HIV-sensitive social protection in Botswana: raising beneficiary and service provider voices to make existing programs more inclusive of HIV-vulnerable young women

Ran van der Wal
Department of Family Medicine
McGill University, Montreal, Canada
November 2023

A thesis submitted to McGill University
in partial fulfillment of the requirement of the degree of Doctor of Philosophy

2. Table of Contents

List of Tables

List of Figures

Acronyms

AGEP	Adolescent Girls Empowerment Program
AGYW	Adolescent Girls and Young Women
AIDS	Acquired Immune Deficiency Syndrome
APP	Alternative Package Program
ART	Antiretroviral Treatment
BCCP	Botswana Combination Prevention Project
BOCODOL	Botswana College of open and distance learning
CIET	Community Information, Empowerment and Transparency
COVID-19	Corona Virus Disease of 2019
BAIS	Botswana Aids Impact Survey
BVV	Beyond Victims and Villains
CEDA	Citizen Entrepreneurial Development Agency
ELA	Empowerment and Livelihoods for Adolescents
FCM	Fuzzy Cognitive Mapping
GBV	Gender-based Violence
GDP	Gross Domestic Product
HCI	Human Capital Index
HDI	Human Development Index
HIV	Human Immunodeficiency Virus
HRDC	Health Research and Development Committee
HSV-2	Herpes Simplex Virus type 2
IGA	Income-Generating Activity
ILO	International Labour Organisation
IMAGE	Intervention with Microfinance to AIDS and Gender Equity
INSTRUCT	Inter-Ministerial National Structural Intervention Trial
IPV	Intimate partner violence
ISPAAD	Integrated Support Program for rain-fed Arable Agriculture Development
IQR	Interquartile Range
LEA	Local Enterprise Authority

LMIC	Low- and Middle-Income Countries
LIMID	Livestock Management and Infrastructure Development
Me	Median
MoA	Ministry of Agriculture
MoESD	Ministry of Education and Skills Development
MLGRD	Ministry of Local Government and Rural Development
MYSC	Ministry of Youth Empowerment, Sports and Culture
NACA	National AIDS Coordinating Agency
NAPHA	National AIDS and Health Promotion Agency
NDP	National Development Plan
NGO	Non-governmental organization
OSEC	Out-of-School Education for Children
OSET	Department of Out-of-School Education and Training
PEP	Poverty Eradication Programmes
PO	Program Officer
PrEP	Pre-Exposure Prophylaxis
R1 & R2	Round 1 & Round 2
S&CD	Social and Community Development
SDG	Sustainable Development Goal
SCIP	Strengthening Communities through Integrated Programming
SHAZ!	Shaping the Health of Adolescents in Zimbabwe
SRH	Sexual and Reproductive Health
SP	Frontline Service Providers
SS&CF	Stepping Stones and Creating Futures
STI	Sexually Transmitted Illnesses
TasP	Treatment as Prevention
TRY	Tap and Reposition Youth
UN	United Nations
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNFPA	United Nations Population Fund
UNGA	The United Nations General Assembly

USAID	United States Agency for International Development
USD	United States Dollar
WINGS	Women’s Income Generating Support
WORTH+	is the name -not an acronym
WS	Workshops
YDF	Youth Development Fund
YW	Unemployed and out-of-school Young Women
ZOE	ZOE Orphan Empowerment

3. Abstract

BACKGROUND: Botswana achieved near epidemic control of HIV infection but HIV outcomes among young women are suboptimal. Unemployed and out-of-school young women are especially vulnerable to HIV. Structural factors like poverty, lack of education, and gender inequality increase their HIV-vulnerability while limiting their ability to act on HIV prevention choices. Promotive social protection programs, economic empowerment programs that aim to enhance income and capabilities, could mitigate their HIV-vulnerability. Botswana funds many promotive programs but unemployed and out-of-school young women rarely benefit from them. HIV-sensitivity requires that programs are inclusive of people at risk of, affected by, or living with HIV, and that HIV-vulnerable groups are involved in their design. This thesis aims to make existing social protection programs in Botswana more HIV-sensitive by engaging direct stakeholders in the generation and assessment of alternative policy and practice options.

METHODS: A systematic review summarized regional best practices in HIV-sensitive social protection interventions (Manuscript 1). A qualitative study explored barriers and solutions to young women's inclusion in Botswana's promotive social protection programs (Manuscript 2). A total of 146 young women and frontline service providers in five randomly selected districts participated in 11 fuzzy cognitive maps, five deliberative dialogues and 20 semi-structured interviews. The review and exploratory study contributed improvement proposals within and beyond the remit of social protection. A 30-person panel of the same stakeholders assessed these proposals in a two-round modified Policy Delphi (Manuscript 3). The panel rated improvement proposals for desirability and feasibility in Round 1. In Round 2, they ranked them for relative importance. Panelists provided rationales and implementation suggestions in both rounds.

RESULTS: The regional systematic review suggested that HIV-sensitive social protection should be comprehensive and adapted to HIV-vulnerable young women. Successful program components included life and job skills training, grants, savings, mentorship, and social safe space in the form of group meetings. The local exploratory study identified barriers to young women's inclusion at personal, interpersonal, community, and structural levels, and highlighted outreach and peer approaches for program improvement. The review and exploratory study contributed 33 proposals in four improvement categories: (i) programs; (ii) training; (iii) outreach; and (iv) program delivery and coordination. Delphi panelists identified seven more, resulting in a total of 40 improvement proposals. The panel rated nearly all proposals as very desirable, two thirds as definitely feasible, and all but one proposal received a top three priority rank from at least one panelist. Service providers stressed foundational skills like life skills and education, while young women preferred proposals with more immediate benefits like receiving grants. Overall, panelists perceived positive role models in program delivery, access to land and water, job skills training, and stipends as most critical to empower young women.

CONCLUSION: More inclusive social protection might enable HIV-vulnerable young women to act on HIV prevention choices. Direct stakeholders proposed, supported, and prioritized alternative policy and practice options to make promotive social protection programs in Botswana more inclusive of HIV-vulnerable young women. The high number and wide range of improvement proposals suggest extensive disadvantage of unemployed and out-of-school young women and ample space to improve the HIV-sensitivity of available programs. The methodology for generating alternative policy and practice options by combining a review, key stakeholder views, and collaborative stakeholder interactions might be transferable and amplify beneficiary voice in policies and programs that affect them.

Résumé

CONTEXTE: Le Botswana est Le Botswana est parvenu à maîtriser quasiment l'épidémie de l'infection à VIH, mais les résultats de VIH chez les jeunes femmes sont sous-optimaux. Les jeunes femmes au chômage et non scolarisées sont particulièrement vulnérables au VIH. Des facteurs structurels tels que la pauvreté, le manque d'éducation et l'inégalité entre les sexes augmentent leur vulnérabilité au VIH tout en limitant leur capacité à agir sur les choix de prévention du VIH. Des programmes promotionnels de protection sociale, des programmes d'autonomisation économique visant à améliorer les revenus et les capacités, pourraient atténuer leur vulnérabilité au VIH. Le Botswana finance de nombreux programmes promotionnels, mais les jeunes femmes au chômage et non scolarisées en bénéficient rarement. La sensibilité au VIH nécessite que les programmes incluent les personnes à risque, affectées ou vivant avec le VIH, et que les groupes vulnérables au VIH soient impliqués dans leur conception. Cette thèse vise à rendre les programmes de protection sociale existants au Botswana plus sensibles au VIH en impliquant les parties prenantes directes dans la génération et l'évaluation d'options politiques et pratiques alternatives.

MÉTHODES: Une revue systématique a résumé les meilleures pratiques régionales dans les interventions de protection sociale promotionnelle sensibles au VIH (Manuscrit 1). Une étude qualitative a exploré les obstacles et les solutions à l'inclusion des jeunes femmes dans les programmes de protection sociale promotionnelle du Botswana (Manuscrit 2). Au total, 146 jeunes femmes et prestataires de services de première ligne dans cinq districts sélectionnés au hasard ont participé à 11 cartes cognitives floues, cinq dialogues délibératifs et 20 entretiens semi-structurés. La revue systématique et l'étude exploratoire ont apporté des propositions d'amélioration au sein et au-delà des attributions de la protection sociale. Un panel de 30 personnes des mêmes parties prenantes a évalué ces propositions dans un Delphi politique modifiée en deux tours (Manuscrit 3). Le panel a évalué les propositions d'amélioration en fonction de leur opportunité et de leur faisabilité lors du premier tour. Lors du deuxième tour, ils les ont classées en fonction de leur importance relative. Les panélistes ont fourni des justifications et des suggestions de mise en œuvre dans les deux tours.

RÉSULTATS: La revue systématique régionale a suggéré que la protection sociale sensible au VIH devrait être complète et adaptée aux jeunes femmes vulnérables au VIH. Les composantes réussies du programme comprenaient une formation aux compétences de vie et professionnelles,

des subventions, des économies, du mentorat et un espace social sûr sous la forme de réunions de groupe. L'étude exploratoire locale a identifié les obstacles à l'inclusion des jeunes femmes aux niveaux personnel, interpersonnel, communautaire et structurel, et a mis en évidence les approches de sensibilisation et de pairs pour l'amélioration du programme. La revue et l'étude exploratoire ont abouti à 33 propositions dans quatre catégories d'amélioration : (i) programmes ; (ii) la formation ; (iii) la sensibilisation ; et (iv) l'exécution et la coordination du programme. Les panélistes de Delphi en ont identifié sept autres, ce qui a abouti à un total de 40 propositions d'amélioration. Le panel a évalué presque toutes les propositions comme très souhaitables, les deux tiers comme tout à fait réalisables, et toutes les propositions sauf une ont reçu un rang de priorité parmi les trois premiers d'au moins un panéliste. Les prestataires de services ont mis l'accent sur les compétences fondamentales telles que les compétences essentielles et l'éducation, tandis que les jeunes femmes préféraient les propositions offrant des avantages plus immédiats, comme l'obtention de subventions. Dans l'ensemble, les panélistes ont perçu des modèles positifs dans la prestation des programmes, l'accès à la terre et à l'eau, la formation professionnelle et les allocations comme les moyens les plus essentiels pour autonomiser les jeunes femmes.

CONCLUSION: Une protection sociale plus inclusive pourrait permettre aux jeunes femmes vulnérables au VIH d'agir en matière de choix de prévention du VIH. Les parties prenantes directes ont proposé, soutenu et hiérarchisé des options politiques et pratiques alternatives pour rendre les programmes de protection sociale promotionnelle au Botswana plus inclusifs pour les jeunes femmes vulnérables au VIH. Le nombre élevé et le large éventail de propositions d'amélioration suggèrent un désavantage considérable pour les jeunes femmes au chômage et non scolarisées et un large espace pour améliorer la sensibilité au VIH des programmes disponibles. La méthodologie permettant de générer des options politiques et pratiques alternatives en combinant une revue systématique, les points de vue des principales parties prenantes et des interactions collaboratives entre parties prenantes pourrait être transférable et amplifier la voix des bénéficiaires dans les politiques et programmes qui les concernent.

4. Acknowledgements

I thank my supervisor, Neil Andersson, for inviting me onto his research project in Botswana, for his patience and support, and for the freedom to carve out my own path in this research journey. I am grateful for the time and dedication of my advisory committee: Anne Cockcroft, for her keen eye for detail, and prompt and comprehensive feedback; Isabelle Vedel, for ensuring the research mechanics and the logical order of my investigations; and Mira Johri, for her intellectual curiosity, critical insights, and positive encouragement.

I thank Miriam Kobo, a cultural broker, without whom I could not have done this research. *Ke a leboga* for believing in this research and for never giving up on the young women. A huge thanks to all the research participants, most of whom have remained dedicated to this research project for all these years. I am so grateful for the generosity of your time, ideas, and reflections. I thank CIET Trust colleagues in Gaborone and colleagues from the Department of Family Medicine and Participatory Research at McGill (PRAM) in Montreal. A special thanks for graduate program director Tibor Schuster.

I want to thank my friends in Canada for dinner and drinks and keeping me sane; my friends in the Netherlands, for your friendship and support throughout the years, and my new-found friends in Botswana, for making us feel welcome and wanting to stay. A big thanks to my family in the Netherlands and in Canada, I am so grateful for your enduring support. To Yannick, mon amour, Noah, Yonah, and Juliette - *schatjes van mijn hartje, merci de votre amour et votre patience, du fond de mon cœur*. I am deeply grateful for your presence in my life.

I am thankful for the generous funding support of the Vanier Canada Graduate Scholarship — Canadian Institutes of Health Research; Fonds de recherche du Québec—santé doctoral scholarship; Lloyd Carr Harris Fellowship—McGill Faculty of Medicine recruitment scholarship; Réseau de recherche en santé des populations du Québec – conference and publication awards; McGill Global Health fellowship and grants; McGill Faculty of Medicine Graduate Mobility awards; Department of Family Medicine awards.

Dedication

For all marginalized young women in Botswana and in the world, I wish you choice and opportunities to be who you want to be, to do what you want to do, and to pursue the goals you value.

For my mom, whose unconditional love and support sustained me all these years. How happy you would have been to see me cross the finish line.

5. Contributions to original knowledge

Direct benefit: There was likely direct benefit from participation in the research itself. Participation by the services providers in Moshupa sub-district might have made them aware of the perspectives of HIV-vulnerable young women, possibly prompting more supportive attitudes towards these potential beneficiaries, even where restructuring the program involved policy decisions beyond their hands-on positions. My work also raised the voices of unemployed and out-of-school young women, for most of them for the first time in their lives. Through participation in this research, they reflected on barriers that prevented them from benefitting from programs that could improve their livelihood and capabilities. They learned about the perspectives of service providers and shared their own. They engaged in policy and practice improvement efforts by identifying potential solutions and through assessment of a range of improvement proposals. Individual anecdotes and feedback though my research assistant suggest that participation in this research increased young women's communication skills, future orientation, and feelings of self-esteem and self-confidence.

Methods: A methodological contribution of my work is my approach to raising alternative policy and practice options. I contextualized regional best practices of HIV-sensitive social protection as described in published and grey literature for local application. I integrated the regional knowledge with views of local stakeholders who had a direct stake in promotive social protection programs — the potential beneficiaries and frontline service providers. These views resulted from stakeholders' lived experience, from their engagement with the regional and local knowledge of HIV-sensitive social protection, and from interaction with other stakeholders. Direct stakeholder interaction occurred in deliberative dialogue workshops and indirect stakeholder interaction in the modified Policy Delphi. This approach to contextualising regional practices and local knowledge could be relevant in other contexts and might offer a method to amplify beneficiary voice in policy and program design.

Relevance of HIV-sensitivity: My application of the UN doctrine on HIV-sensitivity could add value to the management and potential reform of social protection in Botswana. HIV-sensitivity implies that social protection programs designed for broad population groups are inclusive of HIV-vulnerable populations, and that HIV-vulnerable groups are meaningfully involved in the (re)design of social protection programs and policies that affect them.

My work identified proposals that could make existing promotive social protection programs more inclusive of unemployed and out-of-school young women. While this group is highly vulnerable to HIV infection, personal, social, and structural barriers prevented them from benefitting from existing programs. These programs could become more HIV-sensitive if they address these multilevel and intersecting barriers with holistic improvements that are both within and beyond the remit of social protection programming.

Stakeholder engagement: I involved HIV-vulnerable groups in the (re)design and assessment of social protection programs and policies, opening spaces for input from HIV-vulnerable young women. I also engaged frontline service providers in suggesting improved policies and programs in favor of HIV-vulnerable young women. Using participatory methods, these direct stakeholders identified barriers and solutions to program benefit with minimal research guidance. Fuzzy cognitive mapping allowed their conceptualization of the issue independently of my cognitive framework. This demonstrates it is feasible to generate local knowledge outside of the Eurocentric dynamics of most global health research. A more conventional method, the modified Policy Delphi, permitted stakeholders to rate and rank policy and practice improvement proposals.

Theory: My thesis also reflects and contributes to existing theory on pathways of how promotive social protection programs could impact HIV and socioeconomic outcomes. I detailed my conceptual framework with findings of my systematic review. I added gender and health/HIV training to livelihood and employability as interventions of interest. I added mentorship and (social) safe space as delivery mechanisms. Last, I added social capital as a socioeconomic outcome alongside income and capabilities. My empirical findings supported the livelihood and capability interventions as well as the new constructs in the conceptual framework, as panelists rated all existing and new constructs as very desirable, feasible and important.

6. Contributions of authors

My thesis consists of three original manuscripts: (i) a systematic review (Chapter 8); (ii) an exploratory study in Botswana (Chapter 9a); and (iii) a modified Policy Delphi (Chapter 9b). In September 2021, The Journal of the International AIDS Society published my systematic review on HIV-sensitive social protection for vulnerable young women in East and Southern Africa (DOI: 10.1002/jia2.25787). Starting from the choice disability trial (1), INSTRUCT trial (2), and the STRIVE synthesis (3), I developed a conceptual framework to guide my review. I conducted background research to develop the concepts and in- and exclusion criteria. G. Gore, a specialized librarian at McGill University Department of Family Medicine supported my empirical literature search based on this conceptual framework. I screened and selected all records in Rayyan QCRI. I discussed a proportion of included records with D. Loutfi, the second reviewer, to determine the clarity of selection criteria based on a high kappa agreement. D. Loutfi and I appraised the quality of all included papers with the Mixed Methods Appraisal Tool. Q. Nha Hong and I. Vedel provided methodological supervision. I wrote the first and subsequent drafts of the manuscript and revised it after submission. D. Loutfi, Q. Nha Hong, I. Vedel, A. Cockcroft, M. Johri, and N. Andersson critically reviewed multiple iterations of the manuscript and approved the final one. N. Andersson provided overall supervision.

The exploratory study into barriers and solutions to perceived benefit of HIV-sensitive social protection programs by unemployed and out-of-school young women in Botswana was accepted for publication by PloS one in November 2023 (DOI: 10.1371/journal.pone.0293824). A. Cockcroft and N. Andersson conceptualized the fuzzy cognitive mapping (FCM) and deliberative dialogue components. Botswana research NGO CIET Trust facilitators N. Marokane and L. Kgakole collected 11 FCM and five deliberative dialogue data in all five INSTRUCT implementation districts. I assisted with three FCM and one deliberative dialogue workshops in Moshupa town. I conducted semi-structured interviews with program officers. My research assistant, M. Kobo, conducted semi-structured interviews with unemployed and out-of-school young women. Workshop participants analyzed fuzzy cognitive maps with pattern matching to inform deliberative dialogues. In a separate group, a selection of young women, L. Kgakole and A. Cockcroft collaboratively analyzed FCM data from all five districts, assigning FCM concepts to themes they developed. I assisted this collaborative analysis by documenting it real-time in

Excel. I analyzed raw interview and deliberative dialogue data and FCM themes created by collaborative analysis. I wrote the first and subsequent drafts and prepared the final manuscript for submission. A. Cockcroft, M. Kobo, L. Kgakole, N. Marokane, M. Johri, I. Vedel, and N. Andersson critically reviewed multiple iterations of this manuscript and approved it for publication.

The third manuscript is the modified Policy Delphi for assessment and ranking of alternative policy and practice options to improve the HIV-sensitivity of social protection programs in Botswana. I conceptualized the study, selected panelists, piloted the survey questionnaire, conducted the study, analyzed, and interpreted the findings. M. Kobo assisted in data collection with young women and collected data independently with two young women who had been unavailable for Round 2 young women workshops. N. Andersson provided overall supervision. M. Kobo, A. Cockcroft, M. Johri, I. Vedel, and N. Andersson critically reviewed the manuscript and approved it for publication. Global Public Health published the paper in September 2023 (DOI: 10.1080/17441692.2023.2255030)

7. Introduction

Preface to the introduction

Botswana made considerable progress towards ending AIDS as a public health threat by 2030 but young women have been left behind (4). Botswana's HIV response primarily relied on behavioral and biomedical strategies (5). Young women's vulnerability to HIV infection is, however, greatly determined by structural factors like poverty, gender inequality, and lack of education (1, 6, 7). These structural factors affect the ability of young women to implement their HIV prevention choices (8). The *Inter-Ministerial National Structural Intervention Trial* (INSTRUCT-ISRCTN54878784) (2) looked into whether existing social protection programs in Botswana might mitigate the effect of structural factors on young women's HIV-vulnerability. This thesis contributes to answering that question.

At 3.6% of GDP, Botswana's social protection budget is generous among African countries (9). Although nominally an upper middle-income country (9), nearly 60% of the population lives in poverty (10). This is mostly due to high unemployment, which for youth stands at 32.4% (11). Botswana does not offer universal social allowances for children or families to reduce poverty but rather relies on socioeconomic empowerment programs that *promote* livelihood and capabilities development, including for unskilled youth (12). Such *promotive* social protection programs (13) aim to tackle poverty while simultaneously stimulating economic growth and productive employment (9, 14). These programs are part of a raft of social assistance and labor market programs in Botswana (9, 15).

By 2016, the UN General Assembly recommended social protection as a tool to address structural drivers of HIV-vulnerability among adolescent girls and young women (AGYW) in sub-Saharan Africa for whom progress in HIV-outcomes had been slow (16). "HIV-sensitive social protection" became one of 10 Targets in the strategy to Fast-Track ending AIDS by 2030 (17). Social protection programs are HIV-sensitive when they are inclusive of people at risk of, living with, or affected by HIV (18-22). The baseline survey for a recent randomized controlled trial suggests that promotive social protection programs in Botswana are not HIV-sensitive, as few unemployed and out-of-school young women, who arguably need them the most, applied to, or benefitted from these programs (23). HIV-sensitivity also implies that HIV-vulnerable people need to be meaningfully involved in the design and implementation of social protection programs (21, 22). Youth participation in design of policies that affect them is absent in Botswana (24). Public policies are centrally conceived despite the existence of traditional institutions for consultation (*kgotla*) (25). Not all *kgotlas* are well attended and most are used for explanation of policies rather than for citizen participation in policy design (26).

This PhD thesis explores how existing promotive social protection programs in Botswana could become more HIV-sensitive to enable HIV-vulnerable young women to act on HIV prevention choices. The comprehensive literature review is a systematic review of regional best practices in HIV-sensitive promotive social protection. The body of the thesis consists of two empirical studies in Botswana. Before presenting the literature review and the body of the thesis research, an introduction provides relevant background information. The introduction describes the Botswana context, its HIV response, and HIV data for AGYW. It explains why structural factors like poverty, gender inequality, and lack of education increase their HIV-vulnerability. The introduction goes on to describe the field of social protection. It describes how social protection developed from minimal safety nets to rights-based entitlements, and how HIV-sensitive social protection gained traction in policy efforts to reduce HIV/AIDS. The last section of the introduction describes social protection in Botswana. It explains how the Government of Botswana's conservative values and ability to set its own terms gave rise to a unique social protection system focused on work- and market-based programs to reduce poverty and unemployment. It catalogues existing promotive social protection programs that Botswana might leverage for HIV prevention among AGYW. This segues to the INSTRUCT trial that aimed to leverage existing social protection programs to reduce the HIV-vulnerability of unemployed and out-of-school young women aged 18 to 30 years (2). The associated knowledge gap motivates the thesis objectives and research questions. After presenting the structure of the thesis, the introduction concludes with a positionality statement.

The Botswana context, HIV, and HIV-vulnerability of young women

Botswana context

Botswana is a land-locked country with a current population of 2.3 million inhabitants (27). With 582,000 square kilometers, it is roughly the size of France, situated in Southern Africa. It borders Namibia in the west, Zambia in the north, Zimbabwe in the east, and South Africa in the south (28). The semi-arid climate, extreme temperatures, and uneven rainfall make it prone to frequent and severe droughts. Two thirds of the country is covered in infertile, sandy soils, but arable farming is feasible in the eastern parts of the country where most of the population lives (28).

At independence in 1966, Botswana was among the poorest countries in the world with a largely agrarian economy dominated by cattle ranching and subsistence farming (29). Minerals, notably diamonds, discovered in the following years, combined with good governance, prudent macroeconomic and fiscal policies, and extensive public investment in health, education and infrastructure, fueled a steep increase of Botswana's Gross Domestic Product (GDP) (28). From 1966 to 2022, the annual economic growth averaged 8%, and peaked in the early 1970s at around 26% (30). It reduced to around 4% in more recent years, with only 2009, 2015, and 2020 registering negative annual GDP growth due to the global financial crisis, a weak diamond demand, and COVID-19, respectively (30). Botswana achieved middle-income country status in 1986, upper-middle income country status in 2005 (29), and aims to be a high-income country by 2036 (31). The Human Development Index (HDI), a multi-dimensional measure that takes income, education, and health dimensions of poverty into account, showed significant development for Botswana: its HDI value increased from 0.56 in 2000 to 0.735 in 2019 (32). This is much higher than the HDI value of 0.547 for sub-Saharan Africa and positions Botswana near the high development category that starts from 0.753 (32).

Botswana suffers, nonetheless, high rates of poverty, unemployment, and income inequality. With a Gini index of 53.3 (2015), Botswana is one of the most unequal countries in the world (10). In 2021, nearly 60% of Batswana lived in poverty (USD5.50 per day—poverty rate for upper middle-income countries) and 14.1% suffered absolute poverty, defined as living on less than USD1.90 per day (10). In 2020, overall unemployment was 24.5%; unemployment for youth (15 to 35 years) was 32.4%, with females and younger age groups most affected (11).

In 2020, the private sector provided around half of the overall employment, the government around a quarter, with remaining jobs in subsistence agriculture (10%), *Ipelegeng* –Botswana's public works program (6%), and in private households (12%) (33). Although diamonds have fueled Botswana's economic growth, they contribute only 2-3% to employment (29). Combined with the finite nature of mineral resources and their vulnerability to market fluctuation, Botswana's national development plans (NDP) stress economic diversification to support inclusive growth, sustainable employment, and poverty eradication (29, 33).

High public spending on human capital has not been commensurate with education and non-HIV-related health outcomes. Averaging 22% of the national budget in the period 2014-2019, education takes the largest share of government funding (34). From 2017 to 2019, net enrolment rates were 97% for primary education and around 70% for secondary education (33). The quality of education failed to keep pace with gains in enrolment and student achievement levels are low (33). In addition, the current curriculum does not match the demands of the job market, failing to equip learners with hard and soft skills required for (in)formal employment (33).

Annual health spending in the period 2014-2019 averaged 11% of GDP, the third largest share of government spending (33). It supports universal healthcare with 95% of the population accessing health facilities within a distance of eight kilometers (33). Nonetheless, Botswana has high infant and maternal mortality rates, and very high child malnutrition levels (35).

Botswana's Human Capital Index (HCI) score was 41 in 2019 (36), which is similar to the average of sub-Saharan Africa (0.40) and well below the average of other middle-income countries (0.58) (33). Reflecting Botswana's weak health and education outcomes, its HCI score predicts that a child born in Botswana in 2019 would only realize 41% of its full potential by age 18 (36).

HIV in Botswana

HIV/AIDS has taken a toll on Botswana, but political commitment to leverage evidence-based strategies placed the country at the vanguard of epidemic control. After detection of the first case in 1985, adult HIV prevalence peaked at close to 40% at the turn of the 21st century (37). Mortality rates were staggering and female life expectancy projected to more than halve in the next 5-10 years, from nearly 70 to 30 years (37). Under the leadership of then-president Festus Mogae, Botswana was the first country to introduce universal antiretroviral treatment (ART) for its citizens (2002); among the first African countries to introduce routine HIV testing with an opt-out strategy

(2004); and Mogae the first head of state in the world to publicly test for HIV in 2003 (38, 39). Voluntary medical male circumcision was launched in 2008 (40). Linking everyone who tested HIV-positive to treatment regardless of CD4 count, the *Treat All* strategy (2016) enabled large-scale Treatment as Prevention (TasP) (41). High risk groups, including young women, could access pre-exposure prophylaxis from 2018 (42) and free ART was extended to migrants in 2019 (43). Through its prevention of mother-to-child transmission program introduced in 1999, Botswana eliminated vertical transmission in 2021 (44).

Preliminary results of the Fifth Botswana AIDS Impact Survey (BAIS V), a nationally representative household survey published in September 2022, show that Botswana achieved the 95-95-95 targets of the test-and-treat cascade. Botswana therefore reached the Joint United Nations Programme on HIV/AIDS (UNAIDS) Targets set for 2030 to end AIDS as a public health threat. Of all HIV-positive persons in Botswana, 95.1% knew their status, of which 98.0% were on HIV treatment, of which 97.9% had achieved viral suppression (4). Other epidemic transition ratios like the incidence mortality ratio and incidence prevalence ratio also confirm Botswana is on the right path to epidemic control. Defined as the number of new infections falling below the number of deaths of HIV-infected persons per year (45, 46), the incidence mortality ratio in 2021 was just a little over the cut-off of 1(1.08) (47). The incidence prevalence ratio of 1.96 (47) is, however, well below the epidemic transition benchmark of 3% (48).

That Botswana is close to epidemic control and has reached the targets to end AIDS as a public health threat should not lead to complacency. Sex and age-disaggregated data reveal women and youth have been left behind. Preliminary data from BAIS V show an overall annual HIV incidence of 0.2% in 2021 (4). Practically all new infections had occurred in women, however, as female HIV incidence was 0.4% versus 0.0% male HIV incidence. Women also made up nearly two thirds of the overall HIV prevalence of 20.8%. Among youth, female HIV prevalence disproportionately increased by age group. HIV prevalence among adolescent girls (15-19 years) was 2.7% versus 1.6% among adolescent boys. From 20 through to 35 years, the HIV burden of women more than doubled and tripled compared with men: 6.7% versus 2.7% (20-24 years); 15.8% versus 4.8% (25-29 years); 20.2% versus 6.5% (30-35 years) (4).

By achieving 95-98-98 in 2021, BAIS V showed TasP to be effective in general, but viral load suppression for men and youth were well below the 95% benchmark (4). Results were sub-par for men up to 55 years, but for the age group of 15-24 years, young women showed an even lower viral load suppression (74.9%) than same-aged men (81.8%) (4). The preliminary BAIS V Report does not report age-disaggregated prevalence ratios for testing and treatment, but results from the Botswana Combination Prevention Project (BCPP) *Treat All* trial suggest these were of concern for youth and young women (49).

The BCPP is a pair-matched cluster-randomized controlled trial conducted from 2013-2017 with 12,610 individuals (16-64 years) in 30 peri-urban and rural communities in eastern and northern Botswana (41). The overall test-and-treat cascade results of 93-93-98 had been impressive by the trial's end in 2017, but outcomes for men, youth, and young women had been below the 90-90-90 targets UNAIDS had set for 2020 (49). Of men aged 25-64 years, 84-85% had knowledge of HIV-positive status and regarding treatment, only 80-82% of young men (16-35 years) and 88% of AGYW (16-24 years) had been on treatment in 2017. At the same time, BCPP's greatest gains had been among AGYW and men under 35 years. The 73% percent increase in testing among AGYW (16-24 years) led to all AGYW (100%) having knowledge of HIV-positive status by trial end. This suggests that their awareness of HIV-positive status could have been as low as 58% at the start of the trial. The ratio for ART coverage at trial start must have been very low as well, as BCPP ART coverage among 16-24 year old AGYW increased by 99%, suggesting weak linking to care in the standard test-and-treat program in Botswana (49).

In sum, with double or triple the HIV prevalence as same-aged men, nearly all HIV incidence occurring in women, and below-target TasP outcomes, young women in Botswana are left behind. They should be a priority population for comprehensive HIV prevention that aims to prevent both primary HIV infection and forward transmission of HIV through positive prevention for people living with HIV.

Structural drivers of HIV-vulnerability

Biomedical approaches described above, or behavior change strategies for HIV prevention that focus on abstinence, monogamy, and condom use aim to modify proximate risk (50). Such strategies assume individual agency and control over one's life. Link and Phelan (1995) claim that underlying fundamental, or structural and social conditions like lack of power and resources, undermine individual-level change mechanisms and exert a dominant, albeit indirect, effect on disease outcomes (51). Similarly, but in the context of HIV, Andersson coined the term "choice disability" to describe that structural factors reduce the ability of vulnerable young women to act on their HIV prevention preferences (8). The baseline survey (2008) of the choice disability trial in Botswana, Namibia, and Swaziland (n=7,464, 60.9% female) identified intimate partner violence (IPV), partner income disparity, low education, and extreme poverty as structural factors associated with HIV positive status (1).

Gender inequality, patriarchal gender norms, and gender-based violence

IPV and partner income disparity result from gender inequality. Deeply entrenched patriarchal gender norms and discriminatory laws accentuate women's subordinate status. Mac Donald (1996) reported that Batswana women are considered perpetual minors under customary law (52). Nkomazana (2021) elaborates that this justified wife beating if domestic duties, including sexual care, were neglected (53). Polygyny was traditionally accepted, but it was more common for men to enter personal agreements with girlfriends, whom they were expected to feed and clothe (52). Although a few societies in Botswana are matrilineal, most are strongly patriarchal (54) with women socially constructed as inferior to men (55). In these groups, men's dominant socioeconomic status and women's dependence on men might be reinforced by the belief that the most powerful *badimo*, or ancestral spirits, are male, lending a divine justification to male superiority (53, 55). Despite social and legal progress in gender equality, Nkomazana (2021) notes that "*traditional thinking remains engraved in many Batswana's minds*" p.181 (53). Recent narrative life-course research on low-income single mothers in Botswana echoes cultural norms of women's subservience to men (56). Malinga and Modie-Moroka (2023) chronicle a vicious circle of pervasive poverty, attempted escape through (teenage) pregnancies, unfulfilled promises of marriage, and acceptance of partner violence for economic protection (56).

In a cross-sectional study in Botswana with 1,268 participants (18 to 49 years) Leiter et al. (2007) found that women's disempowerment played a key role in their HIV-vulnerability (6). Thirty percent of women reported not having sexual decision-making power, which was associated with twice the odds of concurrency. Partner refusal to use condoms was reported by 53% of women, more than 90% of participants held one or more gender-discriminatory beliefs, and around a fourth held three or more (6). Shannon et al. (2012) reported that higher adherence to gender-discriminatory beliefs like female sexual obedience, acceptance of male concurrency, and wife beating for disobedience or suspected infidelity was associated with increased HIV risk and economic dependence on men (57). Among women, adherence to gender inequity norms was significantly associated with male-controlled decision-making, and intergenerational and transactional sex; among men it was associated with twice the odds of unprotected sex with non-primary partners, sexual dominance, and rape (57).

Two thirds of women in Botswana experienced gender-based violence (GBV) and 62% experienced IPV in their lifetime (58). Only 1.2% of women report GBV to the police (58). Of the 349 reported murders in the first trimester of 2022, 38% had been linked to GBV (59). The Domestic Violence Act (2008) provides for protective court orders (60), but marital rape is still not criminalized in Botswana due to customary law that considers sex within marriage as intrinsically consensual (59).

In Botswana, 25% of girls younger than 15 years reported their first sexual encounter had been non-consensual (58). Coerced sexual debuts are associated with direct HIV infection due to injuries, and indirect HIV risk due to low self-esteem, increased sexual behavior, and easy arousal that may lead to high-risk sexual behaviors (61). Jewkes et al. (2010) report that the first prospective trial that examined the role of GBV in rural South Africa revealed a dose-response relationship between HIV incidence and women's low relationship power and repeated IPV. The study claimed that nearly 14% of new HIV infections could be prevented with enhanced gender equity in heterosexual relationships (62).

Campbell et al. (2008) describe the pathways through which IPV drives HIV transmission (63). Male perpetrators of GBV are more likely to engage in concurrent and commercial sex, exposing their partners to increased risk of sexually transmitted illnesses (STI), including HIV. STIs increase women's susceptibility to HIV infection. Women suffering IPV are less able to negotiate safe sex and more at risk of forced sex with infected partners. Abuse-related chronic stress, depression, and anxiety reduce immune function, which also increases HIV risk (63). Once infected, HIV-positive women in sub-Saharan Africa tend to suffer more IPV than HIV-negative women, especially upon revealing their HIV-positive status (63, 64). For example in Tanzania, HIV-positive women under 30 years were 10 times more likely to report violence (64).

Poverty and socioeconomic inequality

In addition to customary law, common law in Botswana also denied married women the right to hold or acquire property, or to enter into labor and financial contracts without marital consent. This was abolished after passing the *Abolition of Marital Power Act* in 2004, but not for marriages under customary law (65) or for the right to own land, which right married women obtained in 2020 (66). Key rulings like *Molepole College of Education* (1995) and *Moatswi vs. Fencing Centre* (2002) supported economic equality and meant that pregnant students no longer had to leave school, and women could no longer be dismissed from jobs traditionally held by men (65).

These legal changes contributed to great progress in gender parity for labor market participation in Botswana, which was achieved in 2020 (11), although women still earn less than men for the same entrepreneurial work (67). In 2015, male employment and earnings had been higher than female's by 15% and 30% respectively (68). The public sector absorbs 70% of university-educated women, but poorer and less educated women tend to work in the informal sector with inherent income insecurity and poor working conditions (67, 68).

Lack of employment drives the high poverty rates in Botswana: for an annual 3,000 new jobs there are up to 20,000 new job entrants (68). Youth unemployment mostly affects younger and less educated age groups. Of youth with secondary education, 70% was unemployed in 2020 (11). Of the 37.5% of youth that was both unemployed and out-of-school, 50.6% was in the age group 20-24 years, and 58% was female (11). UNICEF and the World Bank reported even higher rates of youth unemployment (41.7%) and annual job entrants (35,000) for Botswana in 2020 (69, 70).

Taken together, this points to the economic vulnerability of poor and low-educated young women. AIDS surveys in Botswana do not disaggregate HIV outcomes by social determinants but other studies found that unemployment predicted the disproportionate high HIV burden among young women (15-24 years) in developing countries (71), and that unemployed persons living with HIV were less likely to adhere to treatment (72). Several studies demonstrate that extreme poverty, or food poverty, is associated with HIV risk, vulnerability, and reduced treatment outcomes. In Botswana, food insufficiency among women was associated with 70% increased odds of unprotected sex with a non-primary partner; double the odds of transactional sex; and 80% higher odds of lacking sexual control (7). Among young women (15-24 years) in six Southern African countries, food insecurity was associated with increased risky sex and twice the risk of recent HIV infection (73). Several systematic reviews confirmed these findings and reported that food insecurity was a barrier to start and adhere to ART (74), and reduced the odds of viral suppression by 29% (75).

Lack of education

Low education is also associated with HIV-vulnerability. HIV information is often disseminated in schools and education helps develop the cognitive abilities to process knowledge, influence attitudes, and increase the self-confidence, aspirations, and self-efficacy required for behavior change (76). Both educational attainment—the cumulative exposure to education, life skills and knowledge—and school attendance are associated with reduced risk of HIV infection. In Botswana, each additional year of education reduced HIV incidence by 8% with effects more pronounced for women and secondary education (77). The protective effect of school attendance hinges on the idea that school sorts learners into same-aged, smaller, and therefore safer sexual networks, which can increase protection while in school, and possibly in the long run through social mobility and social norms (76). A longitudinal analysis of trial data showed that school attendance among 15-25 years old young women in South Africa was associated with reduced incidence of HIV and herpes simplex virus type 2-infections (HSV-2). HIV and HSV-2 risk was higher for dropouts compared with low attendance-students, which in turn was higher than for high attendance-students. Comparing incidence at 1.5 year and 3.5 years, cumulative incidence had tripled for HIV, and quadrupled for HSV-2 infection (78).

The 2018/2019 net enrolment rate for primary education in Botswana was 97%, but for secondary school it dropped to 71.1% (33). As education is such an important protective factor for women, HIV prevention in Botswana should focus on women with little education and dropouts, to keep them in school or encourage them to return to education.

Intersecting structural disadvantages and implications for this thesis

Gender and socioeconomic inequality drive the HIV-vulnerability of poor young women with little education. These do not only intersect, but also compound HIV vulnerability: a generalized model of cumulative HIV vulnerability showed an additional 10% HIV prevalence in women for each added structural factor of IPV, food insufficiency, income disparity and low education, levelling off after three factors (1). Once infected, the negative consequences further increase: HIV positive women suffer more IPV (64), children from HIV affected households are less likely in education (79), and (opportunity) costs associated with access to ART plunge poor people living with HIV deeper into poverty (79). Moreover, stigma and discrimination because of

HIV-associated disability and economic incapacity may further increase their marginalization and social exclusion (80).

Recognizing these fundamental causes of HIV-vulnerability, the international HIV community lobbied for structural approaches to HIV prevention. As social protection has the potential to address socioeconomic and gender inequality, it was increasingly recognized as part of HIV combination prevention approaches (81, 82). Social protection can contribute to enabling environments that support risk- and vulnerability-reducing behaviors or mitigate the negative consequences of HIV infection of unemployed and out-of-school young women in Botswana. The next section on social protection explains this in greater detail.

Social protection: the field, HIV-sensitivity, and social protection in Botswana

Social protection is a capacious field that intersects with social policy disciplines like education and economics, but also with the fields of international development, public health, and human rights (83). There is no single agreed set of definitions, categories, and functions for social protection. Different normative perspectives, rationales and contexts for social protection contribute to the richness of the field, as do a wide range of social protection responses and instruments that overlap, differ by place, and evolve over time. In this section I describe the field of social protection, HIV-sensitive social protection, and the social protection landscape in Botswana.

Social protection: from minimal safety nets to rights-based entitlements

The term *social protection* emerged from development circles during the 1990s (84) and has become the prevailing, overarching term for welfare, safety nets, cash-, income-, or social transfers, tax-funded benefits or entitlements, and social security (85). Social security consists of conventional income-focused welfare programs that transfer resources in the form of social assistance, social insurance, and universal social allowances (85). *Social assistance* programs protect economically or socially vulnerable groups against deprivation through minimal, often means-tested resources. *Social insurance* provides income protection through pooling of member contributions, often matched by employers and, or, the state (83). *Social allowances* are universal programs that subsidize income for specific groups like children or families (84).

The International Labour Organisation (ILO), established in 1919, is the principal United Nations (UN) body responsible for social protection (86). The UN Universal Declaration of Human Rights (1948) was the first international treaty that formulated social security as a human right (87). According to the ILO (Minimum Standards) Convention 102 (1952), social protection should include a minimum of nine schemes: medical care, protection against employment injury, sickness, and unemployment, and benefits for maternity, family size, disability, widowhood and old age (88). Neoliberal theories viewed social protection as mere safety nets to correct for the failure of economic development (89). The first Human Development Report (1990) directed attention to the investment, or human development side, by describing social protection as a tool to strengthen the productive capacity of countries (90, 91). The 2012 ILO Social Protection Floors

Recommendation (R202) advanced a rights-based approach of universal state-provided social protection and social and health services across the life cycle (92-94). Development thinking shifted further away from social protection as a toll on economic growth to it being instrumental to inclusive growth, with increasing consensus that reducing poverty and inequality would lead to long-term, sustainable growth (95). Sustainable Development Goal (SDG) 1.3 therefore prescribes States to *"implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and vulnerable*" (https://www.un.org/sustainabledevelopment/poverty/). Additionally, other SDGs aim to leverage social protection to achieve zero hunger, inclusive education, resilience to disasters, adaptive capacity to climate hazards, and ending AIDS (SDG 3.3) (96).

Whereas social insurance is a key social protection component in wealthy countries, it plays a minor role in low- and middle-income countries (LMIC). This is due to high levels of unemployment, a large informal employment sector, and underdeveloped insurance markets (97). With complex and often chronic poverty, Guhan (1994) asserts that social protection "*in poor countries will have to be viewed as part of, and fully integrated with anti-poverty policies*" p. 38 (97). Guhan identifies *protective*, *preventive*, and *promotive* social protection, three categories of increasing breadth, which have since been adopted by the ILO.

Protective social protection provides relief from deprivation through social assistance to the most vulnerable groups, often those who are unable to work, like disabled and elderly persons. *Preventive* programs aim to avert deprivation from livelihood shocks among the (near-) poor and involve both social insurance like health insurance, and social assistance programs like food distributions or public works. *Promotive* social protection seeks to enhance real income and capabilities (13, 97). *Income-focused* promotive instruments generally support economic opportunities, like agricultural inputs, microfinance, subsidies, productive assets transfers (transfer of livestock or tools), or income generating activities. *Capability-focused* promotive instruments include school feeding programs, work-integrated learning, or active labor market programs that smooth labor supply and demand through job matching, training and skills upgrading (13, 83). A decade later, Devereux and Sabates-Wheeler (2004) added a fourth category of *transformative* social protection to tackle structural causes of poverty like labor exploitation, low wages, and structural inequalities through regulatory change (*passive* labor market policy), or collective action to change attitudes and behaviors (13, 85). Devereux and Sabates-Wheeler (2004) stress that the key objective of social protection is to reduce the vulnerability of the poor and define social protection as:

> *"… all public and private initiatives that provide income or consumption transfers to the poor, protect the vulnerable against livelihood risks, and enhance the social status and rights of the marginalised; with the overall objective of reducing the economic and social vulnerability of poor, vulnerable and marginalised groups."* p. 9 (13)

Social protection can contribute to inclusive economic growth (95). Social protection directly protects and enhances individual and household productivity, labor market participation, asset accumulation, livelihood innovation, and risk taking (98). It has multiplier effects at community-level and may have indirect growth impacts at national-level (98). Indeed, the World Bank 2012-2022 *Social Protection and Labour Strategy* views social protection as a means to further inclusive economic growth and promote pro-poor employment support (99) This contrasts with the Bank's pre-millennium strategies of safety nets rather than springboards (13). Its conceptual framework of 2019 has an even greater focus on asset- and livelihood building programs. Moreover, it recognizes the need for both work and non-work livelihoods, and tangible and intangible assets (cognitive and socio-emotional skills) to achieve equal opportunity and job creation (100).

Last, social protection can increase feelings of dignity and respect at individual level and transform the social contract at macro level (101). When social protection also benefits the middle class upon whom financing social welfare depends, it can improve social cohesion, economic growth, and peace and stability (102).

In sum, social protection is a versatile instrument. Focused on risk and vulnerability, social protection started with minimalist interpretations of social assistance through safety nets, which some consider *economic* rather than *social* protection (13). Social protection went on to develop into rights-based entitlements and holistic packages of comprehensive social programs in support of social equity, inclusive economic growth, and social cohesion. There is clear momentum for social protection, as its potential to achieve multiple intersecting development goals, including ending AIDS, is increasingly acknowledged, and acted upon.

HIV-sensitive social protection

There is no formal definition for the term "HIV-sensitive social protection", but the literature describes its constituent parts, social protection and HIV-sensitivity, in the context of HIV-vulnerability. Whereas HIV risk is the individual probability of HIV acquisition, HIV-vulnerability is the consequence of structural factors that reduce the ability to avoid HIV infection, or to cope with the negative consequences of HIV (103-105). Structural factors are physical, social, economic, cultural, organizational, political, policy, or legal aspects of the environment that facilitate or obstruct efforts to reduce HIV transmission (104). After calling for broad-based multisectoral approaches to address HIV-vulnerability in 1998 (103), UNAIDS advanced international consensus on HIV combination approaches in 2005. This refers to the simultaneous implementation of behavioral, biomedical, and structural programs for primary prevention, but also positive prevention, the prevention of forward transmission from people living with HIV (82). Integrating HIV/AIDS in poverty reduction programs was viewed as a core HIV mitigation policy for countries with generalized or hyperendemic epidemics (82, 106, 107).

At the same time, there was increasing recognition of AIDS as a development crisis. Not only was HIV-vulnerability rooted in poverty, marginalization, and gender inequality, HIV/AIDS had devastating socioeconomic impacts in sub-Saharan Africa (81). High morbidity and mortality rates among economically productive groups eradicated development gains and economic growth, exacerbated poverty, increased health care costs, and the high death toll among teachers and health personnel had long-term negative effects on human capital development (81). AIDS changed the social fabric with new vulnerable groups of AIDS orphans, and the care for many of them shifting to already vulnerable elderly (81).

As social protection gained momentum in international development, UNAIDS made enhancing social protection for HIV-vulnerable people a priority (108). Social protection could reduce HIV risk, support ART uptake and adherence, and mitigate the impact of HIV infection, help keep children in school, and prevent resorting to negative coping mechanisms. UNAIDS valued the conceptual broadening of social protection beyond conventional programs as a critical opportunity "*to 'promote' human development, asset accumulation and economic self-sufficiency and to 'transform' the lives of vulnerable individuals by addressing challenges such as stigma and discrimination*" p.3 (18).

UNAIDS stressed that social protection should be HIV-*sensitive* rather than HIV-specific or HIV-exclusive to avoid stigmatization or perverse incentives, and to ensure that other equally needy groups would not be excluded (18-20). For the priority population of AGYW, UNAIDS recommended a *combined* approach, with poverty alleviation and promotive programs to target different layers of HIV-vulnerability (109).

Highly active antiretroviral therapy (ART), introduced in 1996, dramatically reduced HIV morbidity and mortality (110). Good ART adherence reduced viral loads to undetectable levels, effectively interrupting forward transmission, inspiring strategies to use Treatment as Prevention (TasP) or as Pre-Exposure Prophylaxis (PrEP) for HIV prevention and epidemic control (111-113). The number of persons on ART in LMIC increased from 400,000 in 2003 to 13.6 million by June 2014, a 34-fold increase in 11 years (109, 114).

This fueled optimism about ending the AIDS epidemic, expressed in SDG Target 3.3 that aims to end AIDS as a public health threat by 2030 (109). To achieve this Goal, HIV incidence had to reduce considerably (115), which the Fast-Track strategy (2016-2021) envisaged with the test-and-treat cascade of 90-90-90: 90% of HIV-positive persons should know their status, of which 90% should receive treatment, and of those receiving treatment, 90% should achieve viral suppression (116). The Fast-Track Targets for 2030 were 95-95-95 for testing and treatment (109). Modelling showed that achieving 90-90-90 by 2020 would reverse the spread of HIV by 2020 and, by 2030, reduce new HIV infections with 90%, and deaths from AIDS-related causes with 80% compared with 2010 rates (109, 117).

The UN General Assembly (2016) advanced 10 core Fast Track Commitments focused on key locations and priority populations (16). Key locations refer to HIV hotspots globally and within countries. The focus on key locations was relevant, as 35 countries accounted for over 90% of new infections and AIDS-related deaths, of which 13 were in East and Southern Africa (17). This included Botswana (17). AGYW in East and Southern Africa were a priority population, as they represented two-third of HIV incidence among youth in 2015 (118). Commitment 5, aims to ensure that 90% of youth have the knowledge, skills, and capacity to protect themselves from HIV in order to reduce new HIV infections among AGYW to below 100,000 per year (17). Reaching this infection rate would require a 74% reduction of HIV incidence between 2015 and 2020 (118). To support this achievement, Fast-Track Commitment 6 prescribed that 75% of people living with, at risk of, or affected by, HIV should benefit from HIV-sensitive social protection by 2020 (17).

The 2017 UNAIDS Guideline (21) states that each country should focus on the multiple needs of AGYW, including "*economic… (and) employment assistance and social care to reduce poverty, inequality, exclusion…*" (p.5). The 2017 Guideline also clarified the process aspect of HIV-sensitivity: HIV-vulnerable groups need to be involved in the design, review, and implementation of HIV-sensitive social protection programs to ensure they are inclusive of HIV-vulnerable groups (21). The 2018 UNAIDS Guidance Note on HIV-sensitive social protection emphasizes this participatory element, and identified human capital investments focused on (near) dropouts and secondary education, skills transfer, support for productive livelihoods and formal employment as key pathways to female economic empowerment and HIV prevention (119).

