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# Screening for Antenatal Depression by Midwives in Low Resource Settings in Primary Care Settings in Malawi

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## Abstract

Depression significantly contributes to the disease burden of pregnant women. However, depression is often under diagnosed by health professionals especially in antenatal clinics. This is the situation in Malawi where there is no routine screening for depression in antenatal clinics. Nonetheless, screening can enable the effective management of pregnant women with depression at antenatal clinics. There is therefore a need to integrate screening for depression into routine antenatal services to enhance the early identification of antenatal depression and intervention to improve and maintain the well-being of pregnant women and contribute towards achieving the efforts of the Government of Malawi in scaling up the treatment of depression.

**Keywords:** depression, antenatal, screening, midwives, pregnancy

## 1. Introduction

Depression affects pregnant women during all stages of their pregnancy [1]. Currently, there is no reliable comprehensive epidemiological statistics about the prevalence of depressive disorders during pregnancy in Malawi, though one study in a rural district reported prevalence of depression as 10.7% (major depression) and 21.1% (minor depression) [2]. These figures fall within prevalence range of depressive disorders during pregnancy (8.3–41%) reported in sub-Saharan Africa [3] with highest prevalence (47%) registered in rural parts of South Africa [4]. There are numerous risk factors which are linked to antenatal depression. In Malawi, a previous study found that lower social support and intimate partner violence were linked with antenatal depression [2]. Similarly, another study revealed that being single, poverty, stressful life events, unplanned pregnancy, childhood trauma, and intimate partner violence predicted antenatal depression [5].

Evidence indicates that antenatal depression and its associated risk factors may be addressed through psychosocial interventions including screening to reduce burden they may cause on an individual [2, 6]. Depression is often under diagnosed by treating health professionals [7] which leads to poorer prognosis of co-morbid physical health conditions in primary healthcare settings [8]. This is likely to put pressure on the poor resources available in antenatal clinics in low resource settings and add an

additional burden to pregnant women themselves. The lack of routine screening can also delay identification and treatment of women who are affected by antenatal depression. Delayed diagnosis and treatment of antenatal depression may lead to the early disruption of mother-infant relationships and prolong distress for a mother [6].

Antenatal depression thus causes adverse effects on the mother, family, and community which necessitate interventions of health professionals. Screening for depression can help in timely detection of pregnant women with depression [9]. Currently, there are many instruments for the screening of antenatal depression that are validated in low resource settings [10–12]. Some of these instruments were not specifically developed for use during pregnancy but have been used in these settings. Nevertheless, screening instruments for depression must be accurate (be sensitive and specific) in identifying individuals who have a condition [sensitivity (Se)] and those without a condition [specificity (Sp)] [13].

Currently, pregnant women are not routinely screened for depression in antenatal clinics in Malawi. However, mental health is integrated in general health care system at policy level in Malawi [14], so that people could have increased access to mental health services. This means that pregnant women should also receive mental health care at antenatal clinics along with the usual antenatal care as needed. Services at antenatal clinics in Malawi include history taking, physical and laboratory examination, antenatal drugs and vaccines and antenatal education [15]. This is similar to what happens in South Africa where antenatal care generally focuses on physical examinations [16].

Integrating mental health with antenatal care requires midwives to assess and deal with mental health problems affecting pregnant women in antenatal care settings in Malawi. Nonetheless, some policy makers fear that mental health interventions may deter midwives from concentrating on other ‘priority’ interventions [9]. Furthermore, many general health care workers, including midwives, in Malawi are not confident and competent enough deal with mental health problems [17]. Research studies have asserted that midwives may lack skills and confidence in screening and treating antenatal depression [18]. This is corroborated by Mathibe-Neke, Rothberg [19] who asserted that midwives from sub-Saharan Africa are not skilled enough to assess and treat common perinatal mental disorders even though they encounter many pregnant women with psychosocial problems. Nonetheless, there is evidence that nurses and midwives can effectively intervene to reduce depressive symptoms during pregnancy [6].

Dealing with antenatal depression can assist in achieving the 17 Sustainable Development Goals (SDGs), particularly, goal number three which focuses on ensuring healthy lives and promoting well-being for all ages [20]. The government of Malawi is already making efforts to achieve SDG 3 (good health and well-being) through the Essential Health Package (EHP) [21] which includes mental disorders as priority conditions for the first time. The government has gone a step further in the Malawi Health Sector Strategic Plan II 2017–2022 to emphasise the first line treatment of depression for the entire population at community, primary and secondary levels of care [22]. It is estimated that there are 847 767 people who are in need of treatment for depression, and the Government has targeted providing access to treatment for 27 822 people by 2022 [22]. In this regard, the Government of Malawi has prioritised research on mental health in the National Health Research Agenda for Malawi (2012–2016) to promote the development of innovative and appropriate treatment strategies for mental health problems affecting the population [23].

### 1.1 Antenatal care

Antenatal care includes the health assessment of pregnant women, encouraging good health habits, addressing pregnancy related complications and providing

social and psychological support [24]. The World Health Organisation (WHO) recommends the implementation of new focused antenatal care which consists of a minimum of eight contacts between the pregnant woman and the healthcare providers with their first contact during the first 12 weeks' gestation, then following contacts taking place at 20, 26, 30, 34, 36, 38 and 40 weeks' gestation [25]. Malawi adopted focused antenatal care more than a decade ago [15, 26] with the aim of helping women to maintain normal pregnancies through identification of pre-existing health conditions, early detection of complications arising during pregnancy, health promotion, disease prevention, birth preparedness and complication readiness planning [27]. It encourages careful identification of pregnant women with special health conditions or risk factors for complications [28]. As described in literature, detection and treatment of diseases, is one of the essential elements of care during pregnancy [29].

In Malawi midwives are frequently the first health professionals who could identify antenatal depression, or to whom a pregnant woman with antenatal depression or any other common perinatal mental disorders may go to seek for help. The country has low mental health specialists to patients ratios (0.01 psychiatrists per 100 000 and 0.22 psychiatric nurses per 100 000) [30] for more than 16 million people. This shows that pregnant women attending antenatal clinics may have limited access to mental health specialists. Despite a gross shortage of mental health specialists in the country, midwives therefore could participate in the detection of pregnant women with depression when providing antenatal care.

