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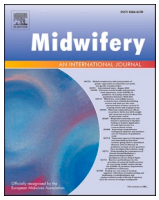

Identifying anticipated challenges when implementing group care: Context-analyses across seven countries to develop an anticipated challenges framework

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ABSTRACT

Problem: Despite increasing interest in Group Care worldwide, implementation is challenging.
Background: Group Care is an evidence-based perinatal care model including three core components: health assessment, interactive learning, and community building. It has several advantages for service users and providers compared to individual perinatal care.
Aim: We aimed to identify anticipated challenges when implementing Group Care, and to develop a supporting tool based on these challenges.
Methods: Context analyses through Rapid Qualitative Inquiries were conducted in 26 sites in seven countries to gain insight into the anticipated challenges when implementing Group Care. Data triangulation and investigator triangulation were applied. The context analyses generated 330 semi-structured interviews with service users and other stakeholders, 10 focus group discussions, and 56 review meetings with the research teams.
Findings: We identified six surface structure anticipated challenges categories (content, materials, facilitators, timing, location, group composition), and five deep structure anticipated challenges categories (health assessment, scheduling Group Care into regular care, enrolment, (possible) partner organisations, financials) occurring in all participating sites, leading to the development of the Anticipated Challenges Framework.
Conclusion: Completing the Anticipated Challenges Framework raises awareness of anticipated challenges if sustainable Group Care implementation is to succeed and encourages the initiation of a concrete action plan to tackle these challenges. Application of the framework may offer important insights to health systems administrators and other key stakeholders before implementing Group Care. In the medium- and long-term, insights gained may lead to greater possibilities for sustainability and to the most cost-effective approaches for implementing Group Care.

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Statement of significance

- **Problem** Although Group Care is a valuable perinatal care model with various benefits for health care providers and service users, implementation is challenging.
- **What is already known** Multiple challenges with Group Care implementation occurred in previous research, but information is site-specific and scattered, hampering applicability in other contexts.
- **What this paper adds** Challenges in Group Care implementation that are anticipated in every implementation, applicable in a wide variety of contexts, were identified and incorporated into a supporting framework. This Anticipated Challenges Framework enhances a sustainable implementation of Group Care.

Introduction

The importance of the first 1000 days in a child's life, being pregnancy and the first two years of life, is receiving increasing attention. Group care is described by the World Health Organization (WHO) as a possible approach to strengthen these first 1000 days (Organization, 2016). Centering-Based Group Care, further described in this article as 'Group Care', is a group antenatal care model developed in the 1990s as CenteringPregnancy and later extended to postnatal Group Care/-CenteringParenting. It has been implemented in the United States, and has been tested and adopted in other countries throughout the world, such as Iran, India, China, Australia, Iceland, UK, Mexico, Malawai, Tanzania and Zanzibar (Rising, 1998; Van Damme et al., 2024). In other countries, such as Afghanistan and Nigeria, it has even been integrated into standard care and national guidelines (Van Damme et al., 2024). Multiple systematic reviews and Randomized Controlled Trials show that antenatal and postnatal Group Care demonstrate greater patient and provider satisfaction, higher attendance rates, and equal birth outcomes such as preterm birth and birth weight (Catling et al., 2015; Cunningham et al., 2019; Ickovics et al., 2007; Picklesimer et al., 2012; Sadiku et al., 2024). The evidence-based Group Care model has three core components: (1) health assessments, including self-assessments by the participants and a brief individual medical check-up by a clinician; (2) use of interactive non-didactic learning; and (3) attention to peer support/community building (Rising, 1998; Rising, 2017). The model includes up to nine antenatal and one postnatal session. Each session is about two hours long, attended by the same 8–12 pregnant people with similar gestational ages, together with their significant others if desired. The sessions are facilitated by the same two facilitators, one of whom is a clinician. In postnatal Group Care, the group consist of 8–10 parent-infant dyads with infants of similar age. Despite the advantages for service users and care providers, implementation of Group Care can be challenging and health system changes to support this alternative way of perinatal care may be needed (Abrams et al., 2018; Mcneil et al., 2016; Patil et al., 2013; Van De Griend et al., 2020). Yet, much of the published literature is specific to and focused on a single context, hampering transferability to other contexts (Gaudion et al., 2011; Mckinnon et al., 2020; Patil et al., 2013; Sayinzoga et al., 2018). Given the expanding interest in Group Care implementation Group Care worldwide, an overarching supporting tool regarding the implementation challenges is desirable to facilitate future translation of Group Care for perinatal care services into practices.