The Evidence Review on the implementation of the 2016-2021 Fast-Track Strategy (120) reported that, despite progress in several countries and populations towards ending AIDS by 2030, worsening inequalities had slowed progress for AGYW in sub-Saharan Africa. In 2019, 280,000 young women had been newly infected with HIV. Although this represents a 34% decrease compared with 2010, it was nearly triple the Fast-Track target of 100,000 new HIV infections per year by 2020. Disparities in HIV incidence, AIDS-related mortality, and access to HIV services resulted from unequal access to education, employment, and economic opportunities. The Review highlighted the paucity of multisectoral approaches that integrated social and structural elements in HIV programs. Initiatives that did show promising results had not been brought to scale in priority settings. Meaningful engagement of HIV-vulnerable populations in program design had been glossed over. Among youth aged 15 to 19 years, twice as many girls had been out of school than boys and access to paid work for AGYW had slowed down (120). Among the key questions the Review offered to consider for future directions were:

> *"How can the global HIV response help strengthen the basic functioning of social protection programs to better respond to the needs of people living with, at risk of, and affected by HIV?"; "How do we make sure AGYW are able to access the full benefits of social protection schemes to achieve gender equality and reduce HIV infection rates?"; "How can the HIV response prioritize countries, geographic areas and populations for interventions that can enhance access to HIV and social protection?" (p.80).*

In response, the current Global AIDS Strategy 2021-2026 (121) takes an inequality lens to identify and reduce the inequalities that impeded progress to achieving ending AIDS by 2030. The Global AIDS Strategy prioritizes critical areas that lag behind. The Strategy also gives equal importance to biomedical interventions, health systems strengthening, enabling environments, and community- and youth-led responses. To achieve equal gender norms and end GBV (Result area 6), priority actions include women's economic empowerment, access to economic resources (land, property, inheritance), labor markets and sustainable livelihoods, as well as efforts to redistribute unpaid care work. Priority actions for youth (Result area 7) are capacity- and skills building, pathways to employment, and HIV-specific social protection schemes like cash plus and financial incentives. The Strategy proposes a near doubling of the budget for combination prevention. It also prescribes that half of this budget will be allocated to economic empowerment by 2025, in response to evidence that "*keeping AGYW in school and empowering them economically reduces their risk and vulnerability to HIV"* (p.150) (121). This suggests a renewed focus on the synergistic potential of combining HIV and promotive social protection, thus on using social protection as springboards rather than as mere safety nets.

Social protection in Botswana

Due to its prevalence in the development literature, social protection is sometimes equated with cash transfers. Both conditional and unconditional cash transfer programs have been leveraged to address structural drivers of HIV-vulnerability like poverty, lack of education, and GBV (122). As the social protection landscape in Botswana does not include cash transfer programs, except for social pensions, I do not further describe the cash transfer literature, but a brief overview can be found in Appendix 11.

Social protection in Botswana results from a unique mix of its cultural roots of benign conservatism and liberal market philosophy (123-125). Botswana's cultural and agrarian roots are reflected in *Kagisano*, a doctrine of social unity, which articulates an ideal rural state of solidarity and community spirit, and a social contract of reciprocal responsibility between state and individuals (123). Key concepts are individual responsibility for self-reliance (*Boipelego*) or self-help (*Ipelegeng*), and chiefly or state responsibility for individuals unable to support themselves (124). Anyone who could work should do so, to help themselves and to contribute to the common good. In-kind social assistance or income transfers from public works are family rations, reflecting conservative family values of (male) heads of household providing for their families (125).

In part due to British colonial influence, the political elite espoused liberal views of a market economy in which welfare is residual. This resulted in frugal and mostly in-kind social assistance benefits, and a range of economic empowerment programs that aim to alleviate poverty while contributing to economic growth (125). Increasing political competition compelled an expansion to social pensions, the only universal cash transfer program in Botswana (126). Financial independence enabled the government to resist other rights-based social protection programs pushed for by international development and donor organizations (127). Indeed, Botswana rejected expansion to universal child and family grants proposed by UNICEF (2010) and the World Bank (2013) respectively (12).

This background explains Botswana's current work-based poverty eradication programs, its tolerance for, rather than embrace of categorical programs for deserving poor, but also its reluctance to adopt universal social allowances like child grants that would shift responsibility for families from citizens to the state.

Botswana does not offer cash transfers to HIV-vulnerable young women. National Development Plan 11 (2017-2023) (28) rather states that social protection programs need to strengthen sustainable livelihoods and productive activities for youth and women. NDP 11 aims to build an empowered and resilient youth capable of developing itself. It promotes opportunity programs to start income generation and work-integrated learning to prepare youth for the job market. It also encourages female participation in such programs, to achieve gender equality and women empowerment (28).

The 2022 World Bank *Botswana Social Protection Programs and Systems Review* (9) reports that Botswana spent 3.6% of its GDP on social protection in 2017/18. Delivery of social protection occurs in 29 programs, implemented by nine ministries, in the three main categories of social assistance, social insurance, and labor market programs Despite taking nearly a third of the social protection budget, social insurance (1% of GDP) is limited to a contributory pension scheme for public officers. The remaining budget for social assistance (2.6% of GDP) is for equity programs that protect against destitution and promote equality of opportunity. Protective programs are safety net programs that offer mostly in-kind benefits to extremely poor, vulnerable and/or HIV/AIDS-affected groups, including indigents, elderly, orphans, chronically ill, and people living with disabilities. Opportunity programs aim to stimulate productive employment and economic growth, help develop physical infrastructure, or promote human capital development. They include fee waivers for education and health services (for destitute families), public works (*Ipelegeng*), which are mostly cash-based, and tertiary education sponsorships and scholarships. The latter take 43% of the social assistance budget (1.13% of GDP) of which the poorest take only 15%. Social assistance in Botswana is nonetheless fairly progressive, as 54% of all beneficiaries belonged to the poorest two quintiles (9).

By increasing income and capabilities through livelihood and improved employability, promotive programs might address the HIV-vulnerability of unemployed and out-of-school young women (13). In 2017, Botswana spent 0.5% of GDP on (youth) economic empowerment programs (9). Of the nine programs, unskilled youth can access five: Youth Development Fund (YDF), Livestock Management and Infrastructure Development (LIMID), Integrated Support Programme for Arable Agriculture Development (ISPAAD), Alternative Package Program (APP, also known as Poverty Eradication Programs -PEP), and apprenticeships in the Botswana National Service Program *Tirelo Sechaba*. The other four programs target skilled youth and/or graduates: Young Farmers Fund, National Internship Program, Graduate Volunteer Scheme, and *Mobogo Dinku*, a microloan program for businesses that add value to the economy (9). Below, I describe promotive social protection programs that might be leveraged for HIV prevention among unemployed and out-of-school young women. The information in this section is condensed in Table 1.

Income transfers through public works -- Ipelegeng

Ipelegeng is a labor-intensive public works program transferring income for short-term employment in community-identified projects (9). Originating from drought relief programs, *Ipelegeng* was reframed in 2008 as a permanent poverty eradication instrument of the Ministry of Local Government and Rural Development (MLGRD) (128). It was to target the poorest through self-selection with unattractive conditions, but widespread poverty and relatively high wages created excess demand and undermined self-selection. Village- or ward development committees therefore recruit beneficiaries on a one-month rotational basis, prioritizing those not previously engaged, or using lotteries (128). Monthly wages of P567 (US$52) for laborers and P651 ($60) for supervisors represent 81% and 93% of the agricultural minimum wage (128). Beneficiaries receive a free meal and work six hours per day in community development projects like maintenance of roads, roadsides, public facilities and drift fences (128). Special positions include law enforcement roles with 1-year contracts, or 3-month wildlife and local council positions (15). According to the World Bank (2022), *Ipelegeng* employs around 73,000 beneficiaries annually, representing a little less than 10% of the total workforce, with the majority (72%) being women (9). Weaknesses of *Ipelegeng* include the lack of links to capacity building, a lack of standard guidelines for projects, a lack of monitoring, evaluation and coordination, and not always targeting the most destitute, especially when using lotteries to allocate employment (9).

Table 1. Promotive social protection programs that enhance livelihood and capabilities in Botswana

Income transfers through public works	Productive asset transfers	Income generation activity	Capabilities development
Ipelegeng *(Ministry of Local Government and Rural Development-MLGRD)* One-month rotating contracts (BWP567-US$54) without training. No requirements.	LIMID *(Ministry of Agriculture-MoA/MLGRD)* Productive asset transfers (small stock** and chickens) for destitute people*.	Alternative Package Program *(Social and Community Development (S&CD)-MLGRD)* Productive asset transfers or microenterprise support with microgrants, training, equipment for destitute people*.	OSEC *(Ministry of Education and Skills Development-MOESD)* Free-of-charge primary education for illiterate adults
	ISPAAD -horticulture *(MoA)* Loans and inputs to support commercial farming. Requirements: business plan, land ownership or 10-year lease hold, access to water, and 40-60% upfront capital investment	Youth Development Fund *(YDF, Ministry of Youth, Sports and Culture-MYSC)* Mixed loans and grants (50%-50%) for microenterprise development with training. Requirements: business plan; unemployed and out-of-school youth 18-35 years	BOCODOL *(MOESD)* Distance learning for secondary education. School and examination fees waived for persons who did not receive Junior certificate (lower-level secondary education).
	ISPAAD -farming *(MoA)* Agricultural inputs: seeds, fertilizer, pesticides, loans, subsidies for ploughing and planting. Requirements: need to own, lease, or borrow fields.		Tirelo Sechaba *(YDF/MYSC)* Youth apprenticeships (20-30 years) in community service (health, education, agriculture) (BWP700-US$65).

*Destitute people: individual income of BWP120 (US$11) or lower, or household incomes of BWP150 (US$14) or lower. ** the Government of Botswana uses the term small stock to refer to goats and sheep. APP: Alternative Package Programme; YDF: Youth Development Fund; ISPAAD: Integrated Support Programme for rain-fed Arable Agriculture Development; LIMID: Livestock Management and Infrastructure Development

Productive asset transfers –ISPAAD and LIMID

The Ministry of Agriculture (MoA) has offered ISPAAD (129) and LIMID (130) as promotive social protection programs since 2008 and 2007 respectively. ISPAAD-farming aims to enhance local food production with inputs like free seeds, fertilizer, and subsidies for ploughing and planting. To be eligible, an individual needs access to land, which can be owned, leased, or borrowed. ISPAAD horticulture provides loans and agricultural inputs for which applicants need to submit business plans, co-invest around half of the business capital, and prove they have access to land and water. ISPAAD is universally accessible but an evaluation published in 2014 showed that beneficiaries tended to be female (60%), older (63.3% were 50 years or older), lowly educated (65% primary education level or less), while youth represented 7.7% of beneficiaries (131). The evaluation found low benefit-to-cost ratio (0.6%) and associated incomes below the poverty datum line for 80% of ISPAAD beneficiaries (131). The revised ISPAAD started in the 2022/2023 season, but guidelines were not publicly available at the time of writing (verbal communication ISPAAD, Moshupa sub-district, June 2022).

The objectives of LIMID are to eradicate poverty, promote food security through improved productivity of cattle, small stock, and poultry, and to improve livestock management, range resources utilization and conservation. In addition, LIMID aims to provide infrastructure for safe poultry and meat processing (130). The resource-poor components of LIMID rely on eligibility criteria of the Destitution Program that prescribe that monthly cash income should not exceed P120 (US$11) for an individual; P150 (US$14) for families, and beneficiaries should not own more than four cattle. These eligibility criteria are under revision (verbal communication LIMID, Moshupa town, June 2022). Productive asset transfers involve transfers of small stock (goats or sheep) for which beneficiaries need proof of access to a water source, or poultry: Tswana chickens or Guinea fowls. The poultry also comes with once-off feeds, the construction of a chicken coop, and veterinary services (the latter is also offered to small stock recipients). An internal assessment in 2010 showed that women represented 80% of beneficiaries of productive asset transfers, but at 15%, youth participation was low (132).

Income generation – YDF and APP

The 2009 Youth Development Fund (YDF) of the Ministry of Youth Empowerment, Sports and Culture Development (MYSCD) supports youth participation in socioeconomic development to create sustainable (rural) youth employment opportunities in Botswana (133). Local youth officers assess business plans submitted by unemployed and out-of-school youth aged 18 to 35 years. The accompanying empowerment program includes capacity building and (life) skills training. Grants are substantial, up to P100,000 (US$ 7,500) per individual and P450,000 (US$33,000) for groups, but most businesses fail with a loan recovery rate of 10% in 2012. This negatively affected the revolving funds-principle underlying YDF's sustainability (15).

The Alternative Package Program (APP), offered by the MLGRD as part of the Poverty Eradication Program in 2011, aimed to provide food security and minimum sustainable livelihood for individuals and families living below the poverty threshold (134). With input from local authorities, social and community development (S&CD) workers identify (un)registered candidates who are destitute aged 18 years and older (15). Candidates are offered microenterprise packages to start bakeries, hair salons, leather works, catering, beekeeping, laundry services, etc. Packages include training, grants, and equipment. Ambiguous accountability processes –social workers report to local councils instead of to the MLGRD—and an absence of monitoring and evaluation, make it unclear how accessible, meaningful and effective these programs are for vulnerable young women (15).

Human capital development – second chance education and work-integrated learning

The MLGRD supports primary and secondary education for orphans and needy students from destitute households (15). Managed by S&CD, this group benefits from subsidies for transport, boarding and school fee waivers, on top of in-kind transfers that include uniforms and school materials. Social workers identify and select beneficiaries (15).

The Department of Out-of-School Education and Training (OSET) of the Ministry of Education and Skills Development (MoESD) provides second chance education programs to out-of-school youth through distance learning (135). For primary education, Out-of-School Education for Children (OSEC) supports basic literacy and numeracy skills (136). The Botswana College of Open and Distance Learning (BOCODOL) is a parastatal institution focused on free secondary education (137). OSET programs suffered from quality issues, as unattractive remuneration packages failed to attract qualified staff (135). BOCODOL transitioned into Botswana Open University, with the last BOCODOL students graduating in November 2018 (138).

Beyond education, capabilities development in the form of work-integrated learning like apprenticeships could benefit vulnerable young women. The MYSCD launched the Botswana National Service Program, *Tirelo Sechaba,* in 2014 (139). It offers unemployed youth (20-30 years) without tertiary education qualifications opportunities to gain job skills in public, parastatal, and NGO institutions while supporting community development (140). *Tirelo Sechaba* provides 12-month volunteer contracts with a monthly allowance of P700 (US$65). Youth work from 7h30 to 12h45 (141) and contracts are renewable until apprentices reach 30 years (140).

In sum, since it relies entirely on national resources, Botswana's social protection system is a function of the government's ability to set its own terms. Conservative values and market-driven ideologies explain Botswana's preference for work- and market-based programs to address poverty and unemployment. These influences have produced a unique social protection context where social and economic empowerment programs are leveraged to reduce and graduate from poverty, promote human and community development, reduce unemployment, and support economic growth. Except for the social assistance programs implemented in direct response to HIV/AIDS, promotive social protection programs seem to consider HIV and gender at best as cross-cutting issues. To make promotive social protection programs work for HIV-vulnerable young women in Botswana, they should be involved in their assessment and design.

INSTRUCT: a structural HIV prevention trial in Botswana

The choice disability trial (2008-2012) identified low education, food poverty, partner income disparity, and IPV as structural factors that undermined HIV prevention among youth (1). Implemented by Botswana NGO CIET Trust and the National AIDS Coordinating Agency (NACA), the *Inter-Ministerial National Structural Intervention Trial: a stepped wedge trial of HIV prevention in Botswana* (INSTRUCT-ISRCTN54878784) aimed to address these structural factors (142). The underlying hypothesis of INSTRUCT was that reducing the worst effects of structural factors on the most vulnerable young women would also reduce their inability to act on their HIV prevention choices, thus reducing their HIV-vulnerability (8). The trial demonstrated that in Botswana, HIV prevalence among young women in control communities was much higher than in communities that received a structural intervention package with three interventions (N. Andersson personal communication, Sep 2016). Subsequently, INSTRUCT started the scale up of the structural intervention package in Botswana. In a stepped-wedge cluster randomized controlled trial design, INSTRUCT randomly assigned 30 population delineations (districts) to six waves of interventions. It aimed to measure impact of outcomes in five districts of the first wave against five control districts of the second wave with HIV prevalence among young women as primary outcome of interest of the trial (143).

The intervention aimed to (i) empower young women (unemployed and out-of-school; 18-30 years); (ii) create an enabling environment for young women to exercise choice; and (iii) improve young women’s benefit from available social support (social protection) programs (142). The first intervention involved 2-day workshops to develop life skills like self-esteem and communication skills, to receive information about locally available promotive social protection programs, and to connect young women with program officers delivering the programs (142). The second intervention involved community-wide structured discussions with men and women of all ages to develop an enabling environment. INSTRUCT trained community activists, including traditional healers, using audio drama (Beyond Victims and Villains summarized in the acronym BVV) to raise awareness of choice disability and generate local initiatives to reduce gender violence (144). Figure 1 shows the schematic representation of the INSTRUCT trial.

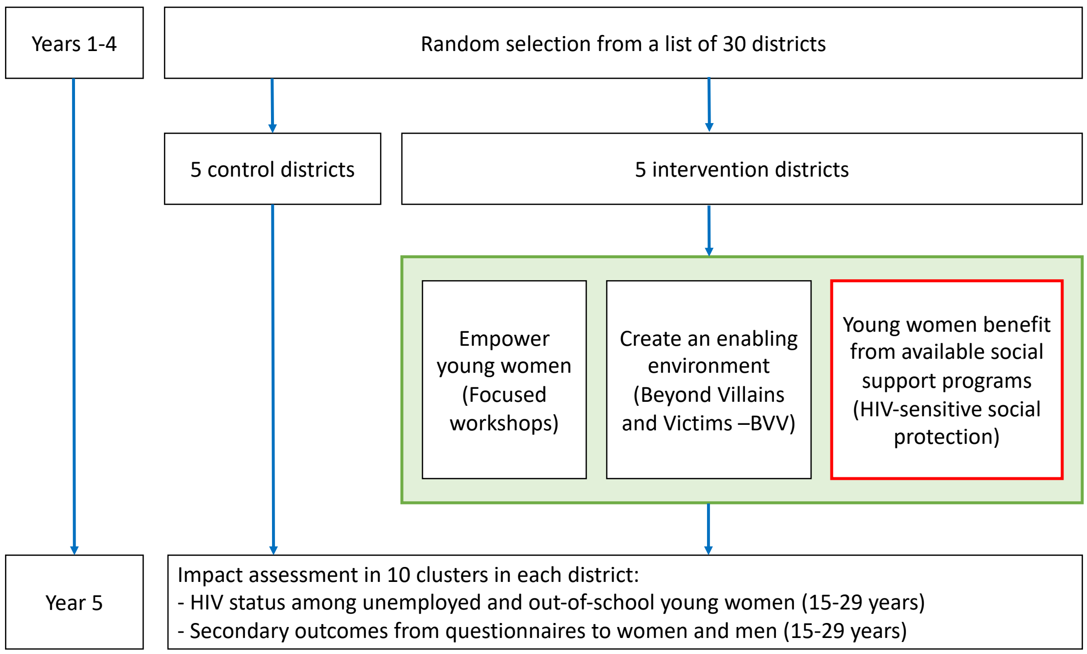

Figure 1. Schematic representation of the INSTRUCT trial

The third intervention, young women benefit from available social support programs, provides the framework for my PhD thesis. Through dialogue between HIV-vulnerable young women and local program and technical officers, INSTRUCT aimed to orient existing promotive social protection programs to unemployed and out-of-school young women (18-30 years) to enable them to take fuller advantage of these programs. The World Bank and social science scholars have criticized Botswana's social protection system for overlapping programs offered by several line ministries, accountability issues in program delivery and lack of proven effectiveness and quality of programs (15, 128, 145). This raises questions of their accessibility and relevance for potential beneficiaries, including unemployed and out-of-school young women. Indeed, the results from INSTRUCT's recruitment survey (2016-2017) with 3,229 unemployed and out-of-school young women revealed that less than half had applied to available programs and less than a third had been accepted. When excluding *Ipelegeng*, one-month rotational public works jobs that provide income transfers without any training or empowerment component, program application and acceptance rates had been 33% and 10% respectively. Younger and less educated young women were least likely to access these programs (23).

Promotive social protection programs in Botswana were not designed for HIV-vulnerable young women and their demonstrated exclusion shows that existing programs are not HIV-sensitive. To be considered HIV-sensitive, social protection programs designed for broad population groups need to be inclusive of people at risk of, living with, or affected by HIV (18-22). In addition, HIV-sensitivity also implies that HIV-vulnerable people are meaningfully involved in the design, implementation, and assessment of HIV-sensitive social protection programs (21, 22). In Botswana, public policies are centrally conceived despite Botswana's long history with public consultation (25). Traditionally, village leaders consulted villagers during *kgotla* meetings to ensure new policies and programs were broadly supported by the population prior to introducing them (25). Kgotla meetings are often poorly attended and used for explanation of policies rather than for citizen participation in policy design (26). Representation of young women in traditional fora is often compromised as social norms relegate youth and women to the subordinate status of minors, unworthy to be listened to (24, 53). Mwansa (1998) states: "*participation in the policy process … occurs within hierarchical or patriarchal structures that tend to conserve the status quo and do not attempt to change and fundamentally restructure social relations*" (p.68) (26). This might make integrating voices of HIV-vulnerable young women especially challenging.

Thesis objective, research questions, and structure of the thesis

Knowledge gap

Botswana has dedicated substantial resources to social protection programs that might empower HIV-vulnerable young women socially and economically and place them in a better position to act on HIV prevention choices. Although not designed for HIV prevention, could Botswana leverage existing promotive social protection for this purpose? Survey data revealed that these programs rarely reach unemployed and out-of-school young women who are highly vulnerable to HIV infection. We do not know which factors impeded program access and benefit, and what might make these programs more inclusive of unemployed and out-of-school young women, hence more HIV-sensitive.

Several systematic reviews examined whether socioeconomic empowerment programs in East and Southern Africa helped reduce HIV-vulnerability but, while reporting HIV outcomes, they failed to report socioeconomic outcomes. None exclusively focused on unemployed and out-of-school young women in the age group 18 to 30 years, nor investigated which implementation components could have contributed to, or moderated, their success. It is also unclear whether HIV-sensitive social protection programs that were successful in East and Southern Africa are transferable to Botswana. We do not know what policy and practice components local stakeholders consider desirable, feasible and important to adapt in favor of unemployed and out-of-school young women in Botswana. Last, HIV-vulnerable populations need to be meaningfully involved in design of social protection programs if these are to be HIV sensitive. It is unclear how unemployed and out-of-school young women in Botswana could inform existing programs if they are, almost by definition, voiceless.

This thesis therefore aims to explore how existing promotive social protection programs in Botswana could be made more HIV-sensitive. Through meaningful engagement of unemployed and out-of-school young women in the generation and assessment of alternative policy and practice options, these HIV-vulnerable young women might improve their inclusion in available programs. More adapted to the social and economic realities of unemployed and out-of-school young women, they might benefit more from available programs, which might empower them socially and economically to act on HIV prevention choices.

Overall & specific objectives and research questions

This thesis explores ways to increase the HIV-sensitivity of existing promotive social protection programs in Botswana through engagement of HIV-vulnerable young women. I propose to identify and assess alternative policy and practice options for available programs that could enhance income and capabilities among unemployed and out-of-school young women aged 18 to 30 years, hence reduce their HIV-vulnerability. Three research questions guide this thesis.

Research question 1: *What are the regional best practices and recommendations for HIV-sensitive social protection programs leveraged for unemployed and out-of-school young women?*
Specific objective 1: Systematically assess the regional experience with HIV-sensitive social protection interventions that aim to enhance livelihood and employability among unemployed and out-of-school young women (15 to 30 years), collate their documented effects on socioeconomic and HIV outcomes, and investigate how programs achieved these outcomes.

Research question 2: *Why do unemployed and out-of-school young women in Botswana rarely benefit from available promotive social protection programs and what do they and frontline service providers propose to remedy perceived barriers?*
Specific objective 2.1: Explore views and lived experience of young women and frontline service providers regarding access and benefit of existing programs by unemployed and out-of-school young women in Botswana, using semi-structured interviews and fuzzy cognitive mapping.
Specific objective 2.2: Discover what improvements unemployed and out-of-school young women and frontline service providers propose to overcome barriers, using deliberative dialogues.

Research question 3: *With a view to improving the HIV-sensitivity of socioeconomic empowerment programs in Botswana, which policy and practice proposals do unemployed and out-of-school young women and frontline service providers support and prioritize, and how do their views differ?*
Specific objective 3.1: Investigate direct stakeholders' perceived desirability, feasibility, and relative importance of policy and practice options that might improve the HIV-sensitivity of socioeconomic empowerment programs in Botswana.
Specific objective 3.2: Discover rating and ranking differences between frontline service providers and young women, and between young women individually and as a group.
I will use a modified Policy Delphi to answer both specific objectives.

Structure of the thesis

After offering abstracts in English and in French and acknowledging persons and funding that greatly enabled this research, I described the contribution of this thesis to original knowledge, followed by the contribution of authors.

The introduction (Chapter 7) provides relevant background knowledge for this thesis. I described the context of Botswana, its HIV response, and the HIV-vulnerability of AGYW. The introduction also covers the field of social protection in general, of HIV-sensitive social protection in particular, and Botswana's unique social protection system. I go on to describe the INSTRUCT trial, followed by a description of the knowledge gap, overall research objective, research questions, and specific objectives. I finish with my positionality statement.

Chapter 8 is a systematic review of the literature on regional best practices and recommendations for HIV-sensitive social protection for unemployed and out-of-school young women. This presents manuscript 1: "*HIV-sensitive social protection for vulnerable young women in East and Southern Africa: systematic review*", published by The Journal of the International AIDS Society in September 2021 (DOI: 10.1002/jia2.25787).

Chapter 9 presents the body of the thesis in two segments. The first explores factors that affect perceived program benefit and potential solutions to barriers with regard to promotive social protection programs in Botswana. I present this exploratory study in my manuscript: "*HIV-sensitive social protection for unemployed and out-of-school young women in Botswana: an exploratory study into barriers and solutions"*, accepted for publication by PloS one in November 2023 (DOI: 10.1371/journal.pone.0293824).

The second segment describes stakeholder views of support and priorities for improvement proposals generated in the regional systematic review and exploratory study of stakeholder views and experience. This presents the third manuscript: "*Vulnerable young women and frontline service providers identify options to improve the HIV-sensitivity of social protection programmes in Botswana: A modified Policy Delphi approach*", published by Global Public Health in September 2023 (DOI: 10.1080/17441692.2023.2255030).

Chapter 10 is a discussion of the thesis as a whole. I triangulate findings from the three manuscripts, while placing them in the context of the larger body of published literature. I also describe the strengths and limitations of the thesis. Last, I offer suggestions for future research directions and uptake of findings in Moshupa sub-district and in Botswana. Chapter 11 provides the conclusion and summary. Chapter 12 lists all references used in the thesis. An indexed Annex collates additional files and appendices associated with the three manuscripts. It also shows ethical approvals from Botswana's Health research and Development Committee (HRDC000724) and the McGill Institutional Review Board (A12-B72-18A).

Positionality

Being a Dutch woman, and Canadian through marriage, I lack cultural and historical linkages with Botswana. I do not speak Setswana and, in my day-to-day life, am rarely exposed to the lives of socioeconomically disadvantaged, or rural Batswana. I benefitted from higher education at Canadian and European institutions that cultivated a Eurocentric ontology to research, to which influence I do not expect immunity. I moved to Botswana in 2019, with my French-Canadian husband and three children who attend international schools in Gaborone. I am relatively well off, giving me residential and occupational choices. Taken together, this gives me many personal, social, economic, and structural privileges most Batswana do not have, let alone the unemployed and out-of-school young women I worked with for this research.

Much of the HIV response in Botswana, including research, in the past and still today, is driven by international actors. In the early 2000s, Merck and the Bill and Melinda Gates Foundation bankrolled the rollout of universal ART, USAID funded, among many other activities, prevention from mother to child transmission, and the World Bank funded the development of national AIDS plans and coordinating mechanisms (146). Of the American universities still present today, Harvard University runs the HIV research laboratory (147), University of Pennsylvania focuses on prevention and treatment of HIV and tuberculosis (148), University of Maryland on epidemic control and the entire HIV cascade (149), Baylor College of Medicine deals with pediatric HIV (150), and they all train the (HIV) health workforce and ventured out to other medical disciplines.

Four factors help to offset some of the shortfalls of my background and the international influences on the Botswana HIV scene. First, my four-year residence in Botswana, extensive travel in the country, and frequent personal interaction with people in Batswana government and academia improved my understanding of the research context. Prior to our move to Botswana, I also lived two short periods of five and six weeks in Moshupa town, the capital of Moshupa sub-district, where most of my research took place. Without running water and frequent power cuts, it exposed me to some of the realities Batswana in more rural areas face. My understanding of poverty and extreme deprivation is in part shaped by a decade of humanitarian work in (post-) conflict-affected areas in Africa and Asia. I have lived in extremely remote and impoverished locations under primitive conditions where a mud hut and latrines were considered luxuries. I rarely observed the same levels of poverty in Botswana, but Miriam, my research assistant, pointed out the signs of poverty hidden behind government provided housing and minimal welfare.

Working with Miriam for the past five years was the second factor that helped to reduce some of the disadvantages of being a foreign researcher. Miriam is a university-trained, older, Motswana woman from a minority tribe who grew up in poverty. These diverse experiences likely equipped her with a profound understanding of both privileged and disadvantaged lives, the divided views required for cultural brokerage. She kept in touch with the young women between field visits, keeping the young women and myself informed about each other's wellbeing. She also communicated with husbands and boyfriends about the relevance of the research. Combined with her motherly connection to the young women, this contributed to the retention of the young women and their increased confidence to speak their mind in my presence.

Third, the INSTRUCT trial resulted from decades of work initiated and conducted by local research NGOs in Botswana and the Southern African region. I benefitted from the guidance of my committee, of whom three members focused their careers on pluriversal knowledges and co-production of knowledges with populations affected by the issues.

Fourth, by facilitating space to generate and assess proposals that could help ensure their inclusion in public policy, the knowledge, ideas, and lived experience of HIV-vulnerable young women took center stage. Regarding the interpretations of findings, I attempted to check my Eurocentric biases by integrating collaborative analysis, including several rounds of member checks, and feedback and discussion sessions with my research assistant. For restitution and to inspire implementation of findings, I produced 10-minute YouTube videos in English and Setswana to present findings in an accessible manner, and shared these with participants, relevant policy makers, and researchers in Botswana.

8. A comprehensive review of the relevant literature

Bridging statement

Socioeconomic and gender inequality undermine the ability of unemployed and out-of-school young women to act on HIV prevention choices. The Government of Botswana funds a range of social protection programs (social assistance and labor market programs) that aim to improve income, livelihood, capabilities, and employability. These could conceivably address structural drivers of HIV-vulnerability among unemployed and out-of-school young women. Such promotive social protection programs could empower young women socially and economically, enabling them to act on HIV prevention choices.

HIV-vulnerable young women in Botswana rarely benefit from available programs promoting livelihood and capabilities development (23). How could these programs become more inclusive of unemployed and out-of-school young women? Similar programs implemented in East and Southern Africa might be informative of which program components could contribute to socioeconomic empowerment while reducing the HIV-vulnerability of this group.

The first question of my thesis addresses this knowledge gap: "*What are the regional best practices and recommendations for promotive HIV-sensitive social protection programs leveraged for unemployed and out-of-school young women*?". Chapter 8 is a comprehensive systematic review of the empirical and grey literature on socioeconomic interventions leveraged for HIV prevention in East in Southern Africa during the period of 2005 to 2020.

Starting from the STRIVE synthesis (3) and choice disability and INSTRUCT trials (1, 2), I developed a conceptual framework to guide the review (Figure 2). As the choice disability trial found significant associations between HIV infection and poverty, IPV, low education and income disparity among young women (1), the population of interest is the HIV-vulnerable population of unemployed and out of school young women. The INSTRUCT trial determined the interventions of interest, which are promotive social protection programs that are similar to programs offered by the government of Botswana. These programs aim to reduce poverty while contributing to improved productivity and economic growth through increased livelihood and employability (28). INSTRUCT aimed to leverage these programs for HIV prevention among unemployed and out-of-school young women. INSTRUCT hypothesized that access to available programs would reduce transactional sex, extreme poverty, and economic and educational disparity, and enable young women to act on HIV prevention choices (2). The STRIVE synthesis presented similar pathways to reduced HIV-vulnerability. Synthesizing several structural HIV interventions STRIVE members conducted in East and Southern Africa and South Asia, the synthesis described how structural interventions might alter the social, economic, and political contexts to mitigate drivers of HIV-vulnerability and influence proximal determinants of HIV risk like sexual risk behavior and IPV to, ultimately, reduce HIV transmission (3).

Similarly, the underlying premise of my conceptual framework is that HIV-vulnerability among unemployed and out-of-school young women could be reduced by addressing structural factors like socioeconomic and gender inequality. It posits that livelihood and employability interventions could increase young women’s income and capabilities. The HIV-sensitive social protection interventions of interest were work skills training, microfinance, and employment support.

Work skills include professional and life skills. Life skills, like communication skills, self-control, self-efficacy and higher-order skills like problem solving, decision-making and critical thinking are associated with higher earnings (151). Life skills are key to entrepreneurial and employment success (152). Formal (vocational) and informal (income generating activity—IGA) livelihood training can increase employment (153) and earnings (154). Business and financial literacy training are critical skills for future planning, preventing indebtedness, and may increase women’s household decision-making (155, 156). A Cochrane review reported business training combined with life skills increased the likelihood of self-employment by 73% (157).

Microfinance includes credit, savings, and microgrants for the poor who lack access to formal financial services (158). Microgrants can be cash, in-kind, or productive asset transfers. Productive assets are tools, equipment, or livestock that sustainably increased income from self-employment (159). Microcredit involves group collateral (mandatory savings), social pressure for loan repayment, and loan renewal upon repayment. Microcredit is associated with increased female household decision-making (160). It reduced IPV among older women (161) and sexual risk behavior among female sex workers (162), as did savings (163).

I defined employment support as support to enhance income through public works, or employability through work-integrated learning and job matching. Public works combine cash- or food-for-work schemes with infrastructure projects (13), or health and social services delivery (164), while providing income and work experience (165). Work-integrated learning increases jobreadiness through apprenticeships. It is associated with increased job opportunities (157), higher employment rates, and better paying jobs (166). Job matching includes job placement, career counseling and job search support, which positively affect employment and earnings (167, 168).

With improved income and capabilities, unemployed and out-of-school AGYW could increase their ability to act on HIV prevention choices. As a result, HIV risk factors like sexual risk behavior and intimate partner violence would reduce, which in turn would reduce HIV infection. Successful HIV-sensitive social protection interventions should therefore demonstrate improved outcomes for both socioeconomic empowerment and HIV-related outcomes.

As most programs were complex, offering multiple interventions, I used the narrative synthesis method developed by Popay et al. (2006) (169). This method helps to unpack intervention components within these programs. It might also support identifying possible program delivery mechanisms that contributed to successful outcomes.

I added detail to the conceptual framework with findings from the review (Figure 4). I added training in gender, health, and HIV as a supporting intervention of interest. I added mentorship and safe space as delivery mechanisms. I also added social capital as a third socioeconomic outcome in addition to income and capabilities.

In conjunction with exploratory research in Botswana, reported in the next chapter, review findings informed the development of candidate improvement proposals that might support the inclusion of HIV-vulnerable young women in existing promotive social protection programs in Botswana, hence make them more HIV-sensitive (Appendix 5). The Journal of the International AIDS Society published the systematic review in September 2021. DOI: 10.1002/jia2.25787.

HIV-sensitive social protection for vulnerable young women in East and Southern Africa: A systematic review [Manuscript 1]

Ran van der Wal[1§], David Loutfi[1], Quan Nha Hong [2], Isabelle Vedel[1], Anne Cockcroft[1,3], Mira Johri[4,5], Neil Andersson[1,6]

1 Department of Family Medicine, McGill University, Montreal, Canada
2 EPPI-Centre, UCL Social Research Institute, University College London, United Kingdom
3 CIET Trust, Gaborone, Botswana
4 Centre de recherche du Centre Hospitalier de l'Université de Montréal, Montreal, Canada
5 Département de gestion, d'évaluation, et de politique de santé, École de santé publique de l'Université de Montréal, Montreal, Canada
6 Centro de Investigación de Enfermedades Tropicales, Universidad Autónoma de Guerrero, Acapulco, Mexico

Abstract

Introduction: Social protection programmes are considered HIV-sensitive when addressing risk, vulnerability or impact of HIV infection. Socioeconomic interventions, like livelihood and employability programmes, address HIV vulnerabilities like poverty and gender inequality. We explored the HIV-sensitivity of socioeconomic interventions for unemployed and out-of-school young women aged 15 to 30 years, in East and Southern Africa, a key population for HIV infection.

Methods: We conducted a systematic review using a narrative synthesis method and the Mixed Methods Appraisal Tool for quality appraisal. Interventions of interest were work skills training, microfinance, and employment support. Outcomes of interest were socioeconomic outcomes (income, assets, savings, skills, (self-) employment) and HIV-related outcomes (behavioural and biological). We searched published and grey literature (01/2005-11/2019; English/French) in MEDLINE, Scopus, Web of Science and websites of relevant international organizations.

Results and Discussion: We screened 3870 titles and abstracts and 188 full-text papers to retain 18 papers, representing 12 projects. Projects offered different combinations of HIV-sensitive social protection programmes, complemented with mentors, safe space, and training (HIV,

reproductive health and gender training). All 12 projects offered work skills training to improve life and business skills. Six offered formal (n=2) or informal (n=5) livelihood training. Eleven projects offered microfinance, including microgrants (n=7), microcredit (n=6), and savings (n=4). One project offered employment support in the form of apprenticeships. In general, microgrants, savings, business and life skills contributed improved socioeconomic and HIV-related outcomes. Most livelihood training contributed positive socioeconomic outcomes, but only two projects showed improved HIV-related outcomes. Microcredit contributed little to either outcome. Programmes were effective when (i) sensitive to age, needs, interests and economic vulnerability; (ii) adapted to local implementation contexts; and (iii) included life skills. Programme delivery through mentorship and safe space increased social capital and may be critical to improve the HIV-sensitivity of socioeconomic programmes.

Conclusions: A wide variety of livelihood and employability programmes were leveraged to achieve improved socioeconomic and HIV-related outcomes among unemployed and out-of-school young women. To be HIV-sensitive, programmes should be designed around their interests, needs and vulnerability, adapted to local implementation contexts, and include life skills. Employment support received little attention in this literature.

1. Introduction

In 2018, East and Southern Africa represented nearly one half of global HIV incident cases (1). Adolescent girls and young women (AGYW) aged 15 to 25 years accounted for 26%, despite making up 10% of the population (1). With 6000 new infections per week, their HIV risk is 60% higher than for same-aged males (1).

Vulnerable young women — defined as unemployed and out-of-school, aged 15 to 30 years — are at especially high risk of HIV infection (2, 3). They may know about this risk (4) but structural drivers of HIV vulnerability like poverty and gender inequality can reduce their ability to act on HIV prevention choices (5). Absolute poverty is linked with unprotected and transactional sex (6), and unemployment predicts young women's disproportionate HIV burden (2). Economic vulnerability constrains their ability to negotiate safe sex and makes it harder to leave abusive relationships (7). Gender inequality at individual level can translate into women's low relationship power; at societal level, harmful hegemonic masculine norms can result in sexual risk taking and violence against women (8). Out-of-school girls do not benefit from the protection implicit in educational attainment (9, 10) or even the lower risk associated with school attendance (11). HIV infection among female school dropouts is triple that of schoolgirls (3).

In 2005, UNAIDS advanced consensus on combining programmes reducing HIV risk, vulnerability, and impact, formalized as "combination HIV prevention" in 2009 (12, 13). Socioeconomic interventions addressing HIV vulnerabilities like poverty and gender inequality have since been fully endorsed as part of combination HIV prevention (13, 14). Socioeconomic interventions could improve young women's power to negotiate contraception and pregnancy, delay sexual debut (15), reduce fertility (16), hence influence lifetime earnings and HIV risk. In the context of social protection, socioeconomic interventions aim to enhance income and employability through livelihood- and skills development programmes (17). Such programmes are considered HIV-sensitive when they also help reduce HIV-risk and vulnerability, or mitigate social and economic impacts of the infection (18).

The United Nations Fast-Track Strategy recommends leveraging HIV-sensitive social protection to end AIDS by 2030 (19). Commitment 6 prescribes that 75% of people at risk of, living with, or affected by, HIV benefit from HIV-sensitive social protection by 2020; Commitment 3 recognizes young women in high prevalence countries as key beneficiaries; Commitment 5 states 90% of youth should have the skills, knowledge and capacity to protect themselves from HIV in order to reduce new infections among young women (20). Beyond income transfers that aim to prevent extreme poverty, like welfare or child grants, the 2018 UNAIDS Guidance Note also encourages using socioeconomic approaches to address structural drivers of HIV-vulnerability (21).

Existing systematic reviews on HIV prevention have summarised combined structural interventions (22, 23), income generating- (24), microenterprise- (25), microcredit- (23), and household economic strengthening interventions (26). No published systematic review has examined HIV-sensitive social protection interventions for unemployed and out-of-school young women, and *how* they were leveraged for HIV prevention. Most existing reviews included men and women of all ages (22-24, 26). Some focused on female sex workers (25, 26) or included quantitative studies only (22-24). Additionally, despite their premise that socioeconomic empowerment could reduce HIV-risk, none assessed socioeconomic outcomes when reporting HIV outcomes.

In the context of HIV-prevention, we reviewed published and grey literature on HIV-sensitive social protection interventions that aim to enhance livelihood and employability among vulnerable young women in East and Southern Africa. We aimed to collate their documented effects on socioeconomic and HIV-related outcomes and how programmes achieved them.

2. Methods

We conducted a systematic review using the narrative synthesis method by Popay et al. (2006), which supports synthesis of complex interventions with considerable heterogeneity (27). The method relies on text to synthesize findings from studies using different methods. It involves four steps: (i) developing a theory of change or conceptual framework; (ii) a preliminary synthesis; (iii) exploring of relationships within and across studies; (iv) assessing the robustness of the synthesis (27).

2.1 Conceptual framework for HIV-sensitive social protection

Our theory of change is as follows: socioeconomic and gender inequality increase HIV risk among vulnerable young women, defined as unemployed and out-of-school, aged 15 to 30 years, in East and Southern Africa. Cash transfers as social protection reduced sexual risk behaviours among adolescents in South Africa (28). HIV-sensitive social protection interventions that improve livelihood and employability could enhance income and capabilities and similarly enable young women to act on HIV prevention choices. This could reduce sexual risk behaviours and intimate partner violence (IPV) (29), which in turn may reduce incidence of HIV infection.

Interventions of interest are work skills training, microfinance, and employment support. Work skills training include life skills and professional skills training, like business or livelihood training. Livelihood training can be formal (vocational) or informal (income-generating activity—IGA). Microfinance includes microcredit, savings and microgrants in the form of transfers in cash, in-kind or productive assets. Employment support can be offered in the form of income transfers for public works, work-integrated learning like apprenticeships, or job matching services like job placement or career counselling support. Box 1 provides detailed definitions.

We consider these interventions HIV-sensitive when they address both socioeconomic and HIV-related outcomes. Socioeconomic outcomes include (self-) employment, income, assets, savings and skills (professional and life skills). HIV-related outcomes are behavioural (sexual risk behaviour and IPV) and biological: HIV infection, measured as HIV incidence or prevalence, or sexually transmitted infections (Figure 2).

Box 1. Definitions of HIV-sensitive social protection components

HIV-sensitive social protection components	Definitions
Work skills training	
Business training	Entrepreneurial training with goal setting, budgeting, cash flow management, development of business and marketing plans.
Financial literacy	Ranges from basic numeracy to budgeting and accounting. Financial literacy is a combination of awareness, knowledge, skill, attitude and behaviour necessary to make sound financial decisions and ultimately achieve individual financial wellbeing.
Life skills	Set of (non) cognitive skills and abilities that connect knowledge, attitudes and behaviour. Skills that increase self- and social awareness; management of self- and relationships; stress, coping, communication, negotiation, conflict resolution and self-efficacy. Higher-order life skills include problem solving, responsible decision-making and critical thinking.
Income generating activity (IGA) training	Informal professional skills training for low-skill self-employment.
Vocational training	Formal professional skills training at nationally accredited institutions for wage employment.
Microfinance	
Microfinance (MFI)	Financial services for the poor who are unable to access formal banking services. It encompasses a range of services including microgrants, microcredit and savings.
Microcredit	Small business loans given to credit groups who use social pressure for loan repayment. Group collateral often consists of mandatory savings. Upon repayment, groups can request larger loans. These small business loans are characterised by short repayment periods and high interest rates.
MFI in-kind	Material contributions to provide investment capital like kits with products to sell, waiving of training fees or subsidies of materials to support training.
MFI savings	Services or support to encourage savings to absorb economic shocks or invest in future expenditure: adolescent-friendly savings accounts; providing a safe place to save; informal revolving group savings schemes.
Productive asset transfers	Transfer of material as investment capital to generate sustainable income. Examples are tools, sewing machines, or agricultural inputs like seed, fertiliser or livestock.
Employment Support	
Job matching	Services that link individuals with public or private sector employment opportunities, career counselling, job searching and placement support, including support for producing and sharing of curriculum vitae.
Public works	Infrastructure and development projects to transfer income to the poor through (temporary) low-skill employment. Wages are kept low to target the poorest through self-selection.
Work-integrated learning	Occupational opportunities to apply professional training in the real world through observation (internships) or mentoring (apprenticeships).

Social Support	
Mentorship	Provision of (health) information and (psychosocial) support, training and coaching by often slightly older female mentors who model positive behaviour.
Safe space (social and physical)	Social safe space: regular group meetings that serve as venues for training, information dissemination, critical dialogue, but also for sharing of personal experiences and peer and mentor support. Physical safe space: girls-only or girl-friendly clubs where girls benefit from social safe space (meetings) or merely hangout with peers; often with social activities.

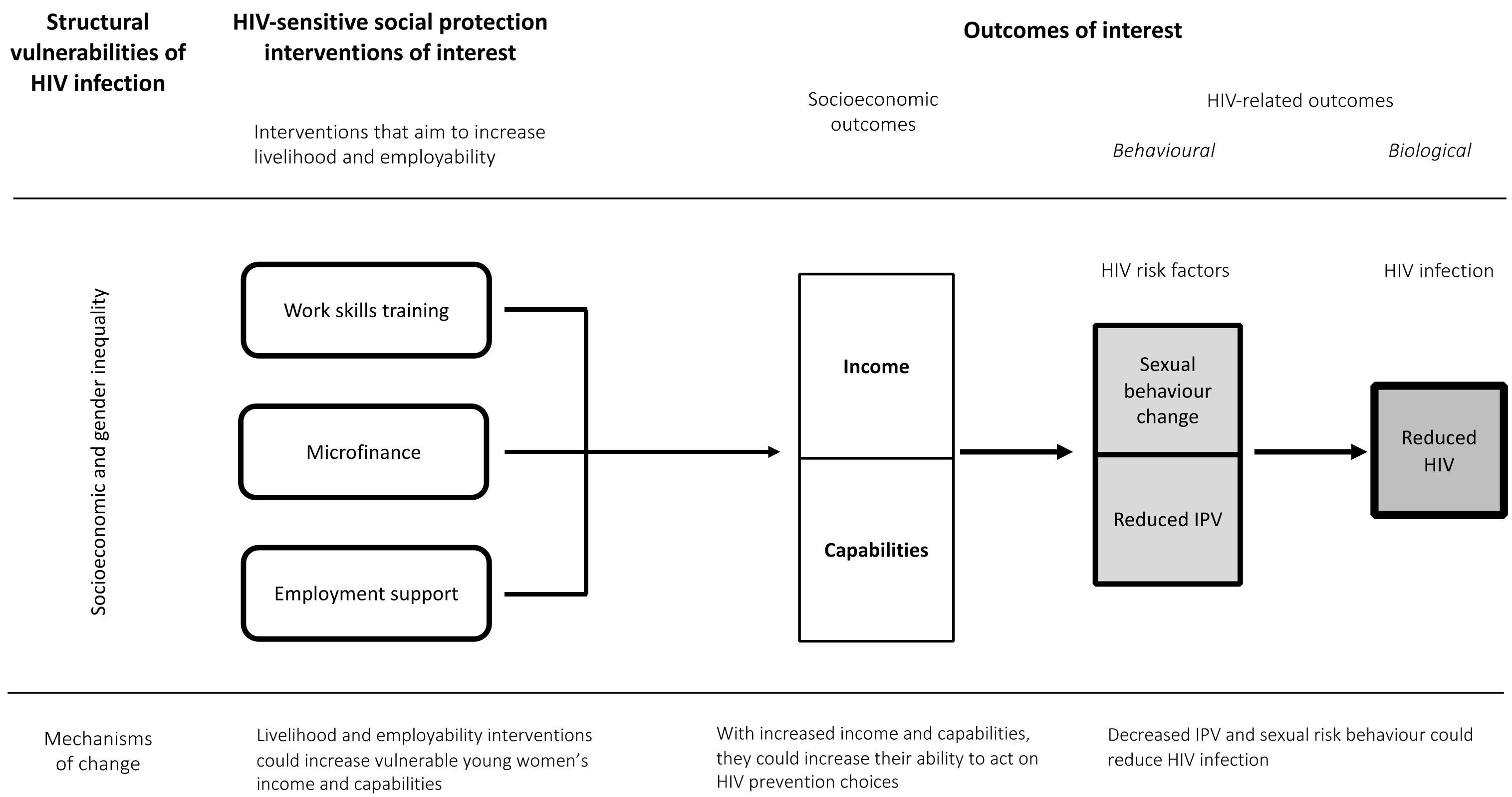

Figure 2. Conceptual framework HIV-sensitive social protection

The rounded rectangles are intervention components. The arrows represent causal effect. The squares are intended outcomes with more distal outcomes darker.

2.2 Search strategy

A specialized librarian supported the search strategy based on population, interventions and outcomes of interest described in the theory of change. Studies reporting both socioeconomic and HIV-related outcomes were included. We used text words and indexing terms to identify published studies in three health and social science databases (MEDLINE, Scopus, and Web of Science Core Collection), and grey literature from websites of the World Bank, International Labour Organization, Centre for Social Protection (IDS), UNAIDS and socialprotection.org. We conducted the search on 28 October 2019 with start date January 2005, when socioeconomic interventions were acknowledged as part of combination HIV prevention (13). The search was limited by language (English and French) and place (countries in East and Southern Africa with an adult HIV prevalence higher than 2.5%). Study designs included qualitative, quantitative and mixed methods. We checked references of included papers with backward and forward citation tracking. See Box 2 for inclusion and exclusion criteria and Additional file 1 for the search string.

