Depression Screening in Pregnancy and Postpartum: Just do Something?

Brett D. Thombs, PhD[1-6]; Danielle B. Rice, PhD;[7,8] Sarah Markham, PhD;[9] Roy C. Ziegelstein, MD.[10]

[1]Lady Davis Institute for Medical Research, Jewish General Hospital, Montreal, Quebec, Canada; [2]Department of Psychiatry, McGill University, Montréal, Québec, Canada; [3]Department of Epidemiology, Biostatistics and Occupational Health, McGill University, Montreal, Quebec, Canada; [4]Department of Medicine, McGill University, Montréal, Québec, Canada; [5]Department of Psychology, McGill University, Montréal, Québec, Canada; [6]Biomedical Ethics Unit, McGill University, Montréal, Québec, Canada; [7]Department of Psychology, St. Joseph's Healthcare Hamilton, Ontario, Canada; [8]Department of Psychiatry and Behavioural Neurosciences, McMaster University, Ontario, Canada; [9]Department of Biostatistics and Health Informatics, King's College London, London, UK; [9]Department of Medicine, Johns Hopkins University School of Medicine, Baltimore, Maryland, USA.

Address for Correspondence: Brett D. Thombs, PhD; Jewish General Hospital; 4333 Cote Ste Catherine Road; Montréal, Québec, Canada H3T 1E4; Tel (514) 340-8222 ext. 25112; E-mail: brett.thombs@mcgill.ca

Word Count: 3,311

Author Contributions: All authors were responsible for the conception and planning of the content of the article. BDT drafted the initial version of the manuscript. All authors provided critical revisions and approved the final manuscript.

Funding: BDT was supported by a Tier 1 Canada Research Chair. There was no specific funding for this work, and no funders had any role in conception and planning of article content, decision to publish, or preparation of the manuscript.

Declaration of Interests: DBR, SM, and RCZ have no relevant interests to declare. BDT was a member of the Canadian Task Force on Preventive Health Care, which develops guidelines on prevention in primary care, including on depression screening, from 2013 to 2021 and Chair from 2017 to 2021; he did not serve as a working group member or voting Task Force member on any depression screening guidelines.

Evidence from systematic reviews suggests that between 7 and 13% of people who are pregnant or have given birth in the past year may be depressed at some point, although estimates vary by assessment timing and whether only major depression is considered [1–3]. A nationally representative sample of over 14,000 women from the United States, including approximately 1,500 who were pregnant at the time of the study interview or had given birth in the past 12 months, estimated 12-month major depressive disorder prevalence of 8% in both non-pregnant women and women who were pregnant or in their first year postpartum [4]. Depression during pregnancy and postpartum, however, may have greater consequences compared to any other point in the lifespan since it can impact the pregnant person, their infant, relationships with partners, and the parent-infant relationship [5–10]. Depression during the perinatal period is an important condition and serious health concern that requires compassionate care and timely access to effective treatment [11].

Depression is normally identified in standard practice when patients report symptoms or when clinicians recognize them through routine assessment and discussions of patient well-being. Clinicians who care for people in pregnancy and postpartum are expected to discuss their patients' well-being with them and probe for health care problems across many areas, including mental health. A careful evaluation by a clinician is important to distinguish symptoms of depression from those typical during pregnancy and the postpartum period. It is also critical to differentiate symptoms of depression from those of medical conditions that occur with increased frequency in pregnant and postpartum individuals, especially thyroid disease [5,6,10]. When appropriate, questions from tools, such as the Edinburgh Postnatal Depression Scale (EPDS) [12] might be used to facilitate discussions of mental health between health care providers and patients.

Screening has been recommended, in addition to usual care, by some to improve mental health care in pregnancy and the postpartum period by attempting to increase identification of people with depression. Tools like the EPDS [12] can be used for multiple purposes, such as facilitating discussions between health care providers and patients, supporting assessments once depression is suspected, or tracking progress for people receiving treatment. Depression screening is distinct from those activities and involves administering a symptom questionnaire, such as the EPDS [12], to all patients not known

or suspected of having depression, using a pre-specified cut-off threshold to classify patients as having positive or negative screens, further assessing those with positive screens, and, as appropriate, discussing management options. Unlike good standard care, which involves discussions with all patients, screening is a rapid mechanism whereby a score on a screening questionnaire identifies which patients will be engaged in mental health discussions and assessment and which will not. People whose scores are below the screening cut-off are not engaged in such discussions [13].

National recommendations on screening for depression during the perinatal period differ. United Kingdom National Institute for Health and Care Excellence guidelines [14] suggest that health care providers consider asking people who are pregnant or postpartum the two Whooley questions [15] or administering a screening questionnaire as part of a full assessment if depression is suspected. They do not recommend administering a screening tool to all people during pregnancy or postpartum. The UK National Screening Committee [16] and Canadian Task Force on Preventive Health Care (CTFPHC) [17] recommend against routine screening due to concerns about false positives, possible harms, and the lack of evidence from well-conducted trials that screening improves mental health outcomes. The United States Preventive Services Task Force (USPSTF) [18] and Australian national guidelines [19], on the other hand, recommend depression screening in pregnancy and postpartum, although the USPSTF notes that “screening should be implemented with adequate systems in place to ensure accurate diagnosis, effective treatment, and appropriate follow-up” [18].