Several frameworks exist to support the implementation of evidence-based interventions in general, e.g. the "Consolidated Framework for Implementation Research" (CFIR) (Damschroder et al., 2009; Damschroder et al., 2022). This can serve as a solid foundation, but a supporting tool focused on the anticipated challenges when implementing Group Care applicable in a variety of healthcare contexts, would be beneficial for future implementation of Group Care across sites globally. Given the importance of the pre-implementation phase during an implementation process, i.e. in this case before the first Group Care sessions are organised, it is recommended that this tool is applicable from this phase onwards (Alley et al., 2023; AM, 2020). This research could bridge the missing link between existing conceptual frameworks and their translation applied in practice specifically for Group Care, through a two-fold research focus: first, to identify the anticipated challenges, i.e. the challenges that are expected in the pre-implementation phase of Group Care implementation, that are applicable in various health systems. Secondly, to develop a framework based on these identified challenges. This framework should be applicable as a tool to elaborate on the anticipated challenges, specified for Group Care, to support the implementation of Group Care in various health systems from the pre-implementation phase onwards.

Methods

Design

This study is embedded in the larger 'Group Care for the first 1000 days' (GC_1000) research, which aims to co-create and disseminate evidence-based implementation strategies and tools to support the successful implementation and scale-up of Group Care in the first 1000 days in health systems throughout the world (Martens et al., 2022). To achieve this objective, part of the process involves identifying the anticipated challenges at the pre-implementation phase of Group Care implementation across sites globally. To identify these anticipated challenges, a context analysis through the method of a Rapid Qualitative Inquiry (RQI) was conducted in 26 participating sites in seven countries between October 2020 and November 2021, guided by a participatory implementation science approach (Ramanadhan et al., 2018). A RQI is a qualitative methodology for context-analyses of complex situations that allows for a rapid and sufficiently rich understanding of a situation for initiatives that need to be started promptly (Beebe, 2014). The CFIR guided the development of the materials and preliminary analysis during the RQIs (topic guides (see Supplement 1), contact summary forms (i.e. a structured summary of each interview completed by the interviewer), and debriefings)). The CFIR is a practical framework to guide systematic assessment of potential contextual barriers and facilitators in implementation research (Damschroder et al., 2009). The model comprises key theories and conceptual models in implementation research, capturing the complex and multi-level nature of implementation, applicable from the pre-implementation phase onwards. It suggests the necessity of diverse implementation strategies across various implementation contexts, making it the most suited implementation science framework for this research paper (Powell et al., 2014). The CFIR includes five domains to consider when implementing an evidence-based intervention: the intervention itself, the inner and outer setting where it is implemented, the individuals involved in the implementation, and the implementation process (Damschroder et al., 2009; Safaeinili et al., 2020).

Setting

There are 26 sites in the pre-implementation phase of a Group Care implementation participating in the GC_1000 research. The sites are spread over seven countries: Belgium, Ghana, Kosovo, South Africa, Suriname, the Netherlands, and United Kingdom. Country-level variation in number and type of sites, type of Group Care to be implemented, experience with implementing Group Care, main care provider during pregnancy in usual care, economy classification, and target population are described in Table 1. This variation enables the development of a globally applicable supporting framework on anticipated challenges when implementing Group Care. Further information on the participating countries can be found in the design paper of the GC_1000 study (Martens et al., 2022).

Table 1
Characteristics of the participating countries.

