Barriers to Hypertension Detection and Management among Women in Bangladesh

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Abstract

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Background

In Bangladesh, the prevalence of hypertension is 20.3%, and 32.4% among men and women respectively. This gendered distribution of prevalence is in sharp contrast to global patterns. Rates of undiagnosed and uncontrolled hypertension are also higher among women. To date, no known research has comprehensively explored the factors underlying women's disproportionate risk of undiagnosed and uncontrolled hypertension in Bangladesh.

Objectives

This study examines the perceptions and experiences of rural and urban dwelling women in recognizing hypertension symptoms and seeking hypertensive care. Study objectives are to: 1) understand how hypertensive women in Bangladesh perceive and experience hypertension symptoms, diagnosis of the disease, as well as hypertension treatment and management, 2) explore barriers to hypertensive care-seeking among women, and what adaptations are needed to improve equitable non-communicable disease (NCD) care services in Bangladesh.

Methods

The study follows an exploratory qualitative approach and In-Depth Interviews (IDI) were used as the study method. A purposive sampling strategy was applied in rural and urban areas to select women diagnosed with hypertension and those whose hypertensive status was unknown prior to receiving diagnosis in national surveillance study. Interviews were conducted with 22 women

using a semi-structured guideline. Thematic analysis was performed, informed by the Framework Method.

Results

The findings of the study showed that gender norms and dynamics contribute to undiagnosed and uncontrolled hypertension in women. Most women reported being completely dependent on their male counterparts for accessing diagnosis and for disease management. In many cases, hypertension was diagnosed while being treated for another condition. Even though women share information and knowledge about hypertension amongst themselves, much of this information is gathered from their own social networks and is misleading and/or inaccurate. In the rural areas, the first point of care is informal providers whereas in urban areas women consult both informal and formal providers. Inadequacies of public sector services related to proximity and availability (clinic closure and limited hours of service) were noted in both rural and urban areas.

Conclusions

In Bangladesh, community level awareness campaigns are needed so that women as well as their family members understand the importance of good management of hypertension. Concomitantly, changes in mindset and practise about women's roles and autonomy are fundamental to allowing them greater agency over their own health and health care. Here, continued focus on education and women's empowerment is crucial. Finally, proximate, quality health care facilities and health care providers are needed across the country so that women can access hypertensive care as needed.

Résumé

Obstacles à la détection et à la prise en charge de l'hypertension artérielle chez les femmes au Bangladesh

Contexte

Au Bangladesh, la prévalence de l'hypertension est de 20,3% et de 32,4% chez les hommes et les femmes, respectivement. Cette répartition sexuée de la prévalence contraste fortement avec les tendances mondiales. Les taux d'hypertension non diagnostiquée et non contrôlée sont également plus élevés chez les femmes. Aucune recherche connue n'a exploré de manière exhaustive les facteurs qui sous-tendent le risque disproportionné de l'hypertension non diagnostiquée et non contrôlée chez les femmes au Bangladesh.

Objectifs

Cette étude examine les perceptions et les expériences des femmes vivant en milieu rural et urbain en matière de reconnaissance des symptômes de l'hypertension et de recherche des soins hypertensifs. Les objectifs de l'étude sont les suivants :

1) comprendre les manières dont les femmes hypertendues au Bangladesh perçoivent et vivent avec les symptômes d'hypertension, le diagnostic de la maladie, ainsi que le traitement et la g[i]estion de l'hypertension,

2) explorer les obstacles à la recherche de soins pour l'hypertension chez les femmes et déterminer les adaptations nécessaires pour améliorer la prestation de services de soins équitables pour les maladies non transmissibles au Bangladesh.

Méthodes

L'étude suit une approche qualitative exploratoire, et des entretiens approfondis (EA) ont été utilisés comme méthode d'étude. Une stratégie d'échantillonnage raisonné a été appliquée dans les zones rurales et urbaines pour sélectionner les femmes chez qui une hypertension a été diagnostiquée et celles dont le statut d'hypertendue était inconnu avant de recevoir le diagnostic dans le cadre de l'étude de surveillance nationale. Des entretiens ont été menés avec 20 femmes en utilisant une approche semi-structurée. Une analyse thématique a été réalisée, assistée en partie par la Méthode du cadre.

Résultat

Les résultats de l'étude ont montré que la dynamique de genre contribue à l'hypertension non diagnostiquée et non contrôlée chez les femmes. La plupart des femmes ont déclaré être complètement dépendantes de leurs homologues masculins pour l'accès au diagnostic et la gestion de la maladie. Dans de nombreux cas, l'hypertension a été diagnostiquée alors qu'elles étaient traitées pour une autre maladie. Même si les femmes partagent entre elles des informations et des connaissances au sujet de l'hypertension, la plupart de ces informations proviennent de leurs propres réseaux sociaux, et sont trompeuses et/ou inexactes. Dans les zones rurales, le premier point de contact est constitué par les prestataires informels, alors que dans les zones urbaines, les femmes consultent à la fois des prestataires informels et formels. Les femmes consultent à la fois des prestataires informels et formels. Les insuffisances des services du secteur public liées à la proximité et à la disponibilité desdits services (fermeture des cliniques et heures de service limitées) ont été constatées dans les zones rurales et urbaines.

Conclusions

Au Bangladesh, des campagnes de sensibilisation au niveau communautaire sont nécessaires pour que les femmes ainsi que les membres de leur famille comprennent l'importance d'une bonne gestion de l'hypertension. Parallèlement, il est essentiel de faire évoluer les mentalités et les pratiques concernant le rôle et l'autonomie des femmes afin de leur permettre de mieux gérer leur santé et leurs soins. Il est donc essentiel de continuer à mettre l'accent sur l'éducation et l'autonomisation des femmes. Enfin, il est nécessaire de disposer d'installations de soins de santé et de prestataires de soins de santé de qualité et proches les uns des autres dans tout le pays, afin que les femmes puissent avoir accès à des soins hypertensifs si nécessaire.

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Both of my supervisors, AMA and KC have approved this version of the thesis as a final draft for the initial submission. I and the supervisors agree to be accountable for all aspects of the work and ensure that questions related to the accuracy or integrity of any part of the work are appropriately addressed and resolved.

Contribution of Authors

Conception and design of study: AA, AMA and KC. Analysis and interpretation of data: AA, AMA, KC. Draft manuscript preparation: AA. Revision of manuscript AA, AMA, KC. Editing of manuscript: AA, AMA. All authors of this report have read and approved the final draft.

List of Abbreviations

NCD	Non-communicable Disease
BP	Blood Pressure
GoB	Government of Bangladesh
OOP	Out-of-pocket
HBM	Health Belief Model
SCT	Social Cognitive Theory
SEM	Socioecological Model

Chapter 1: Introduction

Every year around 41 million people die from various NCDs which is equivalent to 71% of all global deaths (1). By 2030, the total number of deaths due to NCDs is predicted to equal or exceed 52 million (2). NCDs are also a major contributor to disability worldwide. In 2010, 54% of disability-adjusted life years were lost globally because of NCDs compared to 43% in 1990 (3).

The burden of NCDs was initially documented in high-income countries and considered "diseases of the rich" (4). Now low- and middle-income countries (LMIC) bear the largest burden. Annually around 37% of NCD related deaths occur prematurely (below the age of 70) and among these deaths, 85% occur in low- and middle-income countries (2). Like most other developing countries, the mortality rate in Bangladesh is dominated by NCDs reflecting an increase in the proportion of deaths due to NCDs from 43.4% in 2000 to 66.9% in 2015 (5).

Hypertension or elevated blood pressure (BP) is considered the single major risk factor for the overall global burden of disease as it can lead to premature deaths by increasing the risk for multiple NCDs e.g., cardiovascular disease, cerebrovascular diseases, renal failure, peripheral vascular diseases and so forth (6). The World Health Organization (WHO) estimates that 1.28 billion adults have hypertension worldwide (7). Even though the global mean blood pressure (BP) has decreased over the past four decades, the prevalence of hypertension has increased in LMICs (8). Based on an analysis of data from 135 population-based studies from 90 countries, it is estimated that in high income countries the prevalence of hypertension among adults is 28.5% and in low-and-middle income countries the prevalence is 31.5% (9).

According to the 2011 Bangladesh Demographic and Health Survey, the prevalence of hypertension among men is 20.3%, and 32.4% among women (10). This gendered distribution of hypertension prevalence stands in sharp contrast to global patterns where 1 in 4 men and 1 in 5 women have hypertension (11). Of further concern, the 2018 Bangladesh National STEPS Survey[1] indicates that around 50% hypertensive patients are unaware of their high blood pressure status and 30% people have never measured their blood pressure (12). National STEPS data also reveal gender differences in rates of uncontrolled hypertension: 24% of women have uncontrolled hypertension compared to 15% in men (12). These statistics paint an alarming picture of NCD risk and its gendered dimensions that need to be understood and addressed.

To date relatively few published studies have explored factors underlying gender differentials in undiagnosed and uncontrolled hypertension, and no known research has considered these issues in Bangladesh. In response to this gap, this study examines the perceptions and experiences of women in recognizing hypertension symptoms and seeking hypertensive care with the aim of achieving equitable NCD care service for women in Bangladesh.

The study objectives are to:

(1) Understand how hypertensive women in Bangladesh perceive hypertension symptoms, diagnosis of the disease, and its treatment and management.

(2) Explore the barriers women face related to hypertensive care seeking and potential solutions to improve equity in NCD services for women with hypertension[2].

[1] STEPS Survey is a household-based survey arranged by World Health Organization country office to obtain data on the well-established risk factors which help to determine the major burden of NCDs.
[2] Equity in NCD care services will ensure every person is getting NCD related healthcare service that meets their needs irrespective of their sex, age, education, economic status etc.

Chapter 2: Background

Definition of hypertension

According to the World Health Organization, the condition of hypertension, commonly referred to as high or rising blood pressure, is characterized by a consistently elevated pressure in the blood vessels. The vessels transport blood from the heart to every region of the body. The heart pumps blood into the vessels with each beat. As blood is pumped by the heart, it pushes against the walls of blood vessels (arteries), creating blood pressure and the heart has to work more to pump blood when the pressure is higher (13). The threshold for hypertension is 130/80 mmHg. However, if a person has his/her blood pressure beyond 130/80 mmHg just once or occasionally then it is not considered as hypertension because a person's blood pressure can change throughout the day based on his/her activities. To be considered as a hypertensive patient one has to have persistent elevation of his/her blood pressure beyond 130/80 mmHg (14). Here, the first number 130 refers to systolic blood pressure which measures the pressure in the arteries when the heart beats. And the second number 80 refers to diastolic blood pressure which measures the pressure in the arteries when the heart rests between beats (15). Systolic and diastolic blood pressure must be within normal ranges for overall health and well-being as well as for the proper performance of vital organs including the heart, brain, and kidneys (16).