## **1.2 Clinical and public health significance of antenatal depression**

The lancet series on maternal mental health have established the clinical and public health importance of antenatal depression [31–34]. There is evidence that antepartum depression is highly prevalent in low resource settings [31]. Literature show that antenatal depression is associated with increased rates of adverse child outcomes in low resource settings where pregnant women have increased exposure to risk factors for depression [35]. The adverse mental health outcomes for the child include an increased risk of anxiety, depression, attention deficit hyperactivity disorder, and conduct disorder [35]. It is documented that pregnant women with untreated depression have a higher likelihood of obstetric complications, premature deliveries, and low birthweight infants [34].

Antenatal depression and HIV infection form a vicious cycle, whereby the symptoms of each disease worsen the status of the other, and each needs to be sufficiently treated for the pregnant woman to become healthy [32]. It is of public health concern that pregnant women with co-morbidity of depression and HIV infection are less likely to adhere to antiretroviral therapy, which is critical for her survival and prevention of HIV transmission to the child [33]. Stringer, Meltzer-Brody [32] recommended integration depression-screening technique in antenatal services that could identify a large proportion of affected women to break the cycle of depression and HIV infection interaction. It is documented that integrating mental health services into primary care may be the most viable way of closing treatment gap for mental health in low resource settings [31]. An important step in this direction is the incorporation of the capacity to prevent, recognise, and treat depression within antenatal care [36]. This may help to meet the immediate mental health needs of a pregnant woman, ensure better maternal and child outcomes, and contribute towards success of HIV/AIDS services [32].

Integrated antenatal services aimed at identifying and treating women with antenatal depression are needed because antenatal care is typically the first and only time of interaction with the health care system for many women in low resource



settings [31]. As such, antenatal care visits provide critically important opportunities for mental health interventions to occur. There is a need to develop protocols for early identification, treatment and preventing the adverse effects of antenatal depression in low resource settings because they do not exist [31]. There is also a need to develop, refine and rigorously evaluate the predictive validity and reliability of instruments for screening of antenatal depression in low resource settings [31].

## 2. Screening for depression

Screening is the application of an instrument to identify people at risk of a specific condition among people who have not sought medical attention because of symptoms of that condition to warrant further investigation or direct prevention [37]. Literature suggests that it is reasonable to consider screening when the condition in question is significant and prevalent, can be effectively treated and cannot be readily detected without screening [38]. Screening for depression encompasses the use of instruments for measuring symptoms of depression to identify patients who may have depression but who have not sought treatment and whose depression has not already been detected by clinicians [38].

For screening to be successful, it must detect a substantial number of individuals with undiagnosed depression and provide treatment to obtain sufficiently positive results to justify the costs and potential harms associated with screening [38]. It is documented that screening for depression in primary care requires the availability of a lot of resources [9]. In low resource settings, allocation of resources to screening activities could lead to a decline in the quality of care received by patients with more severe depression and who are more clearly in need [38]. More importantly, it is recommended that the WHO minimum criteria for screening should be met before screening is implemented [39].

According to Andermann et al. [39], the following is the aforementioned recommended minimum criteria for screening: [1] the screening programme should respond to a recognised need; [2] the objectives of screening should be defined at the outset; [3] there should be a defined target population; [4] there should be scientific evidence of screening programme effectiveness; [5] the programme should integrate education, testing, clinical services and programme management; [6] there should be quality assurance, with mechanisms to minimise potential risks of screening; [7] the programme should ensure informed choice, confidentiality and respect for autonomy; [8]; the programme should promote equity and access to screening for the entire target population; [9]; programme evaluation should be planned from the outset; and [10] the overall benefits of screening should outweigh the harm. This criteria clearly focuses at improving clinical outcomes of individuals who participate in screening programmes, including pregnant women.

This study complied with the minimum criteria for implementing screening in many ways. Firstly, the aim of this study to develop a screening protocol was response to a need for detecting antenatal depression and associated risk factors. Secondly, the study clearly indicated that pregnant women attending antenatal clinic as target population for the screening of depression. Thirdly, the evidence about effectiveness of the proposed screening protocol for antenatal depression was locally generated by this study some of it was gathered from literature. Fourthly, this study minimised harm and ensured quality by submitting the proposal for review to two research and ethics committees, allowing participants to give consent for their voluntary participation in the study and ensuring privacy by not collecting

personal details that could identify them during data collection. Pregnant women who were diagnosed as having depression were referred to a psychiatric unit. Finally the protocol will be piloted to assess its clinical application and benefits and cost before it is adopted for clinical use. It is hoped that the proposed screening protocol will be used for screening depression in all pregnant women after its adoption.

Screening for depression is useful if it improves patient outcomes beyond those of standard care [38]. However, the Canadian Task Force on Preventive Health Care asserted that there is insufficient evidence about the benefits of screening to recommend routine screening of depression in adults in primary care settings [40]. The fact that there is insufficient evidence to recommend routine screening of depression does not change the importance of depression as a condition that negatively affects quality of life [41]. As such, clinicians in primary care settings should be alert to the possibility of depression in patients with characteristics that may increase their risk of depression [40, 41]. The American College of Preventive Medicine upholds the United States Preventive Services Task Force (USPSTF) proposal that all adults should be screened for depression in primary care settings and that there should be collaboration between primary care providers and mental health specialists to ensure accurate diagnosis and treatment of depression [42].

## **2.1 Screening for depression in antenatal clinics**

During antenatal care, midwives have a duty to screen pregnant women for various conditions [15]. Midwives are expected to routinely screen depression in all pregnant women [43] to improve detection of antenatal depression [44]. There is evidence that screening for depression during pregnancy may reduce depressive symptoms among these women [45]. The American College of Obstetricians and Gynaecologists recommended that pregnant women should be screened for antenatal depression using a standardised and validated instrument [46].

For the routine screening for depression in antenatal care to occur, there is a need for standardised instruments for screening of depression to be designated for use in antenatal clinics in Malawi. Internationally there is evidence that midwives can effectively use instruments for screening of depression during antenatal care [16]. Currently, there are reports which show that EPDS and SRQ are used in research to screen depression during antenatal care in low resource settings [10]. However, screening instruments such as EPDS and SRQ are considered to be too long and time consuming for routine screening [47]. This could present a problem in busy antenatal clinics. In Malawi, antenatal clinics are usually staffed by one or two midwives who attend to a multitude of pregnant women. Literature indicates that antenatal clinics in low resource settings are understaffed, lack infrastructure and do not have adequate instruments for assessing antenatal depression [19]. Screening protocols for antenatal depression could help midwives to implement effective interventions systematically without adding to their workload [9] in these busy antenatal clinics. Routine antenatal visits by pregnant women could provide an appropriate time for antenatal depression screening [48]. Protocols for screening antenatal depression which include instruments that are accurate, acceptable and easy to use in busy, low resource settings therefore are needed [49].