Unlike scenarios in which patients seek clinical management because they are ill or injured, screening, including depression screening during pregnancy and the postpartum period, is done on apparently healthy people. A well-known maxim is that “All screening programs do harm; some do good as well” [20], meaning that all screening programs consume resources and result in adverse events for some people who would not have experienced those events without screening. Thus, decisions about implementing screening programs must, responsibly, weigh evidence on potential benefits and potential harms.

As with virtually all other types of screening, depression screening would require substantial resources because busy health care practitioners would need to evaluate or refer all of their patients

who have positive screens [13,17,21–23]. In a clinic with 8% depression prevalence and half of cases recognized outside of a screening process [24], 15 of every 100 patients would screen positive based on an EPDS score of 11 or higher and need a clinical assessment, but only 3 would meet criteria for major depression [25,26]. Thus, depression screening would consume scarce health care resources that could otherwise be devoted to providing adequate depression treatment to people in pregnancy and the postpartum period who have marked psychopathology but in many cases receive poor-quality care [13,21,27,28].

Potential harms to individuals who undergo depression screening have not been well documented, but if screening were to be done, some people who would not otherwise be exposed will experience harms [13,21,22,27,29]. All screening processes lead to overdiagnosis or misdiagnosis among some patients. Overdiagnosis occurs in depression when people with mild, transient symptoms are diagnosed and treated, but will not benefit from the treatment, since symptoms would have subsided without intervention. This is an especially important consideration in the early postpartum period, when mild, transient symptoms of depression are particularly common (“postpartum blues” or “baby blues”) [6,30]. Misdiagnosis can occur if screening leads to some people being diagnosed and treated even though they do not meet diagnostic criteria [31]. Other harms might include well-known adverse antidepressant medication effects to those who take the medication [32,33], including the risk of long-term use [34,35] and difficulty with discontinuation [36–38]; possible, though uncertain, risks for fetal development [34]; and nocebo effects that can occur by creating negative expectations among people who are not otherwise specifically concerned about their mental health [39–41].

It is tempting to call for screening when there is an important condition that is underdiagnosed in routine practice, a test to detect the condition, and effective treatments available. However, the vast majority of screening programs that have been proposed and tested in randomized controlled trials (RCTs), across many conditions, have not been shown to improve health outcomes [42,43]. Thus, routine screening should only be recommended when there is evidence from well-conducted RCTs that health, including mental health, benefits are sufficient to justify the potential harms that will be incurred and the resources that will not be able to be used for other necessary health services [44].

Recently, the CTFPHC released their 2022 guideline on depression screening in pregnancy and the postpartum period and recommended against routine questionnaire-based screening [17]. Per the CTFPHC, “We draw an important distinction between standard questions posed in a systematic screening context and those integrated into clinical enquiry, based on how a practitioner makes a judgment about next steps. In systematic screening, all patients meeting the cut-off score are considered “screen positive” and investigated further with diagnostic approaches. In contrast, making a judgment about a patient’s status after a personalized assessment, based on all information available to a practitioner, is considered to be routine clinical care and not screening.” (p. E982) [17].

The CTFPHC is an independent expert panel that is funded by the Public Health Agency of Canada to develop clinical guidelines to support primary care providers to deliver the best possible preventive health care, including guidance on screening. The CTFPHC was formed so that Canadian recommendations would be generated by a panel that has the specific expertise to evaluate complex screening and other prevention interventions, is free of competing interests, and restricts participation in guideline development to members whose clinical and research work do not overlap with the guideline topic to avoid expert or specialty biases [45–47]. The CTFPHC is recognized internationally for the rigor and trustworthiness of its guidelines. As an example, the American College of Physicians developed its recent breast cancer and colorectal cancer screening guidelines by first reviewing other top international guidelines and rating them for the rigor of their development and usability. For both guidelines, the CTFPHC guideline was rated at the top of the list in both categories [48,49]. The ECRI Guidelines Trust [50] rates clinical guidelines for trustworthiness on 12 items, each rated from 1-5, that reflect the rigor of guideline development and foundations of recommendations. All CTFPHC recommendations have overall scores of at least 58 out of 60, score levels that are rarely seen in ECRI guideline ratings. One reason, though not the only reason, that the CTFPHC is recognized for the quality of its guidance is that it uses the GRADE (Grading of Recommendations, Assessment, Development and Evaluations) system [51], which is a transparent framework for evaluating evidence and translating that evidence into clinical guidance [52]. The CTFPHC identifies evidence needed to

develop a guideline, a systematic review is conducted by an independent team, and the CTFPHC then translates that evidence into a recommendation using GRADE [51].