Country	# of sites	Type of sites	Type of Group Care to implement	Group Care experience in the country	Main care provider during pregnancy	Economy	Target population
Belgium	3	2 primary care sites 1 hospital and primary care site cooperation	ANC[1]	Yes, minimal	Obstetrician	HIC[2]	Specific (vulnerable women[3])
Ghana	6	6 rural primary care sites	ANC	Yes, minimal	Midwife	LMIC[4]	Non-specific
Kosovo	2	2 hospitals	ANC	No	Obstetrician	LMIC	Non-specific
South Africa	1	1 hospital	ANC	No	Midwife/Nurse	LMIC	Non-specific
Suriname	4	4 primary care sites	ANC and PNC[5]	Yes, for ANC No, for PNC	Obstetrician and midwife, depending on gestational age and institution	LMIC	Non-specific
The Netherlands	7	5 midwifery practices 1 hospital 1 refugee center	ANC and PNC	Yes	Midwife	HIC	Non-specific and specific (Eritrean women, refugees)
United Kingdom	3	1 hospital 2 postnatal care sites	ANC and PNC	Yes, for ANC No, for PNC	Midwife	HIC	Non-specific

[1] ANC: Antenatal Care.
[2] HIC: High-Income Country.
[3] Vulnerable: De Groot and colleagues (2019) conducted a Delphi study, which resulted in a definition of vulnerability in the context of general health, and perinatal health in particular: "Vulnerability is a dynamic state that reflects converging effects of a set of interacting and amplifying personal and environmental factors, which together increase an individual's susceptibility to ill health and which hampers the recovery process to normal health once ill health has occurred". For the purpose of this research, De Groot and colleagues' definition was adopted.
[4] LMIC: Low-and-Middle-Income Country.
[5] PNC: Postnatal Care.

Data collection methods and analysis

The data collection and analysis are an integral part of the RQIs. A RQI was planned in each site for a period of approximately one week per site, resulting in field research of multiple weeks per country, depending on the number of sites. During a RQI, researchers aim to get insights in the insiders' perspectives on a complicated situation through extensive triangulation, intensive teamwork and iterative data analysis in a concerted, concentrated and dialogical way (Beebe, 2014). This complex process of 26 RQIs cycles has led to the production of the final Anticipated Challenges Framework to support implementation of Group Care across sites globally. Fig. 1 visualises the process of the RQIs and the development of the framework based on these RQIs.

Extensive triangulation & intensive teamwork

As recommended by Beebe (Beebe, 2014), triangulation was applied in different ways. First, there was a triangulation of data sources**:** a review of various documents including national and local guidelines regarding perinatal care, site visits (if possible, due to COVID-19), audio recorded one-to-one semi-structured interviews and focus group discussions (online or on location as preferred by the interviewee, if possible due to COVID-19), audio recorded debriefings, application of the framework, and advisory committee discussion were included. The application of these data sources is presented in Table 2. Since our study took place in the pre-implementation phase, participants watched a video vignette describing Group Care in a neutral and comprehensive manner. The vignette was adapted to the local context, e.g. voiceover in local language and culturally sensitive pictures. Participants of the interviews/focus group discussions were informed about the GC_1000 research and the aim of the conversation prior to scheduling the interview/focus group discussion. This information was repeated at the start of the interview/focus group discussion, where written or oral consent for participation was confirmed.

Additionally, investigator triangulation was applied to ensure the identification of both the insider perspective and outsider perspective and promotes the credibility of the research findings (Beebe, 2014; Ramanadhan et al., 2021). The research teams consisted of two project researchers (AVD and NM) who were involved in every RQI, and up to five local researchers in each country. They were involved in all the RQIs in the participating sites in their country. Where possible, site-specific community researchers who did not have formal training in research, were included on the team. The project researchers provided a training in RQI methodology for the local researchers and community researchers. Investigator triangulation was also applied in the data analysis, by assembling an anticipated challenges research team consisting of one of the project researchers (AVD*)*, one senior researcher (KB) and one junior researcher (FT). This team was supported by an advisory committee consisting of three senior researchers experienced in Group Care and implementation science (CP, MC, and MR), and the original Group Care program developer who was previously involved in the implementation of Group Care across the world (SR). The involvement of each of the teams is visible in Table 2. After every RQI, the anticipated challenges research team presented the preliminary results, which were then discussed together with the project research team and local research team and iteratively adapted.