Box 2: Inclusion and exclusion criteria

Inclusion criteria (PICOS)	Exclusion criteria
• **P**opulation: young women aged 15-30 years, unemployed and out-of-school (baseline dropouts) • **I**ntervention of interest: HIV-sensitive social protection interventions: work skills training, microfinance, employment support • **C**ontext: East and Southern African countries with HIV prevalence >2.5% based on UNAIDS Africa - East and Southern: *Botswana, Eswatini, Kenya, Lesotho, Malawi, Mozambique, Namibia, South Africa, Uganda, Tanzania, Zambia & Zimbabwe* • **O**utcomes of interest: socioeconomic outcomes include wage and (self-) employment, income, earnings, assets, savings, consumption, and capabilities like business, financial, or life skills. HIV-related outcomes include behavioural outcomes like sexual behaviour and intimate partner violence, and biological outcomes: prevalence and incidence of HIV or sexually transmitted illnesses • **S**tudy design: quantitative, qualitative, and mixed methods research papers • Published in English or French • Published from January 2005 to 28 October 2019	• Adolescents with mean age lower than 15 years • Young women with mean age older than 29 years • Female sex workers • Studies reporting data not stratified by gender and age • Studies that do not report on both socioeconomic and HIV-related outcomes • Preventive or protective social protection like unconditional cash transfers or emergency relief • Interventions focused on return to regular education rather than training in support of livelihood and employability • Studies reporting the effect of HIV-sensitive social protection interventions outside the context of HIV prevention, like testing, linkage to care, adherence to treatment, viral suppression • Editorials • Commentaries • Reviews • Conference abstracts and proceedings • Protocols

2.3 Study selection

We removed duplicates with EndNote and screened records in Rayyan QCRI. A two-stage process involved screening of titles and abstracts followed by full-text screening. For review efficiency, we double-screened a random sample of records until reaching a good interrater agreement (30, 31). Two reviewers (RW and DL) independently screened a random sample of 10% of titles and abstracts. They resolved disagreements through discussion, which helped clarify selection criteria. Since the interrater agreement was good (k=0.85), the first author (RW) screened remaining records (32). We followed the same process for full-text screening. During title and abstract screening, we excluded six protocols pertaining to our review topic. In April 2020, we performed forward citation tracking of these protocols, identified associated published papers, and screened them against eligibility criteria. Two reviewers (RW and DL) reviewed all selected papers to confirm the final sample of included studies.

2.3 Data extraction, appraisal, and synthesis

Following a convergent data-based synthesis design, we synthesised included papers with the same synthesis method (33). One reviewer (RW) extracted data from included papers in two stages. For step 2 of the narrative synthesis (the preliminary synthesis), data extraction followed the population, intervention, context, outcome, study design (PICOS) framework, reported by paper (34). Several papers reported results for the same project at different stages (pilot and trial) or for different aspects (qualitative and quantitative results). Hence, the second data extraction-stage involved extraction of detailed implementation data per project (Additional file 2) and programme delivery data (mentorship and safe space) (Additional File 3).

For synthesis step 3, the exploration within and across studies (27, 35), we shifted our focus from projects to intervention components for which we developed two additional tables: (i) the Synthesis Table shows intervention components clustered under work skills training, microfinance and employment support. We report socioeconomic and HIV-related outcomes and give brief comments on the implementation; (ii) the Summary Table lists *all* intervention components per project, including supporting intervention components, to show projects offered different intervention combinations.

To assess the robustness of included studies (synthesis step 4), two reviewers (RW and DL) independently appraised included papers with the Mixed Methods Appraisal Tool (36). We rated papers as high, moderate or low quality and contacted authors when missing information. No papers were excluded but ratings were taken into account during the interpretation of findings.

3. Results

3. 1 Study selection

The PRISMA flow diagram presents results of the search and selection process (Figure 3) (34). After removal of duplicate records, we reviewed 3870 titles and abstracts, excluding 3682 in accordance with eligibility criteria (Text Box 2). Full-text screening of 188 papers identified 16 papers. Forward citation tracking of relevant protocols identified two additional papers. The resulting 18 papers represented 12 projects. Additional File 4 presents excluded full-text papers with reasons for exclusion.

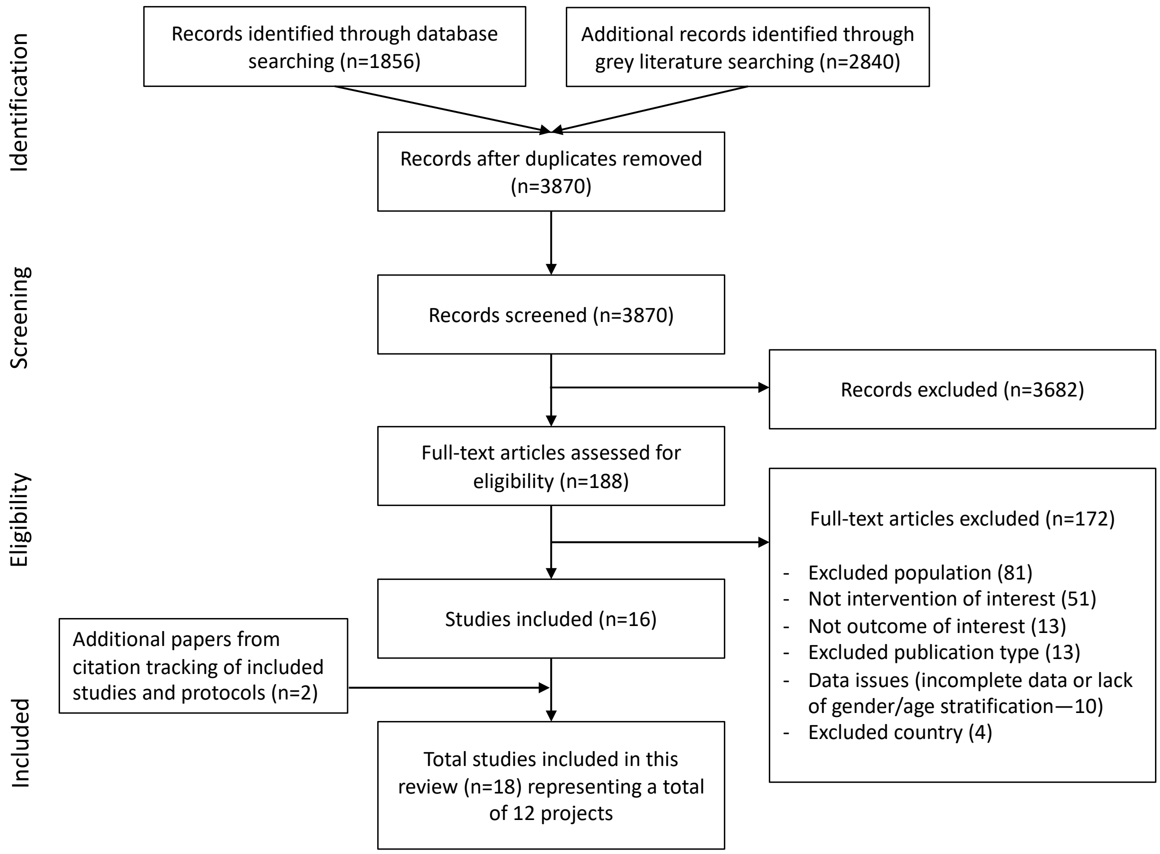

Figure 3. PRISMA Flowchart

3.2 Study characteristics

Table 2 shows descriptive characteristics of the 18 included papers. Five papers used qualitative methods, two used mixed methods, six were cluster-randomized controlled trials (CRCT), one was a randomized controlled trial (RCT) and four were observational, of which one was analytical cross-sectional; one a clustered non-equivalent two-stage cohort trial; one a longitudinal pre-post intervention with matched controls, and one a shortened interrupted time series. The 18 papers represented 12 different projects that included 22,288 participants from eight countries in East and Southern Africa. All had been implemented by non-governmental organisations. The average intervention duration was 2.8 years, ranging from 18 months to five years. Four projects focused solely on adolescent girls (13-19 years) (37-44); three on young women 18 years and above (45-48); and five on both AGYW (49-54).

3.3 Quality Assessment

We rated nine papers as high, six as moderate and three as low quality. Additional File 5 shows the full appraisal of each paper.

Table 2. Descriptive characteristics HIV-sensitive social protection studies

Author	Study design	Population	Intervention	Country/ year	Outcomes	Score
Austrian 2015	Qualitative Interviews and focus groups	Young women 18-25 years n=128	**Asset study** Comparison of 3 groups of young women: (1) Binti comprehensive youth development programme: Sexual and Reproductive Health (SRH), HIV, financial education, leadership- & communications skills; cash stipends (2) Vocational training (3) Income generation activities (IGA) without training	Kenya Feb-May 2010	Economic need was key barrier to translate health knowledge into positive behaviour. Most positive outcomes were in Binti group (unwanted sex, pregnancy and education). Social assets facilitated finding employment and mitigating pressure leading to risky sex. Human assets helped to avoid health risks and supported IGA. Economic assets increased negotiation power. Assets interacted and reinforced each other.	high
Austrian 2020	Cluster randomized controlled trial (CRCT)	Unmarried, out-of-school adolescent girls and young women (AGYW) n= 4661 (3515:1146) 15-23 years	**AGEP** (1) Core component: weekly group meetings (safe spaces) with female mentor to receive training on SRH, HIV, life skills, financial education (2) Health vouchers to access free SRH and general wellness services (3) Adolescent-friendly savings accounts: low fees/opening balance	Zambia 2013-2015 2 years + 2 years after programme end (4 years)	Sustained change on SRH knowledge, self-efficacy and savings, but intervention did not lead to a combined set of social, health and economic assets. It did reduce transactional sex. Short term changes did not lead to long term impacts on education or fertility.	high
Bandiera 2015	CRCT	In/out-of-school adolescent girls 14-20 years Mean (Mn) age 16 n=4800	**ELA-Uganda** (1) Vocational training: 2-year training period: general business skills, financial literacy, training for IGA (2) Life skills for SRH/HIV knowledge (menstruation, pregnancy, STI, HIV, family planning) and gender issues (bride price, child marriage, gender-based violence—GBV) (3) Physical safe space for girls.	Uganda 2008-2010 2 years	Girls in intervention areas were twice as likely engaged in IGA (self-employment). Their earnings and monthly consumption expenditure increased. They reported higher levels of entrepreneurial skills. Fewer girls worried about future jobs. Intervention reduced teenage pregnancy, marriage, sex against their will and increased condom use.	moderate
Bandiera 2018	CRCT	In/out-of-school adolescent girls 14-20 years Mn age 16 n=5966 (3964:2002)	**ELA-Uganda** See under Bandiera 2015. Only physical safe space continued during the 2 years of follow up. Girls continued using clubs as safe space without receiving further training.	Uganda 2008-2012 4 years	Sustained increases for self-reported entrepreneurial skills and IGA; not for monthly expenditure. Control over body: significant increase in SRH and HIV knowledge. Trends continued for delayed pregnancy/marriage and reduced unwanted sex. Increased condom use was not sustained.	moderate
Buehren 2017	CRCT	In/out-of-school adolescent girls 13-19 years n=5454 (3197 Follow up)	**ELA-Tanzania** (1) Vocational training: IGA in local context (2) Life skills for SRH/HIV knowledge (family planning, menstruation, pregnancy, STI, HIV) (3) Physical safe space for girls	Tanzania 2009-2011 2 years	Replication trial of ELA Uganda with MFI added to club activities. Despite low MFI uptake, MFI increased club participation, having savings and participation in informal saving groups. There were no other significant effects on outcomes of interest, likely due to lack of implementation	low

			(4) Community engagement (sensitisation of parents and village elders on issues regarding adolescent girls) (5) Microfinance (MFI): offered to older adolescents to engage in IGA; financial literacy and individual business support (planning and management)		fidelity. Unpublished qualitative process evaluation revealed resources constraints, inadequate mentor training and donated safe spaces were not always accessible or safe. Tanzanian girls had different priorities (preferred educational support rather than IGA).	
Burke 2019 A	Quasi-experimental (clustered non-equivalent two-stage cohort trial)	Adolescent girls 13-19 years Mn age 15.5 n=885 interviews: n=266	**SCIP** (1) Business education and business kits of increasing value. Girls had to sell and repay kits. Graduation after third kit; then eligible to receive a bicycle. Some had access to group saving options and linked business capital. (2) Facilitator–led education sessions on gender norms, pregnancy, HIV, unwanted sexual advances, planning goals, assessing values, money, gifts and skills to communicate with adults/partners. To reduce HIV risk and encourage return to school.	Mozambique Evaluation 2015 6 months (Intervention lasted 5 years)	The 6-month incidence of intergenerational (1%) and transactional sex (7%) at baseline was so low that measures were dropped. No evidence that intervention had impact on girls' GBV knowledge or school attendance. No accurate measures could be obtained for other outcomes.	moderate
Burke 2019 B	Qualitative Interviews and focus groups 2 rounds of data collection (follow up)	49 AGYW 13-25 years, 24 head of households, 36 influential males, 12 community leaders	**SCIP** See Burke 2019 A	Mozambique 2015-2016 12 months	Round 1: most girls reported earning money with business kits. This helped to stay in/return to school, buy necessities, reduce transactional sex. Round 2: A quarter of girls continued earning money. Perceptions: intervention was too short, business kits not sustainable. Most income was used to repay kits. Girls felt shame when having to return to transactional sex. Girls' GBV knowledge was superficial. Others perceived intervention contributed to reduced early marriage and pregnancies and improved social interaction with girls whose behaviour they perceived as more respectful. Respondents from all groups reported increased community awareness had decreased perpetration of GBV.	high
Dunbar 2010	Mixed methods	Out-of-school adolescent orphan girls 16-19 years n=50	**SHAZ!-I** (1) All received life skills (communication- and relationship skills) and health education on HIV, and gender. Intervention group also received: (2) Livelihood support: business training, skill building workshops & mentors identified by community (3) MFI (group lending model)	Zimbabwe 2004 6 months	Income and savings significantly increased (likely due to loans), as did girls' relationship power in non-sexual romantic relationships. There was no change in sexual activity, condom use or future aspirations. There was poor loan repayment, business success, mentoring. Unintended consequences: cross-border trade increased their vulnerability. MFI is not suitable for adolescent girls.	moderate

Dunbar 2014	RCT	Out-of-school HIV-negative orphan girls 16-19 years Mn age 18 n=315 (158:157)	**SHAZ!-II** (1) All received life skills (communication- and relationship skills) and health education on HIV, and gender. (2) All received access to health services: SRH, HIV screening/Rx at every study visit, free condoms, contraception upon request, HIV referral, payment CD4 tests Intervention group also received: (2) Cognitive, material and social support for livelihood: financial literacy, vocational training of choice (nationally accredited), business plan development, micro grant and self-selected mentors	Zimbabwe 2006-2008	Significant results for reduced food insecurity, having own income, less transactional sex, condom use. There were fewer unintended pregnancies (40%). No statistically significant changes for contraceptive use, HIV and HSV-2 incidence. Social support, relationship power and sexual activity was the same across study arms.	moderate
Dunbar 2017	Qualitative Case study interviews, focus groups, process data	See Dunbar 2014	**SHAZ!-II** See Dunbar 2014	Zimbabwe 2006-2008	Authors explored qualitative (community maps) and process data of Dunbar 2014 study. Effects were likely diluted due to the lack of a true standard of care and control girls using transport money for IGA. Few girls received grant: they moved out/returned to school. Barriers to vocational training were language (not in Shona), length (6 months) and girls' care responsibilities.	low
Erulkar 2005	Longitudinal pre-post with matched controls	Out-of-school AGYW 16-22 years n=100 pilot n=326 baseline	**TRY** Modified group-based micro-credit model in 3 phases: (1) pilot (1998-2000): minimalist model; locked-up group collateral; social support (2) 2001: loans required adult guarantors. 2002: adult mentors and educational seminars added (health and gender) (3) 2004 assets replace adult guarantors. Young Savers Club (savings only): with passbook.	Kenya 1998- 2000 (pilot) 2001-04 (scale-up)	TRY girls worked more for pay (from 44 to 57%) and significantly improved their income, assets, savings & safe savings (saving at a bank). Older TRY participants (aged 20 and older) had significantly more assets, earnings from paid work, safe savings. TRY girls did not have more SRH knowledge but significantly increased their ability to refuse sex (OR 1.7) & insist on condom use (OR 2.86). Overall, the percent reporting ability to refuse sex decreased, however.	moderate
Erulkar 2006	Qualitative Case study	See Erulkar 2005	**TRY** See Erulkar 2005		There was a mismatch between project design and AGYW. Barriers: inflexible group lending system, long waiting times for credit (1-30 months; Average 6 months), inability to access savings locked up as collateral, divisive nature group collateral, lack of credit officers. Needs AGYW: acquiring social capital, a safe space to meet, a place to save money. There is a need for a staged programme model with older, bolder AGYW moving on to vocational and business training, work-integrated learning, MFI.	low

Gibbs 2020	CRCT	Unemployed and out-of-school youth 18-30 years Mn age 23.8 (both sexes) n=1351 (677 women; 674 men)	**SS&CF** (1) Stepping Stones: a gender transformative participatory training on HIV and violence prevention programme aimed at more gender-equitable relationships, communication skills. (2) Creating Futures: participatory learning to critically reflect on livelihood/skill development using existing resources in their environment to develop IGA. Training included business training, psychosocial skills to get/keep jobs, savings, manage debt, cope with shocks.	South Africa 2015-2018	At 2-year endline with ITT: no difference in any of the IPV outcomes, but men's self-reported physical/severe IPV perpetration significantly reduced. For women, significant increase of past-month earnings (47% increase) and savings (25%). Future studies should try recruiting couples to validate men's self-reported reductions in IPV perpetration.	high
Goodman 2015	Analytical cross-sectional	Orphan and vulnerable children with 1, 2, 3 years in empowerment programme Median age 18 (Y1 & 2) & 19 (Y3) for girls n=1060	**ZOE** (1) economic empowerment: groups received microgrant and decided how to invest it (which entrepreneurial endeavours/training, financial products, or cash); community mentor (2) sexual behaviour change-training and voluntary counselling and testing.	Kenya 2012-2014	Although overall programme participation seemed protective against sexual initiation/unprotected sex, material transfers and increased monthly income were largely unassociated with risky sex behaviour. Self-efficacy was protective for sexual initiation (past 6 months); unprotected sex and multiple sex partners (past year). Improved food consumption increased odds of all outcomes. Differential gender impact: Girls had less but boys more sexual activity	high
Green 2015	CRCT	Young women Mn age 27.3 n=896 2nd experiment: n=904 young women +partners. Total n=1800 (86% female)	**WINGS** 2 interventions to start non-farm businesses: (1) Economic intervention with business training + seed grant + follow up (FU) support for monitoring and advice (2) Economic intervention became control. New intervention (Women Plus—W+): women and male household member (mostly intimate partner) receive additional 1-day gender training/communication skills.	Uganda 2009-2011 3 years	WINGS: No effect on IPV. Women increased household chores. Doubling of business ownership and income ($p < 0.01$) 16 months after initial grants, moderated by initial quality of relationships. Those suffering IPV increased assets and consumption but not income. W+: still no effect on IPV/gender norms, but W+ improved relationship quality and male support for business and household chores. There was little impact on economic outcomes.	high
Jewkes 2014	Shortened interrupted time-series design	Out-of-school youth 18-34 years n= 232 (n=122 young women and n=110 young men)	**SS&CF** Pilot of trial described above (Gibbs 2020)	South Africa 2012-2013 58 weeks	Significant increases in last month earnings (278%), financially supporting children, receiving child grant, ability to mobilize emergency money and feelings about work situation. Significantly improved gender attitudes, decreased sexual IPV, combined physical/sexual IPV in the past 3 months. Problem alcohol drinking increased from 26.6% to 35.5% but quarrelling about alcohol drinking reduced by a half.	high

Pettifor 2019	Qualitative exploratory narrative timeline interviews	Out-of-school AGYW 15-23 years n= 40	**WORTH+** AGYW attending at least 10 hours of behaviour change communication were eligible to receive cash transfers (CT -$31/3 months) for 18 months. They were offered a place in a small MFI group (savings and loans) and received financial literacy training and mentorship.	Tanzania 2017-2018 18 months	AGYW internalized stated aim to develop business, earn money and become less dependent on men. Cash helped to reduce transactional sex among the poorest by meeting basic needs. Business skills enhanced future aspirations and self-esteem gave AGYW agency to refuse unwanted sex. Social support (family and mentors) enhanced entrepreneurial success.	high
Pronyk 2008	Mixed method CRCT + Qualitative interviews, focus groups, observation, diaries	Poorest AGYW nearly all out-of-school 14-35 years Mn age 29 n= 262 (108: 112)	**IMAGE** (1) MFI: small business loans (2) Sisters for life: participatory learning sessions about gender roles, IPV, HIV, cultural beliefs, relationships, communication every 2 weeks for about a year.	South Africa 2002-2004 2 years	Significant results for increased communications about sex, having gone for testing, reduced unprotected sex with non-spousal partner. HIV incidence was too low (n=8) to examine impact. Qualitative findings revealed increased communication about sex/HIV, especially with children.	high

3.4 HIV-sensitive social protection interventions and socioeconomic and HIV-related outcomes

All projects included work skills training, nine offered microfinance, one offered employment support in the form of apprenticeships. None leveraged employment support in the form of public works or job matching. The Synthesis Table of HIV-sensitive social protection interventions (Table 3) shows intervention components with associated socioeconomic and HIV-related outcomes and additional implementation information.

Table 3. Synthesis table: Outcomes per HIV-sensitive social protection component & implementation comments

	Project	Socioeconomic outcomes	HIV-related outcomes	SE	HIV	Comments on implementation
			Work skills training			
Life skills	**All projects**					Lack description of content, length, quality.
	AGEP	Life skills training increased self-efficacy at programme end and 2 years later.	Decreased transactional sex, sustained 2 years after programme end. No effect on longer-term outcomes (education and fertility).	+	+/-	Self-efficacy was a life skills outcome, but life skills training was not described.
	Asset	Teachings in Binti increased self-esteem.	Self-esteem helped translate knowledge to behaviour change. It helped withstand peer pressure into transactional sex and negotiate condoms.	+	+	Life skills training included communication and leadership skills but also reproductive health and HIV information.
	ELA-Uganda	Life skills mediated socioeconomic outcomes.	Life skills mediated HIV-related outcomes.	+	+	Life skills pertained to management skills: negotiation, conflict resolution, leadership.
	Image	Improved communication skills, increased self-confidence, improved bargaining power to negotiate safe sex (life skills)	Testing and communications about sex improved and unprotected sex reduced.	+	+	IMAGE offered bi-weekly gender and HIV training for a year. Authors suggested there was potential for protective effects of increased testing and communications on sexual behaviour change.
	SS&CF	Critical dialogue and reflection on how to use existing resources in the environment to develop IGA contributed to impressive increases in last month earnings	Gender training effect on combined sexual and physical IPV in pilot; not in trial. No effect on experience IPV in women. No effects on sexual behaviour change.	+	+/-	Harsh environment of informal settlements may be conducive to resorting to violence, which might be difficult to change.
	ZOE Kenya	Increased self-efficacy and resilience.	Increased self-efficacy was protective for sexual initiation, unprotected sex, multiple sex partners. Increased resilience was associated with small increases of sexual initiation and multiple sex partners.	+	+/-	The paper refers to “other life skills training” on top of entrepreneurial training without specifying content.
Business training	**Nearly all**					Lack description of content, length, quality.
	AGEP	Modest increase of financial literacy at programme end; not sustained 2 years later. Savings increased and were sustained.	Total intervention decreased transactional sex sustainably, without impacting longer term education or fertility outcomes.	+	+/-	Intervention component is financial education.
	Asset	Only Binti girls saved, planned and spent responsibly. They found more ways to increase income.	The little money they saved helped young women to not engage in transactional sex.	+	+	Intervention component referred to financial education, which was formally integrated in Binti curriculum and helped instil saving behaviour.

	ELA-Uganda	Self-reported Entrepreneurial skills up by 8% (ITT); 50% (TOT). This increased self-employment.	The total mix of interventions significantly reduced marriage/cohabitation, teenage pregnancy, and sex against their will.	+	+	Business skills refer to general business skills and financial literacy (budgeting, financial services, accounting) to support IGA activities. Voluntary participation in development clubs: 21% participation but intense participation (2 or 3/week for 2 years).
Vocational training	**Asset**	Young women only receiving vocational training reported saving the least and having the lowest economic assets.	They were also perceived as more vulnerable to peer pressure and transactional sex than young women engaged in IGA or graduates from a comprehensive programme (Binti).	-	-	Overwhelming unemployment & high poverty context. Vocational training girls lacked seed capital and professional networks to start IGA. They lacked the positive peer groups and social support Binti girls enjoyed.
	SHAZ!-II	In combination with other components reduced food insecurity, increased having own income.	Pilot with small sample size (n=315) - underpowered to detect effect on HIV or HSV-2. Reduced transactional sex, unintended pregnancies; increased condom use	+?	+/-?	SHAZ! offered 6-months vocational training at a nationally accredited institution. Only 63% completed training; 60% received grant. Barriers: vocational training was in English and at inconvenient times; competing care and household demands.
IGA training	**SS&CF**	1-year pilot stage, last month income increased by 278%; during the 2-year CRCT, income increased by 47%	Decreased combined sexual/physical IPV in pilot. Trial: IPV experience among women did not decrease but men reported reduced perpetration of IPV. Neither the pilot nor the trial showed significant results for sexual behaviour change.	+	-	Participatory learning sessions with wide ranging topics included some training on IGA. SS&CF likely invested the little on IGA training. It is unclear what IGA were pursued and how. Economic results were likely due to critical approach.
	SHAZ!-I	More income but this could be caused by loan.	No significant change in condom use, sexual activity	+?	-	IGA training involved 4-day workshops on candle or soap making, tie dye. Girls engaged in risky livelihood strategies, like cross border trade. Lack of adequate social support; negative unintended consequences IGA increased HIV risk.
	ZOE	Monthly income for girls who were one year in the programme was twice that of girls just starting the programme; no difference in income between girls who had been one or two years in the programme.	Monthly salary was not associated with sexual initiation or unprotected sex. Multiple partners even increased with programme participation.	+?	-	IGA training included barbering, tailoring, car mechanics. Paper does not describe IGA enough to know how much money and time participants spent on IGA.
	ELA-Uganda	Increased (and sustained) engagement with IGA, due to self-employment (72% -ITT). Intervention girls were twice as likely engaged in self-employment than control girls (6x more likely with TOT analysis). Increased income at programme end was not sustained 2 years later.	Teen pregnancy fell by 26%; delayed marriage (58%); sex against their will (44%); all sustained 2 years after project.	+	+	ELA offered many types of IGA training: small-scale agriculture and livestock rearing, hair dressing, tailoring and small trade. Local entrepreneurs were involved in development and delivery of training curriculum.

	ELA-Tanzania	IGA training did not result in any employment, nor in more earnings.	No effect on sexual risk behaviours.	-	-	Resource constraints affected the delivery of interventions. Donated club spaces were not always accessible and safe; the mentor component suffered from inadequate training, long delays in replacement, and lack of supervision.
			Microfinance			
Micro grants (Cash)	**Asset**	Stipends gave Binti girls financial assets and instilled saving behaviour.	Binti girls perceived improved negotiation power to withstand unwanted sex and pregnancy.	+	+	Binti girls received stipends and perceived that economic grounding was key to translate health knowledge into safe sexual behaviours.
	SHAZ!-II	In combination with other components, food insecurity reduced.	Pilot was underpowered to detect effect on HIV/HSV-2. Reductions in transactional sex, unintended pregnancies; increased condom use.	+	+	After finishing vocational training, girls received micro-grant (US$ 100) to invest in supplies, capital equipment or further training. Only 60% of girls received microgrants because of challenges completing vocational training and business plans.
	WINGS	Near doubling of monthly earnings and IGA (crop sales, animal rearing, petty trade, retail). Women suffering IPV at baseline only increased assets and food consumption.	No effect on IPV; slight but significant increase in marital control.	+	-	Increase of 5.8 more household chores. WINGS+ included male partners in a second phase. It increased household and business support, but did not reduce IPV, marital control.
	WORTH+	Increased agency, self-esteem, aspirations and future orientation. The better off were able to develop/expand businesses, attend training. Skills enhanced future aspirations like going for job training, buying assets (livestock, land, sewing machine) to secure income beyond cash transfer time period.	Grant reduced transactional sex for basic needs. Not having to ask parent or boyfriends for money may also have reduced tension with family and boyfriends and potential violence.	+	+	Women internalized the aim to develop IGA and become less dependent on men. Grant size (USD31 every 3 months) was likely too small to reduce transactional sex for other motivations than basic needs. Increased agency, self-esteem, aspirations and future orientation likely affected HIV risk reduction more.
	ZOE	Cohort 2 girls earned twice the income compared with Cohort 1 girls. No further increase for Cohort 3 girls.	Material inputs and monthly income were unassociated with risky sex. Increased food consumption was associated with increase in sexual risk behaviours.	+	-	Value of grant is not reported. Not all participants received the same amount of money. Increase in risky sex could be reverse causation or perhaps girls were perceived as more desirable now they were more food secure. Need for longitudinal data.
Micro grants (In kind)	**SCIP**	Qualitative findings report that ¾ of the girls earned money in the first round, half by the 2nd round and only ¼ at time of interview.	Unable to determine effect due to design and measurement issues and low incidence risky sex behaviours. Many reported reducing transactional sex in Round 1 but some re-engaged in Round 2 due to financial need.	+?	+/-	Girls discontinued selling business kits due to the lack of diversity of products, low profits, travel, high costs in a context of drought & hunger. Project could be made more sustainable by adding life- and professional skills, supplier networks; a longer duration.

Productive assets	**ELA-Uganda**	Sustained increased self-employment	Sustained reduced sexual risk behaviours	+	+	ELA-Uganda offered USD30 worth of productive assets (seeds, tools, chicks -reported in Buehren 2017)
	ZOE	Cohort 2 girls earned twice the income compared with Cohort 1 girls. No further increase for Cohort 3 girls.	None of the material inputs were associated with reduced odds of sexual initiation and unprotected sex	+	-	Start-up kits included sewing machines for tailors, haircutting accessories for tailors and tools for mechanics. Not all participants received start-up kits.
Microcredit	**ELA-Tanzania**	Credit increased savings; spillover effect from social networks: savings mainly occurred in informal rotating credit/saving schemes.	No effect on sexual risk behaviours.	+?	-	Microcredit only offered to adolescents to engage in IGA; supported with financial and business training and support. The MFI component increased interest in overall programme, increasing participation with 6%, but there was a very low uptake of MFI (4%).
	IMAGE	No microcredit results reported.	Testing and communications about sex improved and unprotected sex reduced.		+	IMAGE offered traditional microcredit: young women received small business loans.
	SCIP	No outcomes reported for small business loans.				Some communities used credit associations to provide group saving and linked business capital (loans), but the main component involved kits.
	SHAZ!-I	More income -could be caused by loan.	No significant change in condom use, sexual activity	?	-	This was conventional microcredit including group lending, weekly repayment meetings and new loans upon full repayment. Loans were USD51-87; repayment 3-9 months. Interest 30% (vs 50-60% commercial lending). At 6 months, only 20% had repaid loan; full loan repayment was 6%. The project adapted to no more collateral/weekly instalments upon timely repayment, but then lacked social pressure to encourage repayment. Traditional MFI loans may not be appropriate for vulnerable adolescent girls.
	TRY	TRY girls worked more, had more income, savings and saved at safer places; more pronounced for those 20 years and older.	They significantly increased ability to refuse sex and insist on condom use and had more liberal gender attitudes.	+?	+	TRY offered traditional microcredit with group savings as collateral. Groups consisted of five girls. The two with the best plans receive credit; when fully repaid, the next two, etc. There was little interest in microcredit (54% young women borrowed; 56% had problems with repayment) and faced many barriers.
	WORTH+	No outcomes reported for loan programme.				WORTH+ offered microfinance with individual savings, loans and financial literacy.
Savings	**AGEP**	Girls increased savings.	Transactional sex reduced. Short term changes did not lead to long term impacts on fertility.	+	+/-	Low participation: 25% did not participate at all; 30% participated in half or more sessions. Intervention may not have been meaningful enough. Household poverty may need to be addressed to impact fertility.

	Asset	Young women in Binti and some with IGA activities managed to save.	Savings helped to not having to resort to transactional sex.	+	+	Main challenge to saving was not earning enough money, which was especially true for those who took care of others (children or siblings).
	SCIP	No outcomes reported for this savings.				Some communities used credit associations to provide group saving and linked business capital (loans).
	TRY	Savings increased from 43% to 95%; saving at safer places (at a bank; 42 vs 24% control); Savings remained stable in 2002/03 but took off in 2004 when voluntary saving scheme was introduced.	They significantly increased ability to refuse sex and insist on condom use and had more liberal gender attitudes.	+	+	In phase 3 (2004), stand-alone voluntary savings were added for those enjoying the social aspects of the club/needing a safe place to save. TRY girls were interested in (informal) savings options. Stand-alone savings and low-risk income generation activities were valued by (younger) girls.
	WORTH	Savings improve future orientation: AGYW saved to buy land, assets, livestock.	As they can ask savings group for money, they are less tempted to engage in transactional sex.	+	+	Savings groups were not described.
			Employment support			
Public works	**None**					The lack of research on public works may be due to sociocultural norms that view public works as appropriate for men. Public works projects need to pay more attention to gender and consider additional support to make them sensitive to young women
Work-integrated learning	**SHAZ!-I**	Distrust between mentors and students; 60% of the girls were satisfied with their mentor. More income -likely due to loan.	No significant change in condom use, sexual activity	+?	-	Work-integrated learning may require more attention to training of mentors, compensation of students, access to and involvement with professional networks and hiring opportunities for employment after the apprentice period
Job matching	**None**					The lack of research on employment support may be due to incompatibility of low skilled vulnerable young women and limited (higher skills) wage jobs available in contexts with generalized poverty

Legend: +: positive change; +?: positive change is doubtful; -: no change; +/- both positive and no change; empty cell: no results reported.

3.4.1 Work skills training

All projects offered work skills training. Life and business skills contributed improved socioeconomic and HIV-related outcomes, which were often sustained after interventions ended. Livelihood training produced mixed results: IGA training improved self-employment and income, but failed to reduce HIV risk behaviours with one exception (37); stand-alone vocational training was less suitable for vulnerable young women than more comprehensive interventions.

Life skills training. All projects offered life skills training, but few described content and only five reported outcomes of interest (37, 38, 45-49). Life skills ranged from skills in communication, negotiation, leadership and conflict-resolution to higher order skills like problem-solving and critical thinking. Life skills training increased self-esteem, self-confidence, self-efficacy and aspirations, which helped negotiate condom use, resist transactional sex (47, 49), mediate economic empowerment and unwanted sex (37, 38). Psychosocial and sexual risk behaviour outcomes were sustained two years after projects ended (37, 38, 49). ZOE Orphan Empowerment (ZOE) in Kenya showed mixed results. Self-efficacy was significantly associated with reduced odds of unprotected sex, sexual initiation and concurrency. Increased resilience, however, was associated with small increases of sexual initiation and concurrency (48).

Stepping Stones and Creating Futures (SS&CF) in South Africa took a critical participatory approach to life skills training. Vulnerable young women reflected on skills and resources they could leverage for livelihood and income. Both pilot and full trial reported statistically significant increases in earnings by 278% and 47% respectively. In the pilot, IPV reduced (46) but the trial showed no effect on women's experience of IPV, although self-reported male IPV-perpetration significantly decreased (45). Neither pilot nor the trial found changes in sexual risk behaviour. The pilot saw young women's problem drinking significantly increased by 33% but quarrelling about alcohol reduced by half. Authors suggested improved communication skills may have de-escalated conflicts. A similar trend in the trial mid-way was not sustained at two years (45).

Business and financial literacy training. Nearly all projects offered some business or financial training without describing content, duration or level of training. The three projects reporting outcomes offered financial education or general business skills like budgeting and accounting (37, 38, 47, 49). Financial literacy, self-efficacy and self-reported entrepreneurial skills increased. Business skills significantly increased self-employment (37) and helped young women save, plan, and spend responsibly (47, 49). Projects reported reduced sexual risk behaviour (37, 47, 49). Improved entrepreneurial skills were sustained two years later (37).

Livelihood training (vocational and IGA-training). Six projects offered livelihoods training of which four offered IGA training (37-39, 45, 46, 48). Shaping Health of Adolescents in Zimbabwe (SHAZ!-I and II) offered both IGA and vocational training (42, 43) and the Asset project in Kenya compared the two types of training (47).

Formal vocational training took place at nationally accredited institutions. Asset found vulnerable young women with vocational training at increased socioeconomic and HIV risk compared with peers engaged in IGA or in a comprehensive programme (47). SHAZ-II combined vocational training with microgrants, mentors, and health services. It found statistically significant results for increased income, food security, condom use, reduced transactional sex and unintended pregnancies (42). While incidence of HIV (2.3/100 years) and HSV-2 infection (4.7/100 years) were high, SHAZ!-II was not powered to detect statistically significant changes. Only 60% of intervention girls completed vocational training, as they struggled with instruction in English and competing family responsibilities (42, 44).

Informal IGA training ranged from candle or soap making, tailoring, hair dressing to small-scale agriculture or animal rearing. Whereas income increased in all projects but one, IGA training failed to show impact on sexual risk behaviours. The exception was Empowerment and Livelihood for Adolescents (ELA) in Uganda, which reported increased self-employment, sustained after two years, and significant reductions of teenage pregnancy, unwanted sex and delayed marriage/cohabitation (37, 38). The ELA replication trial in Tanzania failed to demonstrate any statistically significant outcome. Resource constraints negatively affected implementation fidelity. The process evaluation identified girls would have preferred supplementary tutoring. Authors suggest this could be linked with school enrolment being higher in Tanzania than in Uganda (39).

Some studies reported unintended outcomes. In Zimbabwe’s collapsing economy, some orphan girls started cross-border trading and faced physical and sexual harm that increased their HIV risk (43). Increased food consumption in ZOE, Kenya, was associated with increased transactional sex. The authors suggested reverse causality whereby transactional sex might have increased access to food (48).

3.4.2 Microfinance

All projects offered some form of microfinance, except for SS&CF that encouraged leveraging available resources through capabilities development (45, 46). Microgrants contributed positive socioeconomic outcomes like increased earnings and savings but did not always reduce IPV (52) or sexual risk behaviour (48), and impacted the poorest and most vulnerable differently (40, 41, 53). The single microcredit project showing positive effects judged it suitable for 'older and bolder' young women only (50). Projects offering savings reported improved socioeconomic and HIV-related outcomes.

Microgrants: cash, in-kind and productive assets. Seven projects offered microgrants, of which five offered cash (42, 47, 48, 52, 53); two offered productive assets (37, 48). Strengthening Communities through Integrated Programming (SCIP) in Mozambique offered in-kind grants in the form of business kits (40, 41). All projects reported improved socioeconomic outcomes like increased earnings (41, 48, 52), food security (42, 52), savings (47) and self-employment (37).

Results were mixed for HIV-related outcomes. Five projects reported reduced sexual risk behaviours (37, 41, 42, 47, 53). When earnings from business kits halted, some SCIP girls married or re-engaged in transactional sex out of financial need. SCIP also explored perceptions of heads of households, influential males and community leaders. Many credited the intervention for perceived reductions in early marriage and pregnancy, and more 'respectful' behaviour in girls, which could reflect prevailing gender norms. Respondents believed gender training had increased community awareness, reducing intergenerational sex and gender-based violence (41). Productive assets in ZOE were not associated with sexual behaviour change (48). In Northern Uganda, microgrants in Women's Income Generating Support (WINGS) had no effect on IPV except for a small but significant increase in marital control. A one-day gender training session for women and their partners, added in a second phase, had no effect on IPV and economic outcomes, but found significant results for improved communications, quality of relationships and male implication in household chores (52). Out-of-school adolescent girls and young women in WORTH+ received three-monthly grants for 18 months. They perceived increased self-esteem, agency and aspirations. They internalized the goal to develop IGA to reduce transactional sex. Linked to basic needs, only the poorest girls reported reducing transactional sex, whereas the better off developed or expanded businesses. The young women also reported cash grants reduced tensions with family and boyfriends and potential IPV (53).

Microcredit. Six projects offered microcredit (37-41, 43, 50, 51, 53, 54). Only Tap and Reposition Youth (TRY) in Kenya reported both positive socioeconomic and HIV-related outcomes, but only 53% of young women took up the offer of microcredit and half had difficulties to repay. The inflexible lending system led to high dropout rates, but young women appreciated the club's safe space and mentors and leveraged their newfound social networks to start informal rotating savings schemes. Those 20 years and older had significantly more assets, income, and savings than adolescent girls, and authors concluded microcredit appropriate for 'older and bolder' young women only (50, 51). In ELA-Tanzania, savings similarly increased. Despite low uptake (4%), the offer of microcredit triggered interest in club participation, offering opportunities for informal saving schemes (39).

The Intervention with Microfinance for AIDS and Gender Equity (IMAGE) in our review (54) concerns the subgroup of young women (n=262) from the CRCT in South Africa, which had been ineligible due to women's mean age (41 years) (29). It combined microcredit with gender training and reported significant results for reduced sexual risk behaviour, improved communications about sex and having gone for testing. Qualitative findings suggested that discussing sex and testing increased young women's self-confidence and facilitated negotiating safe sex. With eight new HIV infections, the event rate was too low to measure impact on HIV incidence (54).

Savings. Of five projects that mentioned savings (40, 41, 47, 49-51, 53), SCIP did not report savings outcomes (40, 41). Four projects reported improved socioeconomic outcomes with increased savings (47, 49-51), saving at safer places (50, 51), and increased future orientation, as young women saved to buy land or productive assets (53). Savings enabled young women to refuse sex, insist on condom use (50, 51) and resist transactional sex (47, 49, 53). In AGEP, outcomes did not impact fertility two years after the intervention ended and the most vulnerable girls were more likely married, pregnant or had given birth (49).

3.4.3 Employment support

Only one project, SHAZ!-I, offered employment support in the form of work-integrated learning. SHAZ!-I identified mentors for apprenticeships through community outreach. Hampered by trust issues due to perceived exploitation when mentors lacked time for on-the-job training, and perceived laziness of mentees not showing up for work when lacking transport money, SHAZ!-I changed to mentees choosing their own mentors in SHAZ!-II. Increased income likely resulted from loans and sexual risk behaviours did not change (42-44).

3.4.4 Supporting intervention components

All projects offered supporting intervention components that likely contributed to outcomes too (Table 4). Except for WINGS (52), all projects stressed the link with HIV through HIV- and sexual and reproductive health education. Some projects facilitated access to health care by offering health services (42, 44), health vouchers (49), or encouraged voluntary counselling and testing (48). Nine projects offered gender training (37-46, 50-54).

Table 4. Summary table of all intervention components

		HIV-sensitive social protection intervention components							Other intervention components					
		Workforce training			Microfinance			Employ. support	SRH/HIV/GBV		Social support			Health
	Project name Country	**Life skills**	**Business & fin training**	**Livelihood training** IGA vocational	**Grants** Cash In-kind assets	**Credit**	**Savings**	**Appren-ticeship**	**Gender training**	**SRH/HIV training**	**(Female) Mentor**	**Social safe space**	**Physical safe space**	**Health services**
1	AGEP Zambia	x	x				x			x	x	x		x
2	Asset Kenya	x	x	x	x					x	x	x	x	
3	ELA-Uganda	x	x	x	x				x	x	x	x	x	
4	ELA-Tanzania	x	x	x		x			x	x	x	x	x	
5	IMAGE South Africa	x				x			x	x		x		
6	SCIP Mozambique	x	x		x	x	x		x	x		x		
7	SHAZ! Zimbabwe	x	x	x	/x	x/		x/	x	x	x	x		/x
8	SS&CF South Africa	x	x	x					x	x	x	x		
9	TRY Kenya	/x	x			x/	/x		/x	/x	/x	x		
10	WINGS Uganda	/x	x		x				/x		x			
11	WORTH+ Tanzania	x	x		x	x	x		x	x	x	x		
12	ZOE Kenya	x	x	x	x					x	x	x		

'x/' means that component was offered in an earlier phase of the intervention and '/x' in the later phase
IGA: income generating activity; SRH: sexual and reproductive health

3.4.5 Mentorship and safe spaces

All projects instrumentalised mentorship and/or safe space to deliver interventions. Ten projects used mentors who were slightly older young women from the same community (37-39, 45-47, 49) or adults (42-44, 50, 51). They were positive role models (38, 47) delivering health, gender or life skills training (37, 48-51), or offering business support (42-44, 49-52). Most mentors received remuneration and mentor training. Mentors helped create social cohesion, boost attendance (50), and were generally appreciated by girls and young women. The lack of a structured framework in SHAZ!-I lead to mistrust between mentors and mentees (43) and inadequate mentor training in ELA Tanzania contributed to null results (39).

Safe space was *social* space, in the form of regular group meetings, or *physical* space, as girls-only clubs. Except for WINGS (52), all projects offered regular group meetings although only three referred to it as safe space (37-39, 49). Meetings were venues for peer or mentor support, critical dialogue and sharing of experiences. Many offered socialisation free from pressures from (older) men and several offered recreational activities. In TRY, these meetings were the only source of social contact and support for girls (50). Binti Pamoja Centre in Kenya and ELA clubs in Uganda and Tanzania were physical safe spaces (37-39, 47). Girls and young women formed new social networks in social and physical safe spaces and leveraged them to start informal rotating savings schemes (39, 50, 51). They relied on these social networks in times of need, reducing their reliance on transactional sex (47, 53). In ELA-Uganda, sustained reductions in sexual risk behaviours at four-year follow-up were attributed to mentors and physical safe space, as girls continued attending clubs after training activities halted at two years (37). In contrast, donated club spaces ELA-Tanzania used were not safe, contributing non-significant outcomes (39).

4. Discussion

Our systematic review identified 12 HIV-sensitive social protection projects that aimed to improve socioeconomic and HIV-related outcomes among unemployed and out-of-school young women in East and Southern Africa. All projects offered work skills training with a majority also offering some type of microfinance. Most projects leveraged mentorship and safe space for programme delivery. Impact on socioeconomic outcomes was mostly positive, albeit modest, but impact on HIV-related outcomes was less consistent. Employment support was under-researched.

Our review found insufficient tailoring to participants and local implementation contexts in several interventions. This offers three transferable lessons. First, sensitivity to needs, age, interests, and socioeconomic vulnerability of target populations is essential. Of all interventions, microcredit seemed least responsive to vulnerable young women's needs. Low uptake, as little as 4%, indicates little interest in microcredit among adolescent girls (39, 43, 50, 51). With few assets and high mobility they are considered credit risks (55). Loan repayment among microcredit users was low indeed (43, 50, 51). A recent study found that constraints in savings rather than credit contributed to the inability to sustain increased income after receiving microgrants (56). Our review shows that young women were eager to save, even starting informal savings schemes in their newfound social networks (39, 50, 51). These informal savings schemes can help smooth consumption and guard against negative income shocks, but savings will not overcome poverty if all members are poor (57).

Participant socioeconomic vulnerability also requires attention in programme design. Although microgrants contributed positive socioeconomic and HIV-related outcomes, grants only reduced transactional sex among the poorest who used it for basic needs whereas the financially better off managed to develop or expand IGA (53). The poor are often reluctant to go into debt and lack time and resources to invest in credit groups (58). In TRY, authors recommended microcredit, but also work-integrated learning and vocational training for 'older and bolder' young women only (50). Livelihood training should be adapted to young women's social realities. For example, offered at flexible hours with free childcare to account for competing care responsibilities (59).

Vulnerable young women may also need psychosocial support to benefit from interventions. Mentorship and safe space were key to programme delivery but their spillover effect on social capital may indicate another change mechanism. Frequent socialisation and sharing of personal experiences created social networks of trust and reciprocity on which young women relied for psychosocial and economic support, enabling some to reduce transactional sex. IMAGE found social networks increased self-confidence and self-esteem (60), facilitating acting on HIV prevention choices. Another study found young women belonging to voluntary savings clubs more likely to drink alcohol and engage in casual sex, however (61). Safe space may therefore require supportive mentors who model positive behaviour.

Second, interventions need to be comprehensive, adapted to local contexts and rely on enabling environments. Although structural, interventions in our review mostly relied on individual behaviour change mechanisms to reduce HIV risk, whereas social and economic environments need to change to address drivers of HIV vulnerability. The Asset study described a context of overwhelming unemployment, sexual harassment while job seeking, and young women lacking professional networks (47). Zimbabwe's collapsing economy drove girls to risky livelihoods (43) and business kits in SCIP were insufficiently adapted to local context (41). IGA requires relatively inelastic demand. Vulnerable people prefer steady income flows as they value income most for its capacity to absorb shocks (62). This requires evaluation of, and interaction with, local markets. In our review, only ELA-Uganda described demand-driven IGA with local entrepreneurs delivering training adapted to local markets. It led to high self-employment and big reductions in sexual risk behaviour, sustained two years after programme end (38).

Vulnerable young women need linking interventions to facilitate their transition into productive livelihoods. The lack of literature on employment support, notably work-integrated learning and job matching, suggests a lack of 'linking social capital', the deliberate connecting of young women with other networks (63). Interventions could forge private sector links through apprenticeships and coaching like projects did in Latin America (64, 65), Liberia (59) or Uganda (66).

More generally, interventions may require more time and work with other population groups to change gender norms. WINGS added a gender component for men, but the one-day workshop was insufficient to change gender norms (52). Interventions could look at how community mobilization efforts in Botswana, South Africa and Uganda changed gender norms through engagement with other population groups (67-71). Projects in our review were delivered by NGOs and lasted on average 2.8 years, which might be too short to detect significant improvements in socioeconomic and HIV-related outcomes, let alone change gender norms. Livelihood and employability interventions may require government involvement and ownership to support a more prolonged, intersectoral approach to HIV-sensitive social protection and achieve more than the mostly modest outcomes we reported.

Third, the review highlights the pivotal role of life skills. Rarely described in detail although offered by all, few projects aimed to measure life skills outcomes. Life skills training improved self-efficacy, self-esteem, sexual negotiation (48, 54), HIV testing (54) and reduced sexual risk behaviours (48, 49). Self-confidence and future aspirations facilitated investing in IGA and productive assets (37, 38, 53). Communication skills may have de-escalated IPV (45, 46, 52). SS&CF demonstrated that higher-order life skills like critical thinking and dialogue can lead to economic empowerment without any material or financial support (45, 46). Even when increased income was not associated with reduced sexual risk behaviours, increased self-efficacy was. Enhanced capabilities can sustain outcomes beyond interventions. Improved self-efficacy and self-esteem continued to reduce sexual risk behaviours two years after programmes ended (37, 38, 49), despite not sustaining increased earnings (37, 38).

4. 1 Updated conceptual framework for HIV-sensitive social protection

We updated the conceptual framework with findings of this review (Figure 4). For livelihood and employability interventions, we included workforce training, microfinance and employment support. The lack of research on the latter indicates a research gap. As nearly all projects offered additional health and gender training, these have been added as supporting intervention components. We added mentorship and safe space as delivery components along causal pathways to intended outcomes. In addition to income and capabilities, we have added social capital as a socioeconomic outcome. Improved income, capabilities and social capital may contribute to reduced IPV and sexual risk behaviour and, ultimately, reduced HIV infection among vulnerable young women.