However, midwives may consider screening for antenatal depression to be too demanding and requiring too much effort and this may result in a decreased frequency of screening [50]. The ideal timing and interval for screening for depression is not known [51]. However, Wisconsin Association for Perinatal Care recommends that screening of depression should be done at first antenatal visit and the third trimester of pregnancy [52].

## 2.2 Treatment for depression

Literature indicates that treatment for antenatal depression exists [53, 54]. A systematic review found that drug therapy, acupuncture, the use of morning light, individual psychotherapy, cognitive behavioural therapy, counselling and end psychodynamic therapy are forms of depression treatment that are used during pregnancy [55]. In addition, systematic reviews and controlled clinical trials found that various forms of psychotherapy [45, 54, 56–62], massage therapy [54, 61], exercise [63, 64], and drug therapy [55] may be effective in treating depression during pregnancy. This is supported by Whooley [65] who asserted that exercise and other self-management strategies, behavioural activation, structured psychotherapy, and/or pharmacotherapy are effective treatments for depression.

However, some authors of systematic reviews have argued that there is no conclusive evidence on the effectiveness of these treatments for depression during pregnancy [54–56]. All in all one can argue that the lack of evidence on effectiveness of some treatments for depression during pregnancy does not mean that antenatal depression cannot be treated but simply means that evidence is not available.

## 2.3 Instruments for screening of depression

Screening for depression during pregnancy can be done using various instruments such as EPDS [66], Hopkins Symptoms Checklist 15 (HSCL-15) [67], SRQ [68] and Whooley's Questions [69]. Most of these screening instruments were not specifically developed for use during antenatal periods [66–68]. However, there are also numerous instruments for screening antenatal depression that were also validated for use in low resource settings [70] (Table 1).

Screening instruments which were validated in specific settings have a high likelihood of generating accurate results [71] and may reduce the under-detection of depression in those settings. However, screening instruments are generally limited in their accuracy [72] and their performance varies with populations or settings [73]. For instance, previous studies found that EPDS had different levels of accuracy and validity in antenatal clinics in various countries [10, 70, 74–76].

## 2.4 Validity of screening instruments

The performance of screening instruments may vary with settings [73]. A concern is that most instruments for the screening of depression were validated in high

S.No	Screening Instrument	AUC	Se	Sp
1	Beck Depression Index	.87	.87	.74
2	Centre for Epidemiologic Studies Depression Scale 20	.82	.73	.79
3	Edinburgh Postnatal Depression Scale	.97	.87	.92
4	Hamilton Rating Scale for Depression	.86	.88	.75
5	Hopkins Symptoms Checklist 25	.86	.89	.8
6	Kessler Psychological Distress Scale 10	.95	1	.81
7	Self-Reporting Questionnaire	.83	.76	.81

Source: Chorwe-Sungani and Chipps [70].

**Table 1**

Summary of screening instruments that were validated in low resource settings.

income countries (HICs) whose contexts are dissimilar from those of low resource settings [77]. For example, there is evidence that the Edinburgh Postnatal Depression Scale's (EPDS) discriminant ability in detecting antenatal depression varies according to settings [74–76]. The two most commonly used instruments in low resource settings, namely the EPDS and the Self Reporting Questionnaire (SRQ), were reported to be easy to administer to pregnant women by interviewers in Malawi [10]. However, evidence is emerging that some health professionals may find screening instruments which have 5 or more items as long, cumbersome and time consuming for routine screening [47]. Ultra-brief screening instruments (having 4 or less items) can promote screening for depression in busy antenatal clinics [78] and screening instruments with binary questions such as Whooley's questions are less time consuming and easy to score [49].

It is documented that screening instruments which require individuals to choose more than 2 responses for each question may not be easy to apply among illiterate pregnant women in Malawi [10]. These screening instruments should be valid to assist health professionals to effectively detect antenatal depression [38, 79]. A validation process through the application of a gold standard (a clinical diagnostic assessment) is required to confirm a diagnosis of depression among pregnant women who test positive on a screening instrument.

Midwives should use valid screening instruments for them to effectively detect pregnant women with antenatal depression. A valid instrument should have an ability to measure what it is supposed to measure [80] and this is determined by its Se, Sp, PPV and NPV [81]. The sensitivity of a screening instrument refers to the proportion of people with disease that are correctly identified (true positives) by the instrument while specificity is the proportion of people without the disease who will have a negative result (true negatives) [71]. Sensitivity and specificity of a screening instrument are determined by comparing the results of the instrument against the outcomes of a gold standard. A gold standard is the single instrument (or a combination of instruments) that is considered the current preferred method of diagnosing a particular condition [82]. A good screening instrument should have both high sensitivity and specificity [83]. Nevertheless, sensitivity and specificity of a screening instrument are often in balance (trade off) and can vary with optimum cut off scores which are determined through using a Youden index [84, 85].

Both sensitivity and specificity are equally important although a screening instrument can be very specific without being sensitive, or it can be very sensitive without being specific [83]. It is recommended that a suitable screening instrument should have a minimum acceptable balance of Se/Sp (.8/.7) [86]. However, the sensitivity and specificity of a screening instrument has limited use in clinical practice when compared to PPV and NPV because they do not help clinicians to estimate the probability of disease in individual patients [71]. PPV and NPV measure the likelihood that a positive or negative screening result is accurate for an individual [53]. PPV and NPV of a screening instrument depend on the prevalence of disease in a population so that PPV increases with increasing prevalence of disease and NPV decreases with increasing prevalence [82].

These predictive values are more useful measures of diagnostic accuracy in routine clinical practice because they assist a clinician to know the probability of a correct diagnosis being made [71]. An instrument which has high sensitivity and NPV 'rules OUT' the disease while the one with high specificity and PPV 'rules IN' the disease [82]. Thus a highly sensitive screening instrument is most helpful to the clinician when the result is negative because an individual who screens negative is very unlikely to have the disease [71]. Similarly, a screening instrument with high specificity is also most helpful to the clinician when the result is positive because an



individual who screens positive is likely to have the disease. Literature indicates that a screening instrument cannot be valid without it reliably and consistently measuring what it is supposed to measure [87]. This suggests that for effective screening of depression in antenatal clinics, clinicians must utilise accurate screening instruments. Screening for antenatal depression using valid instruments can assist health professionals to accurately identify pregnant women who need mental health interventions [79].