The insiders' perspective

On the one hand, the insiders' perspective was captured through the collaboration of the project researchers with local researchers and community researchers. On the other hand, the active involvement of stakeholders concerned in the implementation of Group Care is required to fully encompass the insiders' perspective. The importance of stakeholder involvement, and more specifically service users, is increasingly recognised and included in this research (Ridde et al., 2023; Wind et al., 2022). Therefore, three groups of participants were included to triangulate various perspectives: (1) service users, defined as pregnant people

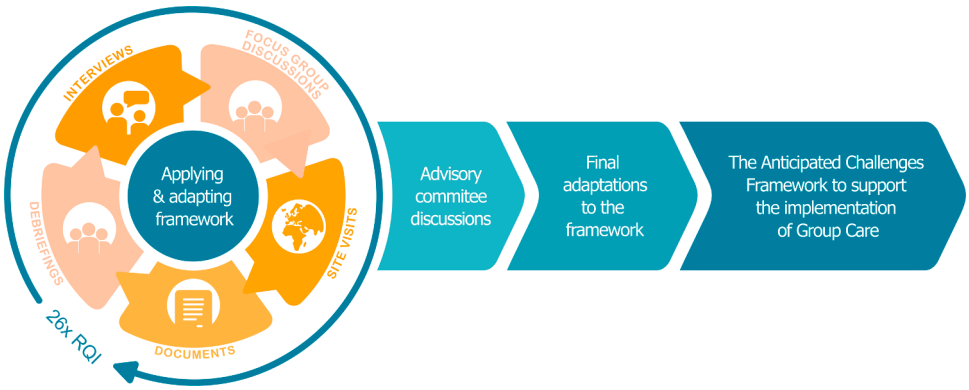

Fig. 1. Development process of the anticipated challenges framework to support the implementation of group care across sites globally.

(and their significant others, if possible) and parents whose youngest child is less than two years of age; (2) experienced and future facilitators; and (3) key stakeholders, defined as any relevant stakeholder with either a specific expertise, in-depth knowledge or overall overview on the subject (e.g., health care managers, policy makers, religious leaders, community leaders, etc.). The project researchers together with the local researchers identified the participants and estimated a sample size a priori to the RQI. To ensure locally driven anticipated challenges of the three different groups of participants, a daily debriefing took place with the research teams where a preliminary analysis was conducted. This allowed accurate adjustment in topic guides and snowball sampling to map all domains of the CFIR. Purposive sampling and snowball sampling were applied to recruit the facilitators and key stakeholders. A combination of purposive sampling (specific target population) and convenient sampling (non-specific target population) was used to recruit the service users depending on the target population, ethical approval, and preferences of the site. The service users were approached by an implementation site employee or local researcher. Data saturation for a RQI was considered achieved when all domains of the CFIR were addressed in light of anticipated challenges in that site, and new data would not contribute to a better understanding of these challenges or would only replicate existing information (Rahimi and khatooni, 2024). For the developed framework, theoretical saturation was considered achieved when no more new categories could be identified during the last RQIs (Rahimi and khatooni, 2024).

