A structured method for psychosocial assessment in maternal healthcare in Sweden: study protocol, implementation and planned evaluation

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Abstract

Background: Onset of depression and anxiety can occur before, during or after pregnancy, and ongoing conditions can either improve or deteriorate at all stages. Early identification and treatment of perinatal mental ill-health can reduce rates of depression and other mental ill-health conditions postpartum. National and international guidelines recommend that maternal healthcare contribute to improving pregnant women's mental health by consistently asking pertinent questions during pregnancy and offering necessary support and care.

Objective: The general aim of this research project is to investigate the effects of the implementation of a structured method for psychosocial assessment during pregnancy, as well as evaluating midwives´ experiences of working with the method.

Methods: The structured method will be evaluated, and possible effects will be investigated through comparison of the periods before and after implementation. Data sources for the study are questionnaire responses, medical records, Swedish Pregnancy Register data and interviews with midwives

Results: Part of the recruitment process and data collection is ongoing. Dissemination plan includes several publications of original research and two doctoral theses.

Conclusions: This study's results are expected to be highly relevant for maternal healthcare, both nationally and internationally. The structured method and evaluation of the implementation could serve as a model for more standardized and effective care. If successful, it may influence national policies and attract global attention as a model for improving maternity care.

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ABSTRACT

Introduction

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Introduction

This paper describes the study protocol, implementation, and planned evaluation of a structured method for psychosocial assessment during pregnancy in Västmanland Region in Sweden.

Assessment of mental health in pregnancy is vital, given that depression and anxiety are common [1]

and may, if undetected or unaddressed, jeopardize the well-being of the woman, baby and family [2]. This is also the case when it comes to other serious mental illness. Early identification is thus essential for timely intervention and risk reduction [3].

During pregnancy, psychological problems and symptoms are often normal and transient reactions to a stressful life situation, but the symptoms can also be severe enough to warrant a diagnosis. Mental ill-health during this life stage includes, in addition to depression and anxiety, a spectrum of different conditions of varying severity [2]. In this protocol, mental ill-health is defined, according to the Public Health Authority of Sweden (2023), as everything ranging from temporary anxiety, depression or insomnia to severe mental illness. In order to be designated mental ill-health, the symptoms must affect well-being and functionality in everyday life. Bipolar disorder, psychosis, severe depression, severe anxiety and eating disorders are examples of severe mental illness [4].

In this paper, the words “woman/women” will be used to refer to pregnant people, concurring with previous literature in the field. While pregnancy is a physiological condition, rather than an illness, the word “patient” will also be used since the subject relates to ill-health and illness.

Pregnant women with ongoing moderate to severe mental illness are at higher risk of preterm birth, neonatal complications and having small for gestational age babies [5]. Children of women with untreated or incompletely treated moderate or severe depression or anxiety during pregnancy are at increased risk of emotional and behavioural problems while growing up [6].

Although many depression and anxiety conditions diagnosed in the postpartum period emerge during or before pregnancy [7] fewer women receive support and treatment for mental ill-health during pregnancy than postpartum [8]. Women with pre-pregnancy moderate to severe mental illness are at increased risk of relapse during pregnancy and the initial postpartum period [8 9]. Therefore, it is important to identify these women early in pregnancy, particularly those with bipolar disorder and previous psychosis, because of the related increased risk of postpartum affective psychosis and other serious conditions. Early identification can be achieved by routinely asking all pregnant women structured questions, which enables the creation of a care plan for the pregnancy and postpartum period [7]. According to two studies, early identification of depression and anxiety, and treatment during pregnancy, are essential and can reduce the rate of postpartum depression [10 11]. Early identification can also increase the possibility that the woman’s health will improve, enabling her to prepare for childbirth and motherhood [12].