The CTFPHC searched for trials of depression screening in pregnancy or the postpartum period and found only a single, small trial conducted postpartum [53]. The CTFPHC rated the evidence from the trial as uncertain due to its imprecise estimate of effects and very serious risk of bias concerns, particularly due to outcome misreporting [17]. Among concerns, the authors of the trial registered one outcome variable as the primary outcome prior to initiating the trial, and when that outcome was not significant, listed another outcome as the primary outcome in the trial publication. Furthermore, the effect size per additional person who received counselling in the screening arm of the trial compared to usual care arm was approximately 6-7 times what would be expected based on meta-analyses of similar counselling interventions, raising concern about the fidelity of the trial and whether these results represent what would occur in actual clinical practice [13,54]. The CTFPHC determined that the lack of trial evidence demonstrating mental health benefits from screening and the certainty that it would consume valuable resources and lead to adverse outcomes for some did not allow them to recommend routine screening.

The CTFPHC approach was conservative, and its guideline statement did not integrate evidence from RCTs of depression screening interventions that have been done in populations other than people who are pregnant or in the postpartum period. We recently searched for RCTs that evaluated depression screening programs by comparing participants randomized to depression screening versus no screening with all management options the same for both groups [13]. In addition to the postpartum depression trial [53], we identified 4 other RCTs [55–58]. These included a small trial, published in 1999, that was conducted in family and general internal medicine settings in the USA [55], and 3 more recent and substantially larger trials, including a 2017 UK trial that randomized almost 6,000 general practice patients with osteoarthritis from 44 general practice settings to depression and anxiety screening or usual care; a 2019 US trial that randomized over 1,500 patients after an acute coronary syndrome to depression screening or usual care [57], and a 2017 UK trial that randomized over 10,000 post-deployment military personnel to depression and other psychosocial screening versus general

mental health advice [58]. None of these trials found that mental health outcomes were improved among participants randomized to screening. Beyond depression screening, members of our group are currently reviewing questionnaire-based screening for other health conditions and psychosocial risk exposures, including anxiety disorders, posttraumatic stress disorder, intimate partner violence, abuse of elderly and vulnerable adults, suicide risk, alcohol misuse and drug use, adverse childhood events, and developmental delays [59]. We have identified 20 RCTs [53,55–58,60–74], including the 5 depression screening trials, and none of these trials has found evidence that screening with these questionnaires results in improved health-related outcomes.

Given the evidence, there should not be any controversy in concluding that trial evidence has not established that routine depression screening would improve outcomes, including mental health outcomes. Indeed, several large trials did not identify any benefits. Nonetheless, there have been calls to ignore the CTFPHC recommendation and to screen for depression in pregnancy and postpartum anyway. The provincial reproductive mental health program from British Columbia, a Canadian province, for example, has encouraged all health care professionals to continue to use the EPDS to screen for perinatal depression and cited evidence that the EPDS is a reliable and valid tool – but no evidence that screening leads to benefit [75]. Using a valid tool to identify more cases is not a benefit. Indeed, all screening procedures lead to more people being labelled or diagnosed, but those are not benefits unless they lead to better health.

Why would people argue, sometimes forcefully, that we must provide a service for which there is no credible evidence of benefit and, seemingly, a clearly unfavorable harm-to benefits imbalance in that significant resources will be expended and some people in the perinatal period will be harmed without evidence that mental health will be improved?

Some argue that we must just do something. The idea of the politician's fallacy, or politician's syllogism, was first described in the British Broadcasting Company's 1980s sitcom, *Yes, Minister* [76], and reflects the tendency of politicians to implement poorly considered solutions for critical problems. A syllogism is a form of deductive reasoning, in which a conclusion is drawn, validly or invalidly, from two propositions assumed to be true. The politician's fallacy reflects a logical error of the form, "We must do

something; this is something; therefore, we must do this" [77]. The problem with this is that we need to do "something that improves the situation" not just "something", and, even better, we need to choose the best possible "something" of those that might improve our situation. Politicians, of course, are not the only ones who act to address critical problems by "just doing something" – it is all too common in health care, as well. Illustrating this, some have argued that we should just proceed with depression screening during pregnancy and the postpartum period until research has proved that it doesn't work [78]. Insisting on just doing something, however, even with evidence that is increasingly negative on the likelihood of a good outcome, puts people in harm's way, risks taking scarce resources away from people who desperately need them, and poses a barrier to finding a solution that does work. Shifting the scientific paradigm to one in which we implement health care procedures until somebody proves their ineffectiveness would also dramatically worsen the current situation, in which health care providers have far too little time to implement even procedures with evidence of benefit [79]. Mental health is only one aspect of health, and, using this logic, the number of ineffective procedures that have not yet been disproven, across areas of health, would quickly accumulate.

Others have argued that this is an issue of social justice and that screening would ensure equal access to care [80]. Implementing a screening program without evidence of benefit, however, would not promote social justice. Screening could achieve social justice if the benefits of screening outweighed its harms, but this has not been shown for depression screening. Currently, in many health care systems, quick access to depression and other mental health care depends on having private insurance, and specialized services, such as perinatal mental health care, have some of the longest wait times [81]. Consuming resources for screening would further limit access to care for those who need it but do not have insurance and rely on public health care services.