Accuracy refers to the degree to which a measurement represents the true value of the attribute being measured, and can be determined by comparing results from a screening instrument with results generated by a gold standard using scores for area under curve (AUC) [88], sensitivity and specificity [89]. In this context validity and accuracy may be used synonymously. AUC scores are used to categorise the accuracy of a screening instrument as low (0.5–0.7), moderate (>0.7–0.9) and high (>0.9) [90]. The higher the AUC score, the more accurate a screening instrument is in detecting individuals with or without the condition being tested [83]. As such, highly accurate instruments are necessary for the screening of depression in antenatal clinics [70]. In addition, these screening instruments should be quick and easy to use in low resource settings [8, 78].

### **3. Ethics of screening**

Health professionals, including midwives, are required to deal with diverse ethical issues when new intervention strategies are developed because they may be unfamiliar with the ethical standards associated with the new practice [91]. It is documented that screening may do more harm than good and it is ethical for clinicians to ensure that the benefits from the screening of each individual must outweigh the harm [39]. Potential harms from routine screening for depression include the treatment of depression in individuals who are incorrectly identified as having the condition, and the treatment of mild symptoms that would often resolve without intervention [38]. As such, clinicians must be open and honest in telling their clients about the accuracy of screening instruments [91] in detecting antenatal depression. According to Sjögren [72], screening instruments are generally limited in their accuracy and interpretation of their results may lead to incorrect conclusions such that if the result is falsely negative, the individuals will consider themselves healthy, when they are actually ill, or if the result is falsely positive, a healthy individual will leave the practice with a false diagnosis.

#### **3.1 Ethics of screening for depression**

Screening for depression should include the provision of depression care support apart from those targeted at improving the effectiveness of treatment [92]. It should also ensure that an individuals' rights to informed choice, confidentiality and autonomy are respected by clinicians [39]. It is important that individuals should provide fully informed consent and be assured of confidentiality before they are screened for [91] depression. Literature suggests that screening and referral for depression within the clinical settings makes it difficult for clinicians to maintain confidentiality [93] about a client's information. Clinicians have an ethical responsibility to ensure that the findings of screenings are not misunderstood or misused in manner that is detrimental to their client's well-being by the clients themselves, their families, community, other clinicians or policymakers [91].

### **3.2 Ethics of screening for depression in antenatal clinics**

Screening for depression during pregnancy may evoke a lot of ethical questions that need to be answered before midwives start implementing screening programmes. For instance, false positives may be of ethical concern because they may add a burden to pregnant women and to clinical services. Screening may result in the use of medications, many of which can cause adverse effects [94] in pregnant women who are falsely detected as having depression. As such, a screening programme must be socially acceptable and must be at an acceptable cost [95] to pregnant women and their families. It is possible that some pregnant women may be placed on anti-depressant medications unnecessarily and will consequently be exposed to the negative side effects associated with these drugs [38]. However, when screening for antenatal depression, a higher level of false positives may be considered acceptable as, ethically, it would seem better not to miss a pregnant woman who needs treatment and support. As described in literature, it is possible for clinicians to exclude false positives from unnecessary treatment by conducting a further diagnostic assessment (gold standard) on all individuals, who screened positive, to confirm the presence of the disorder [94, 96, 97]. This is corroborated by Thombs, Coyne [38] who asserted that individuals who screen positive for depression need further assessment and, if confirmed, should be offered treatment.

A drawback is that the infrastructure and human resources required to implement an effective screening programme can be so costly that allocation of scarce resources demand the appropriate application of ethical principles of justice and equity [39]. It is documented that it is unethical to screen individuals without providing them with relevant interventions because it deprives them of rights to control their own lives and access to treatment [91]. Pregnant women who are diagnosed with depression may be discriminated or socially rejected by society [98]. It is an ethical concern that after screening, a substantial proportion of women diagnosed with false positives may experience discrimination, self-stigma, and stress for unjustifiable reasons [91]. Although little is known about the possible “nocebo effect” of telling individuals who are otherwise not specifically concerned about their mental health that they have depression [38], a label of antenatal depression may negatively affect personal identity, relationships and the self-esteem of pregnant women [91]. The “nocebo effect” occurs when verbal suggestions of an adverse outcome can lead to the onset or exacerbation of symptoms [99].

The new label of having antenatal depression may influence the future goals of individuals and the type of support they may receive from significant others [91]. It is documented that individuals labelled with mental illness may lose their sense of entitlement to participation in community activities [98]. It is possible that pregnant women, who screen positive for depression, may start distancing themselves from others, in anticipation of the associated stigma of depression, and this may negatively impact on their utilisation of antenatal and other social services. There is evidence which shows that stigmas due to a diagnosis of depression is one of the barriers to treatment among women [100]. However, opposing evidence showed that pregnant women who participated in screening for antenatal depression did not feel stigmatised, labelled or distressed by the screening process [101]. This is corroborated by Siu, Bibbins-Domingo [51] who asserted that the negative effects of screening for depression in adults is small or sometimes non-existent.

## **4. Cultural aspects of depression and treatment in Malawi**

In Malawi, all communities have their own explanations for illness. It is believed that mental disorders such as depression is caused by witchcraft, possession by

spirits and 'evil eye' (punishment directed at a person by another person or a supernatural being) [102]. In addition, 'Chauta' (God) may punish wrongdoers who violate taboos [102]. Mental disorders may be caused by parents performing culturally disapproved forms of sexual intercourse such as not abstaining from sexual activity from seventh month of pregnancy until six months after delivery to prevent the child from suffering from mental disorder [103]. This shows that cultural beliefs should be considered as one of important factors which influence mental health interventions [104].

People may have negative cultural beliefs about mental disorders embedded in their community. Cultural beliefs related to mental disorders may affect the way the mentally ill person is handled locally [102]. Explanations of mental disorders, be it witchcraft, angry ancestors, will of God determine the acceptance of affected person's condition [103]. People who believe in witchcraft as a cause of mental disorders may have no hope about recovery in the absence of traditional medicine [104]. It is believed that pregnant women should avoid conflict with others because they may bewitch her to cause delay and complications in labour [105]. It is documented that people who fear witchcraft avoid offending other people who might use magical charms to retaliate [102]. Stewart, Umar [105] found that witchcraft was considered as a very real danger that makes a pregnant woman and her unborn baby vulnerable to illness.