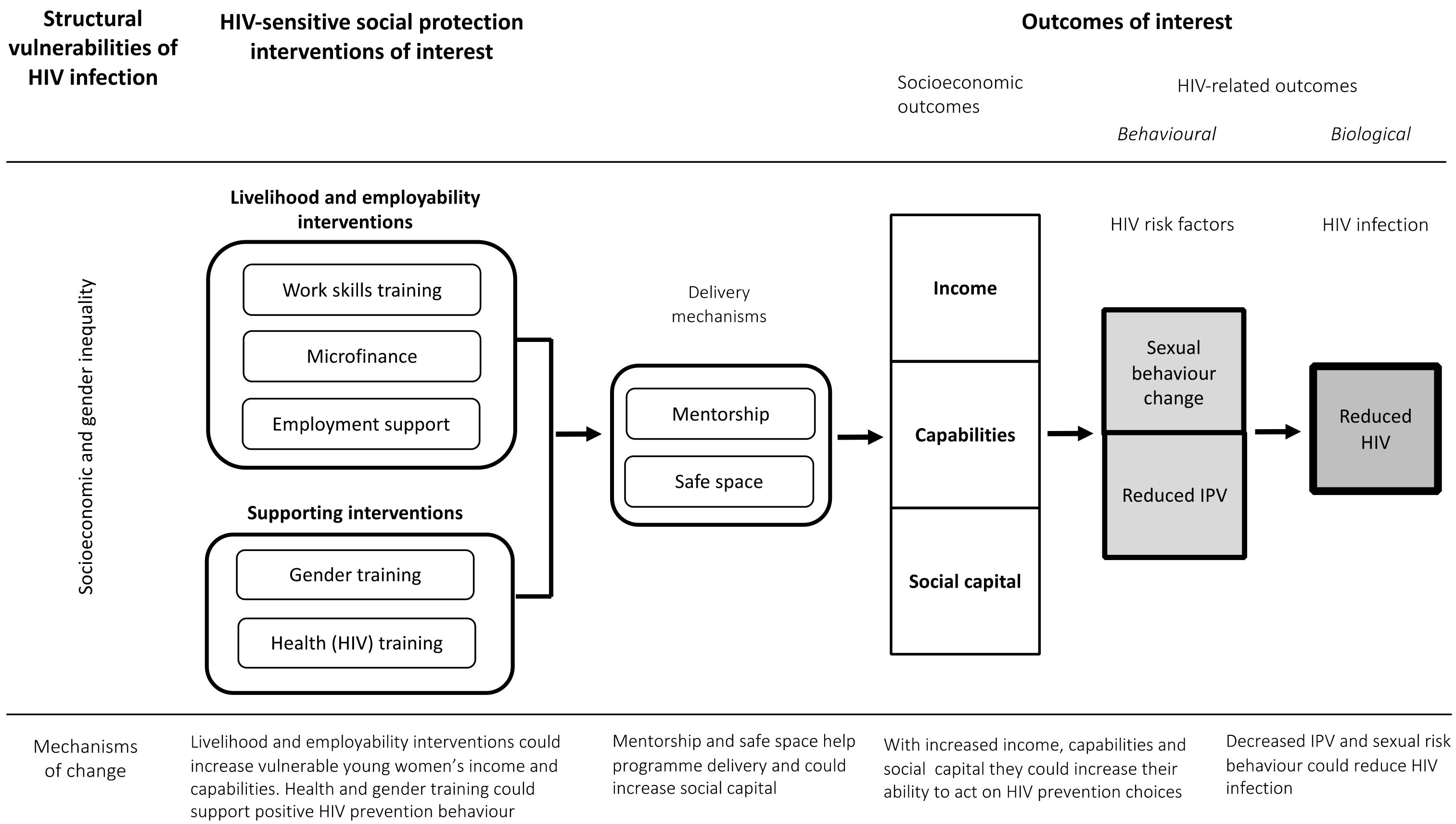

Figure 4. Updated conceptual framework HIV-sensitive social protection

The rounded rectangles are intervention components. The arrows represent causal effect. The squares are intended outcomes with more distal outcomes darker.

To our knowledge, this is the first systematic review on HIV-sensitive social protection interventions for unemployed and out-of-school young women reporting both socioeconomic and HIV-related outcomes. Our use of multiple databases, specialized librarian, two reviewers for quality assessment, detailed data extraction and conceptual grounding contribute to the strengths of this review.

As with any comprehensive intervention with multiple outcomes, it was challenging to attribute specific results to different components. Lack of biomarkers in included studies was another limitation. Including quantitative, qualitative and mixed methods studies provided complementary information that improved understanding of phenomena under study. The narrative synthesis method helped draw out transferable lessons for both impact and change mechanisms.

We recognise a potential selection bias due to independent screening of a proportion of abstracts, titles, and full-text papers by the second reviewer. Other reviews took a similar approach (72, 73) and our selection criteria were clear, reflected by a satisfactory kappa statistic (32).

Conclusions

Given intersecting structural drivers of HIV vulnerability, HIV-sensitive social protection interventions need to be comprehensive and designed around young women's needs, interests and socioeconomic vulnerability. They need to be sensitive to local implementation contexts, to leverage local demand and resources. Microgrants, savings and skills development seem to contribute positive socioeconomic and HIV-related outcomes, of which life skills are most likely sustained. Microcredit may not be appropriate for unemployed and out-of-school girls and young women. The potential of leveraging employment support for HIV-sensitive socioeconomic programming requires further research. Young women may need psychosocial and professional support to achieve and sustain socioeconomic outcomes from livelihood interventions. This could be instrumentalised in design and delivery through mentorship, safe space and the establishing of linking social capital. To also achieve HIV-related outcomes, interventions may benefit from government involvement, longer implementation durations and simultaneously work toward an enabling environment in support of more gender-equal norms.

Competing interests

Nothing to declare.

Authors' contributions

RW conceptualized the study; collected, analysed, interpreted the data; appraised quality of included papers; wrote first and subsequent drafts of the paper and revised it after submission. DL collected data; reviewed analysis and interpretation; appraised quality included papers; critically reviewed paper. IV and QNH provided methodological supervision and critically reviewed the paper. AC, MJ, and NA critically reviewed the paper. All authors approved the final manuscript.

Acknowledgements

We thank peer reviewers for their constructive feedback and Genevieve Gore, family medicine librarian at McGill for her help with the search strategy.

Funding

RW is supported by CIHR Vanier Canada Graduate Scholarship; QNH was supported by a FRQS postdoctoral fellowship. The authors thank the Quebec Population Health Research Network (QPHRN) for its contribution to the financing of this publication

Disclaimer

Funding agencies had no role in the study design, data collection, analysis.

Additional files

Additional file 1: Search strategy

Additional file 2: Detailed implementation data extraction sheets per project

Additional file 3: Data extraction for mentorship and safe spaces

Additional file 4: Table of excluded papers with reasons for exclusion

Additional file 5: Quality appraisal with the Mixed Methods Appraisal Tool

References

1. UNAIDS. Communities at the centre. Geneva; 2019.
2. Austin KF, Choi MM, Berndt V. Trading sex for security: Unemployment and the unequal HIV burden among young women in developing nations. International Sociology. 2017;32(3):343-68.
3. Stoner MC, Pettifor A, Edwards JK, Aiello AE, Halpern C, Julien A, et al. The effect of school attendance and school dropout on incident HIV and HSV-2 among young women in rural South Africa enrolled in HPTN 068. AIDS (London, England). 2017;31(15):2127.
4. Cockcroft A, Kunda JL, Kgakole L, Masisi M, Laetsang D, Ho-Foster A, et al. Community views of inter-generational sex: Findings from focus groups in Botswana, Namibia and Swaziland. Psychology, health & medicine. 2010;15(5):507-14.
5. Consortium SR. Addressing the structural drivers of HIV: A strive synthesis. UK: London School of Hygiene & Tropical Medicine Retrieved from; 2019.
6. Weiser SD, Leiter K, Bangsberg DR, Butler LM, Percy-de Korte F, Hlanze Z, et al. Food insufficiency is associated with high-risk sexual behavior among women in Botswana and Swaziland. PLoS Med. 2007;4(10):e260.
7. Kim J, Pronyk P, Barnett T, Watts C. Exploring the role of economic empowerment in HIV prevention. Aids. 2008;22:S57-S71.
8. Jewkes RK, Dunkle K, Nduna M, Shai N. Intimate partner violence, relationship power inequity, and incidence of HIV infection in young women in South Africa: a cohort study. The lancet. 2010;376(9734):41-8.
9. Bärnighausen T, Hosegood V, Timaeus IM, Newell M-L. The socioeconomic determinants of HIV incidence: evidence from a longitudinal, population-based study in rural South Africa. AIDS (London, England). 2007;21(Suppl 7):S29.
10. De Neve J-W, Fink G, Subramanian S, Moyo S, Bor J. Length of secondary schooling and risk of HIV infection in Botswana: evidence from a natural experiment. The Lancet Global Health. 2015;3(8):e470-e7.
11. Jukes M, Simmons S, Bundy D. Education and vulnerability: the role of schools in protecting young women and girls from HIV in southern Africa. Aids. 2008;22:S41-S56.
12. Gupta GR, Parkhurst JO, Ogden JA, Aggleton P, Mahal A. Structural approaches to HIV prevention. The Lancet. 2008;372(9640):764-75.
13. Hankins CA, de Zalduondo BO. Combination prevention: a deeper understanding of effective HIV prevention. LWW; 2010.
14. UNAIDS. Combination HIV Prevention: Tailoring and Coordinating Biomedial, Behavioral and Structural Strategies to Reduce New HIV Infections. Geneva; 2010.
15. Sivasankaran A. Work and Women's Marriage, Fertility, and Empowerment: Evidence from Textile Mill Employment in India. Job Market Paper, Harvard University, Cambridge, MA. 2014.
16. Bloom DE, Canning D, Fink G, Finlay JE. Fertility, female labor force participation, and the demographic dividend. Journal of Economic growth. 2009;14(2):79-101.
17. Devereux S, Sabates-Wheeler R. Transformative social protection. Sussex, UK: Institute of Development Studies; 2004. Report No.: 1 85864 844 0.
18. UNAIDS. HIV and social protection. 2014. Contract No.: JC2568.
19. Assembly UUG. Political Declaration on HIV and AIDS: On the Fast Track to Accelerating the Fight against HIV and to Ending the AIDS Epidemic by 2030. New York: United Nations; 2016.
20. UNAIDS. Fast-Track Commitments to end AIDS by 2030. Geneva; 2016.

21. UNAIDS. Social Protection: a Fast-Track commitment to end AIDS. Geneva; 2018. Report No.: JC2922.
22. Gibbs A, Willan S, Misselhorn A, Mangoma J. Combined structural interventions for gender equality and livelihood security: a critical review of the evidence from southern and eastern Africa and the implications for young people. Journal of the International AIDS Society. 2012;15:1-10.
23. Gibbs A, Jacobson J, Kerr Wilson A. A global comprehensive review of economic interventions to prevent intimate partner violence and HIV risk behaviours. Global health action. 2017;10(sup2):1290427.
24. Kennedy CE, Fonner VA, O'Reilly KR, Sweat MD. A systematic review of income generation interventions, including microfinance and vocational skills training, for HIV prevention. AIDS care. 2014;26(6):659-73.
25. Cui RR, Lee R, Thirumurthy H, Muessig KE, Tucker JD. Microenterprise development interventions for sexual risk reduction: a systematic review. AIDS and Behavior. 2013;17(9):2864-77.
26. Swann M. Economic strengthening for HIV prevention and risk reduction: a review of the evidence. AIDS Care. 2018;30(sup3):37-84.
27. Popay J, Roberts H, Sowden A, Petticrew M, Arai L, Rodgers M, et al. Guidance on the conduct of narrative synthesis in systematic reviews: a product from the ESRC Methods Programme. Lancaster: Lancaster University. 2006;10(2.1):1018.4643.
28. Cluver L, Boyes M, Orkin M, Pantelic M, Molwena T, Sherr L. Child-focused state cash transfers and adolescent risk of HIV infection in South Africa: a propensity-score-matched case-control study. The Lancet Global Health. 2013;1(6):e362-e70.
29. Pronyk PM, Hargreaves JR, Kim JC, Morison LA, Phetla G, Watts C, et al. Effect of a structural intervention for the prevention of intimate-partner violence and HIV in rural South Africa: a cluster randomised trial. The Lancet. 2006;368(9551):1973-83.
30. Booth A, Sutton A, Papaioannou D. Systematic approaches to a successful literature review: Sage; 2016.
31. Gough D, Oliver S, Thomas J. An introduction to systematic reviews: Sage; 2017.
32. McHugh ML. Interrater reliability: the kappa statistic. Biochemia medica: Biochemia medica. 2012;22(3):276-82.
33. Hong QN, Pluye P, Bujold M, Wassef M. Convergent and sequential synthesis designs: implications for conducting and reporting systematic reviews of qualitative and quantitative evidence. Systematic reviews. 2017;6(1):61.
34. Moher D, Liberati A, Tetzlaff J, Altman DG, Group P. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. PLoS med. 2009;6(7):e1000097.
35. Arai L, Britten N, Popay J, Roberts H, Petticrew M, Rodgers M, et al. Testing methodological developments in the conduct of narrative synthesis: a demonstration review of research on the implementation of smoke alarm interventions. Evidence & Policy: A Journal of Research, Debate and Practice. 2007;3(3):361-83.
36. Hong QN, Fàbregues S, Bartlett G, Boardman F, Cargo M, Dagenais P, et al. The Mixed Methods Appraisal Tool (MMAT) version 2018 for information professionals and researchers. Education for Information. 2018;34(4):285-91.
37. Bandiera O, Buehren N, Burgess R, Goldstein M, Gulesci S, Rasul I, et al. Women's economic empowerment in action: Evidence from a randomized control trial in Africa. Geneva: ILO, Department EP; 2015. Contract No.: 187.
38. Bandiera O, Buehren N, Burgess R, Goldstein M, Gulesci S, Rasul I, et al. Women’s empowerment in action: evidence from a randomized control trial in Africa. eLibrary: World Bank; 2018.

39. Buehren N, Goldstein M, Gulesci S, Sulaiman M, Yam V. Evaluation of an adolescent development program for girls in Tanzania. e-Library: The World Bank Group; 2017. Report No.: 7961.
40. Burke HM, Field S, González-Calvo L, Eichleay MA, Moon TD. Quasi-experimental evaluation using confirmatory procedures: A case study of an economic and social empowerment intervention to reduce girls' vulnerability to HIV in rural Mozambique. Evaluation and program planning. 2019;77:101721.
41. Burke HM, Packer C, González-Calvo L, Ridgeway K, Lenzi R, Green AF, et al. A longitudinal qualitative evaluation of an economic and social empowerment intervention to reduce girls' vulnerability to HIV in rural Mozambique. Evaluation and program planning. 2019;77:101682.
42. Dunbar MS, Dufour M-SK, Lambdin B, Mudekunye-Mahaka I, Nhamo D, Padian NS. The SHAZ! project: results from a pilot randomized trial of a structural intervention to prevent HIV among adolescent women in Zimbabwe. PloS one. 2014;9(11).
43. Dunbar MS, Maternowska MC, Kang M-SJ, Laver SM, Mudekunye-Mahaka I, Padian NS. Findings from SHAZ!: a feasibility study of a microcredit and life-skills HIV prevention intervention to reduce risk among adolescent female orphans in Zimbabwe. Journal of prevention & intervention in the community. 2010;38(2):147-61.
44. Dunbar MS, Mudekunye-Mahaka I. Empowering Adolescent Girls and Women for Improved Sexual Health in Zimbabwe. In: Kurebwa J, Dodo O, editors. Participation of Young People in Governance Processes in Africa: IGI Global Publisher Online Bookstore; 2017.
45. Gibbs A, Washington L, Abdelatif N, Chirwa E, Willan S, Shai N, et al. Stepping Stones and Creating Futures intervention to prevent intimate partner violence among young people: cluster randomized controlled trial. Journal of Adolescent Health. 2020;66(3):323-35.
46. Jewkes R, Gibbs A, Jama-Shai N, Willan S, Misselhorn A, Mushinga M, et al. Stepping Stones and Creating Futures intervention: shortened interrupted time series evaluation of a behavioural and structural health promotion and violence prevention intervention for young people in informal settlements in Durban, South Africa. BMC public health. 2014;14(1):1325.
47. Austrian K, Anderson AD. Barriers and facilitators to health behaviour change and economic activity among slum-dwelling adolescent girls and young women in Nairobi, Kenya: The role of social, health and economic assets. Sex Education. 2015;15(1):64-77.
48. Goodman ML, Selwyn BJ, Morgan RO, Lloyd LE, Mwongera M, Gitari S, et al. Sexual behavior among young carers in the context of a Kenyan Empowerment Program Combining Cash-Transfer, Psychosocial Support, and Entrepreneurship. The Journal of Sex Research. 2016;53(3):331-45.
49. Austrian K, Soler-Hampejsek E, Behrman JR, Digitale J, Hachonda NJ, Bweupe M, et al. The impact of the Adolescent Girls Empowerment Program (AGEP) on short and long term social, economic, education and fertility outcomes: a cluster randomized controlled trial in Zambia. BMC public health. 2020;20(1):1-15.
50. Erulkar A, Bruce J, Dondo A, Sebstad J, Matheka JK, Khan AB, et al. Tap and Reposition Youth (TRY): Providing social support, savings, and microcredit opportunities for young women in areas with high HIV prevalence. New York: Population Council; 2006. Contract No.: 23.
51. Erulkar AS. Evaluation of a Savings and Micro-Credit Program for Vulnerable Youth Women in Nairobi. New York: Population Council; 2005. 34 p.
52. Green EP, Blattman C, Jamison J, Annan J. Women's entrepreneurship and intimate partner violence: A cluster randomized trial of microenterprise assistance and partner participation in post-conflict Uganda (SSM-D-14-01580R1). Social science & medicine. 2015;133:177-88.
53. Pettifor A, Wamoyi J, Balvanz P, Gichane MW, Maman S. Cash plus: exploring the mechanisms through which a cash transfer plus financial education programme in Tanzania reduced

HIV risk for adolescent girls and young women. Journal of the International AIDS Society. 2019;22:e25316.
54. Pronyk PM, Kim JC, Abramsky T, Phetla G, Hargreaves JR, Morison LA, et al. A combined microfinance and training intervention can reduce HIV risk behaviour in young female participants. Aids. 2008;22(13):1659-65.
55. Kim JC, Watts CH, Hargreaves JR, Ndhlovu LX, Phetla G, Morison LA, et al. Understanding the impact of a microfinance-based intervention on women’s empowerment and the reduction of intimate partner violence in South Africa. American journal of public health. 2007;97(10):1794-802.
56. Brudevold-Newman A, Honorati M, Jakiela P, Ozier O. A firm of one's own: experimental evidence on credit constraints and occupational choice: The World Bank; 2017.
57. Larson BA, Wambua N, Masila J, Wangai S, Rohr J, Brooks M, et al. Exploring impacts of multi-year, community-based care programs for orphans and vulnerable children: A case study from Kenya. AIDS care. 2013;25(sup1):S40-S5.
58. Hulme D. Is microdebt good for poor people? A note on the dark side of microfinance. Small Enterprise Development. 2000;11(1):26-8.
59. Adoho F, Chakravarty S, Korkoyah DT, Lundberg M, Tasneem A. The impact of an adolescent girls employment program: The EPAG project in Liberia. The World Bank; 2014.
60. Pronyk PM, Harpham T, Busza J, Phetla G, Morison LA, Hargreaves JR, et al. Can social capital be intentionally generated? A randomized trial from rural South Africa. Social science & medicine. 2008;67(10):1559-70.
61. Campbell C, Williams B, Gilgen D. Is social capital a useful conceptual tool for exploring community level influences on HIV infection? An exploratory case study from South Africa. AIDS care. 2002;14(1):41-54.
62. Mutenje MJ, Nyakudya IW, Katsinde C, Chikuvire TJ. Sustainable income-generating projects for HIV-affected households in Zimbabwe: Evidence from two high-density suburbs. African Journal of AIDS Research. 2007;6(1):9-15.
63. Szreter S, Woolcock M. Health by association? Social capital, social theory, and the political economy of public health. International journal of epidemiology. 2004;33(4):650-67.
64. Attanasio O, Kugler A, Meghir C. Training disadvantaged youth in Latin America: evidence from a randomized trial. National Bureau of Economic Research; 2008. Report No.: 0898-2937 Contract No.: 13931.
65. Díaz JJ, Jaramillo M. An evaluation of the Peruvian ‘youth labor training program’–Projoven. Washington, DC: Office of Evaluation and Oversight, Inter American Development Bank, working paper WP-10/6. 2006.
66. Bukuluki PM, Kamya S, Kasirye R, Nabulya A. Facilitating the transition of adolescents and emerging adults from care into employment in Kampala, Uganda: A case study of Uganda youth development link. Emerging Adulthood. 2020;8(1):35-44.
67. Abramsky T, Devries K, Kiss L, Nakuti J, Kyegombe N, Starmann E, et al. Findings from the SASA! Study: a cluster randomized controlled trial to assess the impact of a community mobilization intervention to prevent violence against women and reduce HIV risk in Kampala, Uganda. BMC medicine. 2014;12(1):122.
68. Cockcroft A, Kgakole L, Marokoane N, Andersson N. A role for traditional doctors in health promotion: experience from a trial of HIV prevention in Botswana. Global health promotion. 2018:1757975918785563.
69. Cockcroft A, Marokoane N, Kgakole L, Mhati P, Tswetla N, Sebilo I, et al. Acceptability and challenges of introducing an educational audio-drama about gender violence and HIV prevention into schools in Botswana: an implementation review. AIDS care. 2019;31(11):1397-402.

70. Pettifor A, Lippman SA, Gottert A, Suchindran CM, Selin A, Peacock D, et al. Community mobilization to modify harmful gender norms and reduce HIV risk: results from a community cluster randomized trial in South Africa. Journal of the International AIDS Society. 2018;21(7):e25134.
71. Wagman JA, Gray RH, Campbell JC, Thoma M, Ndyanabo A, Ssekasanvu J, et al. Effectiveness of an integrated intimate partner violence and HIV prevention intervention in Rakai, Uganda: analysis of an intervention in an existing cluster randomised cohort. The Lancet Global Health. 2015;3(1):e23-e33.
72. Mohsin-Shaikh S, Furniss D, Blandford A, McLeod M, Ma T, Beykloo MY, et al. The impact of electronic prescribing systems on healthcare professionals' working practices in the hospital setting: a systematic review and narrative synthesis. BMC health services research. 2019;19(1):742.
73. O'Brien N, Hong QN, Law S, Massoud S, Carter A, Kaida A, et al. Health system features that enhance access to comprehensive primary care for women living with HIV in high-income settings: A systematic mixed studies review. AIDS patient care and STDs. 2018;32(4):129-48.

9a. Exploratory study in Botswana

Bridging statement

My systematic review indicated that livelihood and employability interventions can increase income and capabilities among unemployed and out-of-school young women. These shifts might enable them to act on HIV prevention choices, which in turn could reduce HIV risk behavior and contribute to reduced HIV infection. The INSTRUCT trial identified multiple promotive social protection programs in Botswana that might trigger this change mechanism. INSTRUCT's recruitment survey showed, however, that unemployed and out-of-school young women rarely applied to, or received help from, those programs (23). To understand why this was the case, and to discover direct stakeholder ideas to overcome barriers to program access and benefit, an exploratory study tried to answer research question 2 of my thesis: "*Why do unemployed and out-of-school young women in Botswana rarely benefit from available promotive social protection programs and what do they and frontline service providers propose to remedy perceived barriers*?".

Chapter 9a is the first part of the body of the thesis. It presents this exploratory study in Botswana conducted in 2017. A two-stage participatory process involved fuzzy cognitive mapping to identify factors impeding program access and benefit, followed by deliberative dialogue to explore improvement options. Participants were direct stakeholders who had experience with, or knowledge of, promotive social protection programs in the five randomly selected districts implementing the INSTRUCT trial. The direct stakeholders were the unemployed and out-of-school young women and frontline service providers. Separately, the two stakeholder groups made fuzzy cognitive maps (FCM), collating concepts of factors impeding program benefit. Deliberative dialogue workshops combined the two groups. Collaborative analysis of FCM involved listing FCM concepts shared by both stakeholder maps, and on young women, or service provider maps only. Participants selected several barriers to program benefit for deliberative dialogue. They co-constructed improvement recommendations that could contribute to the inclusion of HIV-vulnerable young women in HIV-sensitive social protection programs. To clarify perspectives not recorded in the participatory process, I also conducted semi-structured interviews with program officers and unemployed and out-of-school young women in one of the five districts, Moshupa sub-district, where the INSTRUCT pilot had taken place. I triangulated FCM with semi structured interviews findings to better understand some of the underlying reasons of young women's experience of barriers to program access and benefit.

The systematic review of regional best practices reported in the previous chapter and findings of this exploratory study informed a range of candidate improvement proposals to increase the HIV-sensitivity of existing promotive social protection programs in Botswana. I added a few candidate proposals after analysis of the access barriers identified in FCM and semi-structured interview data. These candidate proposals are listed in Appendix 5. PLoS one accepted this paper for publication in November 2023 (DOI: 10.1371/journal.pone.0293824).

HIV-sensitive Social Protection for Unemployed and Out-of-School Young Women in Botswana: An Exploratory Study of Barriers and Solutions [Manuscript 2]

Ran van der Wal[1§], Anne Cockcroft[1,2], Miriam Kobo[2], Leagajang Kgakole [2], Nobantu Marokaone[2], Mira Johri[3,4], Isabelle Vedel[1], Neil Andersson[1,5]

1 Department of Family Medicine, McGill University, Montreal, Québec, Canada
2 CIET Trust, Gaborone, South-East, Botswana
3 Centre de recherche du Centre Hospitalier de l'Université de Montréal (CRCHUM), Montreal, Québec, Canada
4 Département de gestion, d'évaluation, et de politique de santé, École de santé publique de l'Université de Montréal, Montréal, Québec, Canada
5 Centro de Investigación de Enfermedades Tropicales, Universidad Autónoma de Guerrero, Acapulco, Guerrero, Mexico

Abstract

Promotive social protection programs aim to increase income and capabilities and could address structural drivers of HIV-vulnerability like poverty, lack of education and gender inequality. Unemployed and out-of-school young women bear the brunt of HIV infection in Botswana, but rarely benefit from such economic empowerment programs.

Using a qualitative exploratory study design and a participatory research approach, we explored factors affecting perceived program benefit and potential solutions to barriers. Direct stakeholders (n=146) included 87 unemployed and out-of-school young women and 59 program and technical officers in five intervention districts. Perceived barriers were identified in 20 semi-structured interviews (one intervention district) and 11 fuzzy cognitive maps. Co-constructed improvement recommendations were generated in deliberative dialogues. Analysis relied on Framework and the socioecological model.

Overall, participants perceived promotive social protection programs as ineffective and inadequate to empower vulnerable young women socially or economically. Factors affecting perceived program benefit related to programs, program officers, the young women, and their social and structural environment. Participants perceived barriers at every socioecological level. Young women's lack of (life) skills, irresponsible and disrespectful behaviors were personal-level barriers. At an interpersonal level, competing care responsibilities, lack of support from boyfriends and family, and negative peer influence impeded program benefit. Community-level barriers included traditional

venues for information dissemination. Poverty, inequitable gender norms, and lack of coordination were structural barriers. Improvement recommendations focused on improved outreach and peer approaches to implement potential solutions.

Unemployed and out-of-school young women face multidimensional, interacting barriers that prevent benefit from available promotive social protection programs in Botswana. To become HIV-sensitive, these socioeconomic empowerment programs would need to accommodate or preferentially attract this key population. This requires more generous and comprehensive programs, a more client-centered program delivery, and improved coordination. Such structural changes require a holistic, intersectoral approach to HIV-sensitive social protection.

1. Introduction

The Government of Botswana has made massive investments to gain epidemiological control of HIV. It was the first African country to offer universal antiretroviral therapy in 2002 (170). It eliminated mother-to-child transmission in 2021 (44) and approved pre-exposure prophylaxis for high risk groups, including for young women, in 2018 (171). Botswana is one of few countries that achieved the 95-95-95 test-and-treat cascade to end AIDS as a public health threat by 2030: of all HIV-positive persons, 95.1% know their status, of which 98% are on HIV treatment, of which 97.9% achieved viral suppression (4). Nonetheless, adult HIV prevalence is 20.8%, among the highest worldwide, with HIV prevalence in young women (15 to 30 years) up to three times as high as in young men (4).

Structural drivers of HIV-vulnerability like poverty, lack of education and gender inequality undermine young women's ability to act on HIV prevention choices (3). Unemployed and out-of-school young women are especially vulnerable: female unemployment in Sub-Saharan Africa predicts their disproportionate HIV burden (71). Poverty increases young women's economic dependence on men and constrains their ability to negotiate safe sex or leave unhealthy relationships (172). Severe food insecurity, a proxy for extreme poverty, is associated with a twofold increased risk of recent HIV infection (73). In Botswana, severe food insecurity is linked with HIV risk factors like unprotected sex, transactional sex, and early sexual debut (7). In contrast, educational attainment is protective—each additional school year reduced HIV incidence by 8% (77). Comparing schoolgirls and dropouts, school attendance in neighboring South Africa was associated with reduced HIV incidence; the difference in cumulative HIV incidence tripling in two years (173).

The Joint United Nations Programme on HIV and AIDS (UNAIDS) promoted HIV-sensitive social protection for its synergistic potential to achieve the Sustainable Development Goals (SDGs) of ending AIDS, poverty, and gender inequality by 2030 (119). Social protection is defined as public or private transfers of resources to reduce socioeconomic vulnerability (84). Social protection is HIV-sensitive if it is inclusive of HIV-vulnerable groups at risk of, living with, or affected by HIV-infection, and HIV-vulnerable groups are involved in its design and assessment (18-22). Beyond protecting against, or preventing poverty, social protection can be *promotive,* in which case it aims to alleviate poverty by enhancing income and capabilities of the poor (13). Commitment 6 of the UNAIDS *Fast-Track strategy to end AIDS by 2030* states that 75% of key populations, including adolescent girls and young women, should have benefited from HIV-sensitive social protection by 2020 (17). In addition to traditional forms of social protection, it recommends socioeconomic, or promotive, approaches including socioeconomic empowerment programs and second chance education (119).

A systematic review on HIV-sensitive social protection for unemployed and out-of-school young women in East and Southern Africa examined the effect of socioeconomic interventions on HIV and socioeconomic outcomes. The review found that livelihood training contributed positive socioeconomic outcomes but mixed HIV-related outcomes; microcredit contributed little to either outcome, and was not recommended for this target group. Microgrants, savings, business and life skills contributed positive results for both outcome categories, and the review concluded such programs could be effective when comprehensive and adapted to target populations and local contexts (174).

With a mature and well-funded social protection system, taking 3.7% of the national GDP (175), Botswana might be well placed to achieve HIV-sensitive social protection. Beyond welfare and relief programs, Botswana offers several promotive social protection programs that might be leveraged against HIV-vulnerability. These include microloans, microenterprise development, productive asset transfers (small stock and chickens), agricultural inputs (seeds, fertilizer, or ploughing services), public works, apprenticeships and second chance school, and are offered by four different line ministries (Table 4). Although not designed for HIV prevention, these programs could be HIV-sensitive if they would be responsive to the needs and social situation of unemployed and out-of-school young women.

Table 1. Promotive social protection programs that enhance livelihood and capabilities in Botswana

Income transfers through public works	Productive asset transfers	Income generation activity	Capabilities development
Ipelegeng *(Ministry of Local Government and Rural Development-MLGRD)* One-month rotating contracts (BWP567-US$54) without training. No requirements.	LIMID *(Ministry of Agriculture-MoA/MLGRD)* Productive asset transfers (small stock** and chickens) for destitute people*.	Alternative Package Program *(Social and Community Development (S&CD)-MLGRD)* Productive asset transfers or microenterprise support with microgrants, training, equipment for destitute people*.	OSE**C** *(Ministry of Education and Skills Development-MOESD)* Free-of-charge primary education for illiterate adults
	ISPAAD -horticulture *(MoA)* Loans and inputs to support commercial farming. Requirements: business plan, land ownership or 10-year lease hold, access to water, and 40-60% upfront capital investment	Youth Development Fund *(YDF, Ministry of Youth, Sports and Culture-MYSC)* Mixed loans and grants (50%-50%) for microenterprise development with training. Requirements: business plan; unemployed and out-of-school youth 18-35 years	BOCODOL *(MOESD)* Distance learning for secondary education. School and examination fees waived for persons who did not receive Junior certificate (lower-level secondary education).
	ISPAAD -farming *(MoA)* Agricultural inputs: seeds, fertilizer, pesticides, loans, subsidies for ploughing and planting. Requirements: need to own, lease, or borrow fields.		Tirelo Sechaba *(YDF/MYSC)* Youth apprenticeships (20-30 years) in community service (health, education, agriculture) (BWP700-US$65).

*Destitute people: individual income of BWP120 (US$11) or lower, or household incomes of BWP150 (US$14) or lower. ** the Government of Botswana uses the term small stock to refer to goats and sheep. APP: Alternative Package Programme; YDF: Youth Development Fund; ISPAAD: Integrated Support Programme for rain-fed Arable Agriculture Development; LIMID: Livestock Management and Infrastructure Development

The Inter-ministerial National Structural Intervention Trial (INSTRUCT), a multifaceted cluster randomized controlled trial (ISRCTN54878784) that addresses structural drivers of HIV-vulnerability, aimed to leverage Botswana's promotive social protection programs for HIV prevention (2). Implemented by Botswana NGO Community Information, Empowerment and Transparency (CIET Trust) and the National AIDS Coordinating Agency, the INSTRUCT trial was implemented in five randomly selected districts in Botswana. CIET Trust trained local young women to identify all unemployed and out-of-school young women in these districts through door-to-door visits and snowballing (23). Trained peers conducted baseline interviews with unemployed and out-of-school young women (n=3516), showed video clips of available programs, and invited them to 2-day information and empowerment workshops organized by CIET Trust. The CIET workshops offered life skills training and connected the young women with program officers who provided information about locally available programs (2, 23).

The baseline interviews revealed that less than half of unemployed and out-of-school young women had applied to promotive social protection programs, and less than a third had been accepted. Excluding the easily accessible *Ipelegeng*, a public works program without any training, application and acceptance rates had been 33% and 10% respectively (23). Against this background, we aim to explore why, according to direct stakeholders, promotive social protection programs in Botswana fail to benefit unemployed and out-of-school young women, and which potential solutions might remedy some of the barriers.

2. Methodology

Using a qualitative exploratory study design and a participatory research approach, we conducted semi-structured interviews and fuzzy cognitive maps to explore factors affecting perceived program benefit, and deliberative dialogue to identify stakeholder-designed improvement recommendations. We purposively sampled individuals with a direct stake in, experience with, or knowledge of, promotive social protection programs. The two stakeholder groups consisted of young women, defined as unemployed and out-of-school, aged 18 to 30 years, and officers: program officers who deliver socioeconomic programs and technical officers from land and water boards, as land and water were prerequisites for several programs. To take contextual differences into account, we organized mapping and dialogue workshops in all five intervention districts. Due to budget and time constraints, semi-structured interviews occurred only in Moshupa sub-district (Table 5).

Table 5. Data collection methods and study participants

Data collection	Events	Young women	Officers	Selection criteria
Fuzzy cognitive mapping workshops	11	40	26	Separate groups of young women who had participated in 2015-2017 CIET Trust information and empowerment workshops and local program and technical officers in five intervention districts. In Moshupa sub-district, young women had also participated in semi-structured interviews.
Deliberative dialogue workshops	5	31	29	Combined groups of young women and officers who participated in FCM workshops in five intervention districts.
Semi-structured interviews	20	16	4	Young women who had participated in 2015-2017 CIET Trust information and empowerment workshops and one program officer per available program in Moshupa sub-district.
Total	**36**	**87**	**59**	**Total participants: 146**

YW: young woman; Officers: program and technical officers; CIET Trust: Botswana research NGO

2.1 Study setting

Botswana is a Southern African country roughly the size of France with a population of 2.3 million inhabitants (27). It is prone to droughts due to its semi-arid climate, extreme temperatures, and uneven rainfall. Two thirds of the country is covered in infertile soils but arable farming is feasible in the eastern parts of Botswana (28). Despite its upper middle-income country status, nearly 60% of Batswana lived in poverty in 2021, and 14.1% in extreme poverty (10). The unemployment rate is 24.5% overall, 32.2% for youth, and much higher in rural than in urban areas (11). Of the 37.5% of youth that is both unemployed and out-of-school, 57.7% is female (11).

Three of the five randomly selected INSTRUCT intervention districts, including Moshupa sub-district, are situated within a 1-1.5-hour drive from Gaborone, Botswana's capital, in the most populous south-eastern part of the country that borders South Africa. A fourth intervention district borders Namibia in the west and is part of the Kalahari Desert. It is sparsely populated by a minority tribe, and suffers among the highest poverty and unemployment levels in the country (11, 68). The fifth intervention district is part of Central District and borders Zimbabwe. With a relatively mild climate, it is the most agriculturally productive district in Botswana (176).

2.2 Data collection and analysis

2.2.1 Fuzzy cognitive mapping and deliberative dialogue

We used a two-stage participatory process involving fuzzy cognitive mapping (FCM) to identify factors impeding program benefit and deliberative dialogue to explore improvement options. Participatory research involves co-creation of knowledge with those affected by the study, to affect social change through an empowering process of social learning (177). It offers the framework to place local evidence, lived experience, and innovation by participants at the center (178).

FCM combines cognitive maps with fuzzy logic and uses local explanations for analysis (179). It therefore allows integration of non-traditional expert knowledge in planning and decision-making processes (180). FCM is intuitive, culturally fairly neutral, and appropriate for research with marginalized populations, as their maps can be placed on par with, or even outweigh, maps produced by more advantaged groups (181).

In each of the five intervention districts, we first organized FCM workshops with separate stakeholder groups of young women and officers, followed by a deliberative dialogue workshop, which combined the two groups. Officers were purposively sampled from each of the programs and land and water boards present in each district. We purposively selected young women from the population of unemployed and out-of-school young women who had participated in information and empowerment workshops CIET Trust in 2015-2017 (2, 23) on the basis of willingness to participate in participatory workshops, whilst ensuring representation based on rural and urban location. To keep workshops manageable and meaningful, we limited the group size to a maximum of 10 participants for FCM and 16 for deliberative dialogues. In Moshupa sub-district, we selected young women who had participated in semi-structured interviews and organized two FCM workshops, as their number exceeded the maximum group size. Overall, 11 FCM and 5 deliberative dialogue workshops took place throughout 2017 in all five intervention districts, each lasting around three hours (Table 2).

Setswana-speaking CIET staff facilitated the participatory workshops and took written notes. FCM workshops started with facilitators writing down the outcome of "young women not benefitting from programs" in the center of a large whiteboard. Participants wrote all underlying reasons they could think of on individual cards. After comparing cards and removing duplicates, they clustered cards with similar concepts. They placed the cards on the whiteboard and drew circles around each concept. Participants subsequently linked these concepts with arrows to represent perceived causal pathways. The *fuzzifying* involved assigning weights to each causal link to indicate its perceived relative importance. Weights ranged from one to five, from least to most important.

In subsequent deliberative dialogue workshops, the two stakeholder groups collaboratively analyzed the maps made by each group (see analysis section) (179). Together, they identified two or three priority problems, proposed context-sensitive solutions, and considered the feasibility of proposed solutions (179). While deliberative dialogue focuses on problem solving, the process also supports the development of critical consciousness among different social groups by careful consideration of pros and cons of proposed solutions (182). The engagement of both service users and providers could therefore contribute feasible, acceptable and context-sensitive solutions whilst strengthening feelings of ownership and support for their implementation (183).

2.2.2 Semi-structured interviews

In May and June 2017, a local woman interviewer conducted semi-structured interviews with young women in Setswana in Moshupa sub-district, a mainly rural district, close to the national capital, Gaborone. We purposively sampled 16 young women from a pool of unemployed and out-of-school young women who had attended CIET Trust information and empowerment workshops in Moshupa sub-district in 2015-2017. Maximum variation sampling criteria (184) included program application (Y/N), application status, location, and type of program. The interview guide for young women covered their experiences with applications and program officer support (Appendix 3). The lead author (RW) conducted semi-structured interviews with four program officers who were fluent in English, one from each ministry implementing socioeconomic programs in Moshupa sub-district. The guide for program officers covered their views of, and experiences with, programs, program delivery, and accessibility for young women (Appendix 3). Interviewers wrote down responses and took observational notes. Interviews lasted 45 to 90 minutes and took place at locations of participants' choosing, mostly their homes or offices. Anonymized data extractions grouped per interview question can be found in Appendix 3.

2.2.3 Analysis

Thematic analysis relied on Framework, a matrix-based method developed for applied qualitative research (185). We used an inductive-deductive sequential approach to analysis. Starting from interview questions, RW systematically coded interview data into themes and main categories. For the FCM, participants compared cognitive maps with pattern matching tables (23) to identify convergent concepts, and to prioritize issues for deliberative dialogue. Subsequently, a group of young women and facilitators condensed FCM concepts into themes (186). Last, RW thematically assigned FCM themes to the main categories that resulted from the analysis of interviews (Appendix 1). For the deliberative dialogue, RW used thematic analysis and coded themes into the same main categories (Appendix 2). For the overall analysis of findings derived from the three different methods, RW integrated findings in a Framework matrix, juxtaposing methods and participant groups with main categories. This supported methodological triangulation and analysis within and across main categories and participant groups (185). Only authors involved in direct data collection had access to non-anonymized data during or after data collection.

To emphasize that interacting barriers influence program benefit at multiple levels, RW grouped all findings into pre-determined conceptual groups of personal, interpersonal, community, and structural level barriers according to the socioecological framework of Bronfenbrenner (1977) and McLeroy et all (1988) (187, 188). At personal level, the framework focuses on individual characteristics like knowledge, skills, attitudes, and behaviors that may facilitate or impede program benefit. The interpersonal level looks at family and other direct social dynamics, whereas the community level focuses on the social and physical environment of the greater community. Finally, structural level barriers refer to the wider sociocultural, economic, legal, political, and institutional environment of Botswana in which promotive social protection programs are offered.

2.3 Ethical approval

Botswana's Health Research and Development Committee (HRDC00724) and McGill University (A12-B72-18A) granted ethical approval. Reading from a prepared script (Appendix 4), we informed potential participants of the research purpose and rights of participants. We stressed the confidentiality of their responses, the voluntary nature of participation, and the right to not answer questions or stop participating at any time. We obtained oral informed consent from participants prior to interviews and workshops, as is accepted in Botswana (189, 190).

3. Findings

3.1 Overview

We conducted 11 FCM workshops and five deliberative dialogue workshops with 66 and 60 participants respectively across five intervention districts in Botswana. The FCM generated 168 concepts, of which 37 appeared on maps of both young women and officers in at least three districts (Appendix 1). Most concepts (n=115) appeared on both stakeholder maps in at least one district, but the pattern matching table showed them to be more frequent in one or the other group (Appendix 2). For example, only one officer map identified bad or improper officer behavior whereas this featured on all young women's maps. Eleven concepts were solely mentioned by young women and five solely by officers.

We conducted 20 semi-structured interviews in Moshupa sub-district (Table 5), including four with program officers delivering locally available promotive social protection programs. Table 6 shows the demographic characteristics of the four program officers and 16 young women and the programs they had (successfully) applied to.

Table 6. Demographic characteristics interview participants & associated programs

#	Age (y.)	Sex	Marital status & #children	Place	(Application to) promotive social protection programs available in Moshupa sub-district	Application information & decision time
PO						
1	33	F		Moshupa*	APP (microenterprise packages for destitute persons)	Few YW apply
2	34	F		Moshupa*	YDF (microenterprise development, Tirelo Sechaba)	Few YW apply
3	55	M		Moshupa*	ISPAAD (agricultural inputs and horticulture)	Few YW apply
4	33	F		Moshupa*	LIMID (chickens/small stock for destitute persons)	Many YW apply
YW						
1	24	F	Single, 0	Moshupa*	LIMID small stock	accepted
2	25	F	Single, 0	Moshupa*	LIMID small stock	refused
					Tirelo Sechaba	accepted
3	26	F	Single, 1	Moshupa*	LIMID, APP (catering)	refused
4	21	F	Single, 0	Moshupa*	Did not apply to any program	-
5	22	F	Single, 1	Kgomokasitwa	LIMID small stock	refused
					APP (catering)	accepted
6	25	F	Single, 1	Kgomokasitwa	LIMID small stock	refused
					APP (chickens)	accepted
					APP (catering)	pending, 2 y.
7	22	F	Single, 0	Manyana	LIMID small stock	accepted, waiting for disbursement 2 y.
8	23	F	Single, 0	Manyana	LIMID small stock	pending, 2 y.
					BOCODOL	withdrawal
9	21	F	Single, 1	Manyana	APP (chickens)	pending, 1 y.
10	21	F	Single, 1	Tswaane	Did not apply to any program	-
11	24	F	Single, 2	Tswaane	Tirelo Sechaba	accepted
12	25	F	Single, 2	Ranaka	Did not apply to any program	-
13	24	F	Single, 1	Pitseng	APP (tent hire)	pending, 2 y.
14	21	F	Single, 1	Pitseng	Ipelegeng	accepted
15	20	F	Single, 2	Pitseng	APP (tent hire)	pending
16	29	F	Single, 1	Sesung	APP (chickens)	refused

#: number; PO: program officer; YW: young woman; y.: years; F: female, M: male; *urban location; APP: Alternative Package Programme; YDF: Youth Development Fund; ISPAAD: Integrated Support Programme for rain-fed Arable Agriculture Development; LIMID: Livestock Management and Infrastructure Development; Tirelo Sechaba: youth apprenticeships; destitute: individual income of BWP120 (US$11) or lower, or household incomes of BWP150 (US$14) or lower.

3.2. Factors affecting program benefit

We first report findings according to the main five Framework categories of program, program officer, young women, social, and structural factors that affect program benefit for unemployed and out-of-school young women. The Framework matrix (Table 7) shows findings per method and participant group juxtaposed with main categories. For the matrix, FCM themes we report had been mentioned by at least 50% of the maps. We then summarize the barriers to perceived program benefit with the socioecological model that categorizes barriers at personal-, interpersonal-, community- and structural-level barriers.

Table 7. Framework overview of main factors affecting program benefit per method and participant group

Methods & participants	Program factors	Program officer factors	Young women factors	Social factors	Structural factors
Interviews Young women	• Application process is easy • Decisions take too long • Rural areas require more attention • Need for better outreach	• Half of YW found POs helpful • A third found POs unhelpful • Frustration with the process transformed into anger with POs	• Despair in YW expressed as resentment and hopelessness • Patience and determination • Few YW with positive feelings (happiness, pride, satisfaction)	• Most YW knew someone assisted by the program • Group solidarity; learning from peers • Mobilization of YW • Competing childcare responsibilities	• (Extreme) poverty • Need to support family (bread winners) • Community-level challenges
Interviews Program officers	• Easy application process (most programs) • Some programs are not accessible for YW • Most programs are not sustainable	• Effort to support YW • Feelings of demotivation • Upstream barriers	• YW lack technical and social skills • Negative attitudes among YW • YW's preferences and expectations do not match programs on offer • Few YW in programs	• YW lack a supportive social environment	• YW lack access to land and water • Lack of coordination between programs or with land/water boards • Generalized poverty prevents program success
FCM YW	• Poor outreach • Process is complicated/too long (some programs) • Difficulty of (physical) access in remote areas: lack of transport* and POs not visiting remote areas*	• Bad/improper PO behavior • POs unhelpful/unfriendly • POs are unfair*	• YW lack knowledge/skills • YW lack self-confidence • Unhelpful attitudes and behavior among YW • YW hold negative views of programs	• Competing household and childcare responsibilities • Unsupportive partners • Jealousy and competition between YW* • Stigma associated with poverty programs*	• Poverty • Institutional barriers (lack of access to land and water)
FCM Officers	• Poor outreach • Process is complicated/too long (some programs) • Programs are unsuitable, including *Ipelegeng***		• YW lack knowledge/skills • YW lack self-confidence • Unhelpful attitudes and behavior among YW • YW hold negative views of programs	• Competing household and childcare responsibilities	• Poverty • Social norms • Institutional barriers (lack of access to land/water; lack of coordination**; policies** and legislation**)
DD improvement recommen-dations	• Diversify venues for outreach: clinics, churches, school kids passing on message to YW, social media, market days • Involve YW in outreach	• POs help fill out forms • POs improve efficiency, client friendliness • Performance indicators for POs to bring YW onto programs	• Advertise options for free return to secondary education • Train YW to train peers to fill out complicated applications • YW could form groups to approach POs for vocational training	• Involve community and boyfriends in outreach • Leverage role models for YW • Form YW support groups	• Improve coordination between programs and with land/water boards • Involve national levels for support

Main themes reported per data source (horizontal) or by factor (vertical). FCM themes in the table were reported by at least 50% of stakeholder groups. *FCM concepts only mentioned by young women; **only mentioned by officers. Abbreviations: YW: unemployed and out-of-school young women; PO: program officers; FCM: fuzzy cognitive maps; DD: deliberative dialogue.

3.2.1. Program factors

Poor program information dissemination, long and complicated application processes, and unsuitable programs were the main program barriers. Most program information dissemination occurs during Kgotla meetings, which are public community meetings presided over by the chief and locally elected officers and mostly attended by older persons. Feeling uncomfortable and judged, few young women attended Kgotla meetings, hence would not learn about available economic empowerment programs or calls for applications.

Application to poverty eradication programs was mostly considered easy, merely involving registration with an identity card. Application to YDF microenterprise and ISPAAD horticulture programs were too complicated and financially inaccessible, due to the detailed business plans they required, and the 40-60% upfront co-investment (ISPAAD horticulture).

The lengthy process was a major problem. Applicants waited several years to receive an initial decision, and hardly received any feedback. Once accepted, they experienced long delays in disbursement of funds or materials. Although many took the slow process as a lesson in patience, it profoundly disheartened others.

> *"First, I was happy and thought it would not take much time but later I became disappointed, lost morale. It looks like government programs were meant to hurt our feelings. This made me lose interest in applying for any government program." (YW8)*

Program officers explained that upstream barriers contributed to processing delays. They also suffered long delays and uncertainty about when and how much funding would be disbursed. They agreed regular feedback to young women could assuage feelings of frustration. With programs understaffed and underfunded they lacked time, money, and material resources to support beneficiaries.

> *"It takes a long time before we get the funds. We still have a one-year backlog because we do not receive enough funds. We keep registering them if they're eligible but maybe we should know how much we receive and stop registration when we reach the limit." (PO4)*

Officers perceived many programs as unsuitable and unsustainable. Microenterprise projects developed through the Alternative Package Program hardly generated a living wage and the more ambitious microenterprises supported by the Youth Development Fund often failed, in part due to incompatibility with local demand and conditions.

> *"They are not sustainable. Poverty eradication programs don't get them out of poverty… I emphasize education because projects are short-term. They start a tuck shop; then a supermarket opens, and nobody comes." (PO1)*

Some young women suggested programs should have a special focus on young women, either through specialized offices or through differential processes with improved counselling and follow up. Young women were grateful to generate even a small income, sometimes benefitting from demand generated by the government itself.

> *"It is not much, but at the end of the month I am able to survive… I can make between 900-1000 (US$85). This includes chips and Russians (hotdog sausages). At least for (government) tenders I make P2500 (US$225)." (YW5)*

Although young women seemed to appreciate *Tirelo Sechaba*, YDF's work-integrated learning program, the lack of apprenticeship positions, especially in rural areas, made opportunities for work-integrated learning rare. Two young women with *Tirelo Sechaba* positions counted themselves lucky, but as breadwinners, the monthly allowance (US$60) was insufficient to feed their families. The program officer stressed *Tirelo Sechabo* allowances were stipends and that some youth were subsequently hired for permanent employment.

An *Ipelegeng* beneficiary considered the public works program as easy money that brought food to the table. Program officers viewed *Ipelegeng* rather as a barrier. Without any training component and very low allowances (US$54 per month), they felt it prevented participants from pursuing more sustainable opportunities while keeping them in poverty.

3.2.2. Program officer factors

Cognitive maps showed bad program officer behavior and attitudes, which ranged from extortion and exploitation to contempt and officers being unhelpful and unfriendly. Young women perceived officers as unfair accusing them of tribalism, favoritism, and discrimination against the poor. Some officers even requested bribes and sexual favors. In interviews, most of the young women recounted positive personal experiences with program officers, who they perceived as approachable and helpful, with some going the extra mile of signing up young women during home visits. The lengthy process and lack of follow-up or application success changed these positive feelings into feelings of betrayal and disappointment.