There are many modifiable risk factors as well as few non-modifiable risk factors for hypertension development. Unhealthy diets such as excessive salt intake, diets heavy in saturated and trans fats, insufficient intake of fruits and vegetables, use of tobacco and alcohol, physical inactivity and being overweight or obese are some of the risk factors that can be modified. Non-

modifiable risk factors are age over 65, family history of hypertension, and having additional illnesses like diabetes or kidney disease (7).

Hypertension is also known as 'The Silent Killer' because this disease often does not show any early symptoms (17). Most hypertensive individuals exhibit zero symptoms. An occasional sign of hypertension is a headache, shortness of breath, dizziness, pain in the chest, palpitations of the heart, and nosebleeds. While it can be risky to ignore such symptoms, they do not always indicate hypertension (16).

Ignoring high blood pressure can puts one at risk for serious life-threatening complications. Uncontrolled hypertension can cause severe heart disease like myocardial infarction, congestive heart failure, left ventricular hypertrophy, aneurysm, stroke as well as chronic kidney disease like hypertensive nephropathy and hypertensive retinopathy (17). Early detection and proper management of hypertension can reduce the risk of heart failure, stroke and kidney disease. Therefore, it is recommended that people check their blood pressure in a regular manner and if hypertension is detected then seek care from healthcare professional immediately (16).

Bangladesh demography and socioeconomic status

Bangladesh is a small country covering an area of 147,750 square kilometers with an estimated 165.2 million people in 2019 and that make it as the 8th most populous country in the world (18). Located in South Asia and surrounded by India to the north, east and west, Myanmar in the south-east and Bay of Bengal in the south, this country contends with numerous natural disasters like floods, tidal bores, cyclones every year and considered as one of the worst victims of global climate change (19). Despite of all the natural disaster, Bangladesh is undergoing a rapid

urbanization at a rate of 3.5% per year, increasing the percentage of the population residing in cities and towns from 3.6% in the 1970s to 14.4% in 2010 (20).

Bangladesh got independence in 1971 and during that time the fertility rate was 6.9 births per women. However, it has experienced an incredible demographic transition and saw a rapid decline in fertility rate to 2.0 births per women in 2020 (19, 21). Since 1990s, the country has experienced substantial economic growth and in 2015 it reached lower middle-income country status according to the World Bank gross national income per capita of 1025 USD (22). Regardless of the economic growth, income inequality and poverty continue to be major problems for the country (23).

Bangladesh health system

Bangladesh has a pluralistic healthcare system. The government, the private sector, non-governmental organizations, and donor organizations are the four main actors that form the structure and function of the healthcare system. Government, NGOs and the private sector are involved in the delivery of healthcare services as well as the financing and employment of the healthcare workforce, while the donor agencies assist in financing and planning health programs (19). The Ministry of Health and Family Welfare (MOHFW) has the main responsibility for overall health sector policy, planning and regulation (24).

Bangladesh has made notable advancements over the past few decades in terms of life expectancy. In 1990, Bangladesh had a 58-year life expectancy at birth, with maternal mortality at 590 per 100,000 live births and under-five mortality at 144 per 1000 live births. By 2017 life expectancy at birth increased to 72 years, while under-five mortality declined to 31 and maternal mortality to 172 (25). Despite the country's remarkable heath gains, new challenges have

emerged which relate to meeting the needs of a growing population that is living longer (26, 27). Declining birth and death rates have accelerated an epidemiological transition characterized by an increasing proportion of mortality and morbidity due to non-communicable disease. Over the period 1986 and 2006, deaths due to NCDs have increased ninefold (28). However, existing primary healthcare services remain largely oriented around infectious disease and maternal child health, and poorly equipped to manage the country's rapid epidemiological transition towards NCDs (3).

Severe health human resource shortages further handicap the healthcare system with only seven doctors per 10,000 population. A massive private healthcare market has emerged to fill these gaps which is especially prominent in urban areas (29). In Dhaka City, which is the capital of Bangladesh, only one percent of the total number of healthcare facilities are public, inclusive of services contracted-out to Non-Governmental Organizations (NGOs), three percent are private not-for-profit facilities and rest (96%) are private for-profit facilities (30). Moreover, because of the shortage of qualified health care providers, patients are compelled to seek care from unqualified or informal providers. According to a survey on health human resources in Bangladesh, unqualified providers outnumber qualified physicians by a factor of 2 to 1 and represent the first point of contact for the large majority of the population, especially those of lower socioeconomic status (31). This pluralistic healthcare system poses challenges regarding timely and effective referral, leading to delays in getting proper treatment (31).

Healthcare expenditure in Bangladesh

The costs of healthcare are a major cause of poverty in low- and middle-income countries due to out-of-pocket (OOP) expenditures which constitute a major source of healthcare financing.

According to the Bangladesh National Health Accounts-IV, in 2015 per capita health expenditure was USD 37 which accounts for 3% of GDP which ranks lowest in the WHO Southeast Asia Region (32). In Bangladesh, 67% of health care expenditure is out-of-pocket (33). During periods of major illness, OOP can provoke loss of savings, impoverishment or in worst cases the abandonment of treatment, leading to long term deterioration of health and earning capacity (34). A growing portion of OOP expenditures are accounted for by the medical costs of NCD treatment (35). A study that looked at impoverishment due to OOP expenditure for health care in rural Bangladesh, found much higher impacts related to care for NCDs compared to communicable disease. They attributed this difference to greater needs for long term hospitalization in the context of NCDs compared to communicable disease and outpatient care (34).

NCD service and policies in Bangladesh

Just as Bangladesh prioritized communicable disease prevention strategies such as immunization and oral rehydration therapy, it is critical that similar prevention efforts occur for NCDs to avoid escalating costs of treatment and critical care. Population awareness of NCD risk factors, and the promotion and uptake of measures to reduce or manage NCDs, will require the coordinated efforts of public health and primary care. The Government of Bangladesh (GoB) has taken some initiatives to address the NCD epidemic including the establishment of NCD “corners” in every Upazila (sub-district) health complex where people can seek hypertension diagnosis and medication (5). However, the high prevalence of undiagnosed and uncontrolled hypertension, and gender disparities in both, suggest that current actions are insufficient. For example, the Government’s 2018-2025 Multisectoral Action Plan for the Prevention and Control of NCDs

fails to recognize that certain vulnerable populations, like women, may need extra support to access NCD-related healthcare services (36). This plan does not reference gender disparities in NCD risk factors, nor does it offer a plan that considers the unique circumstances of women.

Women in Bangladesh

Bangladesh is a highly patriarchal society and even though the Constitution of the People's Republic of Bangladesh indicates that men and women are equal and prohibits any discrimination, this right mostly exists on paper (37). In Bangladeshi society gender discrimination is present everywhere. For instance, women and young girls have less access than men to financial resources, health care, and education. Even today, the majority of women are dependent on a male member of their family throughout the life course, starting with their fathers then progressing to their husband to sons. In many families, women continue to need permission from a male member of the household before engaging in activities outside the home (38).

Early childhood marriage is also prominent in Bangladesh. In 2017, 22% of young girls in Bangladesh were married by the age of fifteen (39). In turn, early childhood marriage is associated with adolescent pregnancy, irrespective of a young girl’s mental, social, or economical readiness to bear and raise children. Pregnancy and delivery difficulties are the most significant cause of death among girls between the ages of fifteen and nineteen with repercussions for neonatal morbidity, neonatal mortality, and child growth through a variety of pathways (39).

Like most other South Asian countries, intimate partner violence (IPV) is also a major concern in Bangladesh. According to the World Bank, among 15 countries with the highest prevalence of intimate partner violence, Bangladesh ranked in 2nd place (40). One study claims that rates of

IPV among married women in Bangladesh range between 53% to 95% at any point of their lifetime (41). IPV is also linked to adverse health outcomes like injury, reproductive tract infections, pelvic pain, memory loss, unintended pregnancy, depression, distress, and even suicidal thoughts (41).

Nevertheless, the situation is improving slowly, and Bangladeshi women are in a better place now than they were 30 years ago in terms of longevity, fertility rate and other health indicators. Even though the life expectancy of women is greater than men due to complex biological and social factors, men in Bangladesh had a higher life expectancy than women as recently as 2000. Since 2000, cross-over has occurred, and sex ratios now resemble global patterns (25). Literacy rate has also increased among women from 57.8% in 2011 to 69.5% in 2016 (42). As previously mentioned, fertility rate also came down and there is a significant improvement in maternal mortality (25). Despite these improvements, complex structural and cultural barriers persist that impede the agency and equality of women in Bangladesh society.

Current related research

Researchers around the world are relentlessly working to tackle the NCD epidemic. In LMICs, disproportionate attention has focused on describing the risk factors and prevalence of non-communicable diseases (43). The environmental and social aspects of NCDs are less understood. If we zoom into the social aspect a little bit more, we note that gender-related investigations have largely concerned the exploration of male vs. female trends in disease incidence, prevalence, and mortality (44). In Bangladesh, the majority of published studies are based on quantitative surveys that examine risk factors of various non-communicable diseases. In the literature review conducted for this study, almost all of the research related to hypertension

in Bangladesh considered hypertension as a risk factor for various non-communicable diseases or discussed various risk factors for hypertension. Only two studies were identified that explored the experiences of hypertensive patients in managing their condition inclusive of health care seeking (45, 46), both of which focused on rural-dwelling hypertensive patients. Missing from the literature is research on the experiences of urban-dwelling hypertensive women in Bangladesh, and how differ from those in rural settings. Also missing is research that explicitly investigates the perspectives of hypertensive women about the disease, its diagnosis and management, as well as factors that facilitate or prevent hypertension care. This research aims to fill these gaps through a focus on the perceptions and experiences of women in recognizing hypertension symptoms and seeking hypertensive care in Bangladesh, and the social and other determinants underlying healthcare decision-making.