Traditional healers use charms, herbs or mental suggestions to treat mental disorders [102]. However, stigma towards mental disorders exists in Malawi [106] such that treatment may not be sought for an individual with depression who is not causing any trouble [102]. Furthermore, when people are sick, they want to know cultural explanations of their sickness such that they consult traditional healers before going for western medicine, or use both to be on the safe side [102]. This may suggest the need for developing culturally appropriate mental health interventions [106] for screening and treating of depression in pregnant women and other populations in the country.

There is evidence that the pathway to psychiatric care for patients with psychological problems in Malawi is comparable to other developing countries whereby traditional healers and paramedics play a significant role [107]. However, many cultural beliefs related to mental disorders are being challenged [102] and there is high utilisation of health services for people with common mental disorders in the local Primary Health Care settings [108]. This may suggest that screening for depression in local antenatal clinics may be feasible despite the prevailing cultural beliefs on mental disorders. In Malawi, mental health services are provided in all health centres, district hospitals and central hospitals across the country [17].

## **5. Task shifting in screening of antenatal depression in low resource settings**

Mental disorders are underdiagnosed by primary care health workers in low resource settings, where mental health specialists are scarce [31]. This poses a challenge to integration of screening of depression into antenatal care. However, literature suggests task shifting approaches could be used to effectively deliver mental health care in primary health care settings [109]. Task shifting refers to the rational redistribution of tasks among health workforce teams, with specific tasks moved from highly qualified health workers to health workers with shorter training and fewer qualifications in order to make efficient use of the available human resources [110]. In task shifting, tasks are shifted from health workers with more general training to workers with specific training for a particular task [111]. For



instance, non-specialist health professionals or lay workers able to detect, diagnose, treat, and monitor individuals with mental disorders after receiving brief training and appropriate supervision by mental health specialists [109]. This may help to mitigate the impact of health worker shortages and may provide an opportunity for establishing equitable and sustainable health systems in low resource settings [110].

Task shifting aims at increasing the number of health care services provided at a given quality and cost, or providing the same level of health care services at a given quality at a lower cost [111]. As such, task shifting may be of essence in this study because it proposes the inclusion of screening of depression in antenatal services which requires midwives to take up new tasks of detecting and treating of antenatal depression. In Uganda, nurses who run health centres diagnose and prescribe in addition to their usual nursing and midwifery duties [110]. Similarly, anecdote reports indicate that task shifting makes nurses/midwives in Malawi, especially those deployed in health centres, to operate beyond their scope of practice because circumstances demand that they do patient assessment, diagnosis and prescribing. This underscores the importance of having relevant policies and legislations to regulate the implementation of task shifting without compromising quality of care [110] in antenatal clinics.

In line with task shifting, the WHO recommended that the provision of mental health services in primary care should be the responsibility of primary care workers such as nurses and midwives who must receive ongoing training and supervision from specialist mental health specialists [112]. This is corroborated by Honikman, van Heyningen [16] who found that midwives were able to screen for depression and refer pregnant women appropriately after receiving some training in South Africa. Non-specialist health workers can effectively detect, diagnose, treat, and prevent common and severe mental disorders [109]. It is documented that task-shifting mental health interventions from specialised to non-specialised health workers to treat common mental disorders could be expanding access to mental health care [112]. Furthermore, task shifting can substantially reduce the expected number of health care providers otherwise needed to close mental health service gaps at primary health care level in low resource settings [113].

However, task-sharing should not be viewed as an “outright solution” to the human resource crisis in low resource settings because specialist services will always be required regardless of the innovativeness and effectiveness of task shifting approaches in reducing the mental health treatment gap [112]. Considering that midwives in antenatal clinics in low resource settings are overburdened with increased workload [19], there is a need to ensure that task shifting happens in a team, based on which cadres are available, which tasks need to be undertaken and who has which competencies [110]. This study proposed that midwives who are readily available in antenatal clinics and mental health specialists-though scarce-should collaborate when screening for antenatal depression.

In Malawi task sharing initiative which involved lay health workers in providing mental health services led to the establishment of a new service within the community which increased access to mental health services [114]. The lay health workers received mental health training and were supervised by health professionals. There was an increase in detection of people with severe mental illness by lay health workers. Lay health workers were also able to treat or refer patients with distress based on their assessment. However, the decision to refer patients to a district hospital was made by professional health workers. This is a local mental health initiative on which may inform successful implementation of the proposed screening protocol for antenatal depression in the country.

Best-buy interventions may be another approach of implementing mental health services in antenatal clinics. These interventions emphasise cost effectiveness,



feasibility, affordability and scalability [115]. Implementation of buy-in interventions depends on appropriateness of setting, capacity of system to deliver a given intervention to a targeted group of people, technical complexity of intervention and acceptability. It is hoped that screening of depression using the proposed screening protocol would be best-buy interventions because it will be integrated in usual antenatal care provided by midwives. However, mental health specialists remain key in screening of antenatal depression due to complexity of its diagnostic assessments and treatments. This may suggest the importance of utilising task sharing when providing best buy-interventions.

Mental health services have traditionally been offered in psychiatric institutions. Nonetheless, the proposed screening protocol for antenatal depression suggests provision of mental health care to pregnant women in unconventional settings of care. Interventions in unconventional settings model focuses on expanding care beyond traditional locales of service into settings where individuals attend [115]. Provision of care in unconventional settings open multiple opportunities to reach out to individuals or populations not otherwise served. However, implementation of this approach in local antenatal clinics may increase workload for midwives who are already burdened.

## **6. Screening algorithm**

This section present a screening algorithm that can facilitate provision of maternal mental health care that is not readily accessible to pregnant women in Malawi [116]. It is underpinned by the proposition that routine screening in antenatal clinics improves detection of pregnant women with depression and that midwives can be trained to effectively screen for antenatal depression, offer psychoeducation and, make appropriate referrals. The aim of the algorithm is to improve the health of pregnant women and the child they are expecting. The algorithm includes aim, rationale, scope, objectives, principles underpinning algorithm, and components of algorithm.