A systematic review conducted in 2017 showed an overall prevalence of perinatal depression of 11.9% [13]. A study from Sweden found that 7% had major depression and 11% had anxiety disorder during pregnancy [14], while a study from Iceland showed that anxiety, and combined depression and anxiety, are more common than depression alone during pregnancy [15]. In a meta-analysis, approximately 7-9% of pregnant women were estimated to meet the criteria for both depression and some form of anxiety [16]. Statistics from the Swedish Pregnancy Register (SPR) 2023 showed that 9% of pregnant women in Sweden had been treated for mental ill-health [17].

In a meta-analysis from Sweden (2023), the general conclusion was that early identification, followed by thorough psychosocial and clinical assessment, is beneficial, despite the lack of evidence regarding a specific method [18]. At present, assessment with any tool can supplement a broader professional interview, to identify those requiring further clinical assessment and intervention. It is thus important that professionals have appropriate training and enough time to engage in a broad and meaningful conversation with the patient. Referral pathways must be created to ensure quick and accurate diagnostic assessment end effective interventions [18]. Wickberg, Bendix, Wetterholm & Skalkidou (2020) recommended that a structured programme to identify and treat mental health problems during pregnancy be created and that multidisciplinary perinatal mental health teams should be established all over Sweden [19].

Sweden´s perinatal healthcare system

The population of Sweden is approximately 10.5 million (2024) [20]. The healthcare system is

primarily funded by regional governments with tax revenue. Residents of Sweden have general access to publicly funded hospital care and primary healthcare, as well as maternal healthcare, child healthcare and other publicly funded outpatient services.

Healthcare during the perinatal period is free for all women and babies. There is regional autonomy, meaning that maternal healthcare my differ somewhat between regions. Organisation varies as well; maternal healthcare can be run as part of primary care, part of hospital obstetrics and gynaecology departments or within other organisations. However, regardless of region and organisation, maternal healthcare coverage in Sweden is essentially 100%.

In Sweden midwives, working in maternity clinics, are responsible for antenatal care and postpartum care, which together are called “maternal healthcare” in this paper. Furthermore, maternity clinic midwives provide other types of sexual and reproductive healthcare for women. The regional maternal healthcare programmes are very similar in terms of medical, obstetric, psychological and social content, with some adaptions based on specific regional conditions. These programmes usually comprise 9-10 visits during pregnancy and two visits after childbirth. In case of comorbidity or complications, more visits can be offered. The midwife may consult, collaborate with or refer to other professionals or agencies, such as perinatal psychologist, general practitioner, obstetrician, psychiatrist or social services. The midwife retains the main responsibility for care during collaborations of this type.

Child health clinics in Sweden are responsible for child health surveillance from infancy to age six. Like Swedish maternity clinics, they have essentially 100% coverage and are free of charge.

Perinatal psychologists in Sweden, employed at or affiliated with maternity clinics and child health clinics, have several professional functions. Midwives consult with them, most often in small groups, to obtain guidance in managing pregnant and postpartum women with manifest or suspected mental ill-health. The perinatal psychologist also assesses and provides psychological treatment to individual women, coparents/partners and children under age two.

Since 2015, the Swedish government has made major investments in improving perinatal healthcare and women´s health throughout life. All regions in Sweden are currently working to improve healthcare in various areas during the perinatal period [21] [22].

Prior and current guidelines and recommendations in Sweden

Together with the Swedish Association of Midwives and the Swedish Association of Perinatal Psychologists, the Swedish Association of Obstetrics and Gynecology has published guidelines for antenatal and postpartum care, last updated in 2016 [23]. These guidelines recommend that each woman be asked about her mental health in early pregnancy, but structured identification is not stipulated.

The Swedish National Board of Health and Welfare published a guidance concerning some aspects of maternity care (maternal healthcare plus delivery care) in 2022 [22]. It recommended that a structured history of previous or ongoing moderate to severe mental illness be taken in early pregnancy, including identification of depression and anxiety symptoms. Two specified questions about recent symptoms of depression and two specified questions concerning recent symptoms of anxiety are to be asked. If the outcome is positive, the midwife is to proceed with a self-assessment instrument. Furthermore, according to the guidance, all pregnant women are to be asked about known risk factors for depression and about prior or current exposure to violence.