> *"The program officer was humble, made sure I understood what was discussed. First, I felt very happy because the whole process came to my doorstep, but I started to lose hope and now I don't trust government officers. First it was like the best program, I become emotional every time I think about it. It's like I'm a failure." (YW9)*

Program officers reported putting a lot of effort into engaging young women. They felt they went above and beyond routine outreach efforts to motivate and support their clients, even using personal resources. Program officers were aware of accusations of corruption against them but explained clients did not realize they faced upstream barriers. The lack of supervisory, financial, and material support, notably the lack of vehicles, computers, and airtime, impeded their capacity to offer quality services. Unconvinced of the benefits or sustainability of programs, some program officers preferred orienting youth towards further education rather than to self-employment. The combined burden of upstream barriers, an uninterested clientele, and lack of success stories contributed to feelings of demotivation and hopelessness among program officers.

> *"We do orientations; we also do one-on-one...explain what we do. Workshops for business awareness creation, to open their minds...sometimes they're just not interested at all." (PO2)*

"*We are philanthropists here. Our phone can't access cell phones, so to alert (young women) about adverts, I use my own bundle to call. Most of the time we use our own resources, own car, own petrol…I feel demotivated, I have been in this job for 10 years but did not see any success." (PO1)*

3.2.3. Young women factors

Perceived lack of technical and social skills, and unhelpful attitudes and behaviors impeded young women to benefit from programs. Both stakeholder groups mentioned lack of formal education, basic literacy skills and lack of vocational or business skills.

"Many don't have skills. Maybe that's why they're reluctant to apply. For example, she says she wants to do a hair salon, but she doesn't know anything about hair. They have to produce a certificate and prove they have skills." (PO2)

A profound lack of life skills, including the lack of self-confidence, self-esteem, assertiveness, and communication skills prevented young women from receiving program information, applying to programs, or benefitting from them. Young women were too shy to proactively seek program information. They felt intimidated by some programs, perceiving them as too big and too time consuming. Young women also admitted they lacked commitment or interest in entrepreneurial programs. Participants perceived young women as irresponsible, impatient, disrespectful, lazy, with unrealistic expectations.

Officers believed young women preferred white collar jobs to farming in rural areas, even if these paid less. They felt young women expected quick cash and government involvement in running the enterprise and bringing products to market. They were exasperated with the perceived "short-sightedness" and "spoilt character" of young women and wondered whether life skills and psychosocial support would not benefit them more than economic empowerment programs.

"We give them training. We visit them weekly. We don't know what to do. Maybe S&CD should give psychosocial support for encouragement and life skills." (PO3)

Dominant feelings among the young women we interviewed were dejection and despair. They were frustrated with the lengthy process, resented being rejected, and felt hopeless with the lack of prospects to escape poverty. Several repeated young women-blaming narratives that they should not depend on boyfriends or parents, and avoid drugs, alcohol, and teenage pregnancy.

"The programs can improve our lives. They can keep us busy form being engaged in alcohol, teenage pregnancies and can create employment." (YW6)

The few young women who expressed positive feelings like happiness, pride or satisfaction had enjoyed recent application success. Nonetheless, many young women stressed their positive attributes like patience, perseverance, initiative, and solidarity. Several young women took the possibility of self-employment very seriously, reflected in their ideas to turn potential assets into sustainable businesses.

> *"(I would) sell to junior secondary school. I know there's a shortage of egg supply in the village…shops purchase their eggs from Gaborone. The manure from the poultry would be supplied to commercial gardens owners." (YW9)*

3.2.4. Social factors

Social factors included care responsibilities, lack of support, and peer influence. Competing household or childcare responsibilities prevented young women from returning to school or engaging in economic activity. Program officers pointed to negative family influence contributing to lethargy and intergenerational poverty, but many young women reported having positive role models who motivated them to apply. Some family members helped with childcare so young women could work, but others felt their family constrained their choices.

> *"I wanted to apply…but have to stay with two children…and a…baby, so this seems to have shuttered my dreams. Maybe, when my mother returns…rather than running away and leaving them with me." (YW10)*

Beyond lack of family support, other social barriers pertained to boyfriends and community members. Unsupportive boyfriends were a major barrier, as some refused to let their girlfriends apply. At the community-level, wealthier community members were hesitant to get involved in young women's economic activities, denying them a place of operation, or selling small stock to them.

> *"I was discouraged by a farmer refusing to offer quotations for goats, saying it takes time for the government to pay them after supplying the small stock." (YW2)*

Some officers perceived socioeconomic programs as contributors to the decline of traditional values like community spirit and reciprocity, as youth were now unwilling to work for someone else.

> *"I think...(programs)…destroyed the neighborliness of Botswana…We have a shortage of (agricultural) labor here. They have that pride whereby they cannot work for someone else, even if it is a relative." (PO3)*

Peer influence seemed to have both negative and positive effects. Seeing peers rejected, hearing about bad experiences, or the stigma of being on a poverty program discouraged young women from applying to programs. Envy and jealousy contributed to an environment whereby young women competed rather than collaborated, withholding relevant information from each other. Yet, young women also advocated for voice and solidarity. Several young women mentioned wanting to learn from successful peers. Some wanted to mobilize peers to improve their destiny, to hold program officers accountable, or to denounce them.

> *"We should be creative, come up with initiatives aimed at employment creation. We should interact to learn business ideas and skills, share ideas, experiences, meet successful youths. We need to work as a team; this will motivate us." (YW3)*

3.2.5. Structural factors

Poverty, social norms, gender inequity, and institutional barriers were structural barriers. Poverty prevented young women from applying to programs if this involved transportation costs, or accumulating capital to start and support entrepreneurial projects. Poverty could be a barrier to ongoing education, as some young women reported that schools withheld diplomas when school fees were left unpaid.

> *"I was admitted (to vocational education) but not able to attend because I did not have the certificate as I had been unable to pay school fees... No one is working in my family, so life is not easy." (YW15)*

According to some program officers, the context of generalized unemployment, where even highly educated young women had to resort to transactional sex, made it nearly impossible for uneducated young women to thrive in socioeconomic programs.

> *"Even when they do tertiary education, they don't find work. They get into relationships for money. Then they get kids. It is frustrating to have studied four years in Gaborone and then you sit at home in Moshupa." (PO1)*

Despite available jobs in farming, participants viewed agricultural jobs as unsuitable for young women, with few female role models successfully engaged in farming. Poultry and small stock programs offered by LIMID, APP, and YDF, were relatively easy to obtain, but provided only a small number of goats. Breeding them into larger herds took too long, resulting in the poorest families consuming them. Lack of money hampered prevention of zoonotic diseases. A young woman reported losing her entire flock of Tswana chickens to Newcastle disease. Having enjoyed some prosperity, her subsequent downfall left her in even greater despair.

> *"I experienced a natural disaster…lost all chickens…I reported to program officers…but I was only told that funds were finished. I used to help my family…buying them food and school uniforms. I later felt I am a more needy person now." (YW6)*

Institutional barriers included lack of coordination and lack of access to land and water. Officers reported a lack of coordination between programs, but also between programs and land and water boards. They perceived program duplication, inefficiencies, and competition due to the lack of monitoring and evaluation and lack of coordination between different ministries.

> *"We offer the same program, but YDF pays more for goats than us." (PO4)*

> *"Programs are not being evaluated for effectiveness…There is S&CD, LIMID, Youth -we offer the same thing. Why can't these programs be centralized? There is no linkage. A person could benefit from the same thing at different departments." (PO1)*

Lack of access to land, water, or a place of operation made young women ineligible for programs. To receive small stock, they required access to water; for farming, access to land. Few young women owned land, applied for land, or had proof they could borrow land. Lack of coordination between programs and land and water boards sometimes resulted in having to postpone receiving assistance while waiting for land or water allocation. Land laws excluding young women, and the lack of political will to address it, were other institutional barriers on officer maps.

> *"You need to have land. It may take a long time that a land allocation request will be approved. …They need to have a sustainable, continuous and productive water source, for example a borehole or river, for the entire life of the project." (PO3)*

3.3. The socioecological model: Barriers to program benefit

Participants perceived multifaceted and interacting barriers at every socioecological level. Figure 5. summarizes our findings depicting how barriers at the personal, interpersonal, community, and structural levels constrained unemployed and out-of-school young women to benefit from promotive social protection programs in Botswana.

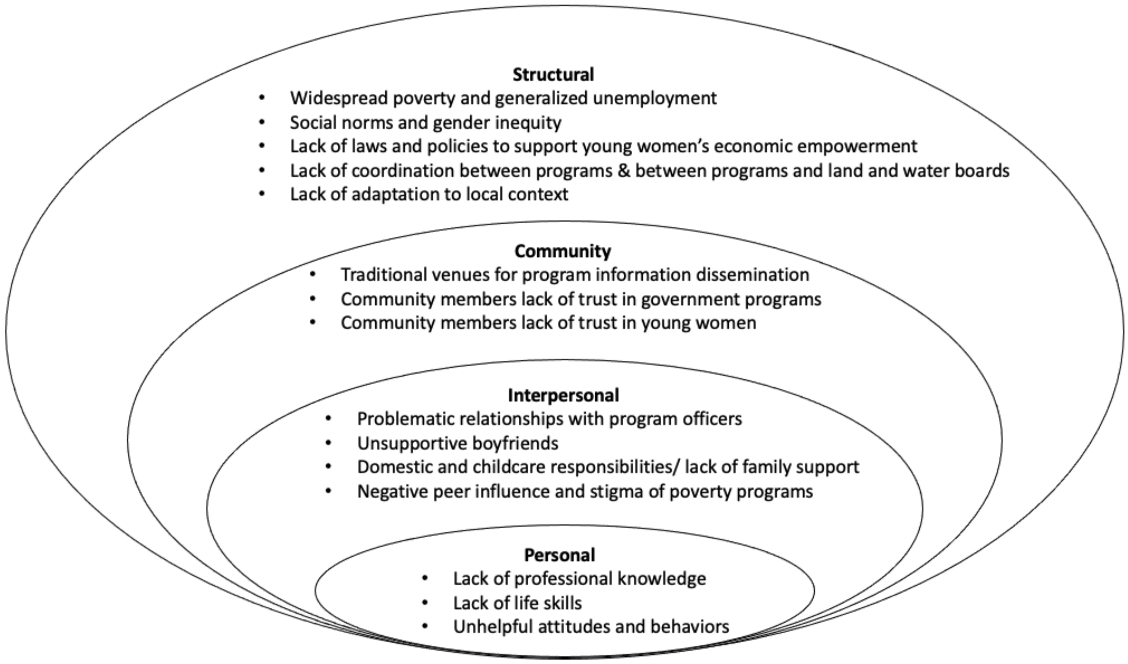

Figure 5. Socioecological model of barriers that impede benefit from promotive social protection programs by unemployed and out-of-school young women in Botswana

3.4. Stakeholder-designed improvement recommendations

Improving outreach through diversification of venues and means of communication was the main recommendation theme emerging from the deliberative dialogue workshops (Appendix 2). Besides traditional venues like the *kgotla* and village development committees, program information could be spread on market days, through youth committees, churches, social media, radio, or through children who could receive information at school and pass it on. Information could reach young women attending child welfare sessions at local clinics. To reach the most rural populations, nurses could disseminate program information through mobile clinics in the *masimo* (agricultural lands outside villages). Distance learning opportunities for primary and secondary education (OSEC and BOCODOL) could ameliorate young women's lack of education. These second chance education programs were free of charge for young women who had dropped out prior to Form 3, but this was not widely known, and participants felt it should be better advertised.

Another prominent theme was active engagement of young women in the implementation of potential solutions. Young women could collate and disseminate program information, help fill out complicated applications, receive training to train peers, or form groups to proactively request vocational training. Some suggested embedding such groups in customary administrative systems like *kgotlana* (village wards). Some program officers proposed funding such groups.

Improvement recommendations for program officers mostly involved hard-to-measure solutions like improving efficiency, client friendliness and assistance. One group proposed including performance targets for program officers to bring unemployed and out-of-school young women onto programs.

To overcome social barriers, suggestions involved leveraging positive role models and involving community and boyfriends in outreach and training. Opportunities for structural improvements pertained to land and water access. Participants suggested programs collaborate and proposed establishing formal agreements between programs, and between programs and land and water boards, while leveraging hierarchy through district-level coordination by the district commissioner. They admitted this would require policy action at national level as well.

4. Discussion

This study explored why promotive social protection programs offered by the government of Botswana fail to benefit unemployed and out-of-school young women. We investigated perceived barriers and potential solutions in the context of HIV-sensitive social protection, as these programs could reduce HIV-vulnerability by reducing social and economic disadvantage.

Many study participants perceived current programs as ineffective and inadequate to empower young women socially or economically, reporting barriers at every socioecological level. The lack of life skills at a personal level is of crucial importance for HIV-sensitive social protection, as life skills do not only increase socioeconomic success among unemployed and out-of-school young women (191, 192), but also help improve sexual negotiation and reduce sexual risk behaviors (193, 194). Complementing available programs with life skills training might facilitate social interactions, including with program officers. Professional skills like business and financial skills could help young women plan, save, and spend responsibly and improve their self-efficacy, a life skill also associated with reduced sexual risk behavior (195-197). Some scholars suggest that *Ipelegeng*, the most easily accessible program for young women, could be made more HIV-sensitive with a skills development component and active linking to other socioeconomic programs (128). In addition, given young women’s negative attitudes and behaviors, mentoring of job and life skills might benefit young women transition into new livelihoods (198). Dialogue groups suggested peer mentoring programs would be welcomed. A systematic review on HIV-sensitive social protection identifies mentoring as a key facilitator to achieve socioeconomic and HIV outcomes (174).

At an interpersonal level, negative peer influence was expressed in reported jealousy and competition with peers. It seems plausible that poverty might force young women to compete for the few available resources. The stigma of being on a poverty program may be another expression of negative peer influence. Peer pressure and “symbol capital” among youth are long-recognized phenomena in the literature on transactional sex (199). Transactional sex is commonly accepted to acquire nice hair, fashionable clothes, cell phones and other symbols of a successful life (200). Associations with poverty programs would undermine the social status young women might want to construct for themselves.

Programs seem to take little account of the needs and social situation of unemployed and out-of-school young women. Many young women are single mothers suffering time poverty due to domestic and childcare responsibilities. Offering childcare, as some programs did in Liberia (154), or leveraging community-based day care centers or after-school programs, as was done in Malawi and South Africa (201), could help.

At the community level, the kgotla seems to be the wrong venue for information dissemination. As young women do not attend kgotla meetings, programs should investigate stakeholder recommendations for diversifying venues and means of communication to reach young women.

Many of the reported barriers were structural level barriers, including poverty, lack of gender egalitarian norms, lack of adaptation to local context, and lack of coordination. Poverty itself was a barrier to accessing and benefitting from poverty programs. The poverty level for upper middle-income countries like Botswana is set at US$165 per month (202), but poverty eradication programs generated income barely above the international threshold for *extreme* poverty set at US$57 per month (US$1.90 per day) (202). Monthly allowances from *Ipelegeng* (US$54) and *Tirelo Sechaba* (US$60) were comparable to the extreme poverty threshold, but eligibility thresholds for programs targeting destitute people, like LIMID and the Alternative Package Program, have not been updated since the inception of the Destitute Persons Program in 1980 (14, 203) and were much lower than that: US$11 (individual monthly income) and US$14 (family monthly income) (15). It is hard to imagine that such low levels of social assistance could protect against high-risk behaviors based on economic necessity like transactional sex.

Moreover, individuals living in extreme poverty tend to spend the majority of their income on food (204). As poverty impedes cognitive function to think through important decisions, they need consumption support before livelihood programs to have the mental bandwidth (205, 206) to successfully engage in socioeconomic programs and act on HIV prevention choices. Consumption support for destitute people in Botswana is mostly offered in kind rather than in cash (15), but coupons or food baskets do not provide the flexibility to save, invest in microenterprise growth, or provide for veterinary care to safeguard flocks and stock. Combined with a lack of program monitoring, it is not surprising that participants lost their chickens or failed to benefit from microenterprise programs.

Our findings in Botswana align with prevailing gender norms in many Sub-Saharan African countries that assign childcare and domestic work to women and require them to obtain male approval to engage in economic activity (207). Other studies report similar findings and labelled Botswana a patriarchal society (208, 209), although urban youth might hold more gender-equal views (210). As patriarchal gender norms are an underlying factor for intimate partner violence, which is associated with a three-fold increase in HIV infection (211), it is essential to address the gender dimensions of promotive social protection programs. To generate male support for female economic activity, dialogue groups proposed engaging boyfriends in disseminating program information. More transformational interventions with men and boys might, however, be necessary to challenge deeply entrenched patriarchal beliefs and behaviors. In Uganda, a single day gender workshop for couples increased male support for young women's businesses and improved male involvement in traditionally female household chores (212). In Côte d'Ivoire, gender dialogues added to a microfinance program may have reduced intimate partner violence (213).

Young women were unlikely to apply to agricultural programs due to gender norms and a lack of interest and resources. Suggestions made in dialogue groups regarding programs leveraging positive role models or setting performance indicators for program officers to bring young women onto programs could also be used to attract young women to agriculture. Land grants, training, and linking with commercial retailers supported female farming in South Africa, where farming is strongly gendered with women traditionally undertaking most food farming whilst excluded from owning and controlling land (214). In Malawi, farmer field schools improved farming practices through credit, savings, and training. The intervention contributed to improved food security, economic resilience, and HIV prevention among the mainly female participants (215). Although the mean age of women in these interventions was higher than in our study, some elements might be transferable to the Botswana context. Mixed livelihood strategies might be another option. A recent study in Kenya showed that, when not forced into a binary choice of farming or other livelihood options, most rural youth saw farming play some role in their future (216).

Officers were critical of the suitability and sustainability of socioeconomic programs. To transform microenterprises into sustainable, income-earning ventures, programs need to respond to local demand and conditions (154), leverage local resources, develop markets for products, and forge private sector links (217). If these elements would be incorporated in economic empowerment programs, young women in Botswana might benefit more from such programs. For example, assisted by local business owners, adolescent girls in Uganda developed income-generating activities adapted to local markets and increased self-employment by 72% and tripled earnings compared to the baseline (218).

Officers highlighted a lack of coordination between Botswana's many social protection programs and supporting services like land and water boards. These findings align with the 2013 World Bank Report on social protection in Botswana (15) and more recent studies that call for improved coordination between programs to reduce overlap, duplication and fragmentation of social protection programs (128, 219). A more holistic and client-centered approach might lead to better outcomes and more effective and efficient use of resources (220). This would require a national strategy for HIV-sensitive social protection and an intersectoral approach to planning, implementation and co-financing of programs (221).

Although not designed for HIV prevention, programs would need to accommodate or even preferentially attract HIV-vulnerable young women to become HIV-sensitive. A holistic approach to HIV prevention and socioeconomic empowerment that places unemployed and out-of-school young women at the center may help guide them through personal, interpersonal, and structural challenges. To our knowledge, this is the first study to take an HIV-sensitive perspective on social protection in Botswana. Findings of this study will feed into a Policy Delphi of stakeholder-generated and validated proposals to improve the HIV-sensitivity of existing promotive social protection programs in Botswana.

4.1. Strengths & limitations

We triangulated methods and data sources in five different districts exploring demand and supply side perspectives (222). Our participatory approach to identifying problems and solutions generated context-sensitive and locally feasible options to improve the situation.

Our sampling strategy may have introduced selection bias, as some young women may not have wanted to participate because they were too shy, occupied with other responsibilities, or did not receive permission from boyfriends to participate. Our interviews with a small number of young women and program officers covered only one of five intervention districts. The interviews focused on personal experience and could be subject to social desirability bias. FCM engaged stakeholders in all five districts and focused on perceptions of causes beyond personal experience. Bolstered by their peers, young women in mapping groups might have been more willing to express negative views of program officers. Although facilitators encouraged all participants to contribute, power differentials might have influenced deliberative dialogues that combined young women and officers. Policies and programs may have changed since we collected data in 2017. For example, the last BOCODOL students graduated in November 2018, after which BOCODOL changed to Botswana Open University (138).

4. Conclusion

Botswana's mature and well-funded social protection system could be adapted to become more HIV-sensitive. If unemployed and out-of-school young women, who bear the brunt of HIV infections, could benefit from available promotive social protection programs that could empower them socially and economically, they might be better placed to act on HIV prevention measures. Existing programs, however, would need to become more responsive to the multiple intersecting barriers young women face at personal, interpersonal, community and structural levels that currently prevent them from benefitting from these programs. Involving vulnerable young women in program revisions could help tailor programs to their needs.

Funding

RW is supported by CIHR Vanier Canada Graduate Scholarship.

The authors thank the Quebec Population Health Research Network (QPHRN) for its contribution to the financing of this publication

Disclaimer

Funding agencies had no role in the study design, data collection, analysis.

Supporting Information

Appendix 1. FCM coding tree: why young women do not benefit from programs

Appendix 2. Deliberative dialogue: pattern matching tables, selection & improvement recommendations

Appendix 3. Framework analysis interviews

Appendix 4. Script for informed oral consent for interviews and workshops (FCM and deliberative dialogue workshops)

5. References

1. Gaolathe T, Wirth KE, Holme MP, Makhema J, Moyo S, Chakalisa U, et al. Botswana's progress toward achieving the 2020 UNAIDS 90-90-90 antiretroviral therapy and virological suppression goals: a population-based survey. The lancet HIV. 2016;3(5):e221-e30. https://doi.org/10.1016/S2352-3018(16)00037-0
2. Bagcchi S. Mother-to-child transmission of HIV in Botswana. The Lancet Infectious Diseases. 2022;22(3):319. https://doi.org/10.1016/S1473-3099(22)00074-3
3. AVERT. HIV and AIDS in Botswana 2020 [Available from: https://www.avert.org/professionals/hiv-around-world/sub-saharan-africa/botswana.
4. Ministry of Health, National AIDS and Health Promotion Agency, Statistics Botswana. BAIS V - Fifth Botswana AIDS Impact Survey. Preliminary Report. Gaborone: Government of Botswana; 2022.Available from: https://statsbots.org.bw/sites/default/files/publications/BAIS%20V%20Preliminary%20Report.pdf.
5. Consortium SR. Addressing the structural drivers of HIV: A strive synthesis. UK: London School of Hygiene & Tropical Medicine 2019.Available from: http://strive.lshtm.ac.uk/resources/addressing-structural-drivers-hiv-strive-synthesis.
6. Austin KF, Choi MM, Berndt V. Trading sex for security: Unemployment and the unequal HIV burden among young women in developing nations. International Sociology. 2017;32(3):343-68. https://doi.org/10.1177/0268580917693172
7. Kim J, Pronyk P, Barnett T, Watts C. Exploring the role of economic empowerment in HIV prevention. Aids. 2008;22:S57-S71. https://doi.org/10.1097/01.aids.0000341777.78876.40.
8. Low A, Gummerson E, Schwitters A, Bonifacio R, Teferi M, Mutenda N, et al. Food insecurity and the risk of HIV acquisition: findings from population-based surveys in six sub-Saharan African countries (2016–2017). BMJ open. 2022;12(7):e058704. https://doi.org/10.1136/bmjopen-2021-058704
9. Weiser SD, Leiter K, Bangsberg DR, Butler LM, Percy-de Korte F, Hlanze Z, et al. Food insufficiency is associated with high-risk sexual behavior among women in Botswana and Swaziland. PLoS Med. 2007;4(10):e260. https://doi.org/10.1371/journal.pmed.0040260
10. De Neve J-W, Fink G, Subramanian S, Moyo S, Bor J. Length of secondary schooling and risk of HIV infection in Botswana: evidence from a natural experiment. The Lancet Global Health. 2015;3(8):e470-e7. https://doi.org/10.1111/tmi.13328
11. Stoner MC, Pettifor A, Edwards JK, Aiello AE, Halpern C, Julien A, et al. The effect of school attendance and school dropout on incident HIV and HSV-2 among young women in rural South Africa enrolled in HPTN 068. AIDS (London, England). 2017;31(15):2127. https://doi.org/10.1097/QAD.0000000000001584
12. UNAIDS. Social Protection: a Fast-Track commitment to end AIDS. Geneva2018.Available from: http://www.unaids.org/en/resources/documents/2018/social-protection-fast-track-commitment-end-aids.
13. Midgley J. Advanced Introduction to Social Protection. Cheltenham, UK: Edward Elgar Publishing; 2022. 160 p.
14. UNAIDS. UNAIDS Expanded Business Case: Enhancing Social Protection. In: WHO U, WFP, ILO, UNHCR, WorldBank, , editor. Geneva, Switzerland: UNAIDS; 2010.Available from: https://www.unaids.org/sites/default/files/media_asset/jc1879_social_protection_business_case_en_0.pdf.

15. UNAIDS. HIV and Social Protection Guidance Note. Geneva, Switzerland: UNAIDS; 2011.Available from: https://www.unicef-irc.org/files/documents/d-3827-HIV-and-Social-Protection.pdf.
16. UNAIDS. HIV and Social Protection. Guidance Note. Geneva, Switzerland: UNAIDS; 2014.Available from: https://www.unaids.org/en/resources/documents/2014/2014unaidsguidancenote_HIVandsocialprotection.
17. UNAIDS. HIV and social protection assessment tool. Generating evidence for policy and action on HIV and social protection. Geneva, Switzerland: UNAIDS; 2017.Available from: https://www.unaids.org/sites/default/files/media_asset/HIV-social-protection-assessment-tool_en.pdf.
18. UNAIDS. Social Protection: a Fast-Track commitment to end AIDS. Geneva, Switzerland2018.Available from: https://www.unaids.org/en/resources/documents/2018/social-protection-fast-track-commitment-end-aids.
19. Devereux S, Sabates-Wheeler R. Transformative social protection. IDS Working Paper, issue 232. Sussex, UK: Institute of Development Studies; 2004.Available from: https://www.ids.ac.uk/publications/transformative-social-protection/.
20. UNAIDS. Fast-Track Commitments to end AIDS by 2030. Geneva, Switzerland2016.Available from: https://www.unaids.org/en/resources/documents/2016/fast-track-commitments.
21. van der Wal R, Loutfi D, Hong QN, Vedel I, Cockcroft A, Johri M, et al. HIV-sensitive social protection for vulnerable young women in East and Southern Africa: a systematic review. Journal of the International AIDS Society. 2021;24(9):e25787. https://doi.org/10.1002/jia2.25787
22. UNICEF. Botswana Budget Brief - Social Protection. Fiscal Year 2019/20. Gaborone, Botswana: UNICEF; 2019. p. 17.Available from: https://www.unicef.org/esa/documents/botswana-budget-briefs-2019.
23. Cockcroft A, Marokoane N, Kgakole L, Kefas J, Andersson N. The Inter-ministerial National Structural Intervention trial (INSTRUCT): protocol for a parallel group cluster randomised controlled trial of a structural intervention to reduce HIV infection among young women in Botswana. BMC health services research. 2018;18(1):1-12. https://doi.org/10.1186/s12913-018-3638-0
24. Cockcroft A, Marokoane N, Kgakole L, Tswetla N, Andersson N. Access of choice-disabled young women in Botswana to government structural support programmes: a cross-sectional study. AIDS care. 2018;30(sup2):24-7. https://doi.org/10.1080/09540121.2018.1468009
25. StatisticsBotswana. 2022 Population and Housing Census - Preliminary Results V2. Gaborone, Botswana2022.Available from: https://www.statsbots.org.bw/sites/default/files/2022%20Population%20and%20Housing%20Census%20Preliminary%20Results.pdf.
26. Ministry of Finance and Economic Development G. National Development Plan 11. April 2017 - March 2023. Gaborone, Botswana2017. p. 292.Available from: https://www.tralac.org/documents/resources/by-country/botswana/1865-botswana-11th-national-development-plan-2017-2023.html.
27. WorldBank. Macro Poverty Outlook for Botswana : April 2022. Washington DC, USA: Macro Poverty Outlook (MPO) Washington, D.C. : World Bank Group.; 2022.Available from:

https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099939404182211697/idu0f1c8cf9703b5504b6c08d45040ca25a1f281.
28. StatisticsBotswana. Multi-Topic Survey Quarter 4,2020 Labour Force Module Report. Gaborone, Botswana2021.Available from: https://www.statsbots.org.bw/multi-topic-survey-quarter-42020-labour-force-module-report-0.
29. WorldBank. Botswana: Systematic Country Diagnostic. Gaborone, Botswana2015.Available from: https://documents.worldbank.org/en/publication/documents-reports/documentdetail/489431468012950282/botswana-systematic-country-diagnostic.
30. StatisticsBotswana. Agricultural Census. Stats Brief 2015. Gaborone: Statistics Botswana; 2015. p. 14.Available from: https://www.statsbots.org.bw/sites/default/files/publications/Agric%20Stats%20Brief%202015.pdf.
31. Israel BA, Schulz AJ, Parker EA, Becker AB. Review of community-based research: assessing partnership approaches to improve public health. Annual review of public health. 1998;19(1):173-202. https://doi.org/0163-7525/98/0510-0173$08.00
32. Andersson N. Participatory research—A modernizing science for primary health care. Journal of general and family medicine. 2018;19(5):154-9. https://doi.org/10.1002/jgf2.187
33. Andersson N, Silver H. Fuzzy cognitive mapping: an old tool with new uses in nursing research. Journal of Advanced Nursing. 2019;75(12):3823-30. https://doi.org/10.1111/jan.14192
34. Gray SA, Zanre E, Gray SR. Fuzzy cognitive maps as representations of mental models and group beliefs. Fuzzy cognitive maps for applied sciences and engineering. 2014:29-48. https://doi.org/10.1007/978-3-642-39739-4_2
35. Giles BG, Findlay CS, Haas G, LaFrance B, Laughing W, Pembleton S. Integrating conventional science and aboriginal perspectives on diabetes using fuzzy cognitive maps. Social science & medicine. 2007;64(3):562-76. https://doi.org/10.1016/j.socscimed.2006.09.007
36. Abelson J, Forest P-G, Eyles J, Smith P, Martin E, Gauvin F-P. Deliberations about deliberative methods: issues in the design and evaluation of public participation processes. Social science & medicine. 2003;57(2):239-51. https://doi.org/10.1016/S0277-9536(02)00343-X
37. Cargo M, Mercer SL. The value and challenges of participatory research: strengthening its practice. Annu Rev Public Health. 2008;29:325-50. https://doi.org/10.1146/annurev.publhealth.29.091307.083824
38. Marshall C, Rossman GB. Designing qualitative research. 5th ed. New York, USA: SAGE Publications; 2014. 344 p.
39. Ritchie J, Spencer L. Qualitative data analysis for applied policy research. In: Alan Bryman, Burgess R, editors. Analyzing qualitative data. London, UK: Routledge; 2002. p. 187-208.
40. Sarmiento I, Ansari U, Omer K, Gidado Y, Baba MC, Gamawa AI, et al. Causes of short birth interval (kunika) in Bauchi State, Nigeria: systematizing local knowledge with fuzzy cognitive mapping. Reproductive health. 2021;18(1):1-18. https://doi.org/https://doi.org/10.1186/s12978-021-01066-2
41. Bronfenbrenner U. Toward an experimental ecology of human development. American psychologist. 1977;32(7):513. https://doi.org/10.1037/0003-066X.32.7.513
42. McLeroy KR, Bibeau D, Steckler A, Glanz K. An ecological perspective on health promotion programs. Health education quarterly. 1988;15(4):351-77. https://doi.org/10.1177/109019818801500401

43. Shaibu S. Ethical and cultural considerations in informed consent in Botswana. Nursing ethics. 2007;14(4):503-9. https://doi.org/10.1177/0969733007077884
44. Ministry of Health M. Guide for consent form. Gaborone: Government of Botswana; 2013.Available from: https://www.moh.gov.bw/Publications/research/GUIDE_CONSENT_FORM_Version.pdf.
45. Gibbs A, Washington L, Abdelatif N, Chirwa E, Willan S, Shai N, et al. Stepping Stones and Creating Futures intervention to prevent intimate partner violence among young people: cluster randomized controlled trial. Journal of Adolescent Health. 2020;66(3):323-35. https://doi.org/10.1016/j.jadohealth.2019.10.004
46. Pettifor A, Wamoyi J, Balvanz P, Gichane MW, Maman S. Cash plus: exploring the mechanisms through which a cash transfer plus financial education programme in Tanzania reduced HIV risk for adolescent girls and young women. Journal of the International AIDS Society. 2019;22:e25316. https://doi.org/10.1002/jia2.25316
47. Goodman ML, Selwyn BJ, Morgan RO, Lloyd LE, Mwongera M, Gitari S, et al. Sexual behavior among young carers in the context of a Kenyan Empowerment Program Combining Cash-Transfer, Psychosocial Support, and Entrepreneurship. The Journal of Sex Research. 2016;53(3):331-45. https://doi.org/10.1080/00224499.2015.1035429
48. Pronyk PM, Kim JC, Abramsky T, Phetla G, Hargreaves JR, Morison LA, et al. A combined microfinance and training intervention can reduce HIV risk behaviour in young female participants. Aids. 2008;22(13):1659-65. https://doi.org/10.1097/QAD.0b013e328307a040
49. Austrian K, Anderson AD. Barriers and facilitators to health behaviour change and economic activity among slum-dwelling adolescent girls and young women in Nairobi, Kenya: The role of social, health and economic assets. Sex Education. 2015;15(1):64-77. https://doi.org/10.1080/14681811.2014.947364
50. Austrian K, Soler-Hampejsek E, Behrman JR, Digitale J, Hachonda NJ, Bweupe M, et al. The impact of the Adolescent Girls Empowerment Program (AGEP) on short and long term social, economic, education and fertility outcomes: a cluster randomized controlled trial in Zambia. BMC public health. 2020;20(1):1-15. https://doi.org/10.1186/s12889-020-08468-0
51. Bandiera O, Buehren N, Burgess R, Goldstein M, Gulesci S, Rasul I, et al. Women's empowerment in action: evidence from a randomized control trial in Africa. eLibrary: World Bank; 2018.Available from: https://elibrary.worldbank.org/doi/abs/10.1596/28282.
52. Nthomang K. Botswana's Ipelegeng Programme Design and Implementation: Reduction or Perpetuation/Entrenchment of Poverty? Asian Journal of Social Science Studies. 2018;3(3):27. https://doi.org/10.20849/ajsss.v3i3.445
53. Bukuluki PM, Kamya S, Kasirye R, Nabulya A. Facilitating the transition of adolescents and emerging adults from care into employment in Kampala, Uganda: A case study of Uganda youth development link. Emerging Adulthood. 2020;8(1):35-44. https://doi.org/10.1177/2167696819833592
54. Leclerc-Madlala S. Transactional sex and the pursuit of modernity. Social dynamics. 2003;29(2):213-33. https://doi.org/10.1080/02533950308628681
55. Wamoyi J, Wight D, Plummer M, Mshana GH, Ross D. Transactional sex amongst young people in rural northern Tanzania: an ethnography of young women's motivations and negotiation. Reproductive health. 2010;7(1):2. https://doi.org/10.1371/journal.pone.0214366
56. Adoho F, Chakravarty S, Korkoyah DT, Lundberg M, Tasneem A. The impact of an adolescent girls employment program: The EPAG project in Liberia. Policy Research Working

Paper. Washington DC: The World Bank; 2014.Available from: http://hdl.handle.net/10986/17718.
57. Heymann J, Kidman R. HIV/AIDS, declining family resources and the community safety net. AIDS care. 2009;21(sup1):34-42. https://doi.org/10.1080/09540120902927593
58. WorldBank. Poverty & Equity Brief Botswana 2020 [Available from: https://www.worldbank.org/en/topic/poverty/publication/poverty-and-equity-briefs.
59. Seleka TB, Lekobane KR. Targeting Effectiveness of Social Transfer Programs in Botswana. BIDPA Working Paper 72. Gaborone, Botswana: Botswana Institute for Development Policy Analysis; 2020.Available from: http://knowledge.bidpa.bw:8080/xmlui/bitstream/handle/123456789/163/BIDPA%20Working%20Paper%2072_Targetting%20Effectiveness%20of%20Social%20Transfer%20Programs%20in%20Botswana%20Means-Te.pdf?sequence=1&isAllowed=y.
60. Republic of Botswana. Destitute Allowance 2022 [cited April 2022. Available from: https://www.gov.bw/allowances/destitute-allowance.
61. Tesliuc J, Mookodi L, Braithwaite J, Sharma S, Ntseane D. Botswana Social Protection Washington DC2013.Available from: https://openknowledge.worldbank.org/handle/10986/18968.
62. Mahler DG, Yonzan N, HIll R, Lakner C, Wu H, Yoshida N. Pandemics, prices, and poverty World Bank Blogs2022 [Available from: https://blogs.worldbank.org/opendata/pandemic-prices-and-poverty.
63. Hashemi SM, De Montesquiou A. Reaching the poorest: Lessons from the graduation model: Consultative Group to Assist the Poor; 2011 [Available from: https://www.cgap.org/research/publication/reaching-poorest-lessons-graduation-model.
64. Shah AK, Mullainathan S, Shafir E. Some consequences of having too little. Science. 2012;338(6107):682-5. https://doi.org/10.1126/science.1222426
65. Marcus R. The norms factor: recent research on gender, social norms, and women's economic empowerment Ottawa, Canada: International Development Research Centre; 2018 [Available from: https://www.odi.org/publications/11226-norms-factor-recent-research-gender-social-norms-and-womens-economic-empowerment.
66. Ntseane P. Being a female entrepreneur in Botswana: cultures, values, strategies for success. Gender & Development. 2004;12(2):37-43. https://doi.org/10.1080/13552070412331332180
67. Hovorka AJ, Dietrich D. Entrepreneurship as a gendered process. The International Journal of Entrepreneurship and Innovation. 2011;12(1):55-65. https://doi.org/10.5367/ijei.2011.0016
68. Giddings C, Hovorka AJ. Place, ideological mobility and youth negotiations of gender identities in urban Botswana. Gender, Place & Culture. 2010;17(2):211-29. https://doi.org/10.1080/09663691003600314
69. Kuchukhidze S, Panagiotoglou D, Boily M-C, Diabaté S, Eaton JW, Mbofana F, et al. The effects of intimate partner violence on women's risk of HIV acquisition and engagement in the HIV treatment and care cascade: a pooled analysis of nationally representative surveys in sub-Saharan Africa. The Lancet HIV. 2023;10(2):e107-e17. https://doi.org/10.1016/S2352-3018(22)00305-8
70. Green EP, Blattman C, Jamison J, Annan J. Women's entrepreneurship and intimate partner violence: A cluster randomized trial of microenterprise assistance and partner

participation in post-conflict Uganda. Social science & medicine. 2015;133:177-88. https://doi.org/10.1016/j.socscimed.2015.03.042
71. Gupta J, Falb KL, Lehmann H, Kpebo D, Xuan Z, Hossain M, et al. Gender norms and economic empowerment intervention to reduce intimate partner violence against women in rural Côte d'Ivoire: a randomized controlled pilot study. BMC international health and human rights. 2013;13(1):1-12. https://doi.org/10.1186/1472-698X-13-46
72. Tshishonga N. Women growing livelihoods through food security: Inanda's Inqolobane Yobumbano Secondary Co-operative. Agenda. 2016;30(4):62-73. https://doi.org/10.1080/10130950.2017.1327175
73. Weinhardt LS, Galvao LW, Yan AF, Stevens P, Mwenyekonde TNo, Ngui E, et al. Mixed-method quasi-experimental study of outcomes of a large-scale multilevel economic and food security intervention on HIV vulnerability in rural Malawi. AIDS and Behavior. 2017;21(3):712-23. https://doi.org/10.1007/s10461-016-1455-1
74. LaRue K, Daum T, Mausch K, Harris D. Who Wants to Farm? Answers Depend on How You Ask: A Case Study on Youth Aspirations in Kenya. The European Journal of Development Research. 2021:1-25. https://doi.org/10.1057/s41287-020-00352-2
75. Attanasio O, Kugler A, Meghir C. Training disadvantaged youth in Latin America: evidence from a randomized trial. 2008(13931). https://doi.org/10.3386/w13931
76. Bandiera O, Buehren N, Burgess R, Goldstein M, Gulesci S, Rasul I, et al. Women's economic empowerment in action: Evidence from a randomized control trial in Africa. Geneva: ILO; 2015. p. 56.Available from: https://www.ilo.org/employment/Whatwedo/Publications/working-papers/WCMS_432281/lang--en/index.htm.
77. Botlhale E, Molokwane T. The viability of the welfare state in Botswana. Journal of Contemporary African Studies. 2019;37(2-3):241-56. https://doi.org/10.1080/02589001.2019.1697433
78. Bassett L, Giannozzi S, Pop L, Ringold D. Rules, roles, and controls: governance in social protection with an application to social assistance. Washington, DC: World Bank; 2012.Available from: https://openknowledge.worldbank.org/handle/10986/13552.
79. Remme M, Vassall A, Lutz B, Luna J, Watts C. Financing structural interventions: going beyond HIV-only value for money assessments. Aids. 2014;28(3):425-34. https://doi.org/10.1097/QAD.0000000000000076
80. Mays N, Pope C. Assessing quality in qualitative research. Bmj. 2000;320(7226):50-2. https://doi.org/10.1136/bmj.320.7226.50
81. Botswana Open University. BOU/BOCODOL Annual Report 201718. Gaborone, Botswana2019.Available from: http://www.bou.ac.bw/images/annual_report/annual_report_201718.pdf.

9b. Modified Policy Delphi

Bridging statement

The systematic review (Chapter 8) explored regional best practices for HIV-sensitive social protection interventions leveraged for unemployed and out-of-school young women in East and Southern Africa. The review found comprehensive packages could increase income, capabilities, and social capital, to enable reduction of sexual risk behavior and IPV. This in turn could help reduce HIV infection. Comprehensive packages should combine livelihood (microgrants and savings) and employability (life and job skills) interventions with gender, sexual and reproductive health, and HIV training. The review identified mentors and social safe space as key delivery mechanisms.

The exploratory study in Chapter 9a found that unemployed and out-of-school young women in Botswana faced many intersecting barriers to benefit from existing promotive social protection programs. The study suggests improvement proposals should address personal, interpersonal, community, and structural-level barriers. In deliberative dialogue workshops, young women and frontline service providers offered improvement recommendations focused on (peer) outreach and (peer) program delivery. Participants also suggested that improved coordination between programs and between programs and land and water boards could lead to more effective and efficient service delivery.

Taken together, the systematic review and exploratory study resulted in 33 candidate proposals to improve the HIV-sensitivity of existing social protection policies, programs, and practice. These proposals informed research question 3 of my thesis: "*With a view to improving the HIV-sensitivity of promotive social protection programs in Botswana, which policy and practice proposals do unemployed and out-of-school young women and frontline service providers support and prioritize, and how do their views differ*?". In this section, I describe stakeholder views of support and priorities for alternative policy and practice options in Moshupa sub-district. This manuscript reports findings from a modified Policy Delphi in Botswana in 2021-2022 and represents the second part of the body of this thesis. Global Public Health published the paper in September 2023 (DOI: 10.1080/17441692.2023.2255030).

A Policy Delphi does not aim for consensus, as does a conventional Delphi. The aim of a Policy Delphi is rather to surface a range of opinions among selected individuals with a stake in the topic. A 30-person panel consisting of 22 young women and eight frontline service providers rated the 33 improvement proposals for perceived desirability and feasibility. They suggested rationales, suggestions for implementation, and additional proposals (n=7). After reading and validating panelist feedback from the first round, panelists ranked 40 improvement proposals for relative importance in a second round. The modified Policy Delphi clarified which proposals had been acceptable and important to panelists. It also indicated differences between frontline service providers and young women. Additionally, I investigated whether young women's individual rankings differed from their group rankings. Young women provided group rankings after they had benefitted from more reflection while discussing the pros and cons of improvement proposals with peers.

To ensure that young women could equally participate in the Policy Delphi, I tried to support their full comprehension and processing of information. This involved translation of every improvement proposal and feedback. The young women preferred listening over reading. We therefore read everything out loud, first in English, then in Setswana. The repetition provided extra time to process information and may have offered small mental breaks. We offered them ample time to reflect, to ask clarifying questions, and to respond. A few young women preferred completing the interviews or workshops in two sessions, which we accommodated. We also offered breakfast, tea, refreshments, and lunch. During workshops, we used several ice breakers for mental breaks and to move physically. As a result, interviews with young women could take three hours, twice the time we required for interviews with service providers. Workshop duration ranged from half a day to two days.

To accommodate young women's social situation, we told them they could bring their children if they had been unable to find a sitter. I brought additional assistance to entertain the children. I also stressed that the young women could answer their mobile phones during interviews and workshops, as some boyfriends became upset if they did not.

Vulnerable young women and frontline service providers identify options to improve the HIV-sensitivity of social protection programmes in Botswana: A modified Policy Delphi approach

[Manuscript 3]

Ran van der Wal[1§], Miriam Kobo[2], Anne Cockcroft[1,2], Isabelle Vedel[1], Mira Johri[3,4], Neil Andersson[1,5]

1 *Department of Family Medicine, McGill University, Montreal, Canada*
2 *CIET Trust, Gaborone, Botswana*
3 *Centre de recherche du Centre Hospitalier de l'Université de Montréal (CRCHUM), Montreal, Canada*
4 *Département de gestion, d'évaluation, et de politique de santé, École de santé publique de l'Université de Montréal, Montreal, Canada*
5 *Centro de Investigación de Enfermedades Tropicales, Universidad Autónoma de Guerrero, Acapulco, Mexico*

Abstract

Poverty, lack of education and gender inequality make unemployed and out-of-school young women extremely vulnerable to HIV infection. Promotive social protection programmes aim to increase livelihood and capabilities and could empower this priority population to act on HIV prevention choices. In Botswana, they rarely benefit from such programmes.

A modified Policy Delphi engaged a panel of 22 unemployed and out-of-school young women and eight frontline service providers to consider alternative policy and practice options, and tailor available programmes to their own needs and social situation. The panel assessed the desirability and feasibility of improvement proposals and, in a second round, ranked them for relative importance. Nearly all 40 improvement proposals were considered very desirable and definitely, or possibly, feasible, and panellists prioritised a wide range of proposals. Frontline service providers stressed foundational skills, like life skills and second chance education. Young women preferred options with more immediate benefits. Overall, panellists perceived positive role models for programme delivery, access to land and water, job skills training, and stipends as most important to empower HIV-vulnerable young women. Results suggest ample policy space to make existing social protection programmes in Botswana more inclusive of unemployed and out-of-school young women, hence more HIV-sensitive.

Introduction

Despite sustained massive investments to gain epidemiological control over HIV, Botswana's HIV prevalence remains one of the highest in the world, with up to three times as many young women (15 to 30 years) affected as young men (223). Poverty, gender inequality and lack of education are structural factors that increase young women's vulnerability to HIV while reducing their ability to act on HIV prevention choices (8, 224). Severe food insecurity (proxy for extreme poverty) is associated with increased sexual risk taking (7) and a twofold increased risk of recent HIV infection (73). Unemployment predicts women's disproportionate HIV burden (71), but educational attainment (77) and school attendance (225) protect against HIV.

Social protection could address such HIV-vulnerabilities through traditional programmes that transfer resources to prevent or protect against poverty, but also through *promotive* social protection: programmes that aim to enhance income and capabilities (226). There is no formal definition for HIV-sensitive social protection, but "HIV-sensitivity" implies that social protection programs are (1) inclusive of HIV-vulnerable groups, and HIV-vulnerable groups are (2) meaningfully involved in the (re-)design of programmes to address the multidimensionality of their vulnerability (21). To end AIDS by 2030, UNAIDS Fast-Track Commitment 6 recommended that 75% of persons at risk of, living with, or affected by, HIV infection should benefit from HIV-sensitive social protection by 2020 (227), including from socioeconomic, or promotive programmes (228).

Botswana offers no universal basic income apart from social pensions, but young women might benefit from a range of promotive programs that aim to alleviate poverty while contributing to economic growth (9). These include microenterprise development, microloans, income transfers through public works (*Ipelegeng*), productive asset transfers (transfers of small stock or chickens), apprenticeships (*Tirelo Sechaba*) and second chance education. Existing programmes are not HIV-sensitive, as the HIV-vulnerable group of unemployed and out-of-school young women rarely benefit from them (229). Barriers to perceived programme benefit were found at every socioecological level. At a personal level, young women lacked life and job skills. At interpersonal level, care responsibilities, negative peer influence, and lack of support from family and boyfriends prevented success. At community and structural levels, barriers included discriminatory gender norms, poverty, and lack of coordination (230).

A systematic review of regional best practices identified which programme elements could help improve the HIV-sensitivity of promotive programmes. It found microgrants, savings, and life- and job skills effective for HIV- and socioeconomic outcome categories, especially in comprehensive packages with supportive mentors and social safe space. Microenterprise development contributed positive socioeconomic but mixed HIV-related outcomes and microcredit was not recommended for this target group (174). By involving unemployed and out-of-school young women and frontline service providers in the assessment of alternative policy and practice options, this study aims to identify how promotive social protection programmes in Botswana could become more HIV-sensitive.

Methods

We used a modified Policy Delphi to investigate how promotive social protection programmes in Botswana could be made more inclusive of HIV-vulnerable young women. We identified policy and practice proposals that unemployed and out-of-school young women and frontline service providers supported and prioritised, and examined how their views differed.

Policy Delphi

A Policy Delphi offers HIV-vulnerable groups the opportunity to be meaningfully involved in the assessment of programmes of policies. The Policy Delphi is a decision-facilitation tool that generates and assesses divergent, even opposing, viewpoints to inform policy and practice with new or alternative options (231). It accommodates the complexity of social policy (232) as it taps into knowledge from stakeholders purposively selected for their closeness to the issue: those with lived experience, affected by decisions, and/or familiar with the context (233). As such, it permits greater inclusion of viewpoints at the lower end of the power continuum like frontline workers (234) and lay persons (235).

The approach engages a panel in an anonymous, multi-round, structured dialogue working toward stability of informed opinion rather than consensus (236). There is no standardised protocol, but a generally accepted approach involves an exploratory round of qualitative research or a systematic review to gather ideas (234), followed by two or more rounds to evaluate ideas (232). For resolution of policy issues, panellists assess the desirability, feasibility, and relative importance of ideas, while providing underlying rationales to explore dissensus (231). The iterative process involves returning analysed and aggregated responses from earlier rounds to panellists for continued and more refined assessment (232).

By focusing on solutions, the Policy Delphi considers diverse opinions in a non-adversarial manner (234). This may contribute more nuanced and realistic solutions while supporting social learning (237). The Policy Delphi does not rely on in-person group meetings (231), reducing dominant voice and groupthink while leveraging positive attributes of group interaction like creative synthesis and diversity of opinions (238). Anonymity levels power differentials in a group, as stakeholders contribute opinions that are assessed on merit, hence are considered more equally without fear of embarrassment or retribution (239). Counterbalancing these advantages, the process is researcher-driven and isolation of panellists by their anonymity may reduce collaborative learning.

Setting

Botswana is an upper middle-income country, but poverty (56.6%) and unemployment (24.5%) rates are high, disproportionately affecting youth, in particular young women (240, 241). This study contributes to the Inter-ministerial Structural Intervention Trial (INSTRUCT-ISRCTN54878784), which aims to leverage promotive social protection programmes for HIV prevention (242). We conducted this research with panellists from Moshupa sub-district, in particular Moshupa town and eight rural villages, of which four have relatively good geographical connectivity; four were more remote.