Chapter 3: Methods

The study followed an exploratory qualitative approach and In-Depth Interviews (IDIs) were used as the research method. The method, data analysis as well as data management procedure of this study are described below.

Study population and recruitment

BRAC James P Grant School of Public Health (BRAC JPGSPH) is the local partner for this study. BRAC JPGSPH is part of regional NCD surveillance study sponsored by Imperial College London and funded by National Institute for Health Research (NIHR), UK. Established in 2019, this 20-year longitudinal study involves a network of community based, NCD surveillance sites in Bangladesh, India, Pakistan and Sri Lanka. The study follows the extended WHO STEPs guideline for collecting NCD related data (47). BRAC JPGSPH agreed to support the implementation of this qualitative study by providing a list of hypertensive women from the NCD surveillance study to facilitate participant recruitment. BRAC JPGSPH also helped in arranging accommodation and transportation during the data collection period.

Two districts in Bangladesh, Dinajpur and Dhaka, were chosen purposively for this study. Dinajpur district is situated in Rangpur division and according to surveillance data, has the lowest percentage of adults who have ever had their blood pressure measured by a health care provider across all divisions in the country (12). Within Dinajpur, one sub-district named Parbatipur was selected through convenience sampling for participant recruitment. This is because during the time of planned data collection, the NCD surveillance study team was active in Parbatipur, offering valued logistical support to our research. In Parbatipur sub-district we

chose two study sites covered by surveillance, comprising 5-6 villages, to represent the perspective and experience of hypertensive women living in a rural area of Bangladesh.

To understand the perspectives and experiences of urban-dwelling women, we selected the national capital and mega-city of Dhaka as our second study site. Comprised of two city corporations, we purposively selected Dhaka north city corporation given the availability of logistical and recruitment-related support from BRAC JPGSPH.

A purposive sampling strategy was employed for participant selection to enable maximum variation of participant characteristics and the collection of rich data (48). Variations of interest were location (urban/rural), age (young adults/older), educational status (no prior formal education/primary/secondary/graduate), employment status (unemployed/employed) and marital status (unmarried/married/widowed/divorced). These variations have been considered given their well-established relation with various NCD risk factors (29, 49). Initially we wanted to stratify two groups from NCD surveillance data; the first group representing women who were diagnosed with hypertension prior to the surveillance study, and the second group receiving the diagnosis of hypertension as a consequence of the surveillance study. This stratification might have yielded insight on why the first group of women were diagnosed earlier and why the second group did not get diagnosed or were not aware of their high blood pressure prior to surveillance. Unfortunately, information on which participants knew about their hypertensive status prior to surveillance was not available. Instead, we purposively chose participants from the list of hypertensive patients provided by the NCD surveillance team to allow for diversity in terms of socio-demographic characteristics including age, education, marital status, and occupation.

In-depth interviews

In-depth interviews were employed as the study method given their effectiveness in exploring the underlying structures of beliefs and actions at individual level (50). Interviews were conducted with 20 women using a semi-structured interview guideline. In general, qualitative study sample size tends to be small given the focus on the collection of rich individual-level data that permit in-depth understanding (51). Data collection was continued until data saturation was reached which implies that no new information is being apprehended. The interview guideline was informed by several well-established frameworks including the Health Belief Model (HBM), Social Cognitive Theory (SCT) and the Socioecological Model (SEM). The HBM framework is designed to explore people's reactions to symptoms and their behaviors in response to a diagnosed illness (52). According to HBM, a person will engage in a health behavior depending on the following six variables: perceived susceptibility, perceived severity, perceived benefits, perceived barrier, cues to action and self-efficacy (53). SCT is another widely accepted theory that is utilized to explain individual behavior. According to SCT, an individual's behavior is outcome of three interacting factors: cognitive factors such as knowledge, attitude and expectations; environmental factors such as the influence of other people on individual decision-making, and behavioral factors such as skills and practice (54). Lastly, SEM is a holistic framework that emphasizes the relations between individual behavior and social and environmental determinants. According to SEM, a person's health behavior is influenced by the interaction of multiple determinants such as individual characteristics, social networks, institutional support, cultural values and norms, and public policies and other structural dimensions (55).

The interview guideline was built around selected constructs from these models. For example, the question, "Did it ever occur to you before getting diagnosed with HTN, that you might have HTN?" was posed to help understand participants' perception about susceptibility to hypertension, a construct drawn from the HBM, with a follow-up question regarding their perception about taking action to prevent or control hypertension. From SCT, notions of peer influence were engaged, while SEM inspired the exploration of cultural norms, social networks and healthcare systems.

The interview guideline was piloted to refine question sequence, flow, and content. It was also shared with BRAC JPGSPH for their feedback prior to finalizing. Guided in-depth interviews were conducted and audio-recorded by the graduate student investigator. Advanced qualitative training was received prior to data collection through course work and discussion with thesis supervisors. During interviews, observations were recorded by the interviewer, inclusive of non-verbal cues.

All interviews were anonymized and transcribed verbatim in Bengali. BRAC JPGSPH supported this study by providing transcribers who were familiar with the local dialect in Dinajpur. The graduate student investigator checked the accuracy of the transcripts against audio-recordings and produced English-language summary transcripts. Notable quotes were transcribed in their entirety, word-for-word. Summarizing occurred with careful attention to local meaning and context, enabling data reduction and analytic discussions with English-speaking supervisors. Efforts were made to analyze data alongside data collection so that unexpected or interesting issues could be investigated as they emerged.

Data management

All data were stored on a password-protected computer and all consent forms were kept in a locked filing cabinet. Audio recordings were shared with the transcribers but after transcriptions were completed, access on the shared drive was disabled. Audio files that were downloaded for the purpose of transcribing were also deleted. Full access to data files was limited to the student investigator. Before transcription, audio-recordings were anonymized, and all identifiable information was removed prior to uploading data in the software data management system. Audio-recordings were destroyed immediately after data analysis. Throughout the thesis pseudonyms are used.

Data analysis

Preliminary data analysis started after the first interview, and advanced throughout the data collection period in an iterative manner (56). This iterative approach, which is standard to qualitative data analysis, permitted the investigation or inclusion of any new topic that emerged to be included in subsequent interviews. For example, during interview we found that some participants prioritized the health of their family members over their own, which affected their care seeking behaviour. Initially, this phenomenon was not signalled in the interview guideline as a topic to explore. For subsequent interviews, the topic was included in the interview guideline.

Data transcripts were read and re-read by the investigator to get familiarized with the data and explore developing themes and patterns. Transcripts were indexed based on key “a priori” concepts in the interview guide constructs from HBM, SCT and SEM conceptual frameworks, as well as open or inductive codes that were developed through analysis. Final codes and code

definitions were developed, shared, and discussed with the thesis supervisory committee until consensus was reached. Data was coded and organized using the data management software "Dedoose".

Thematic analysis was performed, assisted in part by the Framework Method, which relies on data matrices to enable the identification of patterns and themes (57). An inter coder reliability test was undertaken to ensure that codes were being applied in a systematic manner. Regular help and advice were sought from the thesis advisory committee during data analysis.

Ethical considerations

This study did not pose any additional risk to participants. Ethical approval for the study was obtained from institutional review board of McGill University and the BRAC James P Grant School of Public Health prior to the commencement of data collection.

The student investigator provided a verbal overview of the research to potential participants before asking for their consent to engage in the study. In the overview, the student investigator introduced herself, clearly explained the purpose of the study, how it is being funded, how the data collection process would work, and how confidentiality would be protected. The student investigator made clear to participants that their enrollment in the study was completely voluntary, and they could withdraw from the study at any time, or decline to answer any question, at any point during the interview, without any consequences.

Although all the information mentioned above was described in the written consent form, the investigator conveyed this verbally because in rural Bangladesh, a large number of women have limited literacy (31). After giving their verbal consent, participants were asked to provide their

signature on the written consent form. Participants who were unable to read or sign the consent form asked one of their family members to read it for them. There was also an option of audio-recording the consent if a participant was comfortable or unable to give written consent, if needed. The investigator's contact information was provided on the consent form so that participants could contact her if any questions arose.

Positionality and reflexivity

In the context of any research, a researcher's identity is very crucial. Despite my Bangladeshi heritage, my identity as a researcher has multiple layers that made me outsider to the concerns and lives of my participants. For example, when I interviewed rural women in northern Bangladesh, I was perceived as a stranger in their community, with no connection to their district or rural life. At times, participants did not seem to trust me on first meeting. While I tried to spend a substantial amount of time building rapport, even then I felt that there was distance between us. I sensed their reluctance to share because I could never understand their situation completely or could not be trusted with the information I was trying to elicit. For example, on the second day of rural data collection I interviewed a women named Moyna[3] who told me that her husband takes good care of her always, especially when she is sick and needs any help. Coincidently, the next day I interviewed a women named Rahima who referred to Moyna as an example of a women whose husband is abusive and fails to provide her with any support. Because of this experience, I realized that not all participants felt comfortable sharing their personal experiences with me. At the same time, I realized it was important to not to question or

[3] All names used in this thesis are pseudonyms

doubt what participants choose to share with me – that I needed to be aware of my own biases and minimize their effects on how I engaged and listened.

Another difference that distanced me from the experience of rural study participants was my urban origins in the capital city of Bangladesh and my comfort with a Bengali dialect that only city dwellers use. In the northern rural site where I conducted my interviews, the Bengali dialect that is spoken is quite different from the one that I know. Several times I did not completely understand what participants were saying and had to request that they elaborate or clarify multiple times or explain the meaning of the words they were using.

My identity as a university graduate was also influential in undertaking this research. Before starting data collection, I was afraid that, participants would view our relationship as unequal and untrustworthy due to my greater perceived power and level of education. Before I started my master's programme, I had no idea about the influence of power dynamics in research and tended to regard participants as passive subjects to study and collect data from. My masters training sensitized me to the importance of cultural awareness and cultural competence and creating a culturally safe research environment where participants feel that their voices are valued and heard. Among urban participants, power dynamics were less problematic and easier to manage, however, this was not the case in rural areas. I felt I was perceived by participants as someone who was above them in terms of power and privilege, and ultimately, not to be trusted. While these differences are real, I tried to find areas of connection where our experiences are similar, and trust could be forged. For example, I shared the fact that I too suffer from multiple chronic non-communicable diseases and even though I have a university education, I also face difficulties while seeking care. Sharing my experiences helped build a foundation for greater rapport and trust as they started to see me as someone who was shared similar challenges.