The aim, according to the guidance, is to enable preventive measures and early interventions, as well as in-depth assessment and diagnosis by a psychologist or physician, in order to address risks that may negatively affect parenting and thus the child. In the Swedish National Board of Health and Welfare’s subsequently published (2023) national guidelines for maternity care [24], a structured and systematic approach is also recommended, entailing questions about prior serious mental illness and current mental ill-health of any degree (including serious illness).

Implementation of a structured method for psychosocial assessment during pregnancy

In Region Västmanland a structured method for psychosocial assessment during pregnancy was implemented in spring 2020 according to national recommendations. In addition to facilitating the identification of risk factors and mental illness in pregnancy, the aims were to provide the women with appropriate interventions as early as possible, achieve equity in healthcare, decrease the postpartum depression rate, facilitate the midwives' work and develop collaborations between midwives and perinatal psychologists. No scientific evaluation has previously been conducted on the effects of implementing a structured method for assessing mental ill-health during the perinatal period, despite its presumed importance for informing clinical practice.

Development and implementation of the structured method för psychosocial assessment

The structured method for psychosocial assessment was created, concurring in content with, but actually preceding, the above-mentioned national recommendations. It is also aligned with recommendations in other countries [3 25 26].

Midwives and perinatal psychologists were engaged in the design of the method, and fifteen midwives from eight maternity clinics initially tested it. The testing midwives' experiences and opinions were recorded during meetings, and additional adjustments were made, based on their suggestions for improvement. The adjustments were as follows: in addition to in early pregnancy, all pregnant women are asked the questions about mental health (including Whooley and GAD-2, see below) again at gestational week 33; those identified with mental ill-health and illness during pregnancy are asked again postpartum; in-depth questions concerning thoughts and feelings about childbirth, aimed at identifying fear of childbirth, are included; and the timing of questions concerning exposure to violence (already part of the healthcare programme prior to introduction of the structured method) was altered.

The structured method was implemented at the 19 maternity clinics not involved in its initial development. In order to carry out the implementation, the clinics' funding was increased because the visits were expected to be longer, and an extra 30 minutes were made available to be distributed between the first two visits in early pregnancy. Additional visits could also be booked if necessary. During the implementation, the need for contact with the perinatal psychologists also increased and additional funding for psychological treatment was thus provided.

A written routine concerning the structured method was published, as well as other material to facilitate the midwives' work. Collaborations between psychiatrists, obstetricians, general practitioners, and perinatal psychologists were established to clarify the referral pathways for women with identified mental illness or ill-health. These collaborations were reinforced through the establishment of a multidisciplinary consulting team, with the above-mentioned professionals representing their respective competences and services. The purpose of the consulting team was to provide guidance for the midwife regarding management of the women in their care, as well as to strengthen the collaboration around pregnant women with mental illness.

A central part of the implementation consisted of lectures by a specialist in perinatal mental health, aimed at educating midwives and psychologists in the subject of perinatal mental health, as well as in the structured method itself. First author (Y-LL), coordinating midwife and healthcare developer, and second author (HN), coordinating psychologist and healthcare developer, both employed in the regional central maternal healthcare team, led the implementation and the practical training for midwives. After training, the midwives also received continual briefings in connection with their routine group consultations with the perinatal psychologists. During the initial phase, additional education and support were offered both individually and in small groups. Education in consultation methodology took place, at different levels, for psychologists and midwives. Education concerning

the structured method for psychosocial assessment was subsequently included in the introduction programme for newly employed midwives.