Panellists

A Policy Delphi engages 10-50 panellists purposively recruited to reflect divergent views (231). We purposively selected individuals with a direct stake in, experience with, or knowledge of, promotive social protection programmes in Moshupa sub-district. We invited two stakeholder groups: young women who had attended two-day information and empowerment workshops (2015-2017) (242) and frontline service providers (officers) whose current or past duty station was Moshupa sub-district. When initially recruited, the young women had been 18-30 years old, unemployed and out-of-school. Officers included programme officers delivering promotive social protection programmes and technical officers who allocate land and water, as these were prerequisites for application to several programmes.

Data collection

RW collected data in June-October 2021 (Round 1-R1) and in March-June 2022 (Round 2-R2), mostly in person (80%) or by phone. RW collected data with officers who were all fluent in English. MK, a Motswana woman assistant, assisted data collection with young women through translation and follow up. She conducted telephone interviews independently with young women who were unavailable for in-person interviews.

ROUND 1: Candidate proposals (n=33) for the survey questionnaire were generated in an empirical study of barriers and solutions to promotive social protection programmes in Botswana (230), and a systematic review of HIV-sensitive social protection programmes in East and Southern Africa (174), both papers focusing on unemployed and out-of-school young women (Appendix 5). After translation into Setswana and back-translation into English, we piloted and adjusted the questionnaire. We grouped proposals into four policy and practice improvement categories: (1) programme; (2) training; (3) outreach; (4) programme delivery and coordination (Appendix 6).

To ensure panellists shared the same baseline knowledge, a 10-minute YouTube video (https://www.youtube.com/watch?v=kY5idSBnLrY) summarised exploratory findings in English and in Setswana (https://www.youtube.com/watch?v=Kjhoru0_s-0). We used email or WhatsApp to share: (1) information about the Policy Delphi (Appendix 7); (2) questionnaires; (3) YouTube videos. Young women with Smartphones preferred using WhatsApp, on which data transfer (1GB) permitted watching the video multiple times. Young women also received paper handouts of the PowerPoint slides used in the videos. Appendix 8 provides detailed data collection and dissemination information.

All R1-data were collected from individual panellists, who watched the videos on an iPad. After respondent validation to confirm exploratory findings, we read out loud each proposal. We asked panellists to rate proposals for desirability and feasibility with 5-point Likert scales (Table 8), to provide underlying rationales and additional improvement proposals. We conducted telephone interviews with panellists who had moved out of Moshupa sub-district or were unavailable for in-person interviews. R1-data collection lasted 1.5-3 hours, depending on the need for translation. In-person interviews took place at panellists' homes or offices. RW aggregated R1-

responses per proposal (long summary) and per improvement category (short summary) (Appendices 9 and 10).

Table 8. Definitions for desirability and feasibility

Desirability - is this proposal going to be beneficial?

4	Very desirable	Extremely beneficial proposal
3	Desirable	Beneficial. This proposal will have a positive effect with little negative effects
2	Undesirable	Will have negative effects
1	Very undesirable	Will have major negative effects. Extremely harmful. Not justifiable
0	No opinion	I do not know what effect this proposal will have

Feasibility - could this proposal be implemented here in …. and with this group of people?

4	Definitely feasible	This proposal can be implemented and is acceptable to the public and policymakers
3	Possibly feasible	This proposal could be implemented but political or public support is not clear
2	Possibly unfeasible	There are many unanswered questions, so this proposal might not work
1	Definitely unfeasible	This proposal cannot be implemented
0	No opinion	I do not know whether it is possible to implement this proposal

Adapted from Linstone & Turoff 2002

ROUND 2 focused on respondent validation for R1-results, social learning, and ranking for relative importance. R2-panellists commented on summarised findings from R1, ranked two or three priority proposals per improvement category, and provided rationales. RW conducted individual interviews with officers. We organised workshops for young women to leverage collaborative learning. After contributing individual rankings, young women discussed their priorities together, and agreed on group rankings. Workshops lasted 0.5-2 days (Appendix 8), and mostly took place at young women's homes. We provided refreshments, meals, airtime (USD5), and reimbursed transportation costs. R2-interviews with officers lasted around 1.5 hours.

Analysis

RW analysed quantitative data with descriptive statistics. Median and interquartile range described the degree of support and spread in the distribution of desirability and feasibility of improvement proposals; means compared importance ranking between stakeholders. We triangulated quantitative data with qualitative descriptions of rationales. RW thematically analysed qualitative data with Framework, a matrix-based applied qualitative research method (185). Starting from improvement proposals, the deductive-inductive approach involved line-by-line coding and aggregation into themes and main categories while writing analytical memos. Descriptive statistics and qualitative text were analysed in Microsoft Excel. Respondent validation for R1 occurred in R2; for R2, we received validation after reading back what panellists reported.

Ethical approval

Botswana's Health Research and Development Committee (HRDC00724) and McGill University (A12-B72-18A) granted ethical approval considering this study minimal risk. We registered oral informed consent from panellists prior to surveys, interviews, and workshops (Appendices 6 and 7).

Findings

Overview

We invited 25 young women and 12 officers to participate in the Policy Delphi, of which 30 accepted (22 young women, 8 officers). Response rates were 80% overall, R1: 73%, R2: 76%. In R2, we lost one officer and one young woman but gained three young women who had been unable to participate in R1; 24 panellists participated in both rounds (Table 9).

Table 9. Panellist characteristics and programme & service descriptions

Panel demographics	Number of panellists (n=30)			
	Round 1 (n=27)		Round 2 (n=28)	
	YW	**Officers**	**YW**	**Officers**
Gender				
Female	19	4	21	4
Male		4		3
Employment status				
Unemployed	6		7	
Location				
Within Moshupa sub-district	18	5	17	5
Outside Moshupa sub-district	1	3	4	3
Promotive social protection programmes/services in Botswana				
BOCODOL: second chance education for persons without a Junior 3 diploma		1		1
ISPAAD: agricultural inputs (seeds, fertilizer, tools) and subsidies (ploughing, planting); horticulture (part loan/personal capital)		2		2
LIMD: productive asset transfers (goats and chickens) for destitute people*		1		1
S&CD: APP programme: microgrants, microenterprise development, productive asset transfers (goats and chickens) for destitute people*; *Ipelegeng*: income transfers through public works		1		1
Youth Development Fund (YDF): part loan/grant, productive asset transfers (goats and chickens), youth apprenticeships (*Tirelo Sechaba*)		1		1
Sub-Land Board: approves land allocation		1		
Water Utilities Corporation: approves water allocation		1		1
Ever benefitted from a promotive social protection programme	10	1	10	1
Total n panellists per round	19	8	21	7

YW: young women; S&CD: Social and Community Development; APP: Alternative Package Programme; *destitute people: individual income < BWP120 (US$11); household incomes < BWP150 (US$14)

In R1, panellists added six proposals (*in italic*) (Table 10). In R2, another added proposal brought the total to 40 proposals. In R1, panellists rated nearly all proposals as “very desirable”, two third as “definitely feasible”, and one third as “possibly feasible”. Panellists offered implementation suggestions while providing rationales for feasibility. In R2, stakeholder agreement of perceived relative importance was also relatively high. Nuances were in officers stressing foundational skills, while young women preferred proposals with more immediate benefits.

Round 1: perceived desirability & feasibility per improvement category

A. Programme improvement

Proposals centred around (1) improving access to programmes (childcare); (2) improving programmes themselves (grants rather than loans; add a savings component); (3) improving young women's capabilities (mentors, social networks, private sector apprenticeships, one year programme support); and (4) leveraging local context (by establishing local demand, a professional network, and help to bring products to market).

Including a savings component in programmes was very desirable and, due to a well-established cell phone banking system, definitely feasible. Changing microloans into microgrants was also very desirable. *"It is not easy…to gain money from microloans. Repayment is too difficult. We end up not paying and then they go to court to repossess the business and materials. A microgrant would be much better." (YW17).* As Youth Development Fund (YDF) loans had been grants in the past, and youth rarely repaid loans, officers believed the proposal was feasible.

Mentorships were very desirable and, incorporated into programmes or outsourced to specialised parastatals or government psychologists, definitely feasible. Panellists preferred regular meetings focused on professional rather than social support, and monthly, rather than weekly meetings. Panellists strongly supported comprehensive support for at least one year but many preferred prolonging it to three years.

Many panellists interpreted "help to bring products to market" as government assistance with transport. Some considered marketing, market development and negotiation training. Establishing market days, virtual markets, and social media networks could help develop local demand and professional networks. *"The reality is that young women have a challenge to transport their products to markets. Lacking marketing or negotiation skills, they fail to supply. With a little help they could go far". (PO10)*

Although desirable, panellists doubted private sector apprenticeships were feasible. Rural areas often lack a private sector and panellists feared exploitation. Young women suggested clear terms of reference could help prevent the latter. Young women embraced government-sponsored childcare, but officers doubted the government would fund it and some felt childcare was a family responsibility.

Table 10. Desirability & feasibility of improvement proposals by stakeholder group - median and interquartile range

#	Proposals to improve programmes	Young women Me (IQR)		Officers Me (IQR)	
		Desirability	Feasibility	Desirability	Feasibility
1.1	Safe savings	4 (0)	4 (1)	4 (0.25)	3.5 (1)
1.2	Micrograntsrather than loans	4 (0)	2.5 (0.5)		3 (0.25)
1.3	Mentors for psychosocial and business support	4 (0)	4 (0.25)	4 (0)	3.5 (1)
1.4	Weekly meetings for professional and life skills training, psychosocial support, and a social network	4 (0)	4 (1)	4 (1)	3 (0.25)
1.5	Childcare	4 (0)	4 (0)	3 (1)	2.5 (1)
1.6	Create local demand for microenterprise products and services	4 (0)	4 (1)	4 (0)	4 (0)
1.7	Help bring products to markets	4 (0)	3 (0.5)	4 (1)	4 (1)
1.8	Establish private sector links through apprenticeships	4 (0)	2 (0)	4 (1)	3 (1.125)
1.9	Establish professional networks YW	4 (0)	3 (0.5)	4 (0.25)	3.5 (1)
1.10	Offer support for at least one year	4 (0)	-	4 (0.25)	3 (1)
1.11	Offer combination packages: cash grants, skills training, safe saving options, HIV/health/gender training, weekly meetings, and mentors	4 (0)	4 (0.5)	4 (1)	3 (1)
1.12	*Ask people themselves what they want*	-	-	-	-

#	Proposals to improve training	Young women Me (IQR)		Officers Me (IQR)	
		Desirability	Feasibility	Desirability	Feasibility
2.1	Life skills training in all programmes	4 (0)	4 (1)	4 (0.25)	3.5 (1)
2.2	Business and financial skills training	4 (0)	-	4 (0)	4 (0.25)
2.3	Vocational job training	4 (0)	4 (0)	4 (0)	4 (0)
2.4	Include training component in *Ipelegeng*	3 (2)	-	3 (0.5)	3 (1)
2.5	Training in preferred (local) language	4 (0)	-	4 (0)	4 (0)
2.6	Gender awareness training for YW	4 (0)	4 (0.5)	4 (0)	4 (1)
2.7	Gender awareness training for important persons in their lives (mother, father, brothers, boyfriends)	4 (0)	3 (0.5)	4 (1)	4 (1)
2.8	*Provide outlets where YW may confidentially share their life experiences*	-	-	-	-
2.9	*Ask YW what training programmes they would want and bring that to reality*	-	-	-	-

#	Proposal to improve outreach	Young women Me (IQR)		Officers Me (IQR)	
		Desirability	Feasibility	Desirability	Feasibility
3.1	Promote second chance education	4 (0)	3.5 (0.5)	4 (0)	4 (0)
3.2	Diversify places for outreach	4 (0)	4 (0)	4 (0.25)	4 (0.25)
3.3	Diversify venues for outreach	4 (0)	3.5 (1.25)	4 (0.25)	4 (0.25)
3.4	Involve YW for outreach	4 (0)	4 (1)	4 (1)	4 (0.25)
3.5	Involve boyfriends for outreach to YW	4 (0)	3.5 (1.5)	3.5 (1)	3.5 (1.5)
3.6	Involve communities for outreach to YW	4 (0)	3.5 (2)	4 (0.25)	4 (1)
3.7	Train YW to help peers to fill out applications	4 (0)	4 (0.25)	4 (0)	4 (0)
3.8	Stipends for peer training and programme dissemination	4 (0)	-	4 (0.25)	3 (1)
3.9	*Develop a TV programme about YW. A programme that travels all over the country and documents our issues*	-	-	-	-
3.10	*Use boot camps for several weeks that offer all the different kinds of training*	-	-	-	-

#	Proposals to improve programme delivery & coordination	Young women Me (IQR) Desirability	Young women Me (IQR) Feasibility	Officers Me (IQR) Desirability	Officers Me (IQR) Feasibility
4.1	Performance indicators for programme officers	4 (0)	4 (0)	4 (0)	4 (0)
4.2	Positive role models in programme delivery	4 (0)	4 (0)	4 (0.25)	4 (0)
4.3	Positive role models for agriculture programmes	4 (0)	4 (0.25)	4 (0)	4 (0.25)
4.4	Improve coordination between programmes	4 (0)	4 (0)	4 (0)	3.5 (1)
4.5	Improve coordination between programmes and land and water boards	4 (0)	-	4 (0)	4 (0.25)
4.6	Improve access to land and water by YW	4 (0)	-	4 (0)	4 (1.25)
4.7	Develop national strategy for HIV-sensitive social protection	4 (0)	-	4 (0.25)	3 (1)
4.8	*Unemployed and out-of-school YW should be offered leadership roles, like champions.*	-	-	-	-

Me: median; IQR: interquartile range; YW: young women; *italic*: proposals proposed by panellists in Rounds 1 and 2; *Ipelegeng:* public works programme for income transfers

B. Improved training

Proposals to improve training focused on (1) skills development (life and job skills), (2) gender awareness training, and (3) access to training (Setswana language and *Ipelegeng*—the easiest accessible programme for vulnerable young women). Panellists perceived skills development as very desirable and feasible if offered by programmes or specialised parastatals. Training in the local language would make trainings more accessible. Offering training in *Ipelegeng* received mixed reactions, but most panellists felt it could be an opportunity to provide youth with relevant skills for Botswana's future. Officers suggested redesigning *Ipelegeng* as apprenticeships with vocational training. *"Maybe Ipelegeng should be improved. Not just cut trees [roadside maintenance], but a separate programme for the young ones that focuses on improving their future. It could be a chance for the government to train them in different jobs." (PO12)*

Panellists felt gender awareness training was very desirable for young women and others in their social environment, especially boyfriends. Gender training could contribute to improved gender equality and a better understanding of gender violence and its consequences. It could increase self-esteem and empowerment of young women and benefit the larger community. Panellists considered gender training definitely feasible if offered to young women, but many doubted men would be interested in, or attend, such training. *"Because men would never show up. They know. They are always the cause of the issues. They would not want to learn about these issues. They want to be heard, not listen." (YW22).* To sensitise men about gender issues, panellists stressed using social media and informal, confidential, and non-confrontational peer approaches.

C. Improved outreach

Proposals to improve outreach focused on (1) diversifying places and ways of information dissemination, (2) leveraging social networks (of young women, their boyfriends, and communities), and (3) paid peer assistance. Panellists felt all outreach proposals were very desirable and possibly feasible due to existing platforms and perceived cost-effectiveness. Panellists highlighted the potential of leveraging social media to provide youth with easy access to up-to-date information. Despite challenges like lack of connectivity or affordability, young women expressed an overriding wish to use social media. They offered solutions like posting community messages and proactively informing peers without Smartphones or network. *"Nowadays [Covid-19], we're not allowed to gather. On social media we would get information directly. We're connected. Girls nowadays like Facebook and WhatsApp too much. It is our thing. When our parents give us phones, we use it immediately". (YW13)*

Panellists perceived young women as convincing and relatable messengers for peers, but several doubted the ability or goodwill of boyfriends or community members to inform and empower young women. Panellists strongly supported making outreach effective through paid peer approaches. Such peers would have to be trained, well-informed role models with a proven history of success. Outreach-associated expenses (copies and transport) and young women's economic situation justified stipends. Officers viewed such approaches as cost-effective and sustainable, especially for rural areas. With someone trained locally, the information remained accessible, and cost less than programme officers travelling to rural areas. Young women expected stipends would boost their self-esteem, motivation, and possibly counter envy-driven withholding of information by unpaid peers. *"This could create jobs, reduce rural-to-urban migration. It is not that we want to go to urban areas. We just go there because we have nothing to feed our families. We would be determined to reach many young women". (YW4)*

D. Programme improvement

Panellists agreed all programme delivery and coordination proposals were very desirable and definitely, or possibly, feasible. Holding programme officers to account through performance indicators was considered necessary and easy to implement. Some officers interpreted "role models" as celebrities. Most panellists thought of successful peers, including in agriculture, who could motivate young women to emulate them and persevere. *"We want to learn from hands-on* *people who are successful despite some challenges. This can give us courage and strength to soldier on". (YW5).* Role models should be helpful and understanding, offer practical knowledge, share good and bad experiences, and explain how to survive while invested in long-term, but not yet profitable, projects. Several officers felt successful clients had a moral responsibility to help less fortunate peers.

To improve coordination, panellists proposed a one-stop-shop that would include all promotive social protection programmes and land and water boards. Cutting red tape, it could prevent programme duplication, increase efficiency, shorten processes, save human and financial resources, and improve service delivery. The district commissioner or village extension committee could be coordinating bodies at local level. *"You need to bring all stakeholders together. Avoid duplication, wasting resources. Bring everything under one umbrella." (PO1)*

Acknowledging access to land and water as structural barriers to economic empowerment, panellists proposed affirmative action for land and water allocation to young women. An officer suggested the government take a critical look at land policies to reallocate idling farmland, as many owners allegedly use only a third of large plots (70-100 hectares) allocated in the past. An officer proposed establishing a farming incubation programme with programmes applying for land to support young women on a rolling basis with comprehensive farming support for three or four years. Once graduated, young women could undertake farming autonomously. *"We could have big plans…[having land and water] can encourage us to produce more and feed the nation." (YW5).*

Officers stressed the need for a holistic approach, supported by a national strategy for HIV-sensitive social protection. As this depends on political will, such an initiative should come from the highest level of government, the Cabinet, or the Office of the President.

Round 2: respondent validation

Panellists validated all R1-findings. Given the high level of agreement in R1, we did not ask panellists to adjust their views on individual proposals but offered all 39 for importance ranking in R2 (243). Young women were keen to know about officers' feedback and agreed with nearly all their suggestions with a few exceptions. That officers feared grants might induce laziness angered young women, prompting comments about officers' responsibilities to assist in a timely manner and provide job skills and mentoring. Young women did not support an officer's suggestion to organise skills training after working for *Ipelegeng* from 7am to 1pm, citing domestic and farm responsibilities. Childcare being a family responsibility triggered strong reactions. Family ties were not always strong, family members had their own responsibilities, and some young women were orphans. They perceived childcare as crucial to workforce participation, and suggested the government provide free childcare, or a bridging measure until stable in their livelihood. *"We might have received grants, mentorship, and transport support, but we'll fail if we have no childcare…and the government would say we're lazy and irresponsible, and incapable of receiving grants. We are capable provided the core resources are availed". (WS3)*

Young women also reacted strongly to fear of exploitation in private sector apprenticeships, recounting government exploitation of *Tirelo Sechaba* apprentices. Apprentices cook, clean, and cut grass, and even teach when teachers are absent. They felt clear terms of reference were required in both public and private sectors. Young women were disappointed that an officer suggested leveraging *Tirelo Sechaba* apprentices for peer outreach and programme delivery, as they had hoped for another opportunity to earn income without the 30-year age limit.

During workshops with young women, we observed a gradual change in their views of officers. They appreciated officer input and felt better understood. They stood up, applauded, and bowed when learning that officers supported comprehensive packages with cash grants, savings, mentorship and health, HIV, gender, and skills training.

> *"Hallelujah! We are really surprised with the feedback from the officers. They like hearing about us. They're seeing us. They understand the challenges we're facing. We thought they didn't care about us. We're surprised they're willing to seek solutions to help us." (WS4)*

Officers who were unsurprised by the rating similarities between young women and themselves said they knew the reality on the ground. Others were impressed with young women's feedback. *"[Young women] know their weaknesses…I thought they were a bit ignorant, so I am surprised they are so smart and honest." (PO2)*

Round 2: Relative importance - across all proposals

Involving positive role models in programme delivery and improving access to land and water were in the Top 3 priority proposals of all stakeholders (Table 11). Officers stressed foundational skills with life skills as their top choice, followed by mentors and second chance education. Workshops mediated young women's individual rankings: safe savings disappeared while proposals with more immediate benefits like grants, help to bring products to markets, and training in Setswana appeared after young women discussed priorities with peers.

Table 11. Priorities across improvement categories

#	Improvement proposal	Overall	WS	YW	Officers
4.2 4.3	Positive role models in programme delivery, including in agricultural programmes	1	1	1	3
4.6	Access to land and water by YW	2	3	3	3
2.2	Business and financial skills training	2	3	3	
3.8	Stipends for peer training and programme dissemination	3	2	2	
1.2	Microgrants rather than loans		1		
2.1	Life skills training in all programmes				1
1.7	Help bring products to markets		2		
1.3	Mentors for psychosocial and business support				2
2.5	Training in preferred (local) language		3		
1.1	Safe savings			3	
3.1	Promote second chance education				3

Top 3 priority ranking ranges from 1 (highest) to 3 (lowest). Overall: mean rankings WS, YW, Officers; WS: young women group ranking in workshops; YW: individual rankings young women; Officers: individual rankings officers

Round 2: Relative importance per improvement category and ranking differences between stakeholder groups

Table 12 shows the relative importance of proposals overall, for workshops, young women, and officers per improvement category. All proposals, except for gender awareness training for young women received a top three priority ranking by at least one panellist.

Table 12. Importance ranking for improvement proposals by stakeholder group

#	I. Proposals to improve programmes	Overall	workshops	YW	Officers
1.1	Safe savings	0.7	0.4	**1.6**	-
1.2	Microgrants rather than loans	1.3	**2.2**	1.1	0.6
1.3	Mentors for psychosocial and business support	**1.4**	1.4	0.9	**1.9**
1.4	Weekly meetings for professional and life skills training, psychosocial support, and a social network	0.5	0.4	0.3	0.7
1.5	Childcare	0.3	0.1	0.5	0.1
1.6	Create local demand for microenterprise products and services	0.3	-	-	0.7
1.7	Help bring products to markets	1.0	2.0	1.0	0.1
1.8	Establish private sector links through apprenticeships	-	-	0.1	-
1.9	Establish professional networks YW	0.3	-	-	0.9
1.10	Offer support for at least one year	0.1	-	0.1	0.1

1.11	Offer combination packages: cash grants, skills training, safe saving options, HIV/health/gender training, weekly meetings, and mentors	0.5	0.2	0.3	1.0
1.12	*Ask people themselves what they want*	0.2	0.6	0.1	-

#	**II. Proposals to improve training**	**Overall**	**workshops**	**YW**	**Officers**
2.1	Life skills training in all programmes	1.0	-	0.4	**2.7**
2.2	Business and financial skills training	**1.6**	**1.8**	**1.7**	1.4
2.3	Vocational job training	1.0	0.8	1.3	0.9
2.4	Include training component in *Ipelegeng*	0.4	0.6	0.5	-
2.5	Training in preferred (local)	1.0	**1.8**	0.6	0.6
2.6	Gender awareness training for YW	-	-	-	-
2.7	Gender awareness training for important persons in their lives (mother, father, brothers, boyfriends)	0.3	0.3	0.3	0.1
2.8	*Provide outlets where YW may confidentially share their life experiences*	0.2	-	0.3	0.1
2.9	*Ask YW what training programmes they would want and bring that to reality*	0.3	0.6	0.3	0.1

#	**III. Proposals to improve outreach**	**Overall**	**workshops**	**YW**	**Officers**
3.1	Promote second chance education	0.9	0.6	0.5	**1.6**
3.2	Diversify places for outreach	0.5	0.4	0.6	0.6
3.3	Diversify venues for outreach	1.0	1.2	0.9	1.0
3.4	Involve YW for outreach	0.4	-	0.2	0.9
3.5	Involve boyfriends for outreach to YW	0.1	-	0.2	-
3.6	Involve communities for outreach to YW	0.1	-	0.1	0.3
3.7	Train YW to help peers to fill out applications	0.9	1.6	0.9	0.1
3.8	Stipends for peer training and programme dissemination	**1.5**	**2.0**	**1.7**	0.7
3.9	*Develop a TV programme about YW. A programme that travels all over the country and documents our issues*	0.7	0.6	0.7	0.7
3.10	*Use boot camps for several weeks that offer all the different kinds of training*	0.2	0.2	0.4	0.1

#	**IV. Proposals to improve programme delivery and coordination**	**Overall**	**workshops**	**YW**	**Officers**
4.1	Performance indicators for programme officers	0.6	0.6	0.4	0.9
4.2	Positive role models in programme delivery	***1.0***	***1.6***	***0.6***	***0.9***
4.3	Positive role models for agriculture programmes	***0.8***	***0.6***	***1.2***	***0.7***
4.4	Improve coordination between programmes	0.1	-	-	0.4
4.5	Improve coordination between programmes and land and water boards	0.4	-	0.6	0.6
4.6	Improve access to land and water by YW	**1.6**	**1.8**	**1.6**	**1.4**
4.7	Develop national strategy for HIV-sensitive social protection	0.3	0.4	0.5	-
4.8	*Unemployed and out-of-school YW should be offered leadership roles, like champions.*	0.03	-	0.1	-
4.9	Performance indicators for programme officers	0.3	0.6	-	0.4

Mean importance is based on rank 1st: 3 points; 2nd: 2 points; 3rd:1 point. Overall: mean for combination of workshops, individual young women, officers. Workshops: ranking by groups of young women. YW: ranking by individual young women. Bold: most important proposal in improvement category; *italic*: proposals proposed by panellists; Bold-*italic:* most important improvement proposal when combined. *Proposal added in 2nd round.

Comparing stakeholder rankings, we found young women and officers did not share any of the top three priority proposals in the programme improvement category. Young women's first choice was safe savings followed by grants and help to bring products to markets. *"If we have money in the house, I go buy unnecessary things. If we can save, we can budget and plan for the future" (YW16).* Grants were preferable to loans as profits were small and went to loan repayment. Among officers, these proposals enjoyed some (grants) to no (savings) priority support. Officers' top three priorities were mentors, comprehensive packages, and establishing professional networks.

Priorities for improved training were similar between young women and officers and focused on life- and job skills training (business, financial, and vocational). Officers were near-unanimous in their preference for life skills: *"Life skills training is the core issue… It is foundational to life in general but also to business" (PO3).* No officer selected training in *Ipelegeng*, which was young women's second choice.

Officers and young women differed but supported each other's top three proposals for both outreach and programme delivery/coordination categories. For outreach, officers' first choice was advertising free second chance school options. Young women preferred stipends for peer outreach and help filling out applications. Both groups selected using social media for information dissemination.

Positive role models in programme delivery (general and in agriculture combined), access to land and water, and accountability through performance indicators were panellists' top three priorities for programme delivery/coordination. *"Program officers would then work hard because they know…they have to reach a certain target. Like this they will help more young women than now" (YW15)*. Young women supported positive role models in agriculture even more than officers, offering creative ideas *"…ostrich farming. That kind of farming can diversify farming, the economy of the country and trigger a turnaround of our lives. We could work there…employ and contribute to job creation" (WS5).*

Comparing young women's individual and group rankings, stipends and access to land and water remained unchanged. We found workshops mediated individual rankings for grants, replacing safe savings (ranked first by individuals) and training in Setswana (not in the individual top three), which shared first place with business and financial skills training. One group added "political representation" as a 40th improvement proposal and ranked it number one.

Discussion

Promotive social protection programmes could reduce the detrimental effects of structural drivers of HIV-vulnerability like poverty, lack of education, and gender inequality, but unemployed and out-of-school young women in Botswana rarely benefit from these programmes. A panel of young women and frontline officers identified proposals that could make policy and practice more inclusive of HIV-vulnerable young women, hence more HIV-sensitive. As barriers to inclusion not only related to programs themselves but were in part due to young women's skill levels and structural factors, improvement proposals were comprehensive, extending beyond the strict remit of social protection.

Panellists considered nearly all 40 improvement proposals as very desirable, most as definitely feasible, and prioritised a wide range of proposals. It suggests ample policy space to improve the HIV-sensitivity of Botswana's social protection programmes promoting (youth) social and economic empowerment. This is further supported by the high level of agreement between stakeholders, and the high response and retention rates in our panel. As potential clients or frontline service providers, they know the extensive socioeconomic disadvantage of unemployed and out-of-school young women and are frustrated by the lack of current programmes to address it. Panellist support for comprehensive packages and a holistic approach reflects their desire to achieve structural change and positive impact on young women's socioeconomic success.

All panellists valued education, training, and skill building. Whereas officers stressed life skills training, young women preferred business, financial and vocational training. Age might explain this difference. Most of the young women, who had been in their early twenties at the beginning of this process, were now in their late twenties. Older age and participation in this research project may have increased their self-confidence and communication skills. Life skills remain important for adolescent girls and younger women, however, as life skills contribute to increased socioeconomic success (244, 245) and HIV prevention through improved sexual negotiation and reduced sexual risk behaviours (191, 246). Older age may also explain young women's disappointment with an officer's proposal to leverage age-limited apprenticeship programmes for peer approaches, their relative lack of interest in returning to school, and interest in farming.

In exploratory findings, young women had not been interested in farming (230), but the prominence of "improving access to land and water" demonstrates agricultural interest. Shortages of agricultural produce due to COVID-19 restrictions (247) and increasing governmental protectionist policies promoting local farm produce in Botswana (248) may have contributed to this phenomenon. Considering the strong support for vocational job training, it may also reflect a paradigm shift from academic success and white-collar jobs to self-sufficiency through agriculture. This is relevant for HIV prevention, as access to arable land is associated with reduced food insecurity (249), a known risk factor for HIV infection (7, 73).

Gender awareness training for young women was considered very desirable but the only proposal failing to garner top three support for relative importance, unlike gender training for boyfriends despite doubt men would attend. Nearly all men and women had enjoyed participation in gender equity training South Africa's Stepping Stones trial, however (250). Considering the monumental sociocultural change required for gender equality, tackling poverty may have seemed the lower hanging fruit, or panellists may have viewed gender training for boyfriends more effective given women's lack of relational power (6, 53). It may indicate a desire to tackle gender-based violence, which is common in Botswana (251), or increase supportive behaviour among important men in the lives of economically active young women, as gender training in Uganda did (252).

Panellist preference for peer approaches in outreach and programme delivery may have a plausible explanation in Botswana's foundational development principle—*Botho*, a concept of mutual respect, responsibility, interdependence, and empowerment through a process of empowering others (253). While officers referred to beneficiaries helping peers as an obligation to give back, young women were excited with the prospect of learning from positive role models and opportunities to contribute to society. References to job creation, rural-to-urban migration and feeding the nation indicate their concern for the nation's wellbeing, which concurs with research on young farmers in Botswana (254). Together with proposals that highlighted elements of political, popular (with a television show), or functional (role models) representation, it indicates young women's desire to be viewed as contributing members of society worthy of respect (255).

Young women's active engagement in assessing public policy might also support their social reconstruction as deserving, capable, and powerful clients. Schneider and Ingram (1993) posit that such positive reconstruction might have real world consequences, as powerful, positively constructed people tend to receive more, and more generous benefits, framed as rights and offered proactively. In contrast, social protection programmes for negatively constructed, or “undeserving” groups, tend to be means-tested with stigmatizing labels and parsimonious benefits that beneficiaries often need to claim through inefficient and demeaning processes with little options for recourse (256). Support for improved accountability, coordination, and the idea of a one-stop-shop seem to support this theory while also demonstrating panellists’ aspiration to reimagine programmes and programme delivery with young women at the centre. The additional proposals panellists contributed also focused on young women’s preferences, stressing the importance of including their voice in potential redesign of Botswana’s social protection programmes.

Strengths and limitations

Attrition, a standard Delphi limitation (238), was low, likely due to our long engagement with panellists (since 2017), mostly face-to-face interviews, and regular communication. R1’s individual approach, anonymity, videos, and ample time for understanding and discussing improvement proposals may have facilitated truthful contributions. We maintained anonymity, a Delphi characteristic to reduce power imbalance, between stakeholder groups. For the single stakeholder group of young women, we believed collaborative learning outweighed anonymity and peer discussions may have encouraged more critical reflection. One R2-workshop was dominated by a young woman, possibly introducing groupthink (238), as others aligned their preferences with hers. Other workshops probably benefitted from collaborative learning, with young women shifting proposal choices from personal to more general benefit for others like themselves. We elicited personal opinions, which could be subject to social desirability bias. There may have been selection bias such that officers holding more favourable views of young women and potential solutions were more likely to participate than officers with less favourable views. All panellists received the long summary with feedback per proposal. Panellists also receiving the short summary may have based their priority ranking on less detailed feedback, but we do not expect this to disturb the main message from the study. Reporting majority opinions could lead to groupthink, which we aimed to counter by also reporting minority opinions when aggregating group responses.

Our approach to work with potential clients and frontline service providers may have generated context-sensitive, feasible implementation solutions. Given the homogeneity of ratings, and panellists offering implementation suggestions while considering feasibility, we judged two rounds as sufficient. A third round to reconsider rankings might have increased the stability of panellists’ priorities, but R2’s very spread underlines the need for a comprehensive policy review with an HIV-sensitivity lens. Our study focused on one district, from which the exact findings might not be transferable to other districts in Botswana. Our illustration of a contextualising process is transferable, however.

Conclusion

This study investigated the perceived desirability, feasibility, and relative importance of evidence-based proposals that could improve the HIV-sensitivity of promotive social protection programmes in Botswana. By reducing social and economic disadvantage of unemployed and out-of-school young women, available programmes might reduce their HIV-vulnerability. Young women and frontline officers contributed comprehensive improvement proposals tailored to their needs and local context, offering decision-makers a wide spectrum of realistic redesign options with supporting evidence for acceptability and feasibility.

Funding

RW is supported by CIHR Vanier Canada Graduate Scholarship. The authors thank the Quebec Population Health Research Network (QPHRN) for its contribution to the financing of this publication

Disclaimer

Funding agencies had no role in the study design, data collection, analysis.

Authors' contributions

RW conceptualised the study; collected, analysed, and interpreted the data; wrote first draft of the paper and revised it for submission. MK collected data; reviewed analysis and interpretation; critically reviewed paper. AC, IV, MJ, and NA critically reviewed the paper. All authors approved the final manuscript.

Appendices

Appendix 5: Candidate proposals (excel)
Appendix 6: Survey questionnaire Round 1 (Excel; tab 1: English; tab 2: Setswana)
Appendix 7: information letter about the Policy Delphi
Appendix 8: Data collection, sharing of findings & respondent validation
Appendix 9: Detailed summary Round 1 Policy Delphi
Appendix 10: Short summary Round 1 Policy Delphi

References

Andersson, N. (2006). Prevention for those who have freedom of choice–or among the choice-disabled: confronting equity in the AIDS epidemic. *AIDS Research and Therapy, 3*(1), 23. https://doi.org/10.1186/1742-6405-3-23

Austin, K. F., Choi, M. M., & Berndt, V. (2017). Trading sex for security: Unemployment and the unequal HIV burden among young women in developing nations. *International Sociology, 32*(3), 343-368. https://doi.org/10.1177/0268580917693172

Baumann, N., Ervin, O., & Reynolds, G. (1982). The policy delphi and public involvement programs. *Water resources research, 18*(4), 721-728. https://doi.org/10.1029/WR018i004p00721

Belton, I., MacDonald, A., Wright, G., & Hamlin, I. (2019). Improving the practical application of the Delphi method in group-based judgment: a six-step prescription for a well-founded and defensible process. *Technological Forecasting and Social Change, 147*, 72-82. https://doi.org/10.1016/j.techfore.2019.07.002

Cockcroft, A., Marokoane, N., Kgakole, L., Kefas, J., & Andersson, N. (2018a). The Inter-ministerial National Structural Intervention trial (INSTRUCT): protocol for a parallel group cluster randomised controlled trial of a structural intervention to reduce HIV infection among young women in Botswana. *BMC health services research, 18*(1), 1-12. https://doi.org/10.1186/s12913-018-3638-0

Cockcroft, A., Marokoane, N., Kgakole, L., Tswetla, N., & Andersson, N. (2018b). Access of choice-disabled young women in Botswana to government structural support programmes: a cross-sectional study. *AIDS care, 30*(sup2), 24-27. https://doi.org/10.1080/09540121.2018.1468009

De Loe, R. C. (1995). Exploring complex policy questions using the policy Delphi: A multi-round, interactive survey method. *Applied Geography, 15*(1), 53-68. https://doi.org/10.1016/0143-6228(95)91062-3

De Loë, R. C., Melnychuk, N., Murray, D., & Plummer, R. (2016). Advancing the state of policy Delphi practice: A systematic review evaluating methodological evolution, innovation, and opportunities. *Technological Forecasting and Social Change, 104*, 78-88. https://doi.org/10.1016/j.techfore.2015.12.009

De Neve, J.-W., Fink, G., Subramanian, S., Moyo, S., & Bor, J. (2015). Length of secondary schooling and risk of HIV infection in Botswana: evidence from a natural experiment. *The Lancet Global Health, 3*(8), e470-e477. https://doi.org/10.1111/tmi.13328

Devereux, S., & Sabates-Wheeler, R. (2004). *Transformative social protection* (1 85864 844 0). (IDS Working Paper, issue 232, Issue. https://www.ids.ac.uk/publications/transformative-social-protection/

Gibbs, A., Washington, L., Abdelatif, N., Chirwa, E., Willan, S., Shai, N., Sikweyiya, Y., Mkhwanazi, S., Ntini, N., & Jewkes, R. (2020). Stepping Stones and Creating Futures intervention to prevent intimate partner violence among young people: cluster randomized controlled trial. *Journal of Adolescent Health*, *66*(3), 323-335. https://doi.org/10.1016/j.jadohealth.2019.10.004

Goodman, M. L., Selwyn, B. J., Morgan, R. O., Lloyd, L. E., Mwongera, M., Gitari, S., & Keiser, P. H. (2016, 2016). Sexual Behavior Among Young Carers in the Context of a Kenyan Empowerment Program Combining Cash-Transfer, Psychosocial Support, and Entrepreneurship. *Journal of Sex Research*, *53*(3), 331-345. https://doi.org/10.1080/00224499.2015.1035429

Government of Botswana, G. (2016). *VISION 2036–Achieving Prosperity for All* (978-99912-71-57-6). https://vision2036.org.bw/publications

Green, E. P., Blattman, C., Jamison, J., & Annan, J. (2015). Women's entrepreneurship and intimate partner violence: A cluster randomized trial of microenterprise assistance and partner participation in post-conflict Uganda *Social science & medicine*, *133*, 177-188. https://doi.org/10.1016/j.socscimed.2015.03.042

Hasson, F., Keeney, S., & McKenna, H. (2000). Research guidelines for the Delphi survey technique. *Journal of Advanced Nursing*, *32*(4), 1008-1015. https://doi.org/10.1046/j.1365-2648.2000.t01-1-01567.x

Hsu, C.-C., & Sandford, B. A. (2007). The Delphi technique: making sense of consensus. *Practical Assessment, Research, and Evaluation*, *12*(1), 10. https://doi.org/10.7275/PDZ9-TH90

Ingram, H., Schneider, A. L., & DeLeon, P. (2007). Social construction and policy design. In P. Sabatier (Ed.), *Theories of the policy process* (Vol. 2, pp. 93-126). Westview Press.

Jewkes, R., Sikweyiya, Y., Nduna, M., Shai, N. J., & Dunkle, K. (2012). Motivations for, and perceptions and experiences of participating in, a cluster randomised controlled trial of a HIV-behavioural intervention in rural South Africa. *Culture, Health & Sexuality*, *14*(10), 1167-1182. https://doi.org/10.1080/13691058.2012.717305

Kezar, A., & Maxey, D. (2016). The Delphi technique: an untapped approach of participatory research. *International journal of social research methodology*, *19*(2), 143-160. https://doi.org/10.1080/13645579.2014.936737

Leiter, K., Rappaport, L., Rubenstein, L., Iacopino, V., & Tamm, I. (2007). *Epidemic of Inequality* (Women's Rights and HIV/AIDS in Botswana and Swaziland, Issue. https://phr.org/our-work/resources/epidemic-of-inequality-womens-rights-and-hiv-aids-in-botswana-swaziland/

Linstone, H. A., & Turoff, M. (1975). *The Delphi Method -Techniques and Applications*. Addison-Wesley Reading, MA.

Low, A., Gummerson, E., Schwitters, A., Bonifacio, R., Teferi, M., Mutenda, N., Ayton, S., Juma, J., Ahpoe, C., & Ginindza, C. (2022). Food insecurity and the risk of HIV acquisition: findings from population-based surveys in six sub-Saharan African countries (2016–2017). *BMJ Open*, *12*(7), e058704. https://doi.org/10.1136/bmjopen-2021-058704

Machisa, M., & van Dorp, R. (2012). *The Gender Based Violence Indicators Study: Botswana* (978-0-986880-3-5). https://genderlinks.org.za/shop/the-gender-based-violence-indicators-study-botswana/

Ministry of Health, National AIDS and Health Promotion Agency, & Statistics Botswana. (2022). *BAISV Fifth Botswana AIDS Impact Survey* Preliminary Report). https://statsbots.org.bw/sites/default/files/publications/BAIS%20V%20Preliminary%20Report.pdf

Nkomazana, F. (2021). Bogadi Practice and the Place of Women in the Botswana Society. In L. Togarasei & E. Chitando (Eds.), *Lobola (Bridewealth) in Contemporary Southern Africa: Implications for Gender Equality* (pp. 167-183). Palgrave Macmillan.

Nnaji, A., Ratna, N. N., & Renwick, A. (2022). Gendered access to land and household food insecurity: Evidence from Nigeria. *Agricultural and Resource Economics Review, 51*(1), 45-67. https://doi.org/10.1017/age.2021.13

Pettifor, A., Wamoyi, J., Balvanz, P., Gichane, M. W., & Maman, S. (2019, Jul). Cash plus: exploring the mechanisms through which a cash transfer plus financial education programme in Tanzania reduced HIV risk for adolescent girls and young women. *Journal of the International AIDS Society, 22*. https://doi.org/10.1002/jia2.25316

Pronyk, P. M., Hargreaves, J. R., Kim, J. C., Morison, L. A., Phetla, G., Watts, C., Busza, J., & Porter, J. D. (2006, 2006). Effect of a structural intervention for the prevention of intimate-partner violence and HIV in rural South Africa: a cluster randomised trial. *Lancet, 368*(9551), 1973-1983. https://doi.org/10.1016/S0140-6736(06)69744-4

Ritchie, J., & Spencer, L. (2002). Qualitative data analysis for applied policy research. In Alan Bryman & R. Burgess (Eds.), *Analyzing qualitative data* (pp. 187-208). Routledge. https://doi.org/https://doi.org/10.4324/9780203413081

Rowe, G., & Wright, G. (1999). The Delphi technique as a forecasting tool: issues and analysis. *International journal of forecasting, 15*(4), 353-375. https://doi.org/10.1016/S0169-2070(99)00018-7

Rowe, G., & Wright, G. (2011). The Delphi technique: Past, present, and future prospects—Introduction to the special issue. *Technological Forecasting and Social Change, 78*(9), 1487-1490. https://doi.org/10.1016/j.techfore.2011.09.002

Schneider, A., & Ingram, H. (1993). Social construction of target populations: Implications for politics and policy. *American political science review*, *87*(2), 334-347. https://doi.org/https://doi.org/10.2307/2939044

StatisticsBotswana. (2021). *Multi-Topic Survey Quarter 4,2020 Labour Force Module Report* (978-99968-907-1-0). https://www.statsbots.org.bw/multi-topic-survey-quarter-42020-labour-force-module-report-0

Stoner, M. C., Pettifor, A., Edwards, J. K., Aiello, A. E., Halpern, C., Julien, A., Selin, A., Twine, R., Hughes, J. P., & Wang, J. (2017). The effect of school attendance and school dropout on incident HIV and HSV-2 among young women in rural South Africa enrolled in HPTN 068. *AIDS*, *31*(15), 2127. https://doi.org/10.1097/QAD.0000000000001584

STRIVE, R. C. (2019). *Addressing the structural drivers of HIV: A strive synthesis*. http://strive.lshtm.ac.uk/resources/addressing-structural-drivers-hiv-strive-synthesis

Thukwana, N. (2022). Botswana, with an import ban on vegetables, plans to ban more over the next two years. *Business Insider*. https://www.businessinsider.co.za/botswana-plans-to-expand-its-food-import-ban-list-2022-5

UN Botswana. (2020). *Effects of COVID-19 on the Agricultural Sector* (Newsletter, Issue. https://botswana.un.org/index.php/en/103717-effects-covid-19-agricultural-sector#:~:text=Due%20to%20COVID%2D19%2C%20value,the%20vulnerability%20of%20farm%20incomes.

UNAIDS. (2016). *Fast-Track Commitments to end AIDS by 2030*. https://www.unaids.org/en/resources/documents/2016/fast-track-commitments

UNAIDS. (2017). *HIV and social protection assessment tool* (Generating evidence for policy and action on HIV and social protection, Issue. https://www.unaids.org/sites/default/files/media_asset/HIV-social-protection-assessment-tool_en.pdf

UNAIDS. (2018). *Social Protection: a Fast-Track commitment to end AIDS*. http://www.unaids.org/en/resources/documents/2018/social-protection-fast-track-commitment-end-aids

van der Wal, R., Cockcroft, A., Kobo, M., Kgakole, L., Marokaone, N., Johri, M., Vedel, I., & Andersson, N. (under review). HIV-sensitive social protection programs for unemployed and out-of-school young women in Botswana: an exploratory study of barriers and solutions. *PLoS ONE*.

van der Wal, R., Loutfi, D., Hong, Q. N., Vedel, I., Cockcroft, A., Johri, M., & Andersson, N. (2021). HIV-sensitive social protection for vulnerable young women in East and

Southern Africa: a systematic review. *Journal of the International AIDS Society, 24*(9), e25787. https://doi.org/10.1002/jia2.25787

Weiser, S. D., Leiter, K., Bangsberg, D. R., Butler, L. M., Percy-de Korte, F., Hlanze, Z., Phaladze, N., Iacopino, V., & Heisler, M. (2007). Food insufficiency is associated with high-risk sexual behavior among women in Botswana and Swaziland. *PLoS med, 4*(10), e260. https://doi.org/10.1371/journal.pmed.0040260

Williams, M., & Hovorka, A. J. (2013). Contextualizing youth entrepreneurship: The case of Botswana's young farmers fund. *Journal of Developmental Entrepreneurship, 18*(04), 1350022. https://doi.org/10.1142/S1084946713500222

WorldBank. (2022a). *Botswana Social Protection Programs and Systems Review*. https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099645103062256866/p1721750af4ddb0ce098d30b331412b0ab8

WorldBank. (2022b). *Macro Poverty Outlook for Botswana : April 2022*. https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099939404182211697/idu0f1c8cf9703b5504b6c08d45040ca25a1f281

10. Discussion

Discussion

Many intersecting and multilevel barriers impeded unemployed and out-of-school young women's access to, and benefit from existing promotive social protection programs in Botswana. The high number and wide range of improvement proposals, overwhelming support for all of them, and nearly all proposals receiving a top three priority ranking by at least one panelist, reveals the capacious space to improve the HIV-sensitivity of these programs. That so many different things could be done to improve program benefit by those most vulnerable to HIV suggests extensive social and economic disadvantage of unemployed and out-of-school young women.

Below I discuss the findings of the entire thesis. Although I place the findings in the wider context of Botswana, the Delphi findings originated from Moshupa sub-district only. Our findings might have informative value nationally, however, as the promotive social protection programs are national programs, and barriers and solutions resulted from FCM and deliberative dialogue workshops we conducted in five randomly selected implementation districts.

Benefit value may be too low to increase the HIV-sensitivity of poverty programs

Half of the promotive social protection programs included in this study belong to the family of poverty eradication programs that target destitute persons deliberately or through self-selection by offering very low wages. To be eligible for LIMID productive asset transfers or APP microenterprise development, monthly incomes for individuals or households should not exceed USD11 or USD14 respectively (203). Destitute programs are means-tested at income levels that are a fifth of the international threshold for extreme poverty, and have not been updated since their inception in the 1980s (14). There are plans to increase poverty thresholds, however (personal communication with Mr Kgabanyane, director of social protection, Ministry of Local Government and Rural Development, May 2023). These destitution thresholds are 85-93% lower than Botswana's minimum wage, increased in January 2022 to USD96 per month (257). The minimum wage in turn is lower than Botswana's poverty threshold — for upper middle-income countries set at USD165 per month (258). Income transfers for *Ipelegeng*, Botswana's public works program, are USD54 per month. Technically part of youth empowerment, *Tirelo Sechaba* apprenticeships for unemployed and out-of-school youth offer monthly stipends of USD60. These amounts are comparable to the international threshold for *extreme* poverty (USD57/month or USD1.90/day) (258) and do not reflect the cost of living in Botswana (259).

My exploratory study in Botswana identified poverty itself as a barrier to program access and benefit from poverty eradication programs. Without access to cash, young women could not apply to programs if it involved transportation costs. They could not buy medicines to keep their small stock or poultry healthy or invest and grow their businesses. Priority ranking in the modified Policy Delphi showed that young women preferred improvement proposals with concrete benefits like grants and stipends. The perceived importance of stipends, despite their extremely low monetary values, underlines the context of abject poverty in which young women survive.

Food insufficiency, a proxy for absolute poverty, was associated with risky sex among adult women in Botswana and Eswatini (7). A study in Zimbabwe found an association between food insufficiency and HIV infection among young women (260). The Zimbabwe study collected biomarkers and demonstrated the association persisted after controlling for assets, social factors, sexual risk behavior, and knowledge, attitudes, and self-efficacy (260). This strongly suggests absolute poverty does drive HIV infection. An economic strengthening intervention in South Africa also found that absolute income mattered. Although young women had increased their past month income by 47%, the average income had been USD11 only, which had been too low to reduce transactional sex or IPV (191).

Due in part to poverty-induced limited mental bandwidth (261), young women with food insufficiency have even greater challenges to successfully compete for, or engage in, socioeconomic empowerment programs (205). Notwithstanding the effects on alleviating some aspects of poverty, the extremely low value of poverty programs might fail to generate the economic independence (262) that could enable young women to act on HIV prevention choices. Interpreting HIV-sensitivity as mere inclusion of HIV-vulnerable groups in available promotive social protection programs might therefore be inadequate for effective HIV prevention. Increasing stipends well above absolute poverty levels might be necessary to truly empower HIV-vulnerable groups. The government of Botswana may have to reconsider its stance on more universal social allowances. Although universal cash transfer programs for children and vulnerable families are not part of the social protection landscape in Botswana currently, such basic welfare programs might be required to combat the high levels of extreme poverty in the country (12). Indeed, results from randomized controlled trials of the Ultra Poor Graduation Approach implemented in six

LMIC countries viewed consumption support, in cash or in kind, as a necessary precursor to successfully leverage productive asset transfers and income generating activities for health, income, and sustainable livelihoods (159).