Chapter 4: Findings

Socio-demographic characteristics

For this study, we interviewed 20 women, half of whom lived in a rural setting, and the other half in an urban centre. Only 2 urban participants were less than 35 years old, and the rest were 35 years and above. Most urban participants had finished primary school compared to only 1 participant in the rural area. Only two urban participants were involved in work outside their home. There were no unmarried participants in the study. Table 1 summarizes participant characteristics.

		Urban	**Rural**
Age	18-35	2	0
	35 and more	8	10
Education	Grade 1- 5	1	9
	Grade 6-10	5	0
	Grade 11-12	3	1
	University degree	1	0
Marital Status	Married	8	8
	Separated	1	0
	Widowed	1	2
Occupation	Housewife	8	10
	Service holder	2	0

Table 1: Socio-demographic characteristics

Women's knowledge, perceptions, and experiences of hypertension

Knowledge

When participants were asked what they know about hypertension, almost all of them talked about dizziness, headache, neck pain, blurry vision etc. To the participants, hypertension was defined by its symptoms. After reframing the question to probe for their understanding of the meaning or cause of hypertension, almost all participants admitted that they were uncertain about its etiology or medical definition. Rahima, a 56-year-old participant living in rural Bangladesh said it simply, *"I don't know how someone can get hypertension."*

This lack of knowledge was observed in both urban and rural areas. Most urban participants were aware that hypertension can lead to cardiovascular disease. However, this was not the case among rural participants. While two rural participants recognized brain stroke and paralysis as outcomes of hypertension, most rural participants resembled, Masuma, a 49-year-old participant who disclosed,

"I don't know what other illness can be caused by hypertension; the doctor never told me anything like that."

Another pattern noted among participants was that those who didn't know much about hypertension were reluctant to take their medication regularly even after doctors advised them to do so. Instead, many reported taking medication only when they felt hypertensive symptoms, and for a few, only when they experienced symptoms that were sufficiently severe. As noted, Rokhsana, 50-year-old participants living in an urban area:

"I still don't know why I must take medication even if my blood pressure is normal. I wonder why?"

With respect to hypertension management, general knowledge was greater. A few participants mentioned dietary modifications such as moderate consumption of red meat and dairy products and the inclusion of a variety of fruits and vegetables into diet. A number of participants noted the importance of physical exercise to manage hypertension, and/or recognized the role of managing stress in keeping their blood pressure under control. Although some participants acknowledged that doctors advised them to reduce stress when discussing hypertension management, this was not explained in a manner that was understood by them.

Many misunderstandings were related by participants that potentially arose from failure to understand their doctor's instructions. For example, Farida, a 48-year-old rural participant said that her health care provider told her that eating beef is not good for a person with hypertension and advised her to make beef stew with potato. Farida didn't realize that the doctor was suggesting that the addition of potato would reduce her consumption of beef. Instead, her interpretation was that she could eat as much beef stew as she wished if she prepared it with potato. Another rural participant, Sokhina, was advised to cut down her consumption of carbohydrates. For Sokhina, this meant not eating rice. After two days without rice, she felt weak and unable to work as her provider didn't suggest alternatives that would meet her caloric needs.

Poor knowledge about hypertension management is further fueled by information received from social circles or networks as delineated by the Social Cognitive Model. Many study participants emphasized the importance of information acquired through friends and families especially when access to healthcare providers is limited. However, everything women learn from their social network may not be reliable. Almost all participants claimed that they had heard that eating something sour like tamarind or lemon is a remedy for hypertension. As Anjum explains,

"When I feel dizziness or headache or neck pain, I quickly drink one glass of tamarind juice. I learned it from elderly women in the village."

Even among respondents using hypertension medication, tamarind is a first source of treatment when they feel any hypertensive symptoms.

Another example of the influence of social networks is the case of Hosneara, a rural participant who doesn't take hypertensive drugs because she heard that taking multiple medications at the same time will cause weakness. Because she takes another drug for body pain, she stopped using hypertension medication. Farida heard that taking medication without severe symptoms will lead to medication dependency:

"Women in my village believe that having medication always is not a good thing for the body because then without medication one will not be able to perform normally."

Comparing sources of knowledge across rural and urban settings, greater dependence on social circles was apparent among rural participants. In urban areas, internet and social media were mentioned as a source of knowledge. It was also observed that participants with greater education (at least10th grade) were more knowledgeable about hypertension than respondents who did not get the chance to finish primary school. As a respondent in rural Bangladesh who studied until 12th grade explained*:*

"I am an educated woman, so I know the importance of being healthy. I learn by observing my surroundings also I can read. So, I know how important hypertension is and I try to keep it under control."

Perceived severity

According to the Health Belief Model, perceived severity is an important determinant of health seeking behaviour. Across participants, few perceived hypertension as a severe disease with the exception of those who reported having had someone close to them adversely affected. Only those who considered hypertension a serious disease seemed motivated to maintain their blood pressure level. Rahima, for example, checks her blood pressure regularly because she is fearful of the adverse health effects of hypertension. Her father and grandfather died of heart attack, and her aunt suffered stroke caused by a history of hypertension. Knowing this family history, she always tries to keep her blood pressure under control. Another participant, Hasina, is very careful about her hypertension medication because she knows high blood pressure can cause brain stroke. There are several cases of stroke in her family, the most recent of which was her nephew who died very young. So, she is very careful about her blood pressure and always try to keep it in the normal range. Another participant, Morjina, fears that if her blood pressure gets too high, stroke and paralysis might result. This motivates her to keep her blood pressure under control by taking medication as prescribed:

"I don't want to be alive with paralysis, death is better than that. I am really scared of paralysis, so I take the medication on time, regularly."

Participants who didn't perceive hypertension as a serious disease noted three main reasons for their stand. First was that hypertensive symptoms were not felt continually, and second was that they were struggling with another disease with more apparent symptoms. Rowshonara, for example, suffers from gastric problems and perceives them as comparatively more serious than

her hypertension because they bother her almost every day. Another participant, Maloti describes how daily chest and body pain were far more concerning to her than hypertensive symptoms:

"I don't find high blood pressure much serious because blood pressure gets high once or twice a month but the chest pain, I have it everyday, so I fear it the most."

A third reason participants perceive hypertension as less severe is that symptoms can be controlled more easily than other diseases. Almost all of the participants said that if they feel hypertensive symptoms, they take rest or sleep and that helps make them feel better. However, symptoms for other diseases do not go away that easily. Three of the participants gave the example of asthma, noting that breathing problems do not go away just by taking rest and that breathlessness is more worrisome than headache, neck pain or dizziness. Farida, a 48-year-old participant explained that diabetes is more severe than hypertension because a diabetic patient has to follow so many rules:

"A diabetic patient struggles if there is a cut in the skin. Also, there are more problem during operations, and they cannot eat as they wish. People with diabetes have to maintain a lot in everyday life. They cannot be in peace. But hypertension is not like that."

Perceived susceptibility

We were interested in assessing whether participants perceived themselves susceptible to hypertension, with the assumption that those who don't think that they will get the disease will be less likely to seek diagnosis or try to control their blood pressure. Results revealed that most study participants do not consider themselves susceptible to hypertension prior to diagnosis. Moreover, 2 study participants refused to recognize themselves as hypertensive even after

receiving a diagnosis. However, they recognized themselves as hypertensive later after many years passed and after several time doctors claimed that they have hypertension. For instance, Rokhsana, a 50-year-old participant from urban Bangladesh observed that hypertension only affects people who are overweight. As she was thin and didn't eat much, she thought she would never get hypertension. Similarly, Rahima, a slight 56-year-old participant from rural area shared:

"Village people say a thin person cannot get high blood pressure. So, I ignored my headache and neck-pain."

For Sokhina, another rural participant, it never occurred to her that she might have hypertension prior to diagnosis. According to her, she thought people who experience stress are much more likely to have hypertension:

"I did not think that I could have hypertension. I did not have any stress, why would I get hypertension?"

Farida, a 48-year-old rural participant explained that she never thought herself susceptible to hypertension given her perceived good health. She gave birth to four children without any complications, was rarely sick and consumed a nutritious diet including milk, eggs, meat while growing up, so she thought she would not get any disease like hypertension.

Other participants like Rubaba, ignored her hypertension symptoms:

"I did not measure my blood pressure before because I did not give it enough importance. If I felt sick, I thought I am feeling that because I worked too much and if I took little rest I would felt better. So, I never gave it enough importance."

Asma, a 43-year-old urban respondent from Dhaka claimed that she had never considered herself susceptible to hypertension as no one in her family had the condition. When diagnosed by her doctor, she refused to believe that it was serious, and did not continue to take hypertension medication as prescribed. As she explained:

"I thought I was too young to have diseases like hypertension and diabetes. So, I did not take medications for those diseases."

By contrast, those participants who considered themselves susceptible to hypertension had family members with the disease. Both of Sabikun's parents and Saleha's father and grandfather had hypertension. As Sabiku elaborates:

"I thought I would have it as hypertension runs in my family. But I didn't go to any doctor to check if I have hypertension or not. It was just in my mind that I might get it."

Diagnosis of hypertension

In this study we were especially interested in participants' care seeking practice in terms of hypertension diagnosis and management. We found that the majority of participants sought diagnosis when they experienced symptoms or were diagnosed when they went to the healthcare practitioner for another condition. Only two participants in the rural sample were diagnosed through the NCD surveillance project.

The most prevalent pattern was diagnosis triggered by hypertension symptoms, although sometimes participants waited for the symptoms to become severe before taking action. For example, one evening, Rubaba, a 33-year-old urban dwelling woman was feeling physically unwell - experiencing insomnia, loss of appetite and dizziness. Her husband took her to the nearest pharmacy and the salesperson measured her blood pressure and found that it was higher

than normal. However, Rubaba didn't take action. A few years later, she felt sick again, and the same salesman confirmed that her blood pressure was high. Only when the symptoms started to appear more frequently and "were too severe to ignore", did she go to hospital and begin taking medication.

Experiencing neck pain, dizziness and trouble breathing, another participant, Asma, went to the doctor and was diagnosed with hypertension. However, only when she suddenly fainted, and her family took her to the doctor once again did she begin to take her hypertension medication regularly.