Challenges in the implementation

The maternity clinics in Västmanland region are scattered and many clinics are quite small. As elsewhere in Sweden, there has also been a shortage of midwives in the region for several years. Combined with a vulnerable organisation, this initially led to some difficulties in ensuring adherence to the structured method, and implementation took longer than expected. A lot of time was required for continuous information, support and follow-up. The implementation process also took place during the Covid-19 pandemic, another aggravating circumstance.

Description of the structured method for psychosocial assessment

At the first visit (gestational week 5-7), the midwife asks all women questions about prior and ongoing serious mental illness/perinatal mental illness and treatment, as well as about family history of serious mental illness/perinatal mental illness. At the second visit, which takes place a few weeks later (gestational week 8-12), questions are asked concerning prior and ongoing less serious mental ill-health, symptoms of stress/anxiety, social situation, support from relatives/network and experiences of domestic violence.
Moreover, to specifically identify symptoms of depression and anxiety during the conversation about mental ill-health, the midwife asks all women the Whooley questions [27] and the Generalized Anxiety Disorder 2-item (GAD-2) questions [28].
The two Whooley questions are designed to identify symptoms that may be present in depression. The questions are as follows:

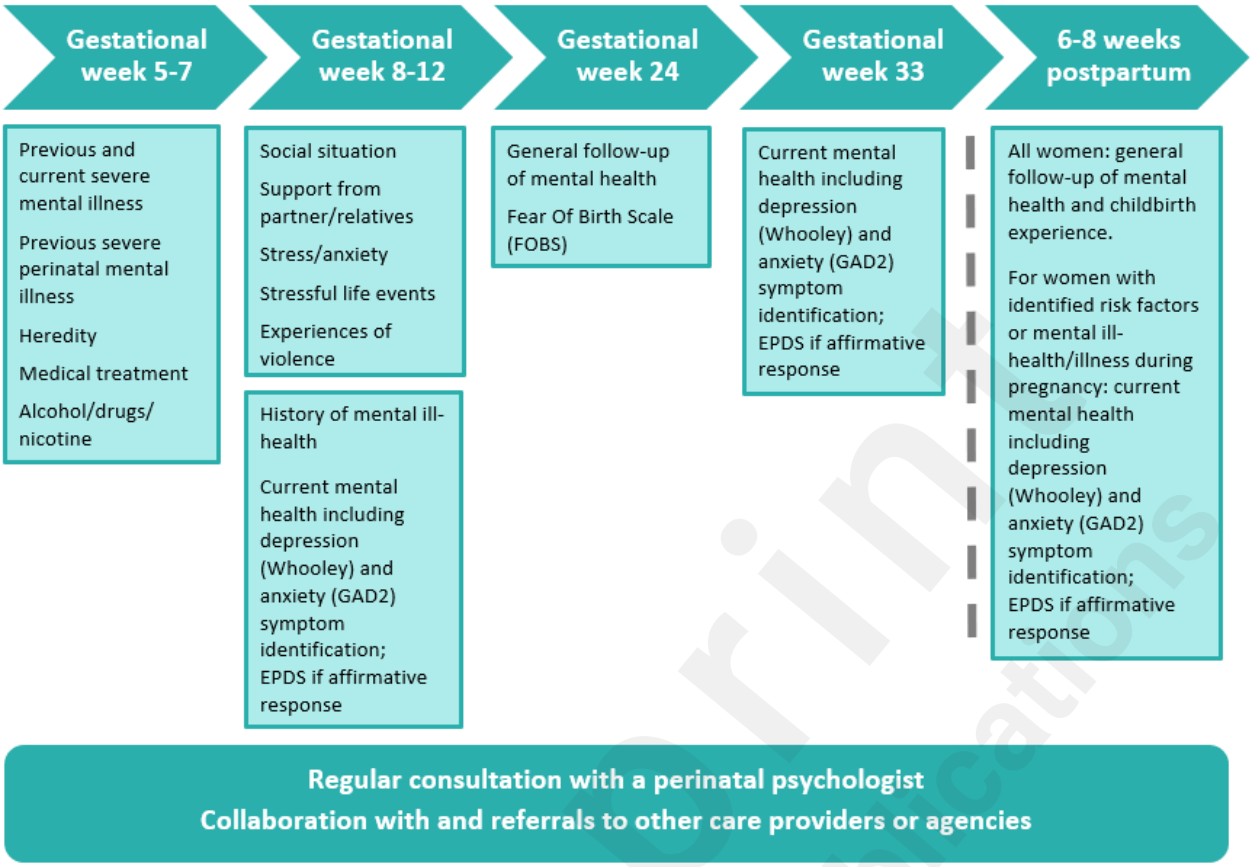
- During the past month, have you often been bothered by feeling down, depressed or hopeless?
- During the past month, have you often been bothered by little interest or pleasure in doing things?