Some may wonder if depression screening could reduce episodes of depression that could potentially lead to postpartum psychosis. Post-partum psychosis is thought to occur in 1 to 2 births per 1,000 [82]. It is a psychiatric emergency with onset typically in the first two weeks post-delivery. It is marked by rapid deterioration and severe symptoms, including mood swings, delusions, hallucinations, and confusion. Infrequently, it can lead to suicide and infanticide [6, 82]. Since there is no direct

evidence that depression screening would lead to fewer episodes of depression or reduce symptoms, there is little reason to think that it would reduce episodes of depression that could progress to psychosis. Furthermore, depression screening tools, which focus on the detection of symptoms associated with low mood and anhedonia and not the cardinal symptoms of postpartum psychosis, would not aide the identification or assessment of the severe symptomatology that presents in postpartum psychosis or help to differentiate new onset psychosis and psychosis linked to pre-pregnancy bipolar disorder or other psychotic disorders.

We depend on research to provide the best possible health care to as many people as possible. Doing this requires trust from the public and policy makers that health care decisions are based on science, but we have seen an important reduction of trust in science among many groups in recent years [83–86]. It is easy to blame this lack of trust on misinformation from outside of our academies, but the behavior of scientists, including health researchers, contributes to the problem [87]. In addition to outright fabrication, which is all-too common and appears to have occurred with highly publicized retractions of major COVID-19 studies [88], for instance, the public is increasingly aware of other non-scientific, but unfortunately also common, practices among health researchers, including data distortions, selective outcome reporting and publication bias, and echo chambers in which gatekeepers erect barriers to the publication of evidence that contradicts strongly held beliefs of groups of individuals, such as those with research or practice interests in a particular area [87].

There are well-established paradigms for evaluating when there is evidence that screening interventions will likely result in sufficient health benefit to justify the resources they require and the harms that will be incurred by some so that others can benefit [44,89]. When people in positions of responsibility call on the public to ignore the evidence because it contradicts their strongly held beliefs or the beliefs of members of specialty organizations to which they belong, this also serves to undermine trust that we will use evidence to deploy our scarce public resources fairly and most effectively for public benefit.

The best way to provide good depression care for people in pregnancy and the postpartum period is to ensure that health care providers ask about symptoms, recognize the importance of distinguishing

depression from the symptoms of a typical pregnancy and early postpartum maternity blues, and appreciate the potential for other conditions like hypothyroidism to mimic the symptoms of depression in pregnant and postpartum individuals. Clinicians must also recognize the importance of identifying and providing guideline-consistent care for depression in the perinatal period and implement procedures to support such care, including compassionate and professional inquiries and discussions about mental health and facilitation of referrals, as appropriate. Caring about depression in pregnancy and the postpartum period would also mean that we actively pursue better options than what we have at our disposal now. If we are going to consider screening, we need to carefully consider how we might improve screening approaches, possibly by limiting who is targeted or improving detection methods [13] and then test them. There may also be other options, apart from screening, that are not being considered but could improve our ability to better identify and manage depression and other mental health concerns in routine perinatal care, which is desperately needed [11]. Improving our ability to care for perinatal depression effectively requires that we have sufficiently open minds to create space for talented and creative clinicians and researchers to generate and test new ideas. But we should not “just do something” by implementing programs that have failed to improve outcomes in research trials.

REFERENCES

[1] O'hara MW, Swain AM. Rates and risk of postpartum depression—a meta-analysis. Int Rev Psychiatry 1996;8:37-54. https://doi.org/10.3109/09540269609037816.

[2] Gavin NI, Gaynes BN, Lohr KN, Meltzer-Brody S, Gartlehner G, Swinson T. Perinatal depression: a systematic review of prevalence and incidence. Obstet Gynecol 2005;106:1071-83. https://doi.org/10.1097/01.AOG.0000183597.31630.db.

[3] Bennett HA, Einarson A, Taddio A, Koren G, Einarson TR. Prevalence of depression during pregnancy: systematic review. Obstet Gynecol 2004;103:698-709. https://doi.org/10.1097/01.AOG.0000116689.75396.5f.

[4] Vesga-López O, Blanco C, Keyes K, Olfson M, Grant BF, Hasin DS. Psychiatric disorders in pregnant and postpartum women in the United States. Arch Gen Psychiatry 2008;65:805-15. https://doi.org/10.1001/archpsyc.65.7.805.

[5] Stewart DE. Perinatal depression. Gen Hosp Psychiatry 2006;28:1-2. https://doi.org/10.1016/j.genhosppsych.2005.09.001.

[6] Stewart DE, Vigod S. Postpartum depression. N Engl J Med 2016;375:2177-86. https://www.nejm.org/doi/10.1056/NEJMcp1607649.

[7] Field T. Postpartum depression effects on early interactions, parenting, and safety practices: A review. Infant Behav Dev 2010;33:1-6. https://doi.org/10.1016/j.infbeh.2009.10.005.

[8] O'Hara MW, McCabe JE. Postpartum Depression: Current status and future directions. Annu Rev Clin Psychol 2013;9:379-407. https://doi.org/10.1146/annurev-clinpsy-050212-185612.