### **6.1 Rationale for the algorithm**

The algorithm will ensure a standardised and quality assured approach for detecting and dealing with pregnant women who have or are at risk of developing depression. It will make it possible for midwives to detect pregnant women with depression at an early stage and be able to put in place appropriate support systems for these women. In addition, the algorithm allows for the involvement of the pregnant women and their families in discussions about their care and treatment options. Furthermore, it ensures that information about pregnant women with depression is documented and shared appropriately with all relevant practitioners providing care. Collaborative care for adults with depression which produces substantial clinical improvements and has a high prospect of long-term cost savings is recommended. Collaborative care of depression includes a systematic, multicomponent, and team-based approach that strengthens and supports self-care, while assuring that effective medical, preventive, and health maintenance interventions take place to improve the quality and outcome of patient care. Therefore, the Algorithm recommends effective collaboration of antenatal services and mental health services for effective screening of antenatal depression.

### **6.2 Scope of the algorithm**

The Algorithm is specifically designed for pregnant women with depression and it is not intended to cover the whole spectrum of pregnant women with other

mental disorders. It focuses on improving the quality and accessibility of maternal mental health care by integrating routine screening for depression into antenatal services so that pregnant women with, or at risk of, depression are timeously detected, and the appropriate treatment can commence. The Algorithm is intended to reflect optimum practice in routine screening for depression and the management of pregnant women at risk or with depression in antenatal clinics in Malawi.

### 6.3 Objectives of the algorithm

The objectives of the Algorithm are to:

1. Detect pregnant women who have or are at risk of depression in local antenatal clinics;
2. Refer pregnant women, who have been detected with depression, to the relevant mental health services.

### 6.4 The principles underpinning algorithm

The following principles will enable the Algorithm to be useful in the context of antenatal clinics in Malawi:

1. The Algorithm should facilitate human rights based screening for depression which will ensure early identification and treatment.
2. The Algorithm should be based on the clinical needs of pregnant women and clinicians involved in the provision of health services in antenatal clinics.
3. The Algorithm should be owned by the midwifery profession which should take a leading role in lobbying for the integration of routine screening for depression into antenatal services and policy.
4. An implementation plan for the Algorithm need to be developed.

### 6.5 Algorithm for screening

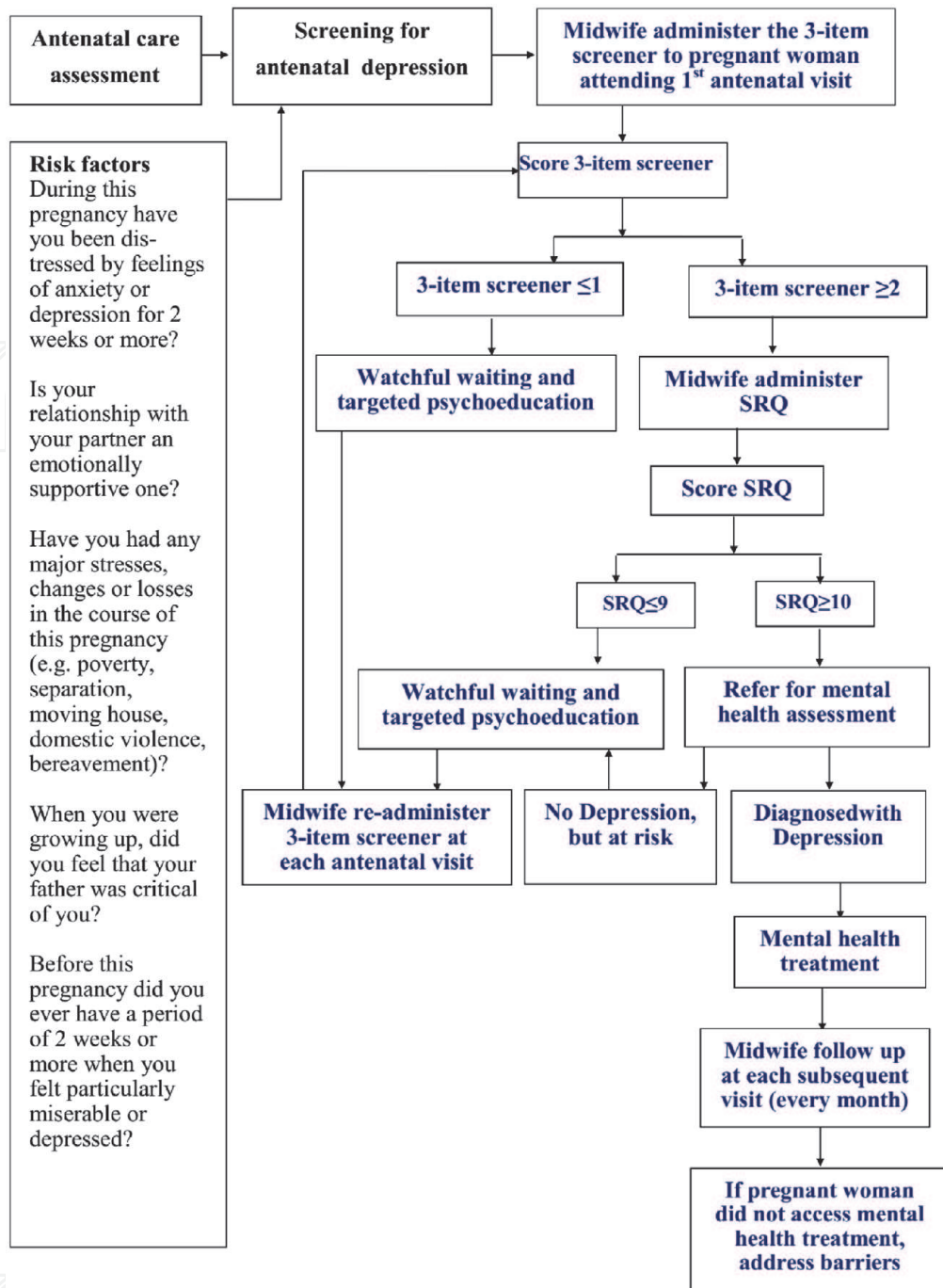
The Algorithm, to ensure an effective and multidisciplinary approach to routine screening of depression in antenatal clinics, is diagrammatically presented in **Figure 1**.

### 6.6 Components of the algorithm

The components of the Algorithm include: antenatal services and antenatal care assessment; midwives' functions, screening instruments and mental health assessment.