Another group of participants were diagnosed with hypertension by chance when seeking care from a healthcare practitioner for other complaints. Hasina, a 58-year-old participant went to the doctor because of diabetes and was identified as hypertensive and prescribed medication. Similarly, Layla sought care for a thyroid problem, was diagnosed with hypertension and subsequently put on hypertension medication.

Only three participants diagnosed with hypertension started taking medication and implemented lifestyle modifications without any delay.

Medication adherence

Once participants get diagnosed with hypertension and accept their condition, some follow their healthcare practitioners' recommendations to commence regular use of hypertension medication, while others reported only taking medication when severe hypertensive symptoms are experienced. Among our study participants, 6 of 20 participants fell into the former adherent category, and of 14 into the latter category, most of whom were rural dwellers.

The majority of participants who did not take medication regularly said that they stopped taking medication when their hypertensive symptoms disappeared. Farida, a 48-year-old rural participant shared that when she suffers from headache and neck pain, which she interprets as symptoms of high pressure, she takes medication that has been prescribed by her healthcare provider. She clarified:

"However, when the symptoms go away and blood pressure comes down to normal from high, I don't take medication anymore".

Other reasons for poor adherence to medication related to poor access to supply in rural areas and cultural norms that restrict women's ability to procure medication on their own. Farida, for example, was forbidden from going to the local drug seller to refill her medication given her husband's discomfort with her being seen by or interacting with other men, including the drug seller. Therefore, Farida must rely on others:

"When I need medication, I called my husband or send my son to the village market. Both of my sons love me very much and careful about me. But they are grown up now, they have their own study, or they are busy playing. So, they are not available always. In that case, I call my husband to bring the medication"

For Moyna it is even more complicated. Her husband works in other people's homes, and they are not financially solvent making it difficult to afford hypertension medication or find people who are willing to lend money for its purchase. Moreover, Moyna does not have any children to support her. If she needs to go to the village market to purchase medication, there is no one to take care of her home and there is no one to go to the market on her behalf.

Several participants shared that they don't have any fixed healthcare provider and thus receive no follow-up care. Farida explained how she seeks care from a village doctor who doesn't monitor whether she is taking the medication regularly or not. Due to the surveillance project, however, she was being followed up every two weeks, and taking her medication regularly.

Participants revealed that sometimes they try home remedies first when they experience hypertensive symptoms instead of relying on medication. As mentioned earlier the consumption of something sour like lemon and tamarind is very common among in both urban and rural areas. As Anjum explains:

"Eating tamarind to lowering down blood pressure is a very common belief among the village people. Everyone who has blood pressure knows that."

Participants also described how rest or sleep lessened hypertensive symptoms and Morjina a 62-year-old participant poured water on her head to make herself feel better.

If home remedies do not work, then participants try medication to reduce hypertensive symptoms. Only if hypertensive symptoms do not go away for several days and symptoms get severe, do participants go to their healthcare practitioner. As Laksmi a 42-year-old participant explains,

"We women do not go to the doctor if the symptoms are not too severe. Even the symptoms are severe we wait couple of days and hope that the symptoms will go away. If not, then at last we go to the doctor."

Perceived barriers to and gendered dimensions of hypertension care

We asked participants about their experience of hypertensive care utilization and tried to understand the diverse barriers they faced as women. This section discusses these barriers in detail.

Availability and accessibility

Many participants faced difficulties measuring their blood pressure or receiving hypertensive care because their first point of care is not easily accessible. Masuma, a 49-year-old rural participant explained how the nearest available healthcare service is located at the village market which is 30-40 mins away by walking. While it is possible to request the village doctor to attend patients at home, this tends to occur when they are severely ill, and even then, it may take 1 to 1.5 hours for them to arrive. Another participant, Morjina, said there are no nearby places to measure her blood pressure. If she wants any hypertensive care, she needs to go to the nearest village market. If she feels sick at night, there is no way to measure the blood pressure or get health care as it is not possible to find any village doctor at night.

Maloti, a 40-year-old participant shared similar constraints:

"I measure my blood pressure rarely because the village market is very far from my house. It takes 2-3 hours to walk to the village market and come back to my home. When my blood pressure is high, I can barely walk so that time it becomes hard to go to the village market. And my house is far, so doctor does not come here. So, when I feel really bad, I wait for tomorrow, hoping that I will feel better and then I will be able to go to the doctor."

While rural study participants were aware that the local village doctor has no formal medical qualifications, many consult them because trained M.B.B.S. doctors are located in a town which

is one hour away by rickshaw van. If they want a specialist doctor, the closest place for care is the district hospital, located several hours away from the village. According to Morjina:

"There is no big doctor (formal provider) near my home, only village doctors. All the big doctors are from Dinajpur city, and it takes 2-3 hours to go there."

The village setting in which study participants live has a Union Health Complex where community health workers (CHW) are supposed to provide basic preventive and curative primary healthcare. However, participants said that the facility does not follow any specific timetable and it opens according to the availability the health worker. During the data collection period, the student investigator noted that the clinic was rarely open for more than 5 consecutive days. When her hypertension symptoms are severe, Farida, a 48-year-old participant is reluctant to travel to the union health center as there is also no guarantee that it will be open. In this scenario, patients like Farida are compelled to seek care from the village doctor:

"Suppose I am suffering with severe symptoms, and I could not manage to see the clinic doctor (community health worker) then I am obliged to find my way outside (to the village doctor). I have to save my life anyways."

Another participant, Moyna shared that, she went to the Union health complex few times, but the CHW did not measure her blood pressure. They claimed that they did not have medication for blood pressure and recommended that she go to the nearest village market instead. She recounted:

"*The doctor (CHW) in the hospital (Union Health Complex) did not measure my blood pressure. She told me that they did not have any blood pressure medication so they would not check my pressure. She was very rude to me, and I felt humiliated, so I did not go there afterwards."*

For urban participants, the first point of care for hypertension is the nearest pharmacy or drug shop. The salesperson is the one who measures their blood pressure and suggests medication if needed. Lacking any kind of medical training or pharmacy training, their suggestions are largely based on experience. Sometimes pharmacies are attached to a private doctor's chamber where formal care is provided. In general, however, urban participants face fewer difficulties in accessing care, with multiple pharmacies available close to their homes. A 50-year-old participant named Rokhsana said,

"The pharmacy salesman is familiar with high blood pressure. I know he is not a doctor, but he is measuring and selling medication for long time. He knows what medication to take if someone's blood pressure is high. So, I take the medication prescribed by him."

However, even when care is available, a few participants still described difficulties in accessing a formal healthcare provider. Rokhsana, a 50-year-old respondent shared that when she goes to the doctor's chamber in local pharmacy, the wait time is long and sometimes the doctor is not available until 5 p.m. in the afternoon when they finish their public sector job. If she feels sick during the day, she has to wait for their availability which may extend as late as 8-9 p.m. Either she waits or chooses to consult the pharmacy salesman. Another option is going to the hospital, but she finds this difficult as the public hospital system is inefficient and difficult to navigate, and private hospitals are expensive. She also noted that there are not enough specialist doctors

available in her area, with the majority working in the areas of pediatrics and obstetrics and gynecology.

35-year-old participant Layla, who works as a garment worker described how she spent all day trying to see a formal care provider for her hypertension and thyroid problems at a local hospital. She didn't go there a second time. As she explained:

"*Either I can go to the work, or I can go see the big doctor (formal care provider). I must choose the first one because working gives me the ability to maintain a roof over my head. If I miss the work for a day, I won't get the money for that day and at the end of the month it will be hard for me to sustain."*

Affordability

A few participants shared that cost was a barrier to hypertensive care and management. Rural participants described how they are dependent on their husband for money as they don't have any personal income. In the urban area, only two participants worked and had their own source of income. In this scenario, spending money for hypertensive medication or hypertensive care is not always a decision that women can take by themselves. In many instances, women are not involved in decisions on health care spending at the household level, making it harder for them to take care of their health.

Almost all participants in the study describe healthcare as expensive. In urban areas more services are available but most of the healthcare service is private-for-profit. These private services are much more costly than public healthcare services. Jharna, a 50-year-old urban participant who is completely dependent on her husband for money said that each time she goes to the doctor, she needs multiple diagnostic tests which cost over 10,000 Bangladeshi taka or

USD 100 each time. 10,000 Bangladeshi taka is a large expenditure for a middle-class family like hers as their monthly income is around 40,000-45,000 Bangladeshi taka. Sometimes she delays going to the doctor because her husband doesn't have enough money to spend on her. Another participant, Rokhsana, who also doesn't have any personal income, shared that she stopped taking daily hypertension medication due to cost. She elaborated:

"*My husband told me that there is no need to take the medication anymore as my blood pressure shows normal and the medicine is expensive. I also agree with him."*

Hypertensive care is also expensive for participants with personal income. Layla, who works in a garment factory shared that she cannot afford medication all the time. She takes medication for certain days in a month when she has money, then must wait for the next month when she will get her salary and will be able to buy medication again. Doctor's fees are high relative to her income, and she cannot afford to spend a whole day waiting for services at the public hospital.

Rural participants faced similar cost-related barriers to care. There is a government Union health complex in the village where hypertensive care and medication should be free, but the facility remains closed most of the time. Based on an informal conversation with the NCD surveillance project doctor working there, we learned that CHWs working in community clinics are supposed to have supply of hypertension medication to give patients for free, however, shortages are frequent.

A further challenge to rural participants is the cost of travel related to seeking hypertension care in the nearest town or the nearest city if a specialist doctor is needed. This is compounded as rural participants report being completely dependent on their husband or son for health expenditures. Further, many are not economically well-off, which makes it harder to spend for

healthcare. A rural participant named Moyna describes financial difficulties in seeking care and buying hypertensive medication. Because her husband's income is low and insecure, medication is bought when money is available. Sometimes he buys medication for 2 days, sometimes for 10 days. Sometimes he borrows money to buy her medication, sometimes he buys medication beforehand if he has some extra money, and sometimes he cannot afford medication or the costs of a medical consultation even if her blood pressure is high.