[9] Slomian J, Honvo G, Emonts P, Reginster J-Y, Bruyère O. Consequences of maternal postpartum depression: A systematic review of maternal and infant outcomes. Womens Health 2019;15:1745506519844044. https://doi.org/10.1177/1745506519844044.

[10] Wisner KL, Parry BL, Piontek CM. Postpartum depression. N Engl J Med 2002;347:194-9. https://doi.org/10.1056/NEJMcp011542.

[11] Cook JL, Wilson RD. Providers need guidance on managing perinatal mental health. CMAJ 2022;194:E1328. https://doi.org/10.1503/cmaj.147105-l.

[12] Cox JL, Holden JM, Sagovsky R. Detection of postnatal depression. Development of the 10-item Edinburgh Postnatal Depression Scale. Br J Psychiatry J Ment Sci 1987;150:782-6. https://doi.org/10.1192/bjp.150.6.782.

[13] Thombs BD, Markham S, Rice DB, Ziegelstein RC. Does depression screening in primary care improve mental health outcomes? BMJ 2021;374:n1661. https://doi.org/10.1136/bmj.n1661.

[14] National Collaborating Centre for Mental Health (UK). Antenatal and Postnatal Mental Health: Clinical Management and Service Guidance: Updated edition. Leicester (UK): British Psychological Society; 2014.

[15] Whooley MA, Avins AL, Miranda J, Browner WS. Case-finding instruments for depression. Two questions are as good as many. J Gen Intern Med 1997;12:439-45. https://doi.org/10.1046/j.1525-1497.1997.00076.x.

[16] Psychiatric illness - UK National Screening Committee. https://view-health-screening-recommendations.service.gov.uk/psychiatric-illness/. Accessed February 7, 2023.

[17] Lang E, Colquhoun H, LeBlanc JC, Riva JJ, Moore A, Traversy G, et al. Recommendation on instrument-based screening for depression during pregnancy and the postpartum period. CMAJ 2022;194:E981-9. https://doi.org/10.1503/cmaj.220290.

[18] Siu AL, US Preventive Services Task Force (USPSTF). Screening for depression in adults: US Preventive Services Task Force recommendation statement. JAMA 2016;315:380-7. https://doi.org/10.1001/jama.2015.18392.

[19] National Perinatal Mental Health Guideline. COPE. https://www.cope.org.au/health-professionals/health-professionals-3/review-of-new-perinatal-mental-health-guidelines/. Accessed February 7, 2023.

[20] Muir Gray JA. Evidence-based healthcare: How to make health policy and management decisions. Churchill Livingstone, 1997.

[21] Thombs BD, Coyne JC, Cuijpers P, Jonge P de, Gilbody S, Ioannidis JPA, et al. Rethinking recommendations for screening for depression in primary care. CMAJ 2012;184:413-8. https://doi.org/10.1503/cmaj.111035.

[22] Thombs BD, Arthurs E, Coronado-Montoya S, Roseman M, Delisle VC, Leavens A, et al. Depression screening and patient outcomes in pregnancy or postpartum: a systematic review. J Psychosom Res 2014;76:433-46. https://doi.org/10.1016/j.jpsychores.2014.01.006.

[23] Joffres M, Jaramillo A, Dickinson J, Lewin G, Pottie K, Shaw E, et al. Recommendations on screening for depression. CMAJ 2013;185:775-82. https://doi.org/10.1503/cmaj.130403.

[24] Mitchell AJ, Vaze A, Rao S. Clinical diagnosis of depression in primary care: a meta-analysis. Lancet 2009;374:609-19. https://doi.org/10.1016/S0140-6736(09)60879-5.

[25] Levis B, Negeri Z, Sun Y, Benedetti A, Thombs BD, DEPRESSion Screening Data (DEPRESSD) EPDS Group. Accuracy of the Edinburgh Postnatal Depression Scale (EPDS) for screening to detect major depression among pregnant and postpartum women: systematic review and meta-analysis of individual participant data. BMJ 2020;371:m4022. https://doi.org/10.1136/bmj.m4022.

[26] Tools. DEPRESSD Project. https://www.depressd.ca/tools. Accessed February 7, 2023.

[27] Gilbody S, Sheldon T, Wessely S. Should we screen for depression? BMJ 2006;332:1027-30. https://doi.org/10.1136/bmj.332.7548.1027.

[28] Byatt N, Levin LL, Ziedonis D, Moore Simas TA, Allison J. Enhancing participation in depression care in outpatient perinatal care settings: A systematic review. Obstet Gynecol 2015;126:1048-58. https://doi.org/10.1097/AOG.0000000000001067.

[29] Thombs BD, Stewart DE. Depression screening in pregnancy and postpartum: who needs evidence? J Psychosom Res 2014;76:492-3. https://doi.org/10.1016/j.jpsychores.2014.03.102.

[30] Rezaie-Keikhaie K, Arbabshastan ME, Rafiemanesh H, Amirshahi M, Ostadkelayeh SM, Arbabisarjou A. systematic review and meta-analysis of the prevalence of the maternity blues in the postpartum period. J Obstet Gynecol Neonatal Nurs 2020;49:127-36. https://doi.org/10.1016/j.jogn.2020.01.001.