The GAD 2 is a brief initial screening tool, consisting of two questions, aimed at identifying symptoms of anxiety (28). The questions are as follows:

- Over the last two weeks, how often have you been bothered by feeling nervous, anxious or on edge?
- Over the last two weeks, how often have you been bothered by not being able to stop or control worrying?

If the woman responds in the affirmative to either of these questions, the Edinburgh Postnatal Depression Scale (EPDS), is administered, to aid further assessment [2 23 25]. EPDS is a comprehensive 10-item self-rating scale, applicable for identifying symptoms of depression [29]. It has been validated in Sweden for use during pregnancy [30].
The structured method for psychosocial assessment also includes an action plan for those identified with mental illness, including collaboration with other relevant providers and agencies. Routine consultations with perinatal psychologists provide midwives with support in their assessments and in clinical decisions around referral for further assessment and treatment.
The Fear of Birth Scale (FOBS) [31 32], a self-rating scale, is administered at gestational week 24 in order to identify fear of birth. If needed, additional visits are offered for childbirth preparation. There is also the possibility of referral to the Obstetrics Department's specialist unit for assessment and care planning with a midwife, obstetrician and perinatal psychologist.
As mentioned above, women in whom risk factors or manifest mental illness have been identified during pregnancy are asked the Whooley and GAD-2 questions again at the postpartum visit 6-8 weeks after birth. This somewhat overlaps the programme at Swedish child health clinics, according to which the nurses administer the EPDS as a general screening method for all women at

approximately eight weeks postpartum [33]. An overview of the structured method is presented in figure 1.



Overview of the structured method for psychosocial assessment (Västmanland Region). Gestational week (+days) for maternity clinic visits, with questions about mental health and social factors. The maternal healthcare programme comprises 9-10 antenatal visits. The part after the dashed line (postpartum) will not be included in the evaluation.

Aim

The general aim of this research project is to investigate the effects of the implementation of a structured method for psychosocial assessment during pregnancy, as well as evaluating midwives´ experiences of working with the method. The study thus consists of two parts, and both quantitative and qualitative study designs are applied.

Research questions

Does the implementation of a structured method for psychosocial assessment during pregnancy influence (1) the women's experience of receiving help and support for identified mental ill-health; (2) the measures taken within the healthcare system and collaboration between the maternity clinic, perinatal psychologists and other providers and agencies, when mental ill-health is identified; (3) the time-point for identification of mental ill-health in pregnant women; and/or (4) the prevalence of pregnant women receiving psychological and/or medical treatment for mental ill-health?
How do midwives experience (5) working according to the structured method; and (6) consultation with the perinatal psychologists and collaborations with other providers and agencies, according to the structured method?

Methods

Study design

In order to answer the six research questions, both quantitative and qualitative methods are applied in the study.

Settings

Västmanland Region, one of Sweden's 21 regions, is medium-sized, with approximately 280 000 inhabitants. Västmanland Region is located 108 km from Stockholm, the capital of Sweden. It is reasonably representative of Sweden, when it comes to the distribution of urban and rural areas, employment, income, education and immigration level. In 2023, there were 100 050 births in Sweden [34] which 2 568 occurred in the Västmanland Region [35].There are 26 maternity clinics spread out over the region. Approximately 55 midwives are employed; most clinics have 1-3 midwives, while a few are staffed by 4-6 midwives. Since the implementation started, two clinics have closed.