#### 6.6.1 Antenatal services and antenatal assessment

Midwives provide antenatal services to the majority of women in Malawi. These services include antenatal assessment, encouraging good health habits, addressing pregnancy related complications and provision of psychosocial support. The World Health Organisation (WHO) recommends that antenatal care should consist of four visits for normal pregnancies with the first visit in the first trimester (before 12 weeks but not later than 16 weeks) and subsequently at 24–28 weeks, 32 weeks and 36 weeks. An antenatal assessment includes taking a psychosocial, medical and



**Figure 1.** Algorithm for screening of antenatal depression.

obstetric history; a complete general and obstetrical examination; screening for HIV and Syphilis; and testing for proteinuria, blood/rhesus group and bacteriuria. History taking provides the midwife with an opportunity to screen for depression during the antenatal assessment.

### 6.6.2 Midwives functions

The functions of a midwife in screening for antenatal depression include:  
 Screening for depression of all pregnant women attending antenatal clinics and to facilitate the management of those detected with depression;

- Appropriately referring pregnant women with probable depression for mental health assessment using Algorithm pathway;

- To be a resource person for other healthcare professionals in the care of pregnant women undergoing screening for antenatal depression;
- To provide information about the screening for antenatal depression and available specialist support services to pregnant women and their families;
- To liaise with the relevant members of the multidisciplinary team to facilitate the effective screening for depression; and provision of appropriate care and support for pregnant women with depression in antenatal clinics;
- To maintain a knowledge base in screening for antenatal depression by attending in-service training, undergoing continuous professional development sessions and attending relevant conferences;
- To provide education and training related to screening for depression to all staff in antenatal clinics;
- To maintain a register of results, of the screening for depression done, in antenatal clinics and produce reports to relevant authorities;
- To participate in the development of policies, procedures and guidelines related to screening for depression in antenatal clinics; and
- To monitor quality and effectiveness of screening for depression in antenatal and take effective action to address issues and promote quality.

### 6.6.3 Screening instruments

Algorithm recommends the use of the 3-item screener and the SRQ to screen for antenatal depression in the local setting.

#### 6.6.3.1 The 3-item screener

##### 6.6.3.1.1 Instructions

Remember - The 3-item screener is a screening instrument and should never override clinical judgement. A Self Reporting Questionnaire (SRQ) should be administered to confirm caseness of pregnant women who screen positive on the 3-item screener.

##### 6.6.3.1.2 Administration

1. Administer either Chichewa or English versions of the 3-item screener depending on the language which a client can easily understand.
2. Read the questions aloud to the pregnant woman and ask her to respond 'Yes' or 'No' depending on how she is feeling now or has been feeling in the **past month**.
3. Circle the response given by a woman against the corresponding question
4. All the 3 items in the 3-item screener must be completed.
5. Care should be taken to avoid the possibility of the pregnant woman discussing her answers with others. (Answers should come directly from the pregnant woman)



6.6.3.1.3 Scoring

1. Each question is scored with a 0 for ‘No’ (AYI) or 1 for ‘Yes’ (EYA).
2. The higher a score is, the more likely the woman is experiencing some level of antenatal depression.
3. When validating the 3-item screener in antenatal clinics in the Blantyre district, optimum cut off score of greater than 1 was used.
4. Administer SRQ to all pregnant women who score 2 or more on the 3- item screener. If the 3-item screener score is 1 or less, stop.

**Please circle the response that comes closest to how a client has been feeling. Please answer all questions**

Here is an EXAMPLE already completed

No
Yes

Are you tired? 0     1 This would mean: ‘Client is feeling tired’.

Please complete the other questions in the same way

**English version**

	NO	YES
During the past month, have you been bothered by feeling down depressed or hopeless?	0	1
During the past month, have you been bothered by little interest or pleasure in doing things?	0	1
Are you depressed?	0	1

**Chichewa version**

	AYI	EYA
Kodi mmwezi wapitawu mwakhala mukuvutika mumtima mwanu chifukwa chakukhumudwa kapena kukhala opanda chiyembekezo?	0	1
Kodi mmwezi wapitawu mwakhala mukuvutika mumtima mwanu chifukwa chokhala opanda chidwi kapena kusasangalatsidwa pochita zinthu?	0	1
Kodi mumtima mwanu mukumva kuti ndinu okhumudwa?	0	1

For official use only	Screened on	Score
Name of Client: _____	Date: _____	Total: _____
Administered by: _____		

Sources: Whooley, M. A., Avins, A. L., Miranda, J., & Browner, W. S. (1997). Case-finding instruments for depression. *Journal of general internal medicine*, 12 (7), 439-445.

Vahter, L., Kreegipuu, M., Talvik, T., & Gross-Paju, K. (2007). One question as a screening instrument for depression in people with multiple sclerosis. *Clinical rehabilitation*, 21(5), 460-464.

### 6.6.3.2 Self-Reporting Questionnaire (SRQ)

#### 6.6.3.2.1 Instructions

Remember - The SRQ is a screening instrument and should never override clinical judgement. A diagnostic mental health assessment should be done to confirm presence or absence of depression.

#### 6.6.3.2.2 Administration

1. Administer either Chichewa or English versions of the SRQ depending on the language which a client can easily understand.
2. Read the questions aloud to the pregnant woman with low literacy and ask her to respond 'Yes' or 'No' depending on how she has been feeling in the previous 4 weeks.
3. Circle the response given by a woman against the corresponding question
4. All the 20 items in the SRQ must be completed.
5. Care should be taken to avoid the possibility of the pregnant woman discussing her answers with others. (Answers should come directly from the pregnant woman)

#### 6.6.3.2.3 Scoring

1. Each question is scored with a 0 for 'No' or 1 for 'Yes'.
2. The higher a score is, the more likely the woman is experiencing some level of antenatal depression.
3. Standard cut off score of 10 or greater is recommended as an indicator of possible depression [117]
4. When validating SRQ in antenatal clinics in the Blantyre district, optimum cut off score of greater than 9 was used.
5. Refer for diagnostic mental health assessment all pregnant women who score 10 or more on SRQ.
6. If a pregnant woman scores 1 specifically on questions 16 or 17, immediate action is needed. An immediate emergency referral to a mental health professional may be the most appropriate next step if a patient has suicidal ideation.