[31] Thombs B, Turner KA, Shrier I. Defining and evaluating overdiagnosis in mental health: A meta-research review. Psychother Psychosom 2019;88:193-202. https://doi.org/10.1159/000501647.

[32] Gartlehner G, Gaynes BN, Hansen RA, Thieda P, DeVeaugh-Geiss A, Krebs EE, et al. Comparative benefits and harms of second-generation antidepressants: background paper for the

American College of Physicians. Ann Intern Med 2008;149:734-50. https://doi.org/10.7326/0003-4819-149-10-200811180-00008.

[33] Carvalho AF, Sharma MS, Brunoni AR, Vieta E, Fava GA. The safety, tolerability and risks associated with the use of newer generation antidepressant drugs: A critical review of the literature. Psychother Psychosom 2016;85:270-88. https://doi.org/10.1159/000447034.

[34] Molenaar NM, Kamperman AM, Boyce P, Bergink V. Guidelines on treatment of perinatal depression with antidepressants: An international review. Aust N Z J Psychiatry 2018;52:320-7. https://doi.org/10.1177/0004867418762057.

[35] Pratt LA, Brody DJ, Gu Q. Antidepressant use in persons aged 12 and over: United States, 2005-2008. NCHS Data Brief 2011:1-8.

[36] Iacobucci G. NICE updates antidepressant guidelines to reflect severity and length of withdrawal symptoms. BMJ 2019;367:l6103. https://doi.org/10.1136/bmj.l6103.

[37] Hengartner MP, Davies J, Read J. Antidepressant withdrawal – the tide is finally turning. Epidemiol Psychiatr Sci 2020;29:e52. https://doi.org/10.1017/S2045796019000465.

[38] Davies J, Read J. A systematic review into the incidence, severity and duration of antidepressant withdrawal effects: Are guidelines evidence-based? Addict Behav 2019;97:111-21. https://doi.org/10.1016/j.addbeh.2018.08.027.

[39] Fava GA, Rafanelli C. Iatrogenic factors in psychopathology. Psychother Psychosom 2019;88:129-40. https://doi.org/10.1159/000500151.

[40] Benedetti F, Lanotte M, Lopiano L, Colloca L. When words are painful: Unraveling the mechanisms of the nocebo effect. Neuroscience 2007;147:260-71. https://doi.org/10.1016/j.neuroscience.2007.02.020.

[41] Webster RK, Weinman J, Rubin GJ. A systematic review of factors that contribute to nocebo effects. Health Psychol 2016;35:1334-55. https://doi.org/10.1037/hea0000416.

[42] Saquib N, Saquib J, Ioannidis JPA. Does screening for disease save lives in asymptomatic adults? Systematic review of meta-analyses and randomized trials. Int J Epidemiol 2015;44:264-77. https://doi.org/10.1093/ije/dyu140.

[43] Thombs BD, Saadat N, Riehm KE, Karter JM, Vaswani A, Andrews BK, et al. Consistency and sources of divergence in recommendations on screening with questionnaires for presently experienced health problems or symptoms: a comparison of recommendations from the Canadian Task Force on Preventive Health Care, UK National Screening Committee, and US Preventive Services Task Force. BMC Med 2017;15:150. https://doi.org/10.1186/s12916-017-0903-8.

[44] Raffle AE, Mackie A, Muir Gray JA. Screening: Evidence and practice. Second Edition. Oxford University Press; 2019.

[45] BMJ. Sheldon Greenfield: Can expert bias be reduced in medical guidelines? https://blogs.bmj.com/bmj/2019/12/03/sheldon-greenfield-can-expert-bias-be-reduced-in-medical-guidelines/. Accessed February 7, 2023.

[46] Jatoi I, Sah S. Clinical practice guidelines and the overuse of health care services: need for reform. CMAJ 2019;191:E297-8. https://doi.org/10.1503/cmaj.181496.

[47] Norris SL, Burda BU, Holmer HK, Ogden LA, Fu R, Bero L, et al. Author's specialty and conflicts of interest contribute to conflicting guidelines for screening mammography. J Clin Epidemiol 2012;65:725-33. https://doi.org/10.1016/j.jclinepi.2011.12.011.

[48] Qaseem A, Crandall CJ, Mustafa RA, Hicks LA, Wilt TJ. Screening for colorectal cancer in asymptomatic average-risk adults: A guidance statement from the American College of Physicians. Ann Intern Med 2019;171:643-54. https://doi.org/10.7326/M19-0642.

[49] Screening for breast cancer in average-risk women: A guidance statement from the American College of Physicians. Ann Intern Med 2019;170:547-60. https://doi.org/10.7326/M18-2147.

[50] ECRI. ECRI Guidelines Trust. https://www.ecri.org/solutions/ecri-guidelines-trust. Accessed February 7, 2023.

[51] Canadian Task Force on Preventive Health Care. Methods. https://canadiantaskforce.ca/methods/. Accessed February 7, 2023.

[52] BMJ Best Practice. What is GRADE? https://bestpractice.bmj.com/info/toolkit/learn-ebm/what-is-grade/. Accessed February 7, 2023.