Dependency

Another prominent theme that arose related to participants' dependency on male members of the household for their health and hypertension care. In rural areas, this extended beyond financial dependency, with many participants describing how they relied on their husband or son to buy their medication, accompanying them to the doctor or sometimes acting as an intermediary in the context of doctor's consultations. Farida described how she is not allowed to talk to the healthcare provider, nor manage her hypertensive medication. Her husband goes to the village doctor or pharmacy and brings the medication when her symptoms are severe. Her husband does not allow her to go to the doctor in the village market by herself and he scolds her if she wants to go to herself. She quotes her husband:

"Why will you go to the market (to see the doctor) being a woman!"

If her symptoms are severe, and her husband is not available, then he tells her to send her son to the doctor on her behalf. Farida is an extreme case where her husband does not allow her to talk to the healthcare provider directly. Other participants are allowed to talk to their healthcare provider but are dependent on their husband or son in other ways. Because there is no formal provider near her village, if Morjina needs to see a healthcare provider, she is dependent on her

husband to take her to the nearest town or the nearest city as she cannot go there alone. Sometimes she chooses not to go as there is no one to take her. Masuma relates a similar dilemma:

"I need to go to Dinajpur (the nearest city) to see a big doctor (formal care provider). It takes hours to go there, and I cannot go there alone as it is an unknown city to me. So, I am waiting when my husband or son will get some time to take me there."

Kulsum is also dependent on her husband to buy her medication. Whenever she does not have any hypertensive symptoms, her husband doesn't buy her medication and tell her that she does not need to take medication despite her doctor's advice.

While urban participants face fewer cultural constraints in going to the healthcare provider by themselves, most lack income so they are still dependent on their husbands. As Laksmi explains:

"I am financially dependent on my husband, so I have to wait for him to take me to the doctor. If I feel like I (need to) go now, but I cannot do that as I don't have the money."

Rokhsana shared that she stopped taking medication at her husband's insistence that it isn't necessary when her blood pressure is normal. Previously when she used to take medication, she didn't take it regularly because her husband could not find the time to buy it or forgot to buy it. Another participant named Jharna shared that her doctor asked her to take medication so that she can sleep properly at night which will help her to manage her hypertension. However, her husband was concerned that the medication might be addictive. She ended up not following her doctor's advice.

Household responsibilities

All the participants agreed that household responsibilities present barriers to maintaining their blood pressure at recommended levels or receiving hypertensive care on time. For example, Rubaba a 33-year-old urban dweller who is a mother of 5 children and a housewife shared that her daily workload is too intense, and she doesn't get opportunity to rest or seek care. Everyday she needs to manage a family of 13 people where she is the only one to look after everyone. She worries a lot about her children and how to effectively manage her everyday workload. She said her pressure gets higher when she stresses too much about the family matters, yet is helpless to do anything about it:

"The doctor told me to stress less, maintain my food and take rest to keep my blood pressure under control. But it is hard for any women like me to follow this. How is it possible to be a woman and don't stress about children and family when I am the one who is responsible for taking care of everyone?"

Rubaba similarly describes the burden of household responsibilities on women:

"(The) husband only gives orders, it is us women who have to do all the work. This is scenario of every household in Bangladesh."

Given this scenario, Rubaba perceives that it is impossible to follow her doctor's instructions to maintain her blood pressure. She cannot take rest or go on a walk or eat regularly. Due to the burden of household chores:

"I cannot even get time to comb my hair...how can I take care of myself? It is better for a woman to accept that she will be the caregiver, but she will not have time to take care of herself."

Another participant, Kamrunnahar, who works as an IT supervisor in Dhaka city described how her healthcare provider asked her to measure her blood pressure for 14 consecutive days to determine if she was hypertensive. However, she returns from work at 9 P.M. and after that she must do household chores and take care of her children. She had no time to go to the pharmacy to measure her blood pressure, and when she does, it is often too late in the evening. As a result, she did not know about her hypertensive status until several years later:

"There is no time for myself, the thought of taking care of me came when finally, I get the time to sleep at night but then I do not find any energy to do anything. This is the life of women."

Rural participants described a similar dilemma between managing household responsibilities and maintaining care for self. A 62-year-old participant named Kulsum said that sometimes she neglects her hypertensive symptoms because of household responsibilities. For example, during the time of data collection she was struggling with hypertensive symptoms but didn't do anything about it because of lack of time due to a family event that was occurring at her house. Even though she was not feeling well, she did not go to the doctor to measure her blood pressure or didn't ask her husband or sons to bring medication as she was too busy with arrangements. When she was asked several times why she didn't take any action she said:

"I wanted to go to the doctor today but there is so much work at the house. So, I will go to the doctor later, maybe tomorrow, maybe day after tomorrow. Family and household duties come first and then me."

Sokhina, a 41-year-old participant from rural area said:

"When I have hypertensive symptoms, I wish to take some rest and sleep, but it is not possible. I am responsible for all the household chores. If I take rest, who will cook for my children and husband…Women cannot rest. If women take rest, entire household will be on pause."

Sometimes married participants felt pressure from their in-laws to prioritize household responsibilities more than their health. Farida described how her mother-in-law used to tell her that when she feel little bit of sickness, she should ignore it and start doing chores. She continues to apply this advice in her life. Likewise, 34-year-old Saleha does not go to the doctor given the many household responsibilities she must bear as parent and wife to an absentee spouse. The whole day she is busy taking care of her children and the house, and gets little time to eat, rest or take care of herself:

"We live in a patriarchal society where women are the victim. We don't think about ourselves and no one else also think about us. And it is the normal scenario."

Giving less priority to themselves

Apart from all the barriers we talked so far, we found that most of the participants don't prioritize themselves when it comes to their hypertensive care. This is a common situation in both urban and rural areas and both for educated and less educated participants. We found that participants are more concerned with their family members' needs than their own.

Jharna, a 50-year-old mother of two explained that her husband, who was the only earning person in their family, retired last year. She feels that healthcare services are expensive in the city. Each time she goes to the doctor, she needs to have multiple diagnostic tests that cost than more than 10,000 Bangladeshi taka each time. Both of her children go to private schools which is

expensive for a middle-income family like their own. Because her children are her first priority, she tends to delay going to see the doctor:

"For a mother her children's education and future is the most important thing, her own health comes later."

Another participant, Laksmi, who is a mother of two children offered a similar narrative:

"Women do not care about themselves as they care about the family members. I would not wait to go to the doctor if my children are sick. But when it comes to me, I stall for few days before going to the doctor. I think it is because we women neglect ourselves."

Participants also talked about prioritizing their husbands over themselves. Morjina a 62-year-old rural participant described her experience the day previous to her interview. She was feeling very sick but didn't disclose this to her husband who was working. Her husband came home late at night and went to sleep. She didn't disturb him because she thought he needed to take rest. She shared:

"I was feeling very sick … I felt like I would die. I took my medication, but it wasn't working. I try all the home remedies I know to make myself feel a little bit better, but nothing was working. But I didn't call my husband. I went to another room so that he can sleep properly. I didn't call him because he worked all day, he needs proper sleep."

Chapter 5: Discussion and limitations

In this study we have explored the perceptions and experiences of hypertensive women in rural and urban Bangladesh regarding hypertension symptoms, diagnosis, treatment and management, and the barriers they face in seeking hypertensive care. Study findings provide unique insights useful in efforts to increase gender equitable and sensitive hypertension care. To our knowledge, it is among the first theory-based investigations of this issue in Bangladesh to explore barriers impeding women's hypertension management and care seeking, and potential solutions to lessen its gendered burden.

Factors influencing hypertension care

Study findings illustrate the intersecting influence of personal, behavioral, and environmental factors on women's perception and management of hypertension in Bangladesh. Personal factors including knowledge about the disease are crucial in terms of early diagnosis and understanding the importance of disease management to keep blood pressure at recommended levels. Of note in this study was the number of participants who understood hypertension solely by its symptoms and lacked knowledge of its causes or potential complications if left unmanaged. This is illustrated by the case of Farida, who indicated poor understanding of hypertension and its potential negative health impacts, and consequent lack of concern about the necessity of taking regular medication for the disease. In short, Farida's lack of knowledge about the disease contributed to her non-compliance with medication intended to lessen the NCD risks of uncontrolled hypertension. Studies examining NCDs across many country and cultural contexts, support this finding, providing strong evidence that accurate knowledge about a disease and its implications encourages better self-management and treatment adherence (58-60). A scoping review investigating the literature on medication adherence of patients with chronic

conditions similarly indicated that without comprehensive knowledge and correct information regarding a disease and its treatment, patients often minimize its severity, and fail to observe recommended treatment as precisely as needed (61).

Environmental factors, including the influence of family members' attitudes towards hypertensive women, also shape how women take care of their disease. For many women in Bangladesh, the prevailing culture of patriarchy limits their power in decision-making even with respect to their own health. It also places expectations on women to put the health of others, first. Study findings reveal that women are dependent on their husband's and sons in myriad ways. In this patriarchal society, the health-related decision-making of younger women is also influenced by older women in the family, the most powerful of whom are mothers-in-laws. The South Asian literature documents similar accounts of the influence of men and older female relatives over younger women's agency and ability to manage their health (62, 63). For example, in one study examining women's autonomy in South Asia, almost one-half of decisions about women's health care in Bangladeshi households were reported to occur without women's participation (64). For hypertensive women, further consequences of their subordinate status are lack of access to preventive and medical care due to cultural dictates that require women to prioritize the health and wellbeing of other household members over their own health, and to avoid health-related decisions with perceived negative repercussions on family life (65). The caregiver and domestic roles of women further complicate their ability to prioritize and manage their own health needs. This complexity of gendered limitations and expectations around health and healthcare seeking is supported by a substantial literature that documents how the multiple responsibilities and roles of women and associated stressors, can negatively impact women's health (66, 67).

Insufficient and inaccessible hypertension services

Another important finding from this study is that available services for hypertension in Bangladesh are insufficient, and for many women in our sample, neither accessible nor affordable. In both urban and rural settings, we noted that health services especially designated for hypertension are rare. In urban areas, some specialized health care facilities are available through the private sector, but in rural areas few such facilities exist. In both urban and rural areas, many hypertensive women are dependent on informal care providers who lack training on quality, evidence-based treatment practices for hypertension management (63).