Recruitment and data collection

Research questions 1-3

The study is conducted in two steps, to enable comparison between before (2019) and after (2020-2021) implementation of the structured method. All pregnant women, who could communicate in Swedish and who were enrolled in early pregnancy at the 19 Västmanland Region maternity clinics not involved in the initial stage of method development, were invited to participate in the study. Invitation occurred during the two time periods specified above. The women were sent an envelope by post with an invitation to participate, information about the study, a consent form, and the questionnaire itself. Consent was requested to access data from the questionnaire and from medical records.

Questionnaires were sent out twice during pregnancy to participants in the two groups. The questionnaires covered the following areas: whether the midwife had asked questions about participants' mental health, their experience of the maternity clinic visits, whether they had been given support and help, previous psychiatric diagnoses, current mental health, treatment for mental ill-health during pregnancy and fear of childbirth.

As a subsequent step, all participants' antenatal and postpartum medical records will be reviewed during 2025 with the following in focus:

- Identification of mental ill-health during pregnancy
- Symptoms or diagnosis
- Gestational age at identification of mental ill-health
- Documented previous mental ill-health
- Ongoing psychological and/or medical treatment for mental ill-health, initiated pre-pregnancy
- Psychological and/or medical treatment for mental ill-health, initiated during pregnancy
- Referral to other healthcare providers

Research question 4

SPR data will be used to compare, in the entire pregnant population in Västmanland Region, the respective prevalences of medical and psychological treatment for mental ill-health, respectively before and during pregnancy, and respectively before (2017-2019) and after (2021-2023) implementation of the structured method. We chose three-year periods in this case in order to obtain more representative data concerning any changes, as well as to counteract the effects of the Covid-19 pandemic.

The SPR is a national quality register with certification level 1 (the highest level). The register is

administered by working groups för maternal healthcare, prenatal testing and childbirth.
The SPR is an easily accessible database. This accessibility is a prerequisite for the development of healthcare, and consequently for improving the health of pregnant women and their children, as well as promoting equitable care and high quality in the chain of care. Improvement work is facilitated by rapid feedback of SPR data and results. Data are transferred daily to the SPR, automatically from medical records systems as well as manually by midwives. These data concern maternal healthcare, obstetric ultrasound and obstetric and postpartum care, as well as information concerning the baby. The SPR is a rich source for research in the field of pregnancy and childbirth. Of the 103 733 births registered in Sweden in 2022, 102 399 were registered in the SPR, a coverage rate of 98.7% [17].

Research questions 5-6

Focus group interviews with exploratory qualitative design will be conducted to investigate midwives´ experiences of working with the structured method. Participants will include midwives working in Västmanland Region before, during and after implementation of the method, as well as those employed after implementation. Participants will receive verbal and written information and will provide written consent.
The interviews will be semi-structured and based on an interview guide. Questions will explore experiences of working with the structured method, whether the content of the consultation with perinatal psychologists has changed and whether collaboration with other providers and agencies has changed. The interviews will be recorded and transcribed verbatim.
At least three focus group interviews are planned, with 6-7 participants per group. More interviews will be conducted as needed, until sufficiently rich material has been obtained so that the research questions can be answered.

Data analysis

Research questions 1-4

The quantitative data from the questionnaires and extracts from the SPR and medical records will be processed with the Statistical Package for the Social Science (SPSS). Data will be first described and then analysed with statistical tests regarding prevalence and mean value analyses, for example Chi2, t-test, Mann Whitney u-test and ANOVA, based on the respective question, scale level and distribution of the data. The periods before and after implementation of the structured method will be compared.