[53] Leung SSL, Leung C, Lam TH, Hung SF, Chan R, Yeung T, et al. Outcome of a postnatal depression screening programme using the Edinburgh Postnatal Depression Scale: a randomized controlled trial. J Public Health 2011;33:292-301. https://doi.org/10.1093/pubmed/fdq075.

[54] Thombs BD. Postpartum depression screening: a comment on Leung et al. J Public Health 2012;34:162-3. https://doi.org/10.1093/pubmed/fdr110.

[55] Williams JW, Mulrow CD, Kroenke K, Dhanda R, Badgett RG, Omori D, et al. Case-finding for depression in primary care: a randomized trial. Am J Med 1999;106:36-43. https://doi.org/10.1016/s0002-9343(98)00371-4.

[56] Mallen CD, Nicholl BI, Lewis M, Bartlam B, Green D, Jowett S, et al. The effects of implementing a point-of-care electronic template to prompt routine anxiety and depression screening in patients consulting for osteoarthritis (the Primary Care Osteoarthritis Trial): A cluster randomised trial in primary care. PLOS Med 2017;14:e1002273. https://doi.org/10.1371/journal.pmed.1002273.

[57] Kronish IM, Moise N, Cheung YK, Clarke GN, Dolor RJ, Duer-Hefele J, et al. Effect of depression screening after acute coronary syndromes on quality of life: The CODIACS-QoL Randomized Clinical Trial. JAMA Intern Med 2020;180:45-53. https://doi.org/10.1001/jamainternmed.2019.4518.

[58] Rona RJ, Burdett H, Khondoker M, Chesnokov M, Green K, Pernet D, et al. Post-deployment screening for mental disorders and tailored advice about help-seeking in the UK military: a cluster randomised controlled trial. Lancet 2017;389:1410-23. https://doi.org/10.1016/S0140-6736(16)32398-4.

[59] Carboni-Jiménez A, Boruff JT, Cosgrove L, MacMillan L, McLennan JD, Thombs BD. Effects of screening with self-report questionnaires for health conditions or risk exposures: protocol for a systematic review of evidence from randomized controlled trials. Open Science Framework. https://osf.io/vzpdm. Accessed February 7, 2023.

[60] van Agt HME, van der Stege HA, de Ridder-Sluiter H, Verhoeven LTW, de Koning HJ. A cluster-randomized trial of screening for language delay in toddlers: Effects on school performance and

language development at age 8. Pediatrics 2007;120:1317-25. https://doi.org/10.1542/peds.2006-3145.

[61] de Konging HJ, de Ridder-Sluiter JG, van Agt HME, Reep-van den Bergh CMM, van der Stege HA, Korgage IJ, et al. A cluster-randomised trial of screening for language disorders in toddlers. J Med Screen 2004;11:109-16. https://doi.org/10.1258/0969141041732229.

[62] Barrera M, Alexander S, Atenafu EG, Chung J, Hancock K, Solomon A, et al. Psychosocial screening and mental health in pediatric cancer: A randomized controlled trial. Health Psychol 2020;39:381-90. https://doi.org/10.1037/hea0000825.

[63] Barrera M, Hancock K, Rokeach A, Atenafu E, Cataudella D, Punett A, et al. Does the use of the revised Psychosocial Assessment Tool (PATrev) result in improved quality of life and reduced psychosocial risk in Canadian families with a child newly diagnosed with cancer? Psychooncology 2014;23:165-72. https://doi.org/10.1002/pon.3386.

[64] Braeken APBM, Kempen GIJM, Eekers DBP, Houben RMA, van Gils FCJM, Ambergen T, et al. Psychosocial screening effects on health-related outcomes in patients receiving radiotherapy. A cluster randomised controlled trial. Psychooncology 2013;22:2736-46. https://doi.org/10.1002/pon.3340.

[65] Geerse OP, Hoekstra-Weebers JEHM, Stokroos MH, Burgerhof JGM, Groen HJM, Kerstjens HAM, et al. Structural distress screening and supportive care for patients with lung cancer on systemic therapy: A randomised controlled trial. Eur J Cancer 2017;72:37-45. https://doi.org/10.1016/j.ejca.2016.11.006.

[66] Maunsell E, Brisson J, Deschênes L, Frasure-Smith N. Randomized trial of a psychologic distress screening program after breast cancer: effects on quality of life. J Clin Onc 1996;14:2747-55. https://ascopubs.org/doi/10.1200/JCO.1996.14.10.2747.

[67] Ploos van Amstel FK, Peters ME, Donders R, Schlooz-Vries MS, Polman LJ, van der Graaf WT, et al. Does a regular nurse-led distress screening and discussion improve quality of life of breast

cancer patients treated with curative intent? A randomized controlled trial. Psychooncology. 2020;29:719-28. https://doi.org/10.1002/pon.5324.

[68] Klevens J, Kee R, Trick W, Garcia D, Angulo FR, Jones R, et al. Effect of screening for partner violence on women's quality of life: a randomized controlled trial. JAMA 2012;308:681-9. https://doi.org/10.1001/jama.2012.6434.