Beyond the limited availability of hypertension care across both rural and urban areas in Bangladesh, this study revealed a variety of gendered barriers to accessing services. Many of these barriers arise from prevailing patriarchal norms that limit women's autonomy. These norms are particularly prominent in more conservative rural areas, where women are discouraged from travelling alone. More than half of the women in the study reported being unable access healthcare services without being accompanied by or obtaining the permission of their husband's or male relative. This finding is supported by other studies in the region (46) and globally (68) that document the difficulties women face in accessing services without accompaniment. The proximity and familiarity of healthcare services is therefore crucial in supporting women's autonomy in managing hypertension. In this regard, greater efforts are needed to strengthen local community clinics in delivering screening services and hypertensive care and medication. In underserved areas, offering training to non-formal providers is a next best option to improve the availability and quality of hypertension care. Supporting this suggestion is evidence that pharmacists receiving proper training and guidelines can be successfully utilized in the management of hypertension (69).

Using theory to understand hypertension-related behaviour

The use of established behavioural theories and models can guide researchers in understanding the complexities and multiple constructs that influence health-related behaviours (70). Indeed, it is widely recognized that public health-related interventions that reference behavioral theory in their development, and implementation have greater impact (71, 72). For example, one evaluation study showed that utilization of at least one theory of behaviour change in interventions promoting physical activity improved the results of patients diagnosed with non-communicable disease (73). In the same manner, research based on behavioural theory is more readily translated into practice (74).

For this study, we utilized three different behavioral theories to inform the development of discussion topics for the interview and provide structure to data analysis and interpretation. Different theories assisted us in considering the different and multi-level dimensions that impact an individual's life and their behavior regarding hypertensive care seeking and management of the disease. The Health Belief Model (HBM) helped elucidate participants' perceptions about hypertension and care seeking and how these modify their behaviour. HBM has been used for decades to understand individual behaviour with respect to screening and management of chronic diseases through its focus on the balance between the perceived threat of a disease (susceptibility, severity), and the perceived benefits of health promotive action.

In this study, we noted that participants implement preventive or treatment actions when they think themselves susceptible to the disease or when they are aware of the severity of the disease. Other studies employing HBM constructs yield similar findings about the relationship between an individual's perceived severity and susceptibility, and behaviours related to chronic disease

management (75, 76). Complementing HBM, Social Cognitive Theory (SCT) helped us explore the influence of an individual's social environment on decisions around hypertension detection and management. Discussion points guided by SCT revealed the importance of peer influence in shaping participants' behaviour towards hypertension management. Women whose family members and broader social circle are aware of hypertension and support them in care seeking, are better equipped to manage their hypertension successfully. For many participants, their social circle is one of the initial sources of information about the disease. For example, Rahima was motivated to keep her blood pressure at the recommended level as both her father and grandfather had hypertension, and she had witnessed its adverse effects. Published literature that utilizes SCT as a study framework also reference constructs such as peer influence and social support, with evidence indicating the benefits of social support in providing patients with a motivating environment that encourages healthy behaviour (54, 77). Use of the Socioecological Model (SEM) also focused attention to the health-related influences of the social networks, cultural norms, healthcare systems in which patients are embedded. For example, we identified prevailing norms in Bangladeshi culture that designate women as responsible for household chores, yet at the same time diminish their agency around household decision-making, including those related to their own health concerns. Further, as the major caregiver in most families, many women feel compelled to put their own health second over other household members. In the context of prevailing cultural norms, it is not surprising that women's health issues may not be prioritized at a societal or familial level. Use of SEM in a study examining health-seeking among adolescent pregnant girls in Bangladesh revealed similar norms affecting adolescents' care seeking behaviours (78). Like our study, these norms played out at multiple personal, institutional, community and policy levels. The value of SEM, therefore, is its location of an

individual within social, institutional and structural spheres of influence, drawing important attention to the multilevel factors that shape their health seeking behavior (79).

The advantage of utilizing several theories in this thesis was to highlight the various determinants of health care seeking from an individual's perceived susceptibility and severity of a disease to their social context, to the larger structural barriers that hinders access to care. Each behavioral theory sheds distinctive light on the complexity of individual behaviour. For example, HBM highlights an individual's perception regarding a disease and health care seeking (53) while SEM embraces multiple other dimensions including social networks, institutional support, cultural values and norms, and public policies (55). In some cases, these theories intersect and overlap. For example, both SCT and SEM emphasize the role of social networks on health behavior, and their impacts on an individual's perceived susceptibility. Contrariwise, HBM develops the construct of perceived susceptibility, but doesn't develop how an individual's perception is formed or shaped by habitual behaviours or external factors (53). Taken together, however, these theories help elucidate the complex and multi-level interactions that influence individual health behaviour and offer insights on the design of feasible and effective programs and policies to reduce the gendered burden of hypertension in Bangladesh.

Intersectionality and hypertension management

While analyzing the data and preparing the results section for this study, we were drawn to the construct of intersectionality as a potential overarching theory that serves to capture the complexity of study findings and their implications. Of note were the myriad ways in which women's health decision-making regarding hypertension management was influenced depending on their location, socioeconomic status, experience, and social networks, among others.

Intersectionality theory is a prominent black feminist theory (80) which offers a lens to observe interdependencies and interconnections between social systems and social categories (81). The term "intersectionality" is first used by an African American legal scholar named Kimberle Crenshaw in 1989 to clearly understand the relationship between race and sex/gender by asserting that the multiple forms of marginalization that African American women experience are mutually constituted, and it is not possible to understand them by treating race and sex/gender as separate subject of inquiry (82). By acknowledging the complexity of the real world and the interacting identities of those living at the margins, intersectionality theory assists researchers in developing a deeper understanding of inequity. Intersectionality theory is unique because it allows the researchers to understand why members of a specific group, or an individual might have different experiences regarding health care seeking depending on their sexual orientation, ethnicity, race, economic class, and other social categories (81). This theory does not give priority to any one social category such as race or gender, instead, it aims to comprehend what is formed and experienced when multiple axes of oppression interact and form a complete new status which is more than the sum of the individual parts and that differs according to place and time (83). Given this distinctive approach to understanding relationships within and between social categories, this theory has great potential to generate new knowledge that guide actions towards the eradication of health disparities across race, gender, ethnicity, social class, socioeconomic status, and other crucial aspects of social inequality (84).

In this study women have varying identities and experiences related to their hypertension and hypertensive care seeking which are captured using an intersectionality lens. For example, intersecting with gender norms are factors such as women's economic status, financial independence, and education, all of which influence health care seeking behaviour. For example,

many women in the study who were financially dependent on male household members faced difficulties in getting timely hypertensive care. Rokhsana, a city dweller and high school graduate, is completely dependent on her husband for money and she does not take her medication regularly as her husband does not think it's necessary. By contrast, Hasina, also a city dweller and high school graduate, is financially independent, and compliant with the treatment regime recommended by her doctor. Hasina is able to follow-up with her doctor and continue her treatment plan as she does not have to depend on anyone for money. Rokhsana, on the other hand, like many other women in the study, lacks this agency. Confirming previous published literature (85), among the most striking findings of this study, was that almost all participants who reported being financially dependent faced difficulties in getting regular access to medication or hypertensive care-seeking. Like financial independence, education is also important in shaping hypertensive care seeking and management. For example, participants who finished 10^{th} grade and higher were more likely to take hypertension seriously and take measures to keep their blood pressure at the recommended level. It is well established that education is positively related with health outcomes due in part to the benefits of health-related knowledge in preventing and managing disease, and the awareness and agency that education can bring when seeking needed healthcare services (86, 87).

Intersectionality theory captures how multiple personal, socio-economic, and structural factors interact with each other to enable or hinder a hypertensive woman in seeking care and managing their disease. Of note in this study were intersecting issues of gender, poverty, education, and financial dependency and their impact on agency. Here agency implies an individual's capacity to act which is mediated by social factors (88). A woman lacking education and financially dependent on her husband has less agency to take care of her health. Lack of education makes

her less knowledgeable and aware of hypotension and its consequences, while financial dependency undermines her ability to seek care even if she wants to. An understanding of this complexity as well as the multiple other social and structural determinants impacting access to hypertension services is crucial in designing interventions and developing policies intended to reduce the gendered burden of NCDs. For instance, given that poor economic conditions can limit women's access to hypertensive care, in formulating programs or policies for hypertension, subsidized care for poor women would be an important consideration. Likewise, the design of women-friendly services for hypertension might include the provision of a children's corner in the clinic or hospitals so they can bring their children when receiving treatment. Several women in the study indicated that childcare issues complicated their ability to leave their homes and seek hypertension services. These two examples illustrate the value of an intersectionality approach in designing programs and policies that are accessible, equitable, wholistic and patient centered.

NCD policy shortcomings

Findings also reveal shortcomings of existing NCD policies. Thus far we have seen how woman experience difficulties in receiving hypertensive care and managing hypertension, however the current National NCD action plan of Bangladesh makes no mention of gender-specific concerns and related actions (36). The failure to acknowledge the special needs of women or the existence of other dimensions of inequity (poverty, rural residence etc.) that require special attention, is an oversight that should be addressed. To give an example, the national NCD action plan is proposing to implement a national salt reduction campaign to educate people about the risk of excessive salt intake through mass media, schools and institutions. In this instance, women who do not have access to mass media or are not part of any outside institution, will not be reached. The national NCD action plan might consider more local, community-based campaigns that have

greater penetration among women working at home. Similarly, the NCD action plan talks about promoting healthy behaviour in schools and workplaces only. None of the rural women in this study worked outside the home, and among urban participants, only two were employed in outside workplaces. It can be presumed, therefore, that the proposed campaign would effectively exclude the large majority of women in Bangladesh if confined to schools and workplaces. The NCD action plan is also silent on broader health systems concerns related to the inadequate supply of frontline NCD services and need for routine monitoring and evaluation regarding service quality and access. Evident in this study was the dysfunctional state of many community clinics where NCD services should be offered, with several women noting that their local clinic was closed or lacking staff and supplies. A 2018 case study of a community clinic in Bangladesh supports this finding, noting general community dissatisfaction with their overall performance (89). The NCD action plan does not acknowledge this problem, nor does it offer a plan to strengthen healthcare systems at the community level.