Some promise for currently inaccessible programs

Some promotive social protection programs were inaccessible to young women due to complicated application processes and/or ineligibility, if young women could not satisfy prerequisites. YDF's microenterprise program, a youth empowerment program for unemployed and out-of-school youth below 35 years, supports microenterprise development with 50%-50% loans and grants. Yet young women were not equipped to fill out complicated forms and business plans on their own. ISPAAD horticulture program also involved a complicated application process with business plans. It was even more inaccessible than YDF, as it also required an upfront capital investment of 40%-60% by applicants, access to water, and land ownership or 10-year lease holds. ISPAAD farming only required applicants to provide proof of access to land, owned or borrowed. Even this did not make this program more accessible, as my exploratory study revealed young women rarely owned or applied for land. According to Delphi panelists, young women were also vulnerable to exploitation when borrowing land (Detailed summary IV.6).

Several improvement proposals might effectively address some of the identified barriers. Panelists in the modified Policy Delphi exercises stated they preferred grants to loans. My systematic review found that microcredit was unsuitable for vulnerable young women. Frontline service providers considered changing loans to grants definitely feasible, as YDF loans used to be grants in the past. Moreover, similar to a microcredit program in Zimbabwe (263), YDF loans were rarely repaid. By accepting the proposal of receiving grants instead of loans, there would be no additional negative effects on the YDF budget. For young women, however, the benefit of receiving grants might represent an actual opportunity to develop a livelihood.

The proposal to train unemployed and out-of-school young women to help peers fill out complicated applications received strong support from all panelists. So did the proposal to pay peer outreach workers/trainers a stipend for these activities. Young women considered peers more relatable, while frontline service providers liked the cost-effectiveness and sustainability of the proposal. Rather than officers travelling to rural areas for outreach, someone trained locally would cost less and the information would remain locally accessible. YDF could allocate funds from its character-building budget for such an initiative. One officer proposed leveraging the *Tirelo*

Sechaba apprenticeship program for this improvement proposal (Detailed summary III.8). He even announced planning to request a *Tirelo Sechaba* candidate the next day. The young women were disappointed when reading this feedback. Given the *Tirelo Sechaba* age limit of 30 years, it is unlikely they would personally benefit from such an interpretation of paid peer support.

Access to land is more challenging, as I will explain below. In contrast, changing loans into grants and leveraging paid peer support represent low-hanging fruit for increasing the HIV-sensitivity of YDF microenterprise programs. Negative budget impacts of changing loans to grants might be kept to a minimum and leveraging paid peer support could be implemented with existing resources.

Land and farming

Delphi panelists selected access to land and water for young women as the second most important proposal overall. Access to land has been an uphill battle for women in Botswana for decades. Until recently, patriarchal interpretations of common and customary laws denied married women the right to hold, acquire, or inherit property. As it considered women as perpetual minors, customary law promoted men's control over productive assets, including land (65). Although the Botswana High Court ruled that the constitutional right to equality had primacy over customary law in 2012 (65), Botswana's Land Policy from 2015 still prevented married women and widows from owning land (264). This was only resolved by an amendment in 2020 (66). Access to land might also be compromised by the scarcity of arable land (265) and very long waiting lists (620,660 land applicants on January 2021), effectively resulting in waiting times between 10 and 30 years (266).

Despite these barriers, officers rated the proposal as definitely feasible. They proposed affirmative action in land and water allocation policies in favor of young women and to repossess idle farmland. The prominence of this proposal was surprising as participants in my exploratory study claimed that young women viewed farming as a "dirty job". Participants believed young women preferred white-collar jobs in towns over farming in the *masimo* (family-operated agricultural lands outside the village). One explanation could be older age. Young women in the Policy Delphi were five years older than when they had been interviewed for, or had mapped, perceived access barriers. Now, closer to age 30, most had (more) children and might have been more interested in food security than elusive white-collar jobs. It could also reflect a renewed appreciation for farming in response to shortages of agricultural produce due to COVID-19 restrictions (267). Or shortages due to Botswana's protectionist policies that limit agricultural importation from South Africa (268). Perhaps, merely considering access to land and water as an improvement proposal, combined with perceived support from officers and feasibility suggestions, had triggered young women's hopes that farming could become an actual livelihood option.

ISPAAD-sponsored subsistence farming contributed more than 50% of new jobs in the period from 2003 to 2010. During this time period, it was the principal contributor to poverty decline in Botswana, which fell from 30.6% to 19.4% (68). Young women's dreams of ostrich farming or "feeding the nation" seem to also indicate an interest in commercial farming. The World Bank points out that, although successful as a poverty alleviation instrument, ISPAAD failed to make farming commercially sustainable. This was in part due to very low productivity, the lack of skills among farmers, and a disconnect between their economic realities and promoted technologies (68). A farming incubation program for young women, as one officer proposed during the Policy Delphi, might address these concerns while providing young women with skills beyond subsistence farming.

Life and job skills

The lack of life and job skills was a barrier that excluded many young women from program benefit. Panelists rated all skill building proposals, including life skills, business/financial, and vocational skills, as very desirable and definitely feasible. Officers prioritized skill building in that order and stressed second chance education. Young women selected business and financial skills as their first choice in the training improvement category. Vocational skills training was their second choice, and training in Setswana their third. Panelists suggested involving parastatals like the Local Enterprise Authority (LEA) for skill building. Established in 2012, LEA provides development and support services for small and medium enterprises. LEA offers business training like planning, management, marketing, and bookkeeping. Support services include mentoring, facilitation of access to markets, brokerage for government and large firm procurement, technology adoption and diffusion, and access to finance (269). Mixed methods research found that youth and women entrepreneurs did not access LEA services. This was mainly because of LEA's narrow strategic focus (leather works, horticulture, pig and dairy farming), of which most entrepreneurs had not been aware (269). Unemployed and out-of-school young women need all these services too. To truly benefit from these existing services, LEA would have to make deliberate efforts to design its services around young women's business interests and cognitive, psychosocial, and economic abilities.

As poverty-level incomes may not provide genuine alternatives for young women to negotiate safe sex, skills development might play an even more important role in HIV prevention and socioeconomic empowerment. My systematic review highlights the pivotal role of life skills, the (non) cognitive skills and abilities that connect knowledge, attitudes, and behaviour, for both HIV prevention and the leveraging of socioeconomic empowerment programs. It found that self-efficacy and self-esteem were associated with improved sexual negotiation, HIV testing (245, 270) and reduced sexual risk behaviors (196). Self-confidence and future aspirations led to investing in assets and income generating projects (192, 197, 218). Higher-order life skills like critical thinking led to increased income without material inputs from the project (191, 271). Life skills sustained their positive effects on sexual risk behavior after programs ended, even when economic outcomes ceased to show significant effects (197, 218). Including life skills in socioeconomic programs was the number one priority across all improvement proposal categories among officers. Young women seemed to value it less in terms of relative importance. Older age and prolonged participation in this research project may have reinforced feelings of self-confidence, critical thinking, communication skills and future aspirations. For younger, less confident, young women life skills might still hold most promise for socioeconomic empowerment and HIV prevention.

Psychosocial support, mentoring and peer approaches

Young women in my exploratory study and modified Delphi exercise felt intimidated and insecure when interacting with government officers. They perceived officers as unhelpful and contemptuous of young women like them. Schneider and Ingram (1993) claim that clients like the young women in my study are socially constructed as helpless, incapable, or undeserving. They claim that negatively constructed target populations tend to receive inefficient, authoritarian, and demeaning service delivery (256). Differential socioeconomic situations between young women and service providers can lead to "othering", a concept of social distance whereby the powerful construct the powerless as inferior, resulting in stereotyping and dehumanization (272). The powerless suffer "relational wounds" at societal and interpersonal levels, including during interactions with officials (273). Such othering can result in stigmatization, victim-blaming, and exploitation (273). Our study found such exploitation in the form of asking for bribes and sex by program officers, which featured on all fuzzy cognitive maps made by young women.

Being at the receiving end of negative interactions can lead to internalisation of poverty-related stigma. When the powerless come to accept discriminatory treatment as valid, it negatively impacts self-confidence, self-respect, and increases feelings of hopelessness and resignation (273), which also undermine HIV prevention.

The modified Policy Delphi identified strong support for peer approaches in outreach and program delivery. When summing rankings for role models in agriculture and regular programs, peer involvement in program delivery was the number one priority across all improvement categories. Panelists expected young women to emulate role models, and role models to take on mentoring roles by offering encouragement and practical advice. The social support literature confirms that situational and sociocultural similarity are most important for effective support, as peers might have greater empathic understanding from facing similar stressors (274).

Beyond providing individual support, mentors might represent an expansion of young women's social capital. As human social systems are based on long-term cooperation with reciprocal exchange, poverty can lead to social exclusion, as the poor might be unable to reciprocate (80). A study in South Africa found transactional sex three times more likely linked with luxury than with survival items, as young women considered luxury items essential for survival from social exclusion (275). Fuzzy cognitive maps in my exploratory study also showed that embarrassment of being on a poverty program for destitute people prevented some young women from applying. Programs could address the need for social inclusion by offering other pathways to social capital. My systematic review identified not only mentorship, but also social safe space — regular group meetings for training and peer/mentor support — as a critical facilitator for improving the HIV-sensitivity of socioeconomic programs. Facilitating social safe space should be well within policy and program reach in Botswana. Through regular socialization and sharing of personal experiences young women might create social networks of trust and reciprocity. In times of need, young women could rely on these networks rather than on family or boyfriends, which might have contributed to reduced transactional sex in Zambia (196) and reduced IPV in Tanzania (192).

Several improvement proposals pertained to these social network aspects of empowerment. They include proposals I.1: using mentors for psychosocial and business support; I.4: weekly meetings to receive training, support and to build a social network; I.9: establishing professional networks for young women, and I.11: the combination package that combined nearly all improvement proposals in the program improvement category. When ranking for priority, officers showed strong priority support for all social network proposals. Although considered very desirable, these social network proposals, apart from mentors, did not make it into the Top 3 priorities among young women. Regarding professional networks, a study into agricultural entrepreneurs in Botswana found that 40% of young farmers felt that the extension of their professional networks had empowered them, offering new levels of self-confidence (254). Given the many barriers young women would have to overcome to become entrepreneurs, professional networks may have been too theoretical at this stage. Fear of jealousy and envy among peers was a recurrent theme in my research and might have tempered their enthusiasm for social safe space in the form of weekly group meetings. Another explanation might be competing domestic work and care responsibilities. Young women might have felt that time away from work and family could be justified only by solid professional development. Panelists felt that monthly rather than weekly meetings would suffice, a finding that might support this interpretation.

Macroeconomic arguments & institutional support

The 2018 Report by the United Nations Population Fund (UNFPA) on the Demographic Dividend in Botswana (276) states that the country is at an advanced stage of the demographic dividend. This is the temporary benefit from a high ratio of working-age adults relative to dependents (children and elderly), provided that the environment for human development and good governance is supportive. Two-thirds of Botswana's population is of working age but high youth unemployment might reduce potential benefits of the demographic dividend (276). Statistics Botswana reported that by the end of 2020, the overall unemployment rate for Botswana was 24.4%; its youth unemployment rate 32.4%, of which 54% was female. The rate for unemployed and out-of-school youth was 37.5%, of which 56% was female, and the age group 20-24 years recorded the highest rate of unemployment (50.6%) (11). UNFPA's top recommendation was therefore to prioritize economic reforms. UNFPA recommended creating jobs and livelihoods for youth. More specifically, to attract youth into agriculture, empower them with resources and skills, and to enhance technical and vocational training to increase the employability of out-of-school youth (276). These recommendations perfectly align with several of the improvement proposals in our study.

Botswana's public works program *Ipelegeng* can be considered gender-sensitive, as 72% of beneficiaries is female and its working hours from 7 am to 1 pm might accommodate other domestic or agricultural responsibilities (9). In its current form, *Ipelegeng* does not offer any capability development, however. Offering life and job skills training in *Ipelegeng*, improvement proposal II.4, could potentially equip a very large workforce with necessary skills to leverage the demographic dividend. When looking at the composition of social protection spending in Botswana, pensions and (tertiary) education scholarships/sponsorships take nearly a third of the total budget each. Income transfers through public works (*Ipelegeng*) take a third of the remaining budget for social assistance (9, 175). Nthomang (2018) writes that without a training component or a focus on sustainable livelihoods, the costs are not commensurate with the expenditure and a far cry from *self-help*, the literal meaning of *Ipelegeng* (128).

Given the intersectoral nature of HIV-sensitive social protection, a coordinating body, like the one-stop-shop panelists proposed, would have to deal with cross-cutting challenges and opportunities. To tackle HIV/AIDS across government sectors, the National AIDS Coordinating Agency (NACA) was placed at the Office of the President. In 2019, NACA expanded to become the National AIDS and Health Promotion Agency (NAHPA) in the Ministry of Presidential Affairs, Governance and Public Administration. The Poverty Eradication Program is also situated in this Ministry. This might facilitate the intersectoral approach required for strengthening promotive social protection with comprehensive packages that address individual and structural disadvantages young women experience.

Gender training

Fuzzy cognitive mapping in my exploratory study showed that some boyfriends prevented young women from applying to programs. In much of Sub-Saharan Africa, patriarchal gender norms require male approval for engagement in economic activity (207). This was the same under both customary and common law in Botswana (65). Without a gender perspective, promotive social protection programs might remain inaccessible for young women. My exploratory study showed that sociocultural norms assign domestic and childcare responsibilities to women. In the modified Policy Delphi, young women said childcare was essential and the lack of childcare would effectively block their workforce participation. In Uganda, gender training increased male involvement in household chores (212). Nearly all projects in my systematic review offered gender training, which I added as a supporting intervention in my detailed conceptual framework (174). Both stakeholder groups had rated gender training as very desirable due to the high prevalence of gender-based violence. They also thought it was definitely feasible, as it could be organized within programs or in conjunction with specialized NGOs. Detailed summary points II.6 and II.7 explain in greater detail why this proposal enjoyed strong support among panelists. Considered a private matter according to social norms, young women said gender-based violence may seem invisible. Several young women reported they had witnessed their mother's abuse when growing up and hoped gender training would break the cycle of violence. Young women expected to learn about their human rights and the psychosocial effects of gender-based violence. They hoped gender training would increase their self-esteem, empowerment, and expectations of equal treatment. Some hoped such training would reduce their social isolation due to IPV and resulting feelings of depression and hopelessness.

Panelists also rated gender awareness training to other important persons in their lives as very important, especially gender training for boyfriends. They hoped boyfriends would develop empathy and become more supportive. Panelists were less convinced about the feasibility of this proposal, as they feared men would not attend such training. The gender workshop for couples in Uganda did increase male support for young women's businesses and household chores but did not impact IPV. The gender training had been one-day only, which may have been insufficient to reduce IPV (212). The fact that such a small dose increased male support for young women's economic activities makes it an interesting avenue to explore further, however.

Unlike gender training for boyfriends, gender awareness training for unemployed and out-of-school young women did not receive a top three priority rank and was in fact the only proposal among all 40 proposals not in any participant's or workshops' top three. Given women's subordinate status in Botswana's patriarchal society, and their lack of relational power (6), panelists may have perceived gender training for boyfriends as more effective. Panelists may also have interpreted the research focus more narrowly than intended, prioritizing the economic rather than the social empowerment aspect of proposals. The deliberate integration of gender in promotive social protection programs is necessary, however. An evidence review of four socioeconomic interventions for women and girls in Africa and Central Asia argued gender training needed to intentionally target violence against women and girls to have impact on reduced IPV (277). The review suggested that offering such training in conjunction with socioeconomic empowerment interventions might enable young women to draw maximum benefit from socioeconomic programs (277). A study on women entrepreneurs in Botswana showed that the gender-neutral approach of the Citizen Entrepreneurial Development Agency (CEDA) continued to reinforce women's socioeconomic disadvantage. The authors claimed that gender neutrality led to gender blindness, and that such an approach was inadequate to overcome Botswana's patriarchal norms (209). As patriarchal gender norms also negatively affect HIV-vulnerability (62), it might be a priority for promotive social protection programs to incorporate gender awareness training with an explicit focus on reducing IPV.

Theory of change

The conceptual framework I developed for my systematic review drew from existing evidence on pathways of how promotive social protection programs could impact HIV and socioeconomic outcomes (1-3). The systematic review demonstrated that positive impacts of livelihood and employability interventions on HIV and socioeconomic outcomes also relied on supporting interventions like gender, health, and HIV training. In addition, it found that supportive mentorship and social safe space in the form of regular meetings with peers were key delivery mechanisms, to help increase income and capabilities among unemployed and out-of-school young women, but also to increase their social capital. I detailed the original conceptual framework with these findings and translated the additional constructs into improvement proposals.

My empirical work supported my conceptual framework, as the Delphi panelists perceived all livelihood, employability, supporting, and delivery mechanism interventions as (very) desirable and (very) feasible. Panelists also perceived all these interventions as important, considering that nearly all proposals received a Top three priority rank by at least one panelist or workshop.

Strengths and limitations

Limited transferability: Findings of this research are limited to context of Moshupa sub-district. I conducted the Policy Delphi with a relatively small number of panellists in only one sub-district, which may limit the transferability of findings. Counterbalancing this, the young women panelists were quite mobile, living in and out of the district. Three officers were currently working in other parts of the country, and two other officers had been recently transferred into Moshupa sub-district. While findings do not provide a full national picture, they could be informative at national level, given the government's singular approach to social protection, and because part of the exploratory research was conducted in five randomly selected districts in Botswana. Regarding the systematic review, the complexity of multi-component interventions made it challenging to attribute specific impacts of different intervention components. The narrative synthesis method helped draw out transferable results, however.

No policy level engagement: This research did not include higher level program and policy stakeholders. Full engagement of policy levels, in conjunction with modified Policy Delphi in the other four INSTRUCT implementation districts, could have increased the relevance of findings at national level. The inclusion of policy makers could have contributed to a better adaptation to the national policy environment and subsequent uptake of findings. In this work we wanted to highlight the voices of direct stakeholders in the generation and assessment of alternative policy and practice options. For future research, I aim to engage (higher level) policy makers in the assessment of the improvement proposals generated by this research, with a view to translating them into actual programs and policies.

Biases due to group dynamics: I used several methods that involved group work, like FCM, deliberative dialogue, and (in)direct group interaction in the modified Policy Delphi. Dominant voice and group think, or conformity bias, may have affected findings from group work. In both the FCM and the modified Policy Delphi, we also asked participants for individual responses, which may have mitigated such biases. Power differentials in deliberative dialogue workshops that combined young women and service providers may have influenced the choice of improvement recommendations. Facilitation by experienced local CIET staff may have mitigated such undue influence. In the modified Policy Delphi, I addressed potential power differentials by maintaining relative anonymity: in Round 2, young women worked in peer workshops, but I did not combine the two stakeholder groups. The perceived safety of this approach may have increased the trustworthiness of findings. My reporting of majority opinions in Round 2 of the modified Policy Delphi might have introduced conformity bias. I aimed to mitigate the latter by also reporting minority opinions.

Selection biases: There may be selection bias in the systematic review due to the second reviewer's screening of a proportion of titles, abstracts, and full texts. Landis (1977) qualifies a kappa agreement statistic between 0.81-1.00 as "almost perfect" agreement (p.165) (278), which suggests that the selection criteria were clear, as our kappa statistic had been 0.85. Our sampling strategy for the exploratory study may have introduced selection bias, as some young women may not have wanted to participate in FCM, deliberative dialogue, or interviews because they lacked self-confidence or communication skills. Young women with competing care responsibilities may have been less likely to participate. Similarly, those with controlling boyfriends may not have received permission to participate. Potential selection bias in the modified Policy Delphi might be due to participating frontline service providers holding more favourable views of young women and their plight than those who did not agree to participate.

Social desirability bias: We encouraged participants to speak their mind but semi-structured interviews may have been subject to social desirability bias. There could also have been social desirability bias in survey interviews in the modified Policy Delphi.

Bias from researcher presence: During interviews with a few young women who were shy and might have been uncomfortable with my presence, I tried mitigating bias from researcher presence by physically moving to another location. During FCM workshops, I tried to be unobtrusive by focusing on support, for example with logistics.

Generalizable method: The main strength of this research is that it demonstrates the feasibility of generation and assessment of potential policy and practice alternatives by direct stakeholders. My methodological approach of combining a review with direct stakeholder input and beneficiary assessment of policy and practice alternatives amplified their voices and could be replicated in other parts of Botswana. Generalization beyond Botswana is similarly limited to the methods.

Stakeholder engagement: This research integrated voices of unemployed and out-of-school young women throughout the research process. Young women identified and analyzed barriers to program benefit through FCM. They offered concrete improvement recommendations in deliberative dialogues. In a 2-round Policy Delphi, the young women assessed improvement proposals derived from empirical and systematic review evidence for desirability and feasibility. Controlled feedback permitted them to integrate regional evidence and views of other panelists into their own views, after which they ranked proposals for relative importance. This process may result in alternative policy and practice options for current promotive social protection programs that are more attuned to the needs and realities of this HIV-vulnerable group. Also, including frontline servicers as local power holders in this process may lend greater weight to the findings of this study. Their direct involvement in program and service delivery may have supported a credible assessment of implementation feasibility. Possibly inspired by the range of alternative practice options, some officers might directly implement some of the propositions in their daily practice.

UN lexicon/criteria: A strength of this thesis is the interpretation of “HIV-sensitivity” as both an outcome and process objective. HIV-sensitivity as an outcome objective focused on making programs for broad population groups inclusive of the HIV-vulnerable group of unemployed and out-of-school young women. HIV-sensitivity as a process objective focused on meaningful participation by HIV-vulnerable young women in achieving this goal of inclusion.

Credibility of findings: Triangulation of semi-structured interviews and fuzzy cognitive maps and soliciting views from both the young women and frontline service providers in five different districts in Botswana may have increased the credibility of my exploratory findings on barriers to program access and benefit. The credibility of my systematic review relied on assistance from a specialized librarian in the search strategy, methodological supervision from a systematic review specialist, my search in multiple databases and grey literature, two reviewers for quality assessment, the conceptual grounding, and detailed data extraction. I actively sought respondent validation for both exploratory and systematic review findings through accessible knowledge translation in the form of 10-minute YouTube videos. During the modified Policy Delphi, I included two rounds of respondent validation, and provided ample time for young women to truly comprehend the proposals and feedback. More generally, extensive debriefing between my Motswana research assistant and myself, and my familiarity with the research context due to my four-year residence in Botswana may have facilitated the credibility of my interpretations.

Local applicability of findings: Input from direct stakeholders who are deeply familiar with the local context may have increased local applicability of findings. Their identification of potential resolution of barriers in deliberative dialogue workshops may have contributed context-sensitive improvement proposals. Their subsequent assessment of the feasibility of proposals may also be more credible.

Participant retention: Another strength is the high level of participant retention, especially among young women. We retained 22 out of 25 young women for the duration of five years. Similar to findings reported by Gorgens et al (2022) (279), young women in Botswana are incredibly mobile, often switching phone numbers. This can make it challenging to find them for follow-up research. Their sustained engagement with this research may in part result from their perceived relevance of the topic. Regular follow up, sharing of updates and primarily face-to-face data collection may also have encouraged panel retention.

Future directions

Need for research on employment support for HIV-vulnerable young women: socioeconomic opportunities for youth, especially for marginalized young women, tend to focus on livelihoods in self-employment or in the informal sector (280). My systematic review confirms a research gap in employment support studies that might have supported unemployed and out-of-school young women to find jobs in formal wage employment. I included job matching, public works, and work-integrated learning under employment support. More research in these fields in general and linked with HIV-vulnerable young women and/or HIV prevention in particular would advance knowledge on potential benefits of employment support for youth economic empowerment and other socioeconomic approaches to HIV prevention.

Lack of research in job matching services for young women in Botswana: In my empirical research in Botswana, I explored barriers and opportunities for unemployed and out-of-school young women in public works (*Ipelegeng*) and work-integrated learning (*Tirelo Sechaba* apprenticeships) but did not investigate job matching opportunities. In the systematic review I defined job matching as services that link individuals with public or private sector employment opportunities, career counseling, job searching and placement support, including support for producing and sharing curriculum vitae. The Ministry of Employment, Labour Productivity and Skills Development provides job matching services in the form of a job search assistance program and apprenticeship program for skilled youth and private sector development (175). Recently, a start-up developed a mobile-based chatbot to connect job seekers and employers in Botswana (281). To support young women's professional opportunities from livelihoods in self-employment to employability in formal wage employment, it might be interesting to explore whether these programs and initiatives could also be leveraged for unskilled youth.

Need for research on the impact of consumption support on livelihood and employability programs: poverty graduation interventions in Ethiopia, Ghana, Honduras, India, Pakistan, and Peru provided consumption support (in kind or cash) in addition to offering livelihood and employability programs. This resulted in significantly improved food security, assets, income, mental health and women empowerment (159). Livelihood and employability programs in Botswana do not offer a consumption support component. Research comparing livelihood and employability programs with and without consumption support might offer further insight in impact and appropriateness of livelihood and employability programs for HIV-vulnerable groups.

Need for research on engaging men and boys in gender awareness training in Botswana and the (perceived) impact of such training on gender equality: despite strong support for gender awareness training for young women in terms of desirability and feasibility, it was the only improvement proposal without top three priority support among panelists. In contrast, gender awareness training for important others in their lives, especially for boyfriends, did garner top three priority support among panelists, despite doubt men would be interested in, or attend such training. Young women's perceived lack of control in changing gender norms might have played a role in these seemingly contradictory findings. This points to an area that warrants further research. Panelists also offered several suggestions for engaging men in efforts to create a more enabling social environment for vulnerable young women in Botswana. It would be worthwhile to explore these suggestions further.

Uptake of research findings in Botswana: at a practical level, uptake of improvement proposals brought forward by this research project would demonstrate transferability of findings. An important next step would be to facilitate such uptake. This could involve targeting policy and program-level decision-makers who could effectuate more immediate change with proposals that might be easier to implement. For example, training and recruiting of *Tirelo Sechaba* apprentices for peer outreach and assistance could be implemented with existing resources. Changing YDF loans into grants might be feasible, given the reality of very low rates of loan repayment, hence most loans turn out to be involuntary grants anyway. The organization of social safe space in the form of regular meetings, in person or virtually, should also be feasible to implement with existing resources. These social spaces could provide young women with job and life skills, psychosocial support, and the social capital to empower them socially, economically, and to act on HIV prevention choices.

A more general approach to research uptake could involve presentation of findings to a wide range of potential users, including policy makers, higher-level program managers, representatives of parastatals like LEA who might adapt training to unskilled groups. More active engagement with results in the form of workshops on how proposals could be implemented in different organizations might be more impactful. Building a community dedicated to the uptake of these stakeholders-informed improvement proposals could ensure sustained engagement and impact.

11. Summary of Results and Conclusions

Summary of Results

As part of INSTRUCT, a structural HIV prevention trial in Botswana, I set out to explore alternative stakeholder-informed policy and practice options that could improve the HIV-sensitivity of existing promotive social protection programs in Botswana. HIV-sensitivity implies that social protection is inclusive of populations at risk of, living with, or impacted by HIV, and that HIV-vulnerable populations are meaningfully involved in the design, assessment, and implementation of programs. The direct stakeholders were the HIV-vulnerable population of unemployed and out-of-school young women in the age group 18 to 30 years and frontline service providers, program officers delivering the programs and technical officers responsible for land and water allocation, as land and water were prerequisites for eligibility for several programs. We investigated regional best practices in HIV-sensitive promotive social protection for unemployed and out-of-school young women in East and Southern Africa, and explored barriers and solutions to program benefit in five INSTRUCT intervention districts in Botswana. I translated findings from the regional review and exploratory study in Botswana into improvement proposals that ranged within and beyond the strict remit of social protection. A panel of the same direct stakeholders in Moshupa sub-district rated the improvement proposals for desirability and feasibility and ranked them for relative importance. This work offers policy makers a wide range of evidence-based policy and practice options to improve the HIV-sensitivity of available promotive social protection programs in Botswana.

A systematic review responded to research question 1: "*What are the regional best practices and recommendations for promotive HIV-sensitive social protection programs leveraged for unemployed and out-of-school young women?"*. The review examined the effects of work skills training, microfinance, and employment support on socioeconomic and HIV-related outcomes among adolescent girls and young women. The review focused on AGYW aged 15 to 30 years in East and Southern African countries with an HIV prevalence higher than 2.5%. I developed a conceptual framework for HIV-sensitive social protection to guide the review. I screened 3,870 titles and abstracts and 188 full-text papers. I retained 18 studies representing 12 socioeconomic empowerment projects. The review highlighted that improvement proposals should incorporate comprehensive support packages including life and job skills, microgrants rather than microloans, opportunities to save in a safe place, and supportive mentorship. Creating safe space, for example, through regular group meetings, could help young women develop social capital and provide a supportive environment where they could receive mentoring and psychosocial support. The review further suggested that prolonged support for interventions that are adapted to local contexts, government-supported intersectoral approaches, and enabling environments promoting gender equity, could contribute to an improved HIV-sensitivity of promotive social protection programs. I detailed the conceptual framework of HIV-sensitive social protection by adding training in gender and health/HIV as a supporting intervention alongside livelihood and employability interventions. I added mentorship and safe space as delivery mechanisms, and social capital as a socioeconomic outcome in addition to income and capabilities (Figure 4).

My second research question asked: *"Why do unemployed and out-of-school young women in Botswana rarely benefit from available promotive social protection programs and what do they and frontline service providers propose to remedy perceived barriers?".* Purposive sampling targeted participants with a direct stake in, experience with, or knowledge of, promotive social protection programs. The two stakeholder groups were unemployed and out-of-school young women and frontline service providers. A total of 146 young women and officers participated in (i) 11 fuzzy cognitive mapping workshops and (ii) five deliberative dialogue workshops in five INSTRUCT intervention districts in Botswana, and (iii) 20 semi-structed interviews in Moshupa sub-district.

Overall, participants perceived that promotive social protection programs in their current form were ineffective and inadequate to benefit unemployed and out-of-school young women. Participants reported barriers at every socioecological level. At the personal level, young women lacked life and job skills. At an interpersonal level, competing care responsibilities, negative peer influence and lack of support from family and boyfriends impeded program benefit. Outreach in *kgotlas* was a community-level barrier, as young women felt uncomfortable attending these formal community forums. Many of the reported barriers were structural: poverty, gender discriminatory norms, poor institutional coordination, lack of program adaptation to the local context, and a lack of access to land and water. In deliberative dialogue workshops, participants contributed improvement proposals that mainly focused on improving program outreach, delivery, and coordination.

Taken together, the systematic review and exploratory study generated 33 improvement proposals. Nineteen proposals were identified by both the review and exploratory study. The review identified six unique proposals and deliberative dialogues contributed five. After analysis of semi-structured interviews and fuzzy cognitive maps, I found another three improvement proposals (Appendix 5). The proposals clustered in four improvement categories: (i) programs; (ii) training; (iii) outreach; and (iv) program delivery and coordination.

I investigated the perceived desirability, feasibility, and relative importance of improvement proposals by responding to research question 3: *'With a view to improving the HIV-sensitivity of promotive social protection programs in Botswana, which policy and practice proposals do unemployed and out-of-school young women and frontline service providers support and prioritize, and how do their views differ?".* Using a modified Policy Delphi, a 30-person panel of 22 young women and eight officers in Moshupa sub-district assessed improvement proposals for desirability and feasibility in Round 1. They subsequently ranked two or three priority proposals for relative importance in Round 2. Panelists added six proposals in Round 1 and another one in Round 2, bringing the total to 40 improvement proposals. The panel rated nearly all 33 improvement proposals as very desirable and two third as definitely feasible. Nearly all 40 proposals received a top three priority rank from at least one panelist or workshop. Panelists perceived positive role models in program delivery, access to land and water, job skills training, and stipends as most important to empower young women through promotive social protection programs. Officers stressed foundational skills, like life skills and return to education, but young women selected specialized training and proposals with more concrete benefits like receiving grants, stipends, land, and water.

The main limitation of this research is the limited transferability of findings. I conducted the modified Policy Delphi in one intervention district only and I did not include policy levels in this research. The transferability of the method is its main strength. I contextualized the international literature in the experience and perceptions of local stakeholders. This study demonstrated the feasibility of involving direct stakeholders, including marginalized young women, in the generation and assessment of evidence-based options, and amplified their voice in the process of making existing social protection more HIV-sensitive.

Conclusion

Existing promotive social protection programs in Botswana are not well attuned to the needs and realities of unemployed and out-of-school young women. Structural factors like poverty, lack of education, and gender inequality compromise their ability to act on HIV prevention choices. Promotive social protection programs could address such structural drivers of HIV-vulnerability but unemployed and out-of-school young women rarely benefit from these programs. Meaningful involvement of HIV-vulnerable groups in the redesign of existing programs could start from a participatory research perspective. This might ensure the inclusion of HIV-vulnerable groups, hence HIV-sensitivity, in social protection programs designed for broad population groups. This thesis demonstrates the feasibility of such a process. Our approach of combining a systematic review, stakeholder views, and assessment and validation by direct stakeholders could be adapted to different local contexts. It may provide decision-makers with a range of locally acceptable alternative policy options that are evidence-based and take the interests, experiences, and knowledge of HIV-vulnerable groups affected by public policies into account.

12. References

1. Andersson N, Cockcroft A. Choice-disability and HIV infection: a cross sectional study of HIV status in Botswana, Namibia and Swaziland. AIDS Behav. 2012;16(1):189-98. https://doi.org/10.1007/s10461-011-9912-3
2. Cockcroft A, Marokoane N, Kgakole L, Kefas J, Andersson N. The Inter-ministerial National Structural Intervention trial (INSTRUCT): protocol for a parallel group cluster randomised controlled trial of a structural intervention to reduce HIV infection among young women in Botswana. BMC health services research. 2018;18(1):1-12. https://doi.org/10.1186/s12913-018-3638-0
3. Consortium SR. Addressing the structural drivers of HIV: A strive synthesis. UK: London School of Hygiene & Tropical Medicine 2019.Available from: http://strive.lshtm.ac.uk/resources/addressing-structural-drivers-hiv-strive-synthesis.
4. Ministry of Health, National AIDS and Health Promotion Agency, Statistics Botswana. BAIS V - Fifth Botswana AIDS Impact Survey. Preliminary Report. Gaborone: Government of Botswana; 2022.Available from: https://statsbots.org.bw/sites/default/files/publications/BAIS%20V%20Preliminary%20Report.pdf.
5. Ramogola-Masire D, Poku O, Mazhani L, Ndwapi N, Misra S, Arscott-Mills T, et al. Botswana's HIV response: Policies, context, and future directions. Journal of community psychology. 2020;48(3):1066-70. https://doi.org/10.1002/jcop.22316
6. Leiter K, Rappaport L, Rubenstein L, Iacopino V, Tamm I. Epidemic of Inequality. Women’s Rights and HIV/AIDS in Botswana and Swaziland. Cambridge, USA: Physicians for Human Rights; 2007.Available from: https://phr.org/our-work/resources/epidemic-of-inequality-womens-rights-and-hiv-aids-in-botswana-swaziland/.
7. Weiser SD, Leiter K, Bangsberg DR, Butler LM, Percy-de Korte F, Hlanze Z, et al. Food insufficiency is associated with high-risk sexual behavior among women in Botswana and Swaziland. PLoS Med. 2007;4(10):e260. https://doi.org/10.1371/journal.pmed.0040260
8. Andersson N. Prevention for those who have freedom of choice–or among the choice-disabled: confronting equity in the AIDS epidemic. AIDS Research and Therapy. 2006;3(1):23. https://doi.org/10.1186/1742-6405-3-23
9. WorldBank. Botswana Social Protection Programs and Systems Review. Washington DC, USA: The World Bank; 2022.Available from: https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099645103062256866/p1721750af4ddb0ce098d30b331412b0ab8.
10. WorldBank. Macro Poverty Outlook for Botswana : April 2022. Washington DC, USA: Macro Poverty Outlook (MPO) Washington, D.C. : World Bank Group.; 2022.Available from: https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099939404182211697/idu0f1c8cf9703b5504b6c08d45040ca25a1f281.
11. StatisticsBotswana. Multi-Topic Survey Quarter 4,2020 Labour Force Module Report. Gaborone, Botswana2021.Available from: https://www.statsbots.org.bw/multi-topic-survey-quarter-42020-labour-force-module-report-0.
12. Chinyoka I, Ulriksen MS. The Limits of the Influence of International Donors: Social Protection in Botswana. From Colonialism to International Aid. 2020:245-71. https://doi.org/10.1007/978-3-030-38200-1_10

13. Devereux S, Sabates-Wheeler R. Transformative social protection. IDS Working Paper, issue 232. Sussex, UK: Institute of Development Studies; 2004.Available from: https://www.ids.ac.uk/publications/transformative-social-protection/.
14. Seleka TB, Lekobane KR. Targeting Effectiveness of Social Transfer Programs in Botswana. BIDPA Working Paper 72. Gaborone, Botswana: Botswana Institute for Development Policy Analysis; 2020.Available from: http://knowledge.bidpa.bw:8080/xmlui/bitstream/handle/123456789/163/BIDPA%20Working%20Paper%2072_Targetting%20Effectiveness%20of%20Social%20Transfer%20Programs%20in%20Botswana%20Means-Te.pdf?sequence=1&isAllowed=y.
15. Tesliuc J, Mookodi L, Braithwaite J, Sharma S, Ntseane D. Botswana Social Protection Washington DC2013.Available from: https://openknowledge.worldbank.org/handle/10986/18968.
16. United Nations General Assembly. Political Declaration in HIV and AIDS: On the Fast track to Accelerating the Fight against HIV and to ending the AIDS Epidemic by 2030. Resolution 70/266. New York, USA: United Nations; 2016.Available from: http://www.unaids.org/sites/default/files/media_asset/2016-political-declaration-HIV-AIDS_en.pdf.
17. UNAIDS. Fast-Track Commitments to end AIDS by 2030. Geneva, Switzerland2016.Available from: https://www.unaids.org/en/resources/documents/2016/fast-track-commitments.
18. UNAIDS. UNAIDS Expanded Business Case: Enhancing Social Protection. In: WHO U, WFP, ILO, UNHCR, WorldBank, , editor. Geneva, Switzerland: UNAIDS; 2010.Available from: https://www.unaids.org/sites/default/files/media_asset/jc1879_social_protection_business_case_en_0.pdf.
19. UNAIDS. HIV and Social Protection Guidance Note. Geneva, Switzerland: UNAIDS; 2011.Available from: https://www.unicef-irc.org/files/documents/d-3827-HIV-and-Social-Protection.pdf.
20. UNAIDS. HIV and Social Protection. Guidance Note. Geneva, Switzerland: UNAIDS; 2014.Available from: https://www.unaids.org/en/resources/documents/2014/2014unaidsguidancenote_HIVandsocialprotection.
21. UNAIDS. HIV and social protection assessment tool. Generating evidence for policy and action on HIV and social protection. Geneva, Switzerland: UNAIDS; 2017.Available from: https://www.unaids.org/sites/default/files/media_asset/HIV-social-protection-assessment-tool_en.pdf.
22. UNAIDS. Social Protection: a Fast-Track commitment to end AIDS. Geneva, Switzerland2018.Available from: https://www.unaids.org/en/resources/documents/2018/social-protection-fast-track-commitment-end-aids.
23. Cockcroft A, Marokoane N, Kgakole L, Tswetla N, Andersson N. Access of choice-disabled young women in Botswana to government structural support programmes: a cross-sectional study. AIDS care. 2018;30(sup2):24-7. https://doi.org/10.1080/09540121.2018.1468009
24. Diraditsile K, Maphula P, Setambule T. The terrain and prospects for involving youth in social policy decision-making in Africa: Botswana's experience. Journal of Social Development in Africa2019. p. 7-24.Available from: https://www.proquest.com/docview/2407572015.

25. Molokwane T. Citizen involvement in the formulation of public policy. International Conference on Public Administration and Development …; 2018.Available from: http://ulspace.ul.ac.za/handle/10386/2504.
26. Mwansa L-K, Lucas T, Osei-Hwedie K. The practice of social policy in Botswana. Journal of social development in Africa1998. p. 55-74.Available from: https://pdfproc.lib.msu.edu/?file=/DMC/African+Journals/pdfs/social+development/vol13no2/jsda013002008.pdf.
27. StatisticsBotswana. 2022 Population and Housing Census - Preliminary Results V2. Gaborone, Botswana2022.Available from: https://www.statsbots.org.bw/sites/default/files/2022%20Population%20and%20Housing%20Census%20Preliminary%20Results.pdf.
28. Ministry of Finance and Economic Development G. National Development Plan 11. April 2017 - March 2023. Gaborone, Botswana2017. p. 292.Available from: https://www.tralac.org/documents/resources/by-country/botswana/1865-botswana-11th-national-development-plan-2017-2023.html.
29. McCaig B, McMillan MS, Verduzco-Gallo I, Jefferis K. Stuck in the middle? structural change and productivity growth in Botswana. In: (IFPRI) IFPRI, editor. Washington D.C., USA: National Bureau of Economic Research; 2017. p. 36.Available from: https://www.ifpri.org/publication/stuck-middle-structural-change-and-productivity-growth-botswana.
30. Macrotrends. Botswana GDP Growth Rate 1966-2022 2022 [cited June 2022. Available from: https://www.macrotrends.net/countries/BWA/botswana/gdp-growth-rate.
31. Vision 2036 Presidential Task Team G. Botswana Vision 2036. Achieving Prosperity For All. Gaborone, Botswana: GoB; 2016. p. 54.Available from: https://www.statsbots.org.bw/sites/default/files/documents/Vision%202036.pdf.
32. UNDP. Human Development Report 2020. The next frontier. Human development and the Anthropocene. New york, USA: UNDP; 2020.Available from: https://www.undp.org/botswana/publications/human-development-report-2020-next-frontier-human-development-and-anthropocene.
33. Ministry of Finance and Economic Development G. Mid-term review of National Development Plan 11 -draft. Gaborone, Botswana2020. p. 150.Available from: https://www.gobotswana.com/sites/default/files/ndp_11_mtr_draft_final_july_ndp_11_draft_mfed_31_july_2020.pdf.
34. UNICEF. Botswana Budget Brief - Education. Fiscal Year 2019/20. Gaborone, Botswana: UNICEF; 2019. p. 16.Available from: https://www.unicef.org/esa/documents/botswana-budget-briefs-2019.
35. UNICEF. Botswana Budget Brief - Health. Fiscal Year 2019/20. Gaborone, Botswana: UNICEF; 2019. p. 14.Available from: https://www.unicef.org/esa/documents/botswana-budget-briefs-2019.
36. WorldBank. Botswana, Human Capital Index 2020. Human Capital Project - October 2020. Washington DC, USA2021. p. 2.Available from: https://databank.worldbank.org/data/download/hci/HCI_2pager_BWA.pdf.
37. Donald de Korte, Patson Mazonde, Darkoh E. Introducing ARV therapy in the public sector in Botswana: Case study: World Health Organization; 2004 [Available from: https://pesquisa.bvsalud.org/portal/resource/pt/who-43065.

38. Creek TL, Ntumy R, Seipone K, Smith M, Mogodi M, Smit M, et al. Successful introduction of routine opt-out HIV testing in antenatal care in Botswana. JAIDS Journal of Acquired Immune Deficiency Syndromes. 2007;45(1):102-7. https://doi.org/10.1097/QAI.0b013e318047df88
39. Wolfe WR, Weiser SD, Leiter K, Steward WT, Percy-de Korte F, Phaladze N, et al. The impact of universal access to antiretroviral therapy on HIV stigma in Botswana. American Journal of Public Health. 2008;98(10):1865-71. https://doi.org/10.2105/AJPH.2007.122044
40. Marukutira T, Ussery F, Kadima E, Mills LA, Moore J, Block L, et al. Male circumcision uptake during the Botswana Combination Prevention Project. PloS one. 2022;17(6):e0269178. https://doi.org/10.1371/journal.pone.0269178
41. Makhema J, Wirth KE, Pretorius Holme M, Gaolathe T, Mmalane M, Kadima E, et al. Universal testing, expanded treatment, and incidence of HIV infection in Botswana. New England Journal of Medicine. 2019;381(3):230-42. https://doi.org/10.1056/NEJMoa1812281
42. UNAIDS. Country Progress Report - Botswana. Geneva, Switzerland: UNAIDS; 2020.Available from: https://www.unaids.org/sites/default/files/country/documents/BWA_2020_countryreport.pdf.
43. UNAIDS. **Botswana extends free HIV treatment to non-citizens** 2019 [cited June 2022. Available from: https://www.unaids.org/en/resources/presscentre/featurestories/2019/september/20190924_Botswana_treatment_non-nationals.
44. Bagcchi S. Mother-to-child transmission of HIV in Botswana. The Lancet Infectious Diseases. 2022;22(3):319. https://doi.org/10.1016/S1473-3099(22)00074-3
45. UNAIDS. Making the end of AIDS real: consensus building around what we mean by “epidemic control”. A meeting convened by the UNAIDS science panel. Geneva Switzerland: UNAIDS; 2017.Available from: https://www.unaids.org/sites/default/files/media_asset/glion_oct2017_meeting_report_en.pdf.
46. Ghys PD, Williams BG, Over M, Hallett TB, Godfrey-Faussett P. Epidemiological metrics and benchmarks for a transition in the HIV epidemic. PLoS medicine. 2018;15(10):e1002678. https://doi.org/10.1371/journal.pmed.1002678
47. UNAIDS. Country Factsheet Botswana 2021 [Available from: https://www.unaids.org/en/regionscountries/countries/botswana.
48. UNAIDS. Communities at the centre Geneva, Switzerland: Joint United Nations Programme on HIV/AIDS; 2019 [UNAIDS/JC2956:[Available from: https://www.unaids.org/en/resources/documents/2019/2019-global-AIDS-update.
49. Lebelonyane R, Bachanas P, Block L, Ussery F, Alwano MG, Marukutira T, et al. To achieve 95-95-95 targets we must reach men and youth: High level of knowledge of HIV status, ART coverage, and viral suppression in the Botswana Combination Prevention Project through universal test and treat approach. PloS one. 2021;16(8):e0255227. https://doi.org/10.1371/journal.pone.0255227
50. Boerma JT, Weir SS. Integrating demographic and epidemiological approaches to research on HIV/AIDS: the proximate-determinants framework. The Journal of infectious diseases. 2005;191(Supplement_1):S61-S7. https://doi.org/10.1086/425282
51. Link BG, Phelan J. Social conditions as fundamental causes of disease. Journal of health and social behavior. 1995:80-94. https://doi.org/10.2307/2626958

52. MacDonald DS. Notes on the socio-economic and cultural factors influencing the transmission of HIV in Botswana. Social science & medicine. 1996;42(9):1325-33. https://doi.org/10.1016/0277-9536(95)00223-5
53. Nkomazana F. Bogadi Practice and the Place of Women in the Botswana Society. In: Togarasei L, Chitando E, editors. Lobola (Bridewealth) in Contemporary Southern Africa: Implications for Gender Equality. Cham, Switzerland: Palgrave Macmillan; 2021. p. 167-83.
54. Denbow J, Thebe PC. Culture and customs of Botswana. Westport, USA: Greenwood Publishing Group; 2006. 269 p.
55. Nkomazana F. The experiences of women within Tswana cultural history and its implications for the history of the church in Botswana. Durban, South Africa: Studia Historiae Ecclesiasticae, UNISA Press; 2008. p. 83-116.Available from: https://uir.unisa.ac.za/handle/10500/4515.
56. Malinga T, Modie-Moroka T. Lived Experiences of Low-Income Unmarried Women in Rural Botswana: A Narrative Approach. Global Social Welfare. 2023;10(2):153-65. https://doi.org/10.1007/s40609-023-00273-y
57. Shannon K, Leiter K, Phaladze N, Hlanze Z, Tsai AC, Heisler M, et al. Gender inequity norms are associated with increased male-perpetrated rape and sexual risks for HIV infection in Botswana and Swaziland. PloS one. 2012;7(1):e28739. https://doi.org/10.1371/journal.pone.0028739.t001
58. Machisa M, van Dorp R. The Gender Based Violence Indicators Study: Botswana. African books collective; 2012.Available from: https://genderlinks.org.za/shop/the-gender-based-violence-indicators-study-botswana/.
59. Amnesty International. Botswana: positive reputation belies hidden violations. Amnesty International: Submission to the 43rd Session of the UPR Working Group, 3 May 2023. London, UK: Amnesty International; 2023.Available from: https://www.amnesty.org/es/wp-content/uploads/2023/01/AFR1560882022ENGLISH.pdf.
60. National Assembly. Domestic Violence Act, 2008. An Act to provide for the protection of survivors of domestic violence and for matters connected therewith. Gaborone, Botswana2008.Available from: https://www.botswanalaws.com/StatutesActpdf/2008Actpdf.
61. Stockman JK, Lucea MB, Campbell JC. Forced Sexual Initiation, Sexual Intimate Partner Violence and HIV Risk in Women: A Global Review of the Literature. AIDS and Behavior. 2013;17(3):832-47. https://doi.org/10.1007/s10461-012-0361-4
62. Jewkes RK, Dunkle K, Nduna M, Shai N. Intimate partner violence, relationship power inequity, and incidence of HIV infection in young women in South Africa: a cohort study. The lancet. 2010;376(9734):41-8. https://doi.org/10.1016/S0140-6736(10)60548-X
63. Campbell JC, Baty M, Ghandour RM, Stockman JK, Francisco L, Wagman J. The intersection of intimate partner violence against women and HIV/AIDS: a review. International journal of injury control and safety promotion. 2008;15(4):221-31. https://doi.org/10.1080/17457300802423224
64. Maman S, Mbwambo JK, Hogan NM, Kilonzo GP, Campbell JC, Weiss E, et al. HIV-positive women report more lifetime partner violence: findings from a voluntary counseling and testing clinic in Dar es Salaam, Tanzania. American journal of public health. 2002;92(8):1331-7. https://doi.org/10.2105/ajph.92.8.1331
65. Hasan T, Tanzer Z. Women's movements, plural legal systems and the Botswana constitution: how reform happens. World Bank Policy Research Working Paper. 2013(6690). https://doi.org/10.1596/1813-9450-6690

66. Thobega K. Botswana opts to make land owners of wives with new law Gaborone, Botswana2020 [cited June 2022. Available from: https://www.reuters.com/article/us-botswana-women-landrights-trfn-idUSKBN2682XF.
67. Cherchi L, Kirkwood D. Crossovers in Botswana: Women Entrepreneurs Who Operate in Male-Dominated Sectors Output for Women Entrepreneurship Study (P164089). Washington DC, USA: The World Bank; 2019.Available from: https://documents.worldbank.org/curated/en/290451565250128807/pdf/Crossovers-in-Botswana-Women-Entrepreneurs-Who-Operate-in-Male-Dominated-Sectors-Output-for-Women-Entrepreneurship-Study.pdf.
68. WorldBank. Botswana: Systematic Country Diagnostic. Gaborone, Botswana2015.Available from: https://documents.worldbank.org/en/publication/documents-reports/documentdetail/489431468012950282/botswana-systematic-country-diagnostic.
69. UNICEF. Country Office Annual Report 2022 - Botswana. Gaborone, Botswana: UNICEF; 2022.Available from: https://www.unicef.org/media/135506/file/Botswana-2022-COAR.pdf.
70. WorldBank. Unemployment, youth total (% of total labor force ages 15-24) (modeled ILO estimate) - Botswana 2023 [cited July, 2023. Available from: https://data.worldbank.org/indicator/SL.UEM.1524.ZS?locations=BW.
71. Austin KF, Choi MM, Berndt V. Trading sex for security: Unemployment and the unequal HIV burden among young women in developing nations. International Sociology. 2017;32(3):343-68. https://doi.org/10.1177/0268580917693172
72. Nachega JB, Uthman OA, Peltzer K, Richardson LA, Mills EJ, Amekudzi K, et al. Association between antiretroviral therapy adherence and employment status: systematic review and meta-analysis. Bulletin of the World Health Organization. 2014;93:29-41. https://doi.org/10.2471/BLT.14.138149
73. Low A, Gummerson E, Schwitters A, Bonifacio R, Teferi M, Mutenda N, et al. Food insecurity and the risk of HIV acquisition: findings from population-based surveys in six sub-Saharan African countries (2016–2017). BMJ open. 2022;12(7):e058704. https://doi.org/10.1136/bmjopen-2021-058704
74. Chop E, Duggaraju A, Malley A, Burke V, Caldas S, Yeh PT, et al. Food insecurity, sexual risk behavior, and adherence to antiretroviral therapy among women living with HIV: a systematic review. Health care for women international. 2017;38(9):927-44. https://doi.org/10.1080/07399332.2017.1337774
75. Aibibula W, Cox J, Hamelin A-M, McLinden T, Klein MB, Brassard P. Association between food insecurity and HIV viral suppression: a systematic review and meta-analysis. AIDS and Behavior. 2017;21:754-65. https://doi.org/10.1007/s10461-016-1605-5
76. Jukes M, Simmons S, Bundy D. Education and vulnerability: the role of schools in protecting young women and girls from HIV in southern Africa. Aids. 2008;22:S41-S56. https://doi.org/10.1097/01.aids.0000341776.71253.04
77. De Neve J-W, Fink G, Subramanian S, Moyo S, Bor J. Length of secondary schooling and risk of HIV infection in Botswana: evidence from a natural experiment. The Lancet Global Health. 2015;3(8):e470-e7. https://doi.org/10.1111/tmi.13328
78. Stoner MC, Pettifor A, Edwards JK, Aiello AE, Halpern CT, Julien A, et al. The effect of school attendance and school dropout on incident HIV and HSV-2 among young women in rural South Africa enrolled in HPTN 068. AIDS. 2017;31(15):2127-34. https://doi.org/10.1097/QAD.0000000000001584

79. Sherr L, Cluver LD, Betancourt TS, Kellerman SE, Richter LM, Desmond C. Evidence of impact: health, psychological and social effects of adult HIV on children. Aids. 2014;28:S251-S9. https://doi.org/10.1097/QAD.0000000000000327
80. Tsai AC, Bangsberg DR, Weiser SD. Harnessing poverty alleviation to reduce the stigma of HIV in Sub-Saharan Africa. PLoS medicine. 2013;10(11):e1001557. https://doi.org/10.1371/journal.pmed.1001557
81. UNAIDS. Report on the global HIV/AIDS epidemic. Geneva, Switzerland: UNAIDS; 2000.Available from: https://www.unaids.org/en/resources/documents/2000/20000619_2000_gr.
82. UNAIDS. Intensifying HIV prevention. UNAIDS policy position paper. Geneva, Switzerland: UNAIDS; 2005.Available from: https://data.unaids.org/publications/irc-pub06/jc1165-intensif_hiv-newstyle_en.pdf.
83. Norton A, Conway T, Foster M. Social protection concepts and approaches: Implications for policy and practice in international development. London, UK: Overseas Development Institute London; 2001.Available from: https://cdn.odi.org/media/documents/2999.pdf.
84. Midgley J. Advanced Introduction to Social Protection. Cheltenham, UK: Edward Elgar Publishing; 2022. 160 p.
85. Midgley J. Social protection and social policy: Key issues and debates. Journal of Policy Practice. 2012;11(1-2):8-24. https://doi.org/10.1080/15588742.2012.624061
86. ILO. Building social protection systems: International standards and human rights instruments. Geneva, Switzerland: International Labour Office Geneva; 2019.Available from: https://www.ilo.org/wcmsp5/groups/public/---ed_protect/---soc_sec/documents/publication/wcms_651219.pdf.
87. Sepúlveda MM, Nyst C. The human rights approach to social protection. Helsinki, Finland: Ministry for Foreign Affairs of Finland; 2012.Available from: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2114384.
88. International Labour Organization I. C102 Social Security (Minimum Standards) Convention, 1952 (No. 102) Geneva, Switzerland: ILO; 1952 [cited Oct 2022. Available from: https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C102.
89. Mkandawire T. Social policy in a development context: Introduction. Social policy in a development context. London, UK: Palgrave Macmillan; 2004. p. 1-33.Available from: https://www.files.ethz.ch/isn/102709/7.pdf.
90. Desai M. Human development: concepts and measurement. European Economic Review. 1991;35(2-3):350-7. https://doi.org/10.1016/0014-2921(91)90136-7
91. United Nations Development Programme U. Human Development Report 1990. New York, USA: Oxford University Press; 1990.Available from: https://hdr.undp.org/content/human-development-report-1990.
92. International Labour Organization I. R202 - Social Protection Floors Recommendation, 2012 (No. 202) Geneva: ILO; 2012 [Jan 2022]. Available from: https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_INSTRUMENT_ID:3065524.
93. Van Ginneken W. Social protection, the millennium development goals and human rights. IDS Bulletin2011. p. 111-7.Available from: https://www.ids.ac.uk/files/dmfile/VanGinneken2011HumanrightsbasedapproachtoMDGsCSPconferencedraft.pdf.