**Self-Reporting Questionnaire (SRQ)**

**Instructions**

Please circle the response that comes closest to how you have been feeling **IN THE PAST 4 WEEKS**. Please answer all questions

Here is an EXAMPLE already completed

**NO**   **YES**  
 Do you feel restless?   0   **1**   This would mean: 'I have felt restless in the past 4 weeks'  
 Please complete the other questions in the same way

**Please answer all questions below:**

*(Circle one answer in each question)*

With reference to the past 4 weeks:

	NO	YES
1. Do you often have headaches?	0	1
2. Is your appetite poor?	0	1
3. Do you sleep badly?	0	1
4. Are you easily frightened?	0	1
5. Do your hands shakes?	0	1
6. Do you feel nervous, tense or worried?	0	1
7. Is your digestion poor?	0	1
8. Do you have trouble thinking clearly?	0	1
9. Do you feel unhappy?	0	1
10. Do you cry more than usual?	0	1
11. Do you find it difficult to enjoy your daily activities?	0	1
12. Do you find it difficult to make decisions?	0	1
13. Is your daily work suffering?	0	1
14. Are you unable to play a useful part in life?	0	1
15. Have you lost interest in things?	0	1
16. Do you feel that you are a worthless person?	0	1
17. Has the thought of ending your life been on your mind?	0	1
18. Do you feel tired all the time?	0	1
19. Do you have uncomfortable feelings in your stomach?	0	1
20. Are you easily tired?	0	1

For official use only	Screened on	Score
Name of Client: _____	Date: _____	Total: _____
Administered by: _____	Scores for #16 and / or 17 _____	

Sources: Beuseberg, M., Orley, J. H., & World Health Organization. (1994). *A User's guide to the self reporting questionnaire (SRQ)*. Geneva: World Health Organisation.

Kumbhar, U. T., Dhumale, G. B., & Kumbhar, U. P. (2012). Self Reporting Questionnaire as a tool to diagnose psychiatric morbidity. *Natl J Med Res*, 2, 51-54.

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### Self-Reporting Questionnaire (SRQ)-Chichewa version

**Malangizo**

Chondezungulizaniyankholomwelikufananirandimomwemwakhalamukumvera ma **SABATA ANAYI APITAWA**. Chondeyankhanimafunsoonse  
 Ichindi CHITSANZO choyankha kale

**AYI EYA**

Kodi mumakhala osakhazikika? 0 1  Tanthauzo: 'Mumakhala osakhazikika mmasabata anayi apitawa'

Chonde yankhani mafunso enawanso chimodzimidzi

**Chondeyankhanimafunsoonsealimmunsiwa:**

(Zungulizaniyankholimodzi pa funsolirilonse)

	AYI	EYA
1. M'masabata anayi apitawa, kodi mumamvakupweteka mutu pafupipafupi?	0	1
2. M'masabata anayi apitawa, kodi simumakhala ndichilakolako cha chakudya?	0	1
3. M'masabata anayi apitawa, kodi mumavutika kugona usiku?	0	1
4. M'masabata anayi apitawa, kodi manja anu amanjenjemera?	0	1
5. M'masabata anayi apitawa, kodi mumakhala ndinkhawa, mantha kapena madandaulo?	0	1
6. M'masabata anayi apitawa, kodi simumachedwa kututumutidwa?	0	1
7. M'masabata anayi apitawa, kodi mumadzimidwa dzimidwa?	0	1
8. M'masabata anayi apitawa, kodi mumakhala ndivuto kuganiza bwinobwino?	0	1
9. M'masabata anayi apitawa, kodi mumakhala osasangalala kapena osakondwa?	0	1
10. M'masabata anayi apitawa, kodi mumaliralira pafupipafupi ndipo koserera muyeso?	0	1
11. M'masabata anayi apitawa, kodi mumaona ngati ndichinthu chokuvutani kusangalatsidwa ndizinthu zimene mumapanga tsiku ndi tsiku?	0	1
12. M'masabata anayi apitawa, kodi mumakhala ndivuto kupanga maganizo Kapena kumangamfundo?	0	1
13. M'masabata anayi apitawa, kodintchitozanuzatsikunditsikusizimayenda bwino?	0	1
14. M'masabata anayi apitawa, kodimumalepherakupangazinthuzaphindu kapenazofunikiram moyowanu?	0	1
15. M'masabata anayi apitawa, kodimunasiyakukhalandichidwi mu zinthu zosiyanasiana?	0	1
16. M'masabata anayi apitawa, kodi mumazona ngati ndinu munthu wopanda ntchito kapena wosafunikira?	0	1
17. M'masabata anayi apitawa, kodimaganizoodziphaanayambaakubwereranipo?	0	1
18. M'masabata anayi apitawa, kodi mumamva kapena kukhala otopatopa nthawi zonse?	0	1
19. M'masabata anayi apitawa, kodi mumakhala ndi vuto losamva bwino m'mimba?	0	1
20. M'masabata anayi apitawa, kodi simumachedwa kutopa?	0	1

<b>For official use only</b>	<b>Screened on</b>	<b>Score</b>
Name of Client: _____	Date: _____	Total: _____
Administered by: _____	Scores for #16 and / or 17 _____	

Sources: Beusenberg, M., Orley, J. H., & World Health Organization. (1994). A User's guide to the self reporting questionnaire (SRQ). Geneva: World Health Organisation.  
 Kumbhar, U. T., Dhumale, G. B., & Kumbhar, U. P. (2012). Self Reporting Questionnaire as a tool to diagnose psychiatric morbidity. *Natl J Med Res*, 2, 51-54.

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## 7. Conclusion

Depression significantly affects women during pregnancy and may lead to adverse outcomes. Screening for depression does not usually form part of antenatal care in low resource settings. Midwives in these settings may often have limited consultation time to screen for depression due to inadequate human and material resources. Antenatal depression is highly prevalent among pregnant women living with HIV. Antenatal depression also remains an important condition which negatively affects pregnant women's quality of life, but one that may respond to treatment. Numerous instruments are validated for screening antenatal depression in low resource settings although they were developed in high income countries. When screening, a short screening instrument can be used for initial screening with only positives screens being referred for more detailed screening. This would allow for a distributed workload in busy antenatal clinics. For effective screening for depression to be achieved in antenatal clinics, screening protocols for depression should be integrated into standard antenatal care. Successful implementation of the proposed screening would require implementation of relevant task shifting approaches that to effectively deliver mental health care in local settings. Ethical questions may arise around screening for depression during pregnancy as there is the potential that it may cause harm. However, the extent of harm from screening for depression is negligible or at times non-existent. Despite the prevailing cultural beliefs on mental disorders, screening for depression in local antenatal clinics may be feasible. Antenatal care contacts provide opportunities for screening depression and there is a need to develop protocols for early detection, treatment and preventing the adverse effects of antenatal depression in low resource settings.

### Conflict of interest

None.

### Notes/Thanks/Other declarations


Not applicable.

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