[69] Koziol-McLain J, Garrett N, Fanslow J, Hassall I, Dobbs T, Henare-Toka TA, et al. A randomized controlled trial of a brief emergency department intimate partner violence screening intervention. Ann Emerg Med 2010;56:413-423.e1. https://doi.org/10.1016/j.annemergmed.2010.05.001.

[70] MacMillan HL, Wathen CN, Jamieson E, Boyle MH, Shannon HS, Ford-Gilboe M, et al. Screening for intimate partner violence in health care settings: a randomized trial. JAMA 2009;302:493–501. https://doi.org/10.1001/jama.2009.1089.

[71] Crawford MJ, Thana L, Methuen C, Ghosh P, Stanley SV, Ross J, et al. Impact of screening for risk of suicide: randomised controlled trial. Br J Psychiatry 2011;198:379-84. https://doi.org/10.1192/bjp.bp.110.083592.

[72] Wasserman D, Hoven CW, Wasserman C, Wall M, Eisenberg R, Hadlaczky G, et al. School-based suicide prevention programmes: the SEYLE cluster-randomised, controlled trial. Lancet 2015;385:1536-44. https://doi.org/10.1016/S0140-6736(14)61213-7.

[73] Singer S, Danker H, Roick J, Einenkel J, Briest S, Spieker H, et al. Effects of stepped psychooncological care on referral to psychosocial services and emotional well-being in cancer patients: A cluster-randomized phase III trial. Psychooncology 2017;26:1675-83. https://doi.org/10.1002/pon.4492.

[74] Barrera M, Desjardins L, Prasad S, Shama W, Alexander S, Szatmari P, et al. Pilot randomized psychosocial trial of a screening intervention in pediatric oncology. Psychooncology 2022;31:735-44. https://doi.org/10.1002/pon.5857.

[75] Perinatal Services BC. Statement affirming the importance of depression screening in BC. http://www.perinatalservicesbc.ca/about/news-stories/stories/statement-affirming-the-importance-of-perinatal-depression-screening-in-bc. Accessed February 7, 2023.

[76] Yes, Prime Minister. Power to the People. https://www.imdb.com/title/tt0751835/. Accessed February 7, 2023.

[77] Jordan A. A case for expanded seven day services: The politician's fallacy? https://www.bmj.com/content/351/bmj.h4596/rr-44. Accessed February 7, 2023.

[78] Chaudron LH, Wisner KL. Perinatal depression screening: let's not throw the baby out with the bath water! J Psychosom Res 2014;76:4890-91. https://doi.org/10.1016/j.jpsychores.2014.03.011.

[79] Yarnall KSH, Pollak KI, Østbye T, Krause KM, Michener JL. Primary care: is there enough time for prevention? Am J Public Health 2003;93:635-41. https://doi.org/10.2105/ajph.93.4.635.

[80] Linden W, Vodermaier A. Re-rethinking the article by Thombs and colleagues. CMAJ 2012;184:438–438. https://doi.org/10.1503/cmaj.112-2023.

[81] Canadian Institute for Health Information. New CIHI data available: Wait times for mental health counselling and for home care services. https://www.cihi.ca/en/news/new-cihi-data-available-wait-times-for-mental-health-counselling-and-for-home-care-services. Accessed February 7, 2023.

[82] Jones I, Chandra PS, Dazzan P, Howard LM. Bipolar disorder, affective psychosis, and schizophrenia in pregnancy and the post-partum period. Lancet 2014;384:1789-99. https://doi.org/10.1016/S0140-6736(14)61278-2

[83] Kennedy B, Tyson A, Funk C. Americans' trust in scientists, other groups declines. Pew Res Cent Sci Soc 2022. https://www.pewresearch.org/science/2022/02/15/americans-trust-in-scientists-other-groups-declines/. Accessed February 7, 2023.

[84] Algan Y, Cohen D, Davoine E, Foucault M, Stantcheva S. Trust in scientists in times of pandemic: Panel evidence from 12 countries. Proc Natl Acad Sci 2021;118:e2108576118. https://doi.org/10.1073/pnas.2108576118.

[85] Cope EL, Khan M, Millender S. Trust In health care: Insights from ongoing Research. Health Affairs Forefront. https://www.healthaffairs.org/do/10.1377/forefront.20220110.928032/full/. Accessed February 7, 2023.

[86] Parikh S. Why we must rebuild trust in science. Pew Trend Magazine. https://pew.org/2MoiYlW. Accessed February 7, 2023.

[87] West JD, Bergstrom CT. Misinformation in and about science. Proc Natl Acad Sci 2021;118:e1912444117. https://doi.org/10.1073/pnas.1912444117.

[88] Piller C, Servick K. Two elite medical journals retract coronavirus papers over data integrity questions. Science. https://www.science.org/content/article/two-elite-medical-journals-retract-coronavirus-papers-over-data-integrity-questions. Accessed February 7, 2023.

[89] UK National Screening Committee. Evidence review criteria: national screening programmes. https://www.gov.uk/government/publications/evidence-review-criteria-national-screening-programmes. Accessed February 7, 2023.