94. Patel L. Sharing innovative experiences: Successful social protection floor experiences. New York: United Nations Development Programme; 2011.Available from: https://www.ilo.org/secsoc/information-resources/publications-and-tools/books-and-reports/WCMS_SECSOC_20840/lang--en/index.htm.
95. Ranieri R, Almeida Ramos R. Inclusive growth: Building up a concept. Working Paper , No104. Brasilia, Brazil: International Policy Centre for Inclusive Growth; 2013.Available from: http://hdl.handle.net/10419/71821.
96. United Nations. Sustainable Development Goals 2015 [cited Dec 2022. Available from: https://www.un.org/sustainabledevelopment/poverty/.
97. Guhan S. Social security options for developing countries. International Labour Review1994. p. 35.Available from: https://heinonline.org/HOL/LandingPage?handle=hein.journals/intlr133&div=11&id=&page=.
98. Mathers N, Slater R. Social protection and growth: Research synthesis. Barton, Australia: Australia: Department of Foreign Affairs and Trade Australian Government; 2014.Available from: https://www.social-protection.org/gimi/gess/RessourcePDF.action?ressource.ressourceId=54036.
99. World Bank. The World Bank 2012–2022 social protection and labor strategy: Resilience, equity and opportunity. Washington D.C, USA: World Bank Group; 2012.Available from: http://documents.worldbank.org/curated/en/443791468157506768/Resilience-equity-and-opportunity-the-World-Banks-social-protection-and-labor-strategy-2012-2022.
100. Jorgensen SL, Siegel PB. Social Protection in an Era of Increasing Uncertainty and Disruption. Social Protection and Jobs Discussion Paper,no 1930 Washington D.C.: The World Bank Group; 2019.Available from: http://documents.worldbank.org/curated/en/263761559643240069/Social-Protection-in-an-Era-of-Increasing-Uncertainty-and-Disruption-Social-Risk-Management-2-0.
101. Molyneux M, Jones WN, Samuels F. Can cash transfer programmes have 'transformative'effects? The Journal of Development Studies. 2016;52(8):1087-98. https://doi.org/10.1080/00220388.2015.1134781
102. Deacon B, Cohen S. From the global politics of poverty alleviation to the global politics of social solidarity. Global Social Policy. 2011;11(2-3):233-49. https://doi.org/10.1177/1468018111421294
103. UNAIDS. Expanding the global response to HIV/AIDS through focused action. Reducing risk and vulnerability: definitions, rationale and pathways. Geneva, Switzerland: UNAIDS; 1998.Available from: https://www.unaids.org/sites/default/files/media_asset/jc171-expglobresp_en_0.pdf.
104. Gupta GR, Parkhurst JO, Ogden JA, Aggleton P, Mahal A. Structural approaches to HIV prevention. The Lancet. 2008;372(9640):764-75. https://doi.org/10.1016/S0140-6736(08)60887-9
105. Bonilla Garcia A, Gruat JV. Social protection: a life cycle continuum investment for social justice, poverty reduction and development. Geneva, Switzerland: International Labour Office; 2003.Available from: https://www.ilo.org/public/english/protection/download/lifecycl/lifecycle.pdf.
106. Ainsworth M, Teokul W. Breaking the silence: setting realistic priorities for AIDS control in less-developed countries. The Lancet. 2000;356(9223):55-60. https://doi.org/10.1016/S0140-6736(00)02440-5

107. UNAIDS. Practical Guidelines for Intensifying HIV Prevention. Towards universal Access. Geneva, Switzerland: UNAIDS; 2007.Available from: https://data.unaids.org/pub/manual 2007/20070306_prevention_guidelines_towards_universal_access_en.pdf.
108. UNAIDS. Joint Action for Results. UNAIDS Outcome Framework 2009-2011. Geneva, Switzerland: UNAIDS; 2010.Available from: https://www.unaids.org/en/resources/documents/2010/20100428_jc1713_joint_action_en.pdf.
109. UNAIDS. Fast-track: ending the AIDS epidemic by 2030. In: WHO, editor. UNAIDS/JC2686. Geneva, Switzerland: UNAIDS; 2014.Available from: http://www.unaids.org/sites/default/files/media_asset/JC2686_WAD2014report_en.pdf.
110. Palella Jr FJ, Delaney KM, Moorman AC, Loveless MO, Fuhrer J, Satten GA, et al. Declining morbidity and mortality among patients with advanced human immunodeficiency virus infection. New England Journal of Medicine. 1998;338(13):853-60. https://doi.org/10.1056/NEJM199803263381301
111. Cohen MS, Chen YQ, McCauley M, Gamble T, Hosseinipour MC, Kumarasamy N, et al. Prevention of HIV-1 infection with early antiretroviral therapy. New England journal of medicine. 2011;365(6):493-505. https://doi.org/10.1056/NEJMoa1105243
112. Fonner VA, Dalglish SL, Kennedy CE, Baggaley R, O'reilly KR, Koechlin FM, et al. Effectiveness and safety of oral HIV preexposure prophylaxis for all populations. AIDS (London, England). 2016;30(12):1973. https://doi.org/10.1097/QAD.0000000000001145
113. Grant RM, Lama JR, Anderson PL, McMahan V, Liu AY, Vargas L, et al. Preexposure chemoprophylaxis for HIV prevention in men who have sex with men. New England Journal of Medicine. 2010;363(27):2587-99. https://doi.org/10.1056/NEJMoa1011205
114. UNAIDS. Progress Report Summary 2011. In: WHO, editor. Geneva, Switzerland: UNAIDS; 2011.Available from: https://files.unaids.org/en/media/unaids/contentassets/documents/unaidspublication/2011/20111130_UA_Report_summary_en.pdf.
115. Piot P, Karim SSA, Hecht R, Legido-Quigley H, Buse K, Stover J, et al. Defeating AIDS—advancing global health. The Lancet. 2015;386(9989):171-218. https://doi.org/10.1016/S0140-6736(15)60658-4
116. UNAIDS. On the Fast-Track to end AIDS. 2016-2021 Strategy. Geneva, Switzerland: UNAIDS; 2015.Available from: https://www.unaids.org/sites/default/files/media_asset/20151027_UNAIDS_PCB37_15_18_EN_rev1.pdf.
117. UNAIDS. Understanding Fast-Track. Accelerating action to end the AIDS epidemic by 2030. Geneva, Switzerland: UNAIDS; 2015.Available from: https://www.unaids.org/en/resources/documents/2015/201506_JC2743_Understanding_FastTrack.
118. UNAIDS. Get on the Fast-Track — The life-cycle approach to HIV. Finding solutions for everyone at every stage of life. Geneva, Switzerland: UNAIDS; 2016.Available from: https://www.unaids.org/sites/default/files/media_asset/Get-on-the-Fast-Track_en.pdf.
119. UNAIDS. Social Protection: a Fast-Track commitment to end AIDS. Geneva2018.Available from: http://www.unaids.org/en/resources/documents/2018/social-protection-fast-track-commitment-end-aids.
120. UNAIDS. EVIDENCE REVIEW Implementation of the 2016–2021 UNAIDS Strategy: on the

Fast-Track to end AIDS. Geneva, Switzerland: UNAIDS; 2020.Available from: https://www.unaids.org/sites/default/files/media_asset/PCB47_CRP3_Evidence_Review_EN.pdf.
121. UNAIDS. Global AIDS Strategy 2021-2026—End inequalities. end AIDS. Geneva, Switzerland: UNAIDS; 2021.Available from: https://www.unaids.org/en/resources/documents/2021/2021-2026-global-AIDS-strategy.
122. Stoner MC, Kilburn K, Godfrey-Faussett P, Ghys P, Pettifor AE. Cash transfers for HIV prevention: A systematic review. PLoS medicine. 2021;18(11):e1003866. https://doi.org/10.1371/journal.pmed.1003866
123. Seekings J. The discourse of dependency and the agrarian roots of welfare doctrines in Africa: The case of Botswana. Fribourg, Switzerland: Sozialpolitik.ch; 2017. p. 23.Available from: https://www.sozialpolitik.ch/fileadmin/user_upload/2017_2_Article_Seekings.pdf.
124. Seekings J. Building a conservative welfare state in Botswana. CSSR Working Paper. 2017;388. https://doi.org/10.35188/UNU-WIDER/2017/307-3
125. Seekings J. The effects of colonialism on social protection in South Africa and Botswana. From Colonialism to International Aid: External Actors and Social Protection in the Global South. 2020:109-35. https://doi.org/10.1007/978-3-030-38200-1_5
126. Ulriksen MS. Mineral wealth and limited redistribution: social transfers and taxation in Botswana. Journal of Contemporary African Studies. 2017;35(1):73-92. https://doi.org/10.1080/02589001.2016.1246684
127. Adesina JO. Beyond the social protection paradigm: social policy in Africa's development. Canadian Journal of Development Studies/Revue canadienne d'études du développement. 2011;32(4):454-70. https://doi.org/10.1080/02589001.2016.1246684
128. Nthomang K. Botswana's Ipelegeng Programme Design and Implementation: Reduction or Perpetuation/Entrenchment of Poverty? Asian Journal of Social Science Studies. 2018;3(3):27. https://doi.org/10.20849/ajsss.v3i3.445
129. Ministry of Agriculture. Guidelines for Integrated Support Programme for Arable Agriculture Development (ISPAAD). Gaborone, Botswana: GoB; 2013.Available from: https://www.gov.bw/sites/default/files/2019-12/ISPAAD%20Guidelines%20Revised%20May%202013_0.pdf.
130. Ministry of Agriculture. Livestock Management and Infrastructure Development Programme. Agricultural Support Programme Guidelines. Gaborone, Botswana2010.Available from: https://www.gov.bw/sites/default/files/2019-12/LIMID%20Phase%20II%20Guidelines.pdf.
131. Marumo D, Tselaesele N, Batlang U, Nthoiwa G, Jansen R. Poverty and social impact analysis of the Integrated Support Programme for Arable Agriculture Development in Botswana. Poverty Environment Initiative (PEI) Working Paper. Gaborone, Botswana: UNDP, UNEP; 2014.Available from: https://www.unpei.org/files/pdf/botswana_working_paper_2%20_psia_of_the_integrated_support_programme_for_arable_agriculture_development_2014.pdf.
132. Moreki J, Mokokwe J, Keboneilwe D, Koloka O. Evaluation of the livestock management and infrastructure development support scheme in seven districts of Botswana. Livestock Research for Rural Development. Gaborone, Botswana: Ministry of Agriculture; 2010. p. 87.Available from: https://www.lrrd.cipav.org.co/lrrd22/5/more22087.htm.

133. Republic of Botswana. Revised National Youth Policy. In: Ministry of Youth Empowerment SaCD, editor. Gaborone, Botswana2010.Available from: https://www.youthpolicy.org/national/Botswana_2010_National_Youth_Policy.pdf.
134. Office of the President. Poverty Eradication Guidelines. Implementation packages. Gaborone, Botswana: GoB; 2012.Available from: https://extranet.who.int/mindbank/item/2133.
135. Republic Of Botswana. Education & Training Sector Strategic Plan (ETSSP 2015-2020). Gaborone, Botswana: GoB; 2015.Available from: https://www.gov.bw/sites/default/files/2020-03/ETSSP%20Final%20Document.pdf.
136. Ministry of Education and Skills Development. Botswana National Education For All 2015 Review. Botswana Country report. Gaborone, Botswana: GoB; 2015.Available from: https://unesdoc.unesco.org/ark:/48223/pf0000231568.
137. Tau DR. Strategies for sustainable open and distance learning: From policy to practice: A case study of the Botswana college of distance and open learning (BOCODOL). World review of distance education and open learning series Volume six: Strategies for sustainable open and distance learning. 15. London, UK: Commonwealth of Learning and Routledge Falmer Press; 2005.
138. Botswana Open University. BOU/BOCODOL Annual Report 201718. Gaborone, Botswana2019.Available from: http://www.bou.ac.bw/images/annual_report/annual_report_201718.pdf.
139. Diraditsile K. Accelerating youth empowerment for a sustainable development in Botswana: Assessment of potential, prospects and development. In: Amutabi MN, Hamasi L, editors. Politics and sustainable development in Africa Centre for Democracy, Research and Development. Nairobi, Kenya: Centre for Democracy, Research and Development; 2020. p. 10-21.
140. Ministry of Youth Empowerment SaCD. Botswana National Service Programme - Tirelo Sechaba Gaborone, Botswana: GoB; 2014 [Available from: https://www.gov.bw/ministries/ministry-youth-empowerment-sport-and-culture-development.
141. Botswana Press Agency (BOPA). Number of initivaitives for youth empowerment Gaborone, Botswana: GoB; 2022 [cited Dec 2022. Available from: https://dailynews.gov.bw/news-detail/66212.
142. Cockcroft A, Marokoane N, Kgakole L, Kefas J, Andersson N. The Inter-ministerial National Structural Intervention trial (INSTRUCT): protocol for a parallel group cluster randomised controlled trial of a structural intervention to reduce HIV infection among young women in Botswana. BMC health services research. 2018;18(1):822. https://doi.org/10.1186/s12913-018-3638-0
143. Andersson N. Proof of impact and pipeline planning: directions and challenges for social audit in the health sector. BMC health services research. 2011;11(2):S16. https://doi.org/10.1186/1472-6963-11-S2-S16
144. Cockcroft A, Kgakole L, Marokoane N, Andersson N. A role for traditional doctors in health promotion: experience from a trial of HIV prevention in Botswana. Global health promotion. 2018:1757975918785563. https://doi.org/10.1177/1757975918785563
145. Botlhale E, Mogopodi L, Mothusi B, Motshegwa B. A Political Economy Analysis of Social Protection Programmes in Botswana. PASGR Working Paper 001. No. 001 ed. Nairobi, Kenya: Partnership for African Social and Governance Research; 2015.Available from: http://www.pasgr.org/wp-content/uploads/2016/04/A-Political-Economy-Analysis-of-Social-Protection-Programmes-in-Botswana.pdf.

146. Seleke TL, Mokaloba M. Has Donor Funding Been Able to Change the HIV/AIDS Policy Agenda in Botswana? Botswana Notes and Records. 2018;50:166-77. https://doi.org/10.2307/90026906
147. University H. Botswana Harvard AIDS Institute (BHP) Partnership for HIV research and education 2023 [cited May 2023. Available from: https://bhp.org.bw/.
148. University of Pennsylvania - Perelman School of Medicine. Botswana-UPenn Partnership 2023 [May 2023]. Available from: https://www.med.upenn.edu/botswana/.
149. University of Maryland. Botswana-University of Maryland School of Medicine Health Initiative (Bummhi) 2023 [cited May 2023. Available from: https://ciheb.org/Botswana/.
150. Baylor College of Medicine - Texas Children's Hospital. Botswana-Baylor Children's Clinical Centre of Excellence Trust 2023 [cited May 2023. Available from: https://www.texaschildrensglobalhealth.org/botswana.
151. Heckman JJ, Kautz T. Hard evidence on soft skills. Labour economics. 2012;19(4):451-64. https://doi.org/10.1016/j.labeco.2012.05.014
152. Lippman LH, Rybers R, Carney R, Moore KA. Workforce Connections: Key 'soft skills' that foster youth workforce success: toward a consensus across fields. Workforce Connections. Washington D.C. : Child Trends 2015. p. 56.Available from: https://www.childtrends.org/?publications=key-soft-skills-that-foster-youth-workforce-success-toward-a-consensus-across-fields.
153. McKenzie D. How effective are active labor market policies in developing countries? a critical review of recent evidence. The World Bank Research Observer2017. p. 127-54.Available from: https://elibrary.worldbank.org/doi/10.1596/1813-9450-8011.
154. Adoho F, Chakravarty S, Korkoyah DT, Lundberg M, Tasneem A. The impact of an adolescent girls employment program: The EPAG project in Liberia. Policy Research Working Paper. Washington DC: The World Bank; 2014.Available from: http://hdl.handle.net/10986/17718.
155. Hung A, Yoong J, Brown E. Empowering women through financial awareness and education. OECD Working Papers on Finance, Insurance and Private Pensions. 2012. https://doi.org/10.1787/5k9d5v6kh56g-en
156. Jiyane G, Zawada B. Sustaining informal sector women entrepreneurs through financial literacy. Libri. 2013;63(1):47-56. https://doi.org/10.1515/libri-2013-0004
157. Chinen M, De Hoop T, Alcázar L, Balarin M, Sennett J. Vocational and business training to improve women's labour market outcomes in low-and middle-income countries: a systematic review. Campbell Systematic Reviews. 2017;13(1):1-195. https://doi.org/10.4073/csr.2017.16
158. Dworkin SL, Blankenship K. Microfinance and HIV/AIDS prevention: assessing its promise and limitations. AIDS and Behavior. 2009;13(3):462-9. https://doi.org/10.1007/s10461-009-9532-3
159. Banerjee A, Duflo E, Goldberg N, Karlan D, Osei R, Parienté W, et al. A multifaceted program causes lasting progress for the very poor: Evidence from six countries. Science. 2015;348(6236):1260799. https://doi.org/10.1126/science.1260799
160. Mahmud M, Otsuka K, Sawada Y, Tanaka M, Tanaka T. Women Empowerment in Bangladesh: Household Decisions under Development of Non-Farm Sectors and Microfinance Institutions. JICA-RI Working Paper2017.Available from: https://www.jica.go.jp/Resource/jica-ri/publication/workingpaper/wp_154.html.
161. Pronyk PM, Hargreaves JR, Kim JC, Morison LA, Phetla G, Watts C, et al. Effect of a structural intervention for the prevention of intimate-partner violence and HIV in rural South

Africa: a cluster randomised trial. The Lancet. 2006;368(9551):1973-83. https://doi.org/10.1016/S0140-6736(06)69744-4
162. Odek WO, Busza J, Morris CN, Cleland J, Ngugi EN, Ferguson AG. Effects of micro-enterprise services on HIV risk behaviour among female sex workers in Kenya's urban slums. AIDS and Behavior. 2009;13(3):449. https://doi.org/10.1007/s10461-008-9485-y
163. Witte SS, Aira T, Tsai LC, Riedel M, Offringa R, Chang M, et al. Efficacy of a savings-led microfinance intervention to reduce sexual risk for HIV among women engaged in sex work: a randomized clinical trial. American Journal of Public Health. 2015;105(3):e95-e102. https://doi.org/10.2105/AJPH.2014.302291
164. Dladla L, Mutambara E. The Impact of Training and Support Interventions on Small Businesses in the Expanded Public Works Programme—Pretoria Region. Westville, South Africa: University of KwaZulu-Natal; 2017. 248 p.
165. Subbarao K. Public works as an anti-poverty program: An overview of cross-country experience. American journal of agricultural economics. 1997;79(2):678-83. https://doi.org/10.2307/1244171
166. Acevedo P, Cruces G, Gertler P, Martinez S. How Vocational Education Made Women Better Off but Left Men Behind. Labour Economics. 2020:101824. https://doi.org/10.1016/j.labeco.2020.101824
167. Abel M, Burger R, Carranza E, Piraino P. Bridging the intention-behavior gap? The effect of plan-making prompts on job search and employment. American Economic Journal: Applied Economics. 2019;11(2):284-301. https://doi.org/10.1257/app.20170566
168. Carranza E, Garlick R, Orkin K, Rankin N. Job search and hiring with limited information about workseekers' skills. American Economic Review. 2022;112(11):3547-83. https://doi.org/10.1257/aer.20200961
169. Popay J, Roberts H, Sowden A, Petticrew M, Arai L, Rodgers M, et al. Guidance on the conduct of narrative synthesis in systematic reviews: a product from the ESRC Methods Programme. Lancaster: Lancaster University. 2006;10(2.1):1018.4643.
170. Gaolathe T, Wirth KE, Holme MP, Makhema J, Moyo S, Chakalisa U, et al. Botswana's progress toward achieving the 2020 UNAIDS 90-90-90 antiretroviral therapy and virological suppression goals: a population-based survey. The lancet HIV. 2016;3(5):e221-e30. https://doi.org/10.1016/S2352-3018(16)00037-0
171. AVERT. HIV and AIDS in Botswana 2020 [Available from: https://www.avert.org/professionals/hiv-around-world/sub-saharan-africa/botswana.
172. Kim J, Pronyk P, Barnett T, Watts C. Exploring the role of economic empowerment in HIV prevention. Aids. 2008;22:S57-S71. https://doi.org/10.1097/01.aids.0000341777.78876.40.
173. Stoner MC, Pettifor A, Edwards JK, Aiello AE, Halpern C, Julien A, et al. The effect of school attendance and school dropout on incident HIV and HSV-2 among young women in rural South Africa enrolled in HPTN 068. AIDS (London, England). 2017;31(15):2127. https://doi.org/10.1097/QAD.0000000000001584
174. van der Wal R, Loutfi D, Hong QN, Vedel I, Cockcroft A, Johri M, et al. HIV-sensitive social protection for vulnerable young women in East and Southern Africa: a systematic review. Journal of the International AIDS Society. 2021;24(9):e25787. https://doi.org/10.1002/jia2.25787
175. UNICEF. Botswana Budget Brief - Social Protection. Fiscal Year 2019/20. Gaborone, Botswana: UNICEF; 2019. p. 17.Available from: https://www.unicef.org/esa/documents/botswana-budget-briefs-2019.

176. StatisticsBotswana. Agricultural Census. Stats Brief 2015. Gaborone: Statistics Botswana; 2015. p. 14.Available from: https://www.statsbots.org.bw/sites/default/files/publications/Agric%20Stats%20Brief%202015.pdf.
177. Israel BA, Schulz AJ, Parker EA, Becker AB. Review of community-based research: assessing partnership approaches to improve public health. Annual review of public health. 1998;19(1):173-202. https://doi.org/0163-7525/98/0510-0173$08.00
178. Andersson N. Participatory research—A modernizing science for primary health care. Journal of general and family medicine. 2018;19(5):154-9. https://doi.org/10.1002/jgf2.187
179. Andersson N, Silver H. Fuzzy cognitive mapping: an old tool with new uses in nursing research. Journal of Advanced Nursing. 2019;75(12):3823-30. https://doi.org/10.1111/jan.14192
180. Gray SA, Zanre E, Gray SR. Fuzzy cognitive maps as representations of mental models and group beliefs. Fuzzy cognitive maps for applied sciences and engineering. 2014:29-48. https://doi.org/10.1007/978-3-642-39739-4_2
181. Giles BG, Findlay CS, Haas G, LaFrance B, Laughing W, Pembleton S. Integrating conventional science and aboriginal perspectives on diabetes using fuzzy cognitive maps. Social science & medicine. 2007;64(3):562-76. https://doi.org/10.1016/j.socscimed.2006.09.007
182. Abelson J, Forest P-G, Eyles J, Smith P, Martin E, Gauvin F-P. Deliberations about deliberative methods: issues in the design and evaluation of public participation processes. Social science & medicine. 2003;57(2):239-51. https://doi.org/10.1016/S0277-9536(02)00343-X
183. Cargo M, Mercer SL. The value and challenges of participatory research: strengthening its practice. Annu Rev Public Health. 2008;29:325-50. https://doi.org/10.1146/annurev.publhealth.29.091307.083824
184. Marshall C, Rossman GB. Designing qualitative research. 5th ed. New York, USA: SAGE Publications; 2014. 344 p.
185. Ritchie J, Spencer L. Qualitative data analysis for applied policy research. In: Alan Bryman, Burgess R, editors. Analyzing qualitative data. London, UK: Routledge; 2002. p. 187-208.
186. Sarmiento I, Ansari U, Omer K, Gidado Y, Baba MC, Gamawa AI, et al. Causes of short birth interval (kunika) in Bauchi State, Nigeria: systematizing local knowledge with fuzzy cognitive mapping. Reproductive health. 2021;18(1):1-18. https://doi.org/https://doi.org/10.1186/s12978-021-01066-2
187. Bronfenbrenner U. Toward an experimental ecology of human development. American psychologist. 1977;32(7):513. https://doi.org/10.1037/0003-066X.32.7.513
188. McLeroy KR, Bibeau D, Steckler A, Glanz K. An ecological perspective on health promotion programs. Health education quarterly. 1988;15(4):351-77. https://doi.org/10.1177/109019818801500401
189. Shaibu S. Ethical and cultural considerations in informed consent in Botswana. Nursing ethics. 2007;14(4):503-9. https://doi.org/10.1177/0969733007077884
190. Ministry of Health M. Guide for consent form. Gaborone: Government of Botswana; 2013.Available from: https://www.moh.gov.bw/Publications/research/GUIDE_CONSENT_FORM_Version.pdf.
191. Gibbs A, Washington L, Abdelatif N, Chirwa E, Willan S, Shai N, et al. Stepping Stones and Creating Futures intervention to prevent intimate partner violence among young people: cluster randomized controlled trial. Journal of Adolescent Health. 2020;66(3):323-35. https://doi.org/10.1016/j.jadohealth.2019.10.004

192. Pettifor A, Wamoyi J, Balvanz P, Gichane MW, Maman S. Cash plus: exploring the mechanisms through which a cash transfer plus financial education programme in Tanzania reduced HIV risk for adolescent girls and young women. Journal of the International AIDS Society. 2019;22:e25316. https://doi.org/10.1002/jia2.25316
193. Goodman ML, Selwyn BJ, Morgan RO, Lloyd LE, Mwongera M, Gitari S, et al. Sexual behavior among young carers in the context of a Kenyan Empowerment Program Combining Cash-Transfer, Psychosocial Support, and Entrepreneurship. The Journal of Sex Research. 2016;53(3):331-45. https://doi.org/10.1080/00224499.2015.1035429
194. Pronyk PM, Kim JC, Abramsky T, Phetla G, Hargreaves JR, Morison LA, et al. A combined microfinance and training intervention can reduce HIV risk behaviour in young female participants. Aids. 2008;22(13):1659-65. https://doi.org/10.1097/QAD.0b013e328307a040
195. Austrian K, Anderson AD. Barriers and facilitators to health behaviour change and economic activity among slum-dwelling adolescent girls and young women in Nairobi, Kenya: The role of social, health and economic assets. Sex Education. 2015;15(1):64-77. https://doi.org/10.1080/14681811.2014.947364
196. Austrian K, Soler-Hampejsek E, Behrman JR, Digitale J, Hachonda NJ, Bweupe M, et al. The impact of the Adolescent Girls Empowerment Program (AGEP) on short and long term social, economic, education and fertility outcomes: a cluster randomized controlled trial in Zambia. BMC public health. 2020;20(1):1-15. https://doi.org/10.1186/s12889-020-08468-0
197. Bandiera O, Buehren N, Burgess R, Goldstein M, Gulesci S, Rasul I, et al. Women's empowerment in action: evidence from a randomized control trial in Africa. eLibrary: World Bank; 2018.Available from: https://elibrary.worldbank.org/doi/abs/10.1596/28282.
198. Bukuluki PM, Kamya S, Kasirye R, Nabulya A. Facilitating the transition of adolescents and emerging adults from care into employment in Kampala, Uganda: A case study of Uganda youth development link. Emerging Adulthood. 2020;8(1):35-44. https://doi.org/10.1177/2167696819833592
199. Leclerc-Madlala S. Transactional sex and the pursuit of modernity. Social dynamics. 2003;29(2):213-33. https://doi.org/10.1080/02533950308628681
200. Wamoyi J, Wight D, Plummer M, Mshana GH, Ross D. Transactional sex amongst young people in rural northern Tanzania: an ethnography of young women's motivations and negotiation. Reproductive health. 2010;7(1):2. https://doi.org/10.1371/journal.pone.0214366
201. Heymann J, Kidman R. HIV/AIDS, declining family resources and the community safety net. AIDS care. 2009;21(sup1):34-42. https://doi.org/10.1080/09540120902927593
202. WorldBank. Poverty & Equity Brief Botswana 2020 [Available from: https://www.worldbank.org/en/topic/poverty/publication/poverty-and-equity-briefs.
203. Republic of Botswana. Destitute Allowance 2022 [cited April 2022. Available from: https://www.gov.bw/allowances/destitute-allowance.
204. Mahler DG, Yonzan N, HIll R, Lakner C, Wu H, Yoshida N. Pandemics, prices, and poverty World Bank Blogs2022 [Available from: https://blogs.worldbank.org/opendata/pandemic-prices-and-poverty.
205. Hashemi SM, De Montesquiou A. Reaching the poorest: Lessons from the graduation model: Consultative Group to Assist the Poor; 2011 [Available from: https://www.cgap.org/research/publication/reaching-poorest-lessons-graduation-model.
206. Shah AK, Mullainathan S, Shafir E. Some consequences of having too little. Science. 2012;338(6107):682-5. https://doi.org/10.1126/science.1222426

207. Marcus R. The norms factor: recent research on gender, social norms, and women's economic empowerment Ottawa, Canada: International Development Research Centre; 2018 [Available from: https://www.odi.org/publications/11226-norms-factor-recent-research-gender-social-norms-and-womens-economic-empowerment.
208. Ntseane P. Being a female entrepreneur in Botswana: cultures, values, strategies for success. Gender & Development. 2004;12(2):37-43. https://doi.org/10.1080/13552070412331332180
209. Hovorka AJ, Dietrich D. Entrepreneurship as a gendered process. The International Journal of Entrepreneurship and Innovation. 2011;12(1):55-65. https://doi.org/10.5367/ijei.2011.0016
210. Giddings C, Hovorka AJ. Place, ideological mobility and youth negotiations of gender identities in urban Botswana. Gender, Place & Culture. 2010;17(2):211-29. https://doi.org/10.1080/09663691003600314
211. Kuchukhidze S, Panagiotoglou D, Boily M-C, Diabaté S, Eaton JW, Mbofana F, et al. The effects of intimate partner violence on women's risk of HIV acquisition and engagement in the HIV treatment and care cascade: a pooled analysis of nationally representative surveys in sub-Saharan Africa. The Lancet HIV. 2023;10(2):e107-e17. https://doi.org/10.1016/S2352-3018(22)00305-8
212. Green EP, Blattman C, Jamison J, Annan J. Women's entrepreneurship and intimate partner violence: A cluster randomized trial of microenterprise assistance and partner participation in post-conflict Uganda. Social science & medicine. 2015;133:177-88. https://doi.org/10.1016/j.socscimed.2015.03.042
213. Gupta J, Falb KL, Lehmann H, Kpebo D, Xuan Z, Hossain M, et al. Gender norms and economic empowerment intervention to reduce intimate partner violence against women in rural Côte d'Ivoire: a randomized controlled pilot study. BMC international health and human rights. 2013;13(1):1-12. https://doi.org/10.1186/1472-698X-13-46
214. Tshishonga N. Women growing livelihoods through food security: Inanda's Inqolobane Yobumbano Secondary Co-operative. Agenda. 2016;30(4):62-73. https://doi.org/10.1080/10130950.2017.1327175
215. Weinhardt LS, Galvao LW, Yan AF, Stevens P, Mwenyekonde TNo, Ngui E, et al. Mixed-method quasi-experimental study of outcomes of a large-scale multilevel economic and food security intervention on HIV vulnerability in rural Malawi. AIDS and Behavior. 2017;21(3):712-23. https://doi.org/10.1007/s10461-016-1455-1
216. LaRue K, Daum T, Mausch K, Harris D. Who Wants to Farm? Answers Depend on How You Ask: A Case Study on Youth Aspirations in Kenya. The European Journal of Development Research. 2021:1-25. https://doi.org/10.1057/s41287-020-00352-2
217. Attanasio O, Kugler A, Meghir C. Training disadvantaged youth in Latin America: evidence from a randomized trial. 2008(13931). https://doi.org/10.3386/w13931
218. Bandiera O, Buehren N, Burgess R, Goldstein M, Gulesci S, Rasul I, et al. Women's economic empowerment in action: Evidence from a randomized control trial in Africa. Geneva: ILO; 2015. p. 56.Available from: https://www.ilo.org/employment/Whatwedo/Publications/working-papers/WCMS_432281/lang--en/index.htm.
219. Botlhale E, Molokwane T. The viability of the welfare state in Botswana. Journal of Contemporary African Studies. 2019;37(2-3):241-56. https://doi.org/10.1080/02589001.2019.1697433

220. Bassett L, Giannozzi S, Pop L, Ringold D. Rules, roles, and controls: governance in social protection with an application to social assistance. Washington, DC: World Bank; 2012.Available from: https://openknowledge.worldbank.org/handle/10986/13552.
221. Remme M, Vassall A, Lutz B, Luna J, Watts C. Financing structural interventions: going beyond HIV-only value for money assessments. Aids. 2014;28(3):425-34. https://doi.org/10.1097/QAD.0000000000000076
222. Mays N, Pope C. Assessing quality in qualitative research. Bmj. 2000;320(7226):50-2. https://doi.org/10.1136/bmj.320.7226.50
223. Ministry of Health, National AIDS and Health Promotion Agency, Statistics Botswana. BAISV Fifth Botswana AIDS Impact Survey. Gaborone: Government of Botswana; 2022.
224. STRIVE RC. Addressing the structural drivers of HIV: A strive synthesis. UK: London School of Hygiene & Tropical Medicine 2019.
225. Stoner MC, Pettifor A, Edwards JK, Aiello AE, Halpern C, Julien A, et al. The effect of school attendance and school dropout on incident HIV and HSV-2 among young women in rural South Africa enrolled in HPTN 068. AIDS. 2017;31(15):2127. https://doi.org/10.1097/QAD.0000000000001584
226. Devereux S, Sabates-Wheeler R. Transformative social protection. Sussex, UK: Institute of Development Studies; 2004. Report No.: 1 85864 844 0.
227. UNAIDS. Fast-Track Commitments to end AIDS by 2030. Geneva, Switzerland; 2016.
228. UNAIDS. Social Protection: a Fast-Track commitment to end AIDS. Geneva; 2018.
229. Cockcroft A, Marokoane N, Kgakole L, Tswetla N, Andersson N. Access of choice-disabled young women in Botswana to government structural support programmes: a cross-sectional study. AIDS care. 2018b;30(sup2):24-7. https://doi.org/10.1080/09540121.2018.1468009
230. van der Wal R, Cockcroft A, Kobo M, Kgakole L, Marokaone N, Johri M, et al. HIV-sensitive social protection programs for unemployed and out-of-school young women in Botswana: an exploratory study of barriers and solutions. PLoS one. https://doi.org/ 10.1371/journal.pone.0293824.
231. Linstone HA, Turoff M. The Delphi Method -Techniques and Applications. Linstone HA, Turoff M, editors. Boston, USA: Addison-Wesley Reading, MA; 1975.
232. De Loë RC, Melnychuk N, Murray D, Plummer R. Advancing the state of policy Delphi practice: A systematic review evaluating methodological evolution, innovation, and opportunities. Technological Forecasting and Social Change. 2016;104:78-88. https://doi.org/10.1016/j.techfore.2015.12.009
233. Baumann N, Ervin O, Reynolds G. The policy delphi and public involvement programs. Water resources research. 1982;18(4):721-8. https://doi.org/10.1029/WR018i004p00721
234. Hasson F, Keeney S, McKenna H. Research guidelines for the Delphi survey technique. Journal of advanced nursing. 2000;32(4):1008-15. https://doi.org/10.1046/j.1365-2648.2000.t01-1-01567.x
235. Rowe G, Wright G. The Delphi technique: Past, present, and future prospects—Introduction to the special issue. Technological forecasting and social change. 2011;78(9):1487-90. https://doi.org/10.1016/j.techfore.2011.09.002
236. Belton I, MacDonald A, Wright G, Hamlin I. Improving the practical application of the Delphi method in group-based judgment: a six-step prescription for a well-founded and defensible process. Technological Forecasting and Social Change. 2019;147:72-82. https://doi.org/10.1016/j.techfore.2019.07.002

237. Kezar A, Maxey D. The Delphi technique: an untapped approach of participatory research. International journal of social research methodology. 2016;19(2):143-60. https://doi.org/10.1080/13645579.2014.936737
238. Hsu C-C, Sandford BA. The Delphi technique: making sense of consensus. Practical Assessment, Research, and Evaluation. 2007;12(1):10. https://doi.org/10.7275/PDZ9-TH90
239. Rowe G, Wright G. The Delphi technique as a forecasting tool: issues and analysis. International journal of forecasting. 1999;15(4):353-75. https://doi.org/10.1016/S0169-2070(99)00018-7
240. StatisticsBotswana. Multi-Topic Survey Quarter 4,2020 Labour Force Module Report. Gaborone, Botswana; 2021. Report No.: 978-99968-907-1-0.
241. WorldBank. Macro Poverty Outlook for Botswana : April 2022. Washington DC, USA: Macro Poverty Outlook (MPO) Washington, D.C. : World Bank Group.; 2022.
242. Cockcroft A, Marokoane N, Kgakole L, Kefas J, Andersson N. The Inter-ministerial National Structural Intervention trial (INSTRUCT): protocol for a parallel group cluster randomised controlled trial of a structural intervention to reduce HIV infection among young women in Botswana. BMC health services research. 2018a;18(1):1-12. https://doi.org/10.1186/s12913-018-3638-0
243. De Loe RC. Exploring complex policy questions using the policy Delphi: A multi-round, interactive survey method. Applied Geography. 1995;15(1):53-68. https://doi.org/10.1016/0143-6228(95)91062-3
244. Pronyk PM, Hargreaves JR, Kim JC, Morison LA, Phetla G, Watts C, et al. Effect of a structural intervention for the prevention of intimate-partner violence and HIV in rural South Africa: a cluster randomised trial. Lancet. 2006;368(9551):1973-83. https://doi.org/10.1016/S0140-6736(06)69744-4
245. Goodman ML, Selwyn BJ, Morgan RO, Lloyd LE, Mwongera M, Gitari S, et al. Sexual Behavior Among Young Carers in the Context of a Kenyan Empowerment Program Combining Cash-Transfer, Psychosocial Support, and Entrepreneurship. Journal of Sex Research. 2016;53(3):331-45. https://doi.org/10.1080/00224499.2015.1035429
246. Pettifor A, Wamoyi J, Balvanz P, Gichane MW, Maman S. Cash plus: exploring the mechanisms through which a cash transfer plus financial education programme in Tanzania reduced HIV risk for adolescent girls and young women. Journal of the International Aids Society. 2019;22. https://doi.org/10.1002/jia2.25316
247. UN Botswana. Effects of COVID-19 on the Agricultural Sector. Gaborone, Botswana: United Nations; 2020.
248. Thukwana N. Botswana, with an import ban on vegetables, plans to ban more over the next two years. Business Insider. 2022.
249. Nnaji A, Ratna NN, Renwick A. Gendered access to land and household food insecurity: Evidence from Nigeria. Agricultural and Resource Economics Review. 2022;51(1):45-67. https://doi.org/10.1017/age.2021.13
250. Jewkes R, Sikweyiya Y, Nduna M, Shai NJ, Dunkle K. Motivations for, and perceptions and experiences of participating in, a cluster randomised controlled trial of a HIV-behavioural intervention in rural South Africa. Culture, health & sexuality. 2012;14(10):1167-82. https://doi.org/10.1080/13691058.2012.717305
251. Machisa M, van Dorp R. The Gender Based Violence Indicators Study: Botswana. African books collective; 2012. Report No.: 978-0-986880-3-5.

252. Green EP, Blattman C, Jamison J, Annan J. Women's entrepreneurship and intimate partner violence: A cluster randomized trial of microenterprise assistance and partner participation in post-conflict Uganda Social science & medicine. 2015;133:177-88. https://doi.org/10.1016/j.socscimed.2015.03.042
253. Government of Botswana G. VISION 2036–Achieving Prosperity for All. Gaborone: Lentswe La Lesedi Gaborone; 2016. Report No.: 978-99912-71-57-6.
254. Williams M, Hovorka AJ. Contextualizing youth entrepreneurship: The case of Botswana's young farmers fund. Journal of Developmental Entrepreneurship. 2013;18(04):1350022. https://doi.org/10.1142/S1084946713500222
255. Ingram H, Schneider AL, DeLeon P. Social construction and policy design. In: Sabatier P, editor. Theories of the Policy Process. 2. Colorado, USA: Westview Press; 2007. p. 93-126.
256. Schneider A, Ingram H. Social construction of target populations: Implications for politics and policy. American political science review. 1993;87(2):334-47. https://doi.org/https://doi.org/10.2307/2939044
257. BotswanaGovernment. Adjustment of minimum wages for 2021/2022 Gaborone2021 [cited June 2022. Available from: https://ne-np.facebook.com/BotswanaGovernment/photos/a.336021353147196/4625631960852759/?type=3.
258. WorldBank. Poverty & Equity Brief Botswana 2022 [Available from: https://www.worldbank.org/en/topic/poverty/publication/poverty-and-equity-briefs.
259. Balise J. Cost of living in Botswana vs average monthly earning: the contrast Gaborone, Botswana: Sunday Standard; 2020 [cited July 2022. Available from: https://www.sundaystandard.info/cost-of-living-in-botswana-vs-average-monthly-earning-the-contrast/.
260. Pascoe SJ, Langhaug LF, Mavhu W, Hargreaves J, Jaffar S, Hayes R, et al. Poverty, food insufficiency and HIV infection and sexual behaviour among young rural Zimbabwean women. PloS one. 2015;10(1):e0115290. https://doi.org/10.1371/journal.pone.0115290
261. Mani A, Mullainathan S, Shafir E, Zhao J. Poverty impedes cognitive function. Science. 2013;341(6149):976-80. https://doi.org/10.1126/science.1238041
262. Greig FE, Koopman C. Multilevel analysis of women's empowerment and HIV prevention: quantitative survey results from a preliminary study in Botswana. AIDS and Behavior. 2003;7(2):195-208. https://doi.org/10.1023/a:1023954526639
263. Dunbar MS, Maternowska MC, Kang M-SJ, Laver SM, Mudekunye-Mahaka I, Padian NS. Findings from SHAZ!: a feasibility study of a microcredit and life-skills HIV prevention intervention to reduce risk among adolescent female orphans in Zimbabwe. Journal of prevention & intervention in the community. 2010;38(2):147-61. https://doi.org/10.1080/10852351003640849
264. Kalabamu FT. A commentary on Botswana's 2019 National Land Policy. Land Use Policy. 2021;108:105563. https://doi.org/10.1016/j.landusepol.2021.105563
265. Isaacs SM, Manatsha BT. Will the dreaded 'yellow monster'stop roaring again? An appraisal of Botswana's 2015 Land Policy. Botswana Notes and Records. Gaborone, Botswana: JSTOR; 2016. p. 383-95.Available from: https://www.jstor.org/stable/90025353.
266. Zenda C. Botswana abolishes law excluding married women from land ownership Gaborone, Botswana: Land Portal; 2021 [cited June 2022. Available from: https://www.landportal.org/news/2021/06/botswana-abolishes-law-excluding-married-women-land-ownership.

267. UN Botswana. Effects of COVID-19 on the Agricultural Sector. Newsletter. Gaborone, Botswana: United Nations; 2020.Available from: https://botswana.un.org/index.php/en/103717-effects-covid-19-agricultural-sector#:~:text=Due%20to%20COVID%2D19%2C%20value,the%20vulnerability%20of%20farm%20incomes.
268. Thukwana N. Botswana, with an import ban on vegetables, plans to ban more over the next two years South Africa2022 [cited June 2022. Available from: https://www.businessinsider.co.za/botswana-plans-to-expand-its-food-import-ban-list-2022-5.
269. Okurut FN, Ama NO. Assessing factors that affect women and youth micro-entrepreneurs in Botswana1. International Journal of Academic Research in Economics and Management Sciences; 2013. p. 306.Available from: https://www.semanticscholar.org/paper/Assessing-Factors-That-Affect-Women-and-Youth-Micro-Okurut-Ama/ae5341fa0c46b3e0baa5b18abf1b3acde9a749c7.
270. Pronyk PM, Kim JC, Abramsk T, Phetla G, Hargreaves JR, Morison LA, et al. A combined microfinance and training intervention can reduce HIV risk behaviour in young female participants. Aids.22(13):1659-65. https://doi.org/10.1080/00224499.2015.1035429
271. Jewkes R, Gibbs A, Jama-Shai N, Willan S, Misselhorn A, Mushinga M, et al. Stepping Stones and Creating Futures intervention: shortened interrupted time series evaluation of a behavioural and structural health promotion and violence prevention intervention for young people in informal settlements in Durban, South Africa. BMC public health. 2014;14(1):1325. https://doi.org/10.1186/1471-2458-14-1325
272. Jensen SQ. Othering, identity formation and agency. Qualitative studies. 2011;2(2):63-78. https://doi.org/10.7146/qs.v2i2.5510
273. Lister R. To count for nothing': Poverty beyond the statistics. Journal of the British Academy. 2015;3(0):139-65. https://doi.org/10.5871/jba/003.139
274. Thoits PA. Social support as coping assistance. Journal of consulting and clinical psychology. 1986;54(4):416. https://doi.org/10.1016/0277-9536(94)00165-P
275. Ranganathan M, Knight L, Abramsky T, Muvhango L, Polzer Ngwato T, Mbobelatsi M, et al. Associations between women's economic and social empowerment and intimate partner violence: Findings from a microfinance plus program in rural North West Province, South Africa. Journal of interpersonal violence. 2019:0886260519836952. https://doi.org/10.1186/s12978-018-0539-y
276. UNFPA. Opportunities and Policy Actions to Maximise the Demographic Dividend in Botswana. Demographic Dividend Study Report. Gaborone, botswana: UNFPA; 2018. p. 116.Available from: https://botswana.unfpa.org/en/publications/opportunities-and-policy-actions-maximize-demographic-dividend-botswana.
277. Gibbs A, Bishop K. Combined economic empowerment and gender transformative interventions. Pretoria, South Africa: What Works to Prevent Violence against Women and Girls2019.Available from: https://www.whatworks.co.za/resources/evidence-reviews/item/652-combined-economic-empowerment-and-gender-transformative-interventions.
278. Landis JR, Koch GG. The measurement of observer agreement for categorical data. Biometrics. 1977:159-74. https://doi.org/PMID: 843571
279. Gorgens M, Ketende S, Longosz AF, Mabuza M, Nkambule M, Dlamini T, et al. The impact of financial incentives on HIV incidence among adolescent girls and young women in Eswatini: Sitakhela Likusasa, a cluster randomised trial. BMJ Global Health. 2022;7(9):e007206. https://doi.org/10.1136/bmjgh-2021-007206

280. Chakravarty S, Das S, Vaillant J. Gender and youth employment in Sub-Saharan Africa: A review of constraints and effective interventions. Policy Research Working Paper. e-Library: The World Bank; 2017.Available from: https://elibrary.worldbank.org/doi/abs/10.1596/1813-9450-8245.
281. Jackson T. This Botswanan startup has built a mobile-based chatbot that connect users with jobs: Disrupt Africa; 2020 [Available from: https://disrupt-africa.com/2020/03/23/this-botswanan-startup-has-built-a-mobile-based-chatbot-that-connect-users-with-jobs/.

Additional Files and Appendices