Towards greater self-care

This study highlights the overlooked importance of self-care for women as a means of supporting ongoing management of hypertension. Study findings reveal that majority of the women have limited knowledge about self-care. Participants shared that they give more priority to their roles as a mother, wife, daughter in law and give secondary attention to their own health and wellbeing. In this scenario, it is critical that women learn about and be supported around self-care as a means of maintaining personal health and enabling their roles within and beyond the family. A large number of studies investigating self-care and chronic conditions have concluded that patients who know and perform self-care are better able to manage their disease (90, 91). A few participants in this study also recognized its importance, noting that unless women in

Bangladeshi society learn the importance of self-care and give themselves priority, no disease management strategy will work. Hence, interventions and programs should be designed to create a greater awareness of self-care, and its necessity for health and wellness.

Social and community learning

Another key insight emerging from this study is the importance of social and community learning about hypertension. While improving women's individual knowledge about hypertension symptoms, health risks and management is crucial to timely diagnosis and blood pressure control, it is insufficient. As noted previously, in Bangladesh, women's health is influenced by the views and needs of family members, so much so that interventions to increase knowledge of hypertension must include them. For example, a cross-sectional study conducted in Bangladesh noted a significant association between husband's knowledge about the health of their partners, and positive health outcomes among married women (92). This evidence, together with findings from other studies (93) provides strong support for community-based learning that promotes knowledge about hypertension among female patients and their husbands and family members. These community-based programs or campaigns can serve to increase public awareness on how to recognize hypertension and its consequences, what measures need to be taken, and how family members can support hypertensive women in managing their disease effectively.

Economic empowerment and agency

Finally, study findings emphasize the importance of continued efforts to increase women's economic empowerment, lessen their financial dependence on male family members and increase their active participation and agency around health decision-making and healthcare

expenditure for themselves and others in the household (94). Investments in women's education and financial empowerment are vital in supporting women's self-care and enabling the health and wellbeing of their families.

Study limitations

A limitation of this study is its geographic focus on only two districts of Bangladesh. Norms, knowledge and practices regarding the disease may be different in other districts. A second limitation is its exclusive focus on women. Future research might query the perceptions and behaviours of men in relation to hypertension among women as well as their own experiences with the disease and its management. A further limitation is our insufficient exploration of the construct of self-efficacy, which is critical to motivating and enabling health care seeking but is exceeding difficult to capture. Further detailed study is therefore required. In light of these limitations, it is inappropriate to generalize findings beyond the context of the study. However, certain insights may be relevant to the study of similar populations, and our theory-based approach offers useful guidance to future research exploring the complex behavioural, social and structural determinants of hypertension care.

Chapter 6: Conclusion

To address the global NCD epidemic, Social Development Goal (SDG) 3.4 is targeted towards reducing premature mortality due to NCDs by one-third before 2030. Encouraged by prior success in improving Millennium Development Goal (MDGs) health-related indicators, Bangladesh is endeavoring to make progress on its commitments to realizing SDG targets. Towards this end, the Bangladesh government has adopted a multisectoral approach aiming for a 25% relative reduction in the prevalence of raised blood pressure and premature mortality from NCDs by 2025. Through its focus on the perceptions and experiences of hypertensive women, this study provides key insights on how to strengthen gender equity in the early detection and good management of hypertension though a focus on families, communities, and the primary healthcare system.

Study findings suggest that in Bangladesh, there is lack of awareness about hypertension among women in both urban and rural areas. They also emphasize the importance of self-care in addressing non-communicable disease risk factors like hypertension. Creating awareness among women about the importance of self-care, early diagnosis, and good management of hypertension is therefore a priority, as is getting help and support from their families and communities. It is crucial that family members look after women just as women look after everyone in the family. In particular, norms and practices need to be changed regarding women's roles and duties so that women's health and healthcare are prioritized to a greater degree. Apart from awareness about self-care and support from family, strengthened health care provision for hypertension is needed that is proximate, affordable, effective and sensitive to the multiple roles, responsibilities and contexts of women in Bangladesh.

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Appendix 1: Interview guideline

	Theme	Prompts
	Warm-up/Socio demographic	
1	Please tell me about yourself	• Age • Education • Occupation • living situation and household composition • Social networks and interaction
	History of hypertension screening/diagnosis	
2	Did you ever get screened for hypertension (HTN)?	• If yes, then can you share you experience in detail?
3	When did you get diagnosed with HTN for the first time?	• Can you share your experience in detail? •
4	Why did you decide to get diagnosed? / How did you decide to seek care?	• What were the events that led you to take the decision of getting diagnosed or seeking care? Who took that decision? • Did you experience any symptoms before you were diagnosed with Hypertension? If yes, can you describe those symptoms of Hypertension and the timeline for those symptoms? • Did any of your family members/relative/ neighbour/ friend have HTN (CVD or any other disease) from before? If yes, then how did that or they influence you to get diagnosed?
5	If someone didn't get screened for hypertension ever and if someone has faced long amount of gap between first symptoms and first time getting diagnosed, then - Why didn't you get screened diagnosed earlier?	• What problems did you faced while you seek care for screening or diagnosis? Can you please share your experience with me?
	Perception of hypertension	

6	What do you know about hypertension? How much did you know about HTN before your diagnosis?	• What were your information sources before getting diagnosed and after getting diagnosed?
7	To what extent do you think HTN is a severe disease?	• What's your perception about HTN as an important/serious disease before getting diagnosed and after getting diagnosed? • What are the changes occurred in your life after getting diagnosed with HTN? (Health, occupation, family)
8	Did it ever occur to you before getting diagnosed with HTN, that you might have HTN?	• If so, then why? Can you share your experience? • If not, then what are the factors that made you think that you do not or will not have HTN? • Do you think of any reason that could have increased or decreased your chance of developing HTN?
9	Do you think that knowing about your HTN status is helpful for you?	• If so, how? If not, why not?
	Care seeking and management	
10	How do you manage your HTN now?	• Please share your experience of seeking for hypertensive care after getting diagnosed • What motivates you to manage your HTN and seeking care? • What are the reasons that may hamper to control your HTN and seeking care?
11	How well do you think you are able to manage your HTN?	• What are the benefits of better management of hypertension?

Appendix 2: Code definitions

Code	Description
Socio demographic	This code refers to participant's age, occupation, education, children, living area, family
Social and community network	This code refers to participant's social interaction and how that network influence on her decision-making process
Duration of disease	This code refers to participant's duration of hypertension
Negligence	This code refers to participant's negligence towards hypertension
Cue to action	This code refers to participant's decision after having hypertensive symptoms
• Waiting until having severe symptoms	
• Towards medical care or medication	
• Towards home remedies	
Doesn't recognize as hypertensive patients	This code refers to participant not recognizing themselves as hypertensive patients
Hypertension in known circle	If respondent's known people have hypertension
Ways to check hypertension	This code refers to participant's action towards checking their blood pressure level
Ways to maintain HTN	This code refers to participant's action towards maintaining their blood pressure
Medical instruction	Instructions given to the respondent by a formal or informal provider
Perceived benefits	This code refers to participant's perception of the effectiveness of various actions available to reduce the threat of illness or disease
Comorbidity	This code refers to participant having any more disease other than hypertension
Perceived Barrier	This code refers to participant facing problems or barriers during care seeking
• Dependency	
• Availability of facility	

• Accessibility	
• Affordability	
• Multiple medication	
• Time	
Self-Efficacy	This code refers to the level of a participant's confidence in her ability to successfully perform a behavior. Participant's ability to make decision regarding her healthcare.
Pluralistic health system	This code refers to participant talking about multiple healthcare provider
Knowledge	This code refers to participant's knowledge about hypertension, source of knowledge, misinformation
Perceived severity	This code refers to participant's perception about HTN as an important/serious disease
Perceived susceptibility	This code refers to participant 's subjective perception of the risk of acquiring an illness or disease
Gender	This code refers how gender is playing a role in hypertensive care seeking
• Don't prioritize themselves	
• Household responsibilities	
• Family barriers	
Awareness	This code refers to participant taking about awareness regarding self-care and awareness in family
• Self-care	
• Family	

Appendix 3: Data display (selected dimensions)

Participant No	What does hypertension mean	Hypertension can lead to which diseases	Perceived susceptibility	Medication Adherence
1	doesn't know	doesn't know	Not overweight, so not susceptible	Take medication only when she feels hypertensive symptoms
2	doesn't know	Paralysis	Never thought that she can have hypertension	Take medication only when she feels hypertensive symptoms
3	doesn't know	CVD, stroke	it is not possible to tell if she can have hypertension from before, so never think herself as susceptible	Take medications regularly
4	doesn't know	CVD	have children without any complication, so did not think herself as susceptible	Take medication only when she feels hypertensive symptoms
5	doesn't know	CVD, stroke	Never thought that she can have hypertension	Take medications regularly
6	doesn't know	CVD	She did not have much stress, so did not think herself as susceptible	Take medication only when she feels hypertensive symptoms
7	doesn't know	CVD, stroke, paralysis	she thought she was physically active, so	Take medication only when she feels

			did not think herself as susceptible	hypertensive symptoms
8	doesn't know	CVD, paralysis	Family members have hypertension, so she thought herself as susceptible	Take medications regularly
9	doesn't know	doesn't know	Never thought that she can have hypertension	Take medication only when she feels hypertensive symptoms
10	doesn't know	CVD	Family members have hypertension, so she thought herself as susceptible	Take medications regularly
11	doesn't know	doesn't know	Never thought that she can have hypertension	Take medication only when she feels hypertensive symptoms
12	doesn't know	doesn't know	She was not overweight, so did not thought herself as susceptible	Take medication only when she feels hypertensive symptoms
13	doesn't know	doesn't know	Never thought that she can have hypertension	Take medication only when she feels hypertensive symptoms
14	doesn't know	doesn't know	She thought only overweight people can get hypertension, so did not think herself as susceptible	Take medication only when she feels hypertensive symptoms
15	doesn't know	Brain stroke, paralysis	She did not have much stress, so did	Take medications regularly

			not thought that she is susceptible	
16	doesn't know	doesn't know	Never thought that she can have hypertension	Take medication only when she feels hypertensive symptoms
17	doesn't know	doesn't know	Never thought that she can have hypertension	Take medication only when she feels hypertensive symptoms
18	doesn't know	doesn't know	Never thought that she can have hypertension	Take medication only when she feels hypertensive symptoms
19	doesn't know	Stroke, Paralysis	Her family members had hypertension, so she thought herself as susceptible	Take medications regularly
20	doesn't know	doesn't know	She thought she was too young to have hypertension	Take medication only when she feels hypertensive symptoms