Research questions 5-6

Qualitative content analysis with an inductive approach, according to Graneheim & Lundman, will be undertaken [36 37 38]. The interviews will be analysed by the authors. To obtain an overall impression of the data, the transcripts will be read repeatedly. Meaning units will be extracted, condensed and coded according to relevance to the study aim. The codes will be sorted into categories with similar manifest content. Some of the categories will be sorted into sub-categories, followed by interpretation of both manifest and latent content. The analysis process will be repeated several times and subsequently reviewed by one researcher with extensive experience in qualitative method, in order to ensure trustworthiness.

Statistics

Estimated sample size and power

Calculation of the sample size was initially based on research question 4, using Minitab 16. The calculation was based on a 7% initial prevalence of mental ill-health among pregnant women in Västmanland Region (SPR, 2018), with an expected increase to 10% due to the rise in detection

attributable to the structured method implementation. In order to detect an increase by three percentage points in identified mental ill-health, with 80% power and a significance level of 5% (two-sided test), at least 534 pregnant women had to be included in each group. The inclusion of several different maternity clinics in the project was also taken into consideration, and we estimated a dropout rate of approximately 20%. This meant that 640 pregnant women had to be included in each group for both pre- and post-implementation measurements.

However, addressing the recruitment challenges faced for research questions 1-3, it is crucial to note the difficulties encountered in achieving the initial target sample size. Specifically, we aimed to recruit 640 participants in the pre-implementation phase but were only able to enrol 486. This shortfall contrasted with the implementation phase, during which we successfully recruited 940 participants. This variation in recruitment necessitated a revision of the expected statistical power and the minimal detectable difference (MDD) in the study. The latter, originally projected at an increase in identified mental ill-health, from pre- to post-implementation, by three percentage points (with 80% power), was adjusted to the current study context, rising to a 4.5-percentage-point increase (with 80% power). This change reflects an adaptation to the unforeseen circumstances posed by the Covid-19 pandemic, which significantly influenced participant availability and behaviour, a reality for many researchers during the global health crisis. However, this may not be unreasonable, as the pandemic's effects led us to anticipate a higher increase in detected cases of mental ill-health, rising from 7% pre-implementation to an adjusted 11.5% during the implementation, compared to the initial estimate of 10%. This convinced us that our project and findings remain relevant and robust, providing meaningful insights despite the pandemic's disruptions.

The research design outlined above, together with the collected data, will provide the opportunity to test a wide array of hypotheses in the current research area. Specifically, it is suitable for testing hypotheses involving both dichotomous outcomes, with lower or higher pre-implementation prevalence, and a wide range of continuous outcomes, including when testing for small, standardised differences.

Dichotomous outcomes

The MDD with the current design varies inversely with the pre-implementation prevalence. For instance, it can reliably, with 80% power, discern an 8% change in a 50% pre-implementation prevalence, and more refined changes—such as 5% at a 10% prevalence, or 4% at a 5% prevalence, with the same power and similar sensitivity at a higher prevalence (90% and 95%). This makes the design ideal for testing hypotheses expected to result in either a marked increase or decrease in prevalence rates, ensuring accurate detection of both common and rare conditions, as well as self-rated dichotomous factors according to the questionnaire data.

Continuous outcomes

The study has the capacity to detect minimal standardised differences as small as 0.15 with 80% power. This level of sensitivity is particularly beneficial for hypotheses investigating subtle changes in continuous measures, such as gradual improvements or declines in health measures, psychological scores, continuous variables according to the questionnaire data or any other continuous outcomes that fall well within the scope of this design.

Given these conditions, the study design is suitable for a broad spectrum of hypotheses and can be used effectively to advance our knowledge in this field.

Results

The recruitment process of participants for research questions 1-3 is complete. Data collection for research question 1 was completed in 2022. A total of 486 consecutive patients were included before implementation of the structured method in 2019; the response rate was 54.7%. After

implementation, 940 patients were included during two consecutive periods in 2020 and 2021; the response rate was 49.8%. The questionnaire data collection was extended in scope and time, as implementation took longer than estimated due, among other factors, to the Covid-19 pandemic outbreak in the first quarter of 2020 [39]. The pandemic was expected to create temporarily high levels of mental ill-health and illness, especially during pregnancy. Healthcare services in Sweden introduced restrictions for pregnant women's partners to accompany them during and after pregnancy, which might have affected both expectant parents.
Recruitment of participants for research questions 4-6 and data collection for research questions 2-6 will begin in 2024-2025. Data analysis will be performed continuously.

Discussion

In this research project, we are in the process of investigating the effect of the implementation of a structured method for psychosocial assessment during pregnancy.

Strengths and limitations

The study includes comparison of the periods before and after the implementation. This was challenging, as the Covid-19 pandemic struck in the early 2020s, in close proximity to the introduction of the structured method. Our analytic strategy will need to include ways to account for the pandemic's effects. On the other hand, this project has many strengths, including the population-based design, the uniformly designed educational programme for all midwives and the use of both quantitative and qualitative methods. Data sources include patient questionnaires, review of medical records, quality register data and focus group interviews with midwives. No previous study has been conducted in Sweden to investigate the effect of implementing a structured method of this type and the results will thus be highly relevant for maternal healthcare in Sweden.

Clinical implications

Research in the field of perinatal mental health can contribute to continuing development of maternal healthcare. The results of this study are expected to be highly relevant for maternal healthcare, both in the national and international context and from several perspectives. The implementation of this structured method during pregnancy, as subsequently stipulated in the Swedish national recommendations, can serve as a model, contributing to a more standardised and effective approach to maternal healthcare. If successful, the method might influence national guidelines and policies, setting a precedent for other regions and potentially attracting international attention as a model for improving maternity care.
This study underscores the importance of early identification and treatment of mental health issues during pregnancy. Timely intervention can improve maternal mental health outcomes, including reducing the occurrence of postpartum depression [10 25]. This is crucial for the overall well-being of both the mother and the newborn. Furthermore, this study also explores midwives' experiences of working with the structured method, of consultations with perinatal psychologists and of collaborating with other healthcare providers and agencies after implementation of the method. Improved collaboration and consultation can lead to a more comprehensive and coordinated approach, ensuring that pregnant women receive holistic care and support [22]. Another important aspect is the midwives' involvement in the evaluation process, allowing for insights into their experiences with the structured method and related training. Our findings can inform enhanced training and professional development programmes, ensuring that healthcare professionals are well-equipped to implement structured methods and provide high-quality and equitable maternal healthcare.
In summary, this research project has the aims of positively impacting the care chain in maternity

care by promoting early identification, improving support and treatment, implementing a structured approach and fostering collaboration, to promote professional development and equitable healthcare. These outcomes collectively contribute to a more effective and patient-centred approach to maternal healthcare.

Ethics and dissemination

This project is carried out in accordance with the latest version of the Declaration of Helsinki and has been approved by the Swedish Ethical Review Authority (permit numbers 2018-331, 2018-332, 2019-02380, 2020-03479, 2020-06902, 2023-01892-02). All data will be managed and securely stored according to GDPR regulations. Dissemination plan includes several publications of original research and two doctoral theses.

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Contributors

Y-LL, HN, AS and CÅ were involved in the conception and design of the study. The first draft of this manuscript was written by the first author (Y-LL). Y-LL, HN, AS and CÅ revised the draft critically for intellectual content, approved the final manuscript, and contributed to the continuation of the project. The English language in this manuscript was revised by a native English speaker who is an obstetrician.

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Competing interest

None declared.

Abbreviations

EPDS: Edinburgh Postnatal Depression Scale
FOBS: Fear Of Birth Scale
GAD-2: Generalized Anxiety Disorder 2-item
MDD: Minimal detectable difference
SPR: the Swedish Pregnancy Resister

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