Iterative data analysis & dialogue

Multiple aspects to ensure rigor in pragmatic qualitative analysis for implementation science are applied, such as transparency, triangulation, reflexivity and linking our choices (e.g. CFIR) with the complete paper and literature (Ramanadhan et al., 2021). An iterative data analysis approach was applied to identify categories of anticipated challenges towards a sustainable implementation of Group Care. Keynotes from the site visits, interviews, focus group discussions, and debriefings, as well as audio recordings from interviews, focus group discussions, and debriefings were read and listened to, to identify the anticipated barriers. In a first stage, the CFIR served as a base to identify these anticipated challenges in all five different domains, and the results were structured accordingly. After the first RQI, these findings allowed production of the first draft of the Anticipated Challenges Framework. This was shared with the research teams involved in that RQI and revised based on feedback. Then, the next RQI started, and the framework was altered based on application of the previous version of the framework, and the new data from the RQI. The application of the framework involved entering the obtained data from the RQI into the framework to provide an overview of the results for the participating sites, try out and experience the use of the framework by the researchers, and contribution to the identification of the anticipated challenges. By combining the new information of the RQI and immediately applying the framework, new categories of anticipated challenges could be added promptly and adequately. Previously defined categories that appeared not to occur during the new RQI could be removed. This alteration process, visualised in Fig. 1, was repeated throughout all RQIs and always in dialogue among and within the different research teams, leading to the Anticipated Challenges Framework. After finishing all RQIs, the framework was presented and discussed with the anticipated challenges research team and advisory committee. After this discussion, the last adaptations to the framework were completed, resulting in the final Anticipated Challenges Framework to support the implementation of Group Care across sites globally.

Results

In total, 330 semi-structured interviews, 10 focus group discussions and 56 debriefings were conducted during the RQIs across all participating countries (Table 3).

The structure of the framework

By applying the iterative data collection and analysis process, as visualised in Fig. 1 and clarified in Table 2, 11 anticipated challenges categories were identified where a need for actions is expected to achieve successful implementation of Group Care. Mapping the first results according to the CFIR ensured covering all implementation domains. Supplementary Table 2 visualizes how these 11 anticipated challenges are linked with, often multiple, CFIR domains. Data saturation and theoretical saturation were reached, as all domains of the CFIR are covered in the light of anticipated challenges, and no new categories emerged during the last RQIs. Research teams and application of the framework highlighted that a clear structure of the framework is necessary to encourage its use. Resnicow et al. (Resnicow et al., 1999) deviates between surface and deep structure dimensions of cultural sensitivity. Inspired by this division, the research teams decided to deviate between surface and deep structure anticipated challenges categories in the Anticipated Challenges Framework. Surface structure anticipated challenges are described as challenges that are anticipated to require rather superficial (though nonetheless important) actions, such as logistical arrangements and site-specific plans regarding the implementation. Deep structure anticipated challenges categories are considered deeply rooted in the culture and/or healthcare system, and need understanding of the cultural, social, historical, and environmental context to tackle these challenges. This distinction gives the framework a comprehensible structure and provides implementation settings with an accurate view of the complexity of the actions needed to address the anticipated challenges. Following these descriptions, six surface structure anticipated challenges categories (Content, Materials, Facilitators, Timing, Location, and Group Composition) and five deep structure anticipated challenges categories (Health assessment, Scheduling Group

Table 2
Overview of data collection and data analysis methodology to develop the Anticipated Challenges Framework.

Data collection method	Data form collected	Teams	Aim	Participants	Timing	Data analysis method	Research team involved	Contribution to framework
Documents	- Existing national/local guidelines	- PRT[1] - LRT[2]	- Content analysis regarding perinatal care policies/ guidelines and readiness to implement CBCG - Context validation[3]	N/A	Before start of each RQI	- Content analysis through team discussion	- PRT - LRT	Identification anticipated challenges
Semi-structured interviews & Focus group discussions	- Audio recordings - Contact summary forms	- PRT - LRT - CRT[4]	Insights in the local context and the challenges requiring actions from different perspectives	- Service users - (Future) facilitators - Key stakeholders	During each RQI	- Deductive coding of contact summary forms into existing adaptation framework - Inductive coding of contact summary forms and adding codes to existing framework - Inductive coding of audio recording if needed	- PRT - ACRT[5]	Identification anticipated challenges
Site visits	- Pictures of the sites - Description of the sites in contact summary forms	- PRT - LRT	Insights in the local context and the challenges requiring actions through site visits	N/A	During each RQI (where possible)	- Deductive coding of contact summary forms into existing adaptation framework - Inductive coding of contact summary forms and adding codes to existing framework	- PRT - ACRT	Identification anticipated challenges
Daily debriefings	- Audio recordings	- PRT - LRT - CRT	Context validation and completing missing links through discussion of collected data	- PRT - LRT - CRT	Every day during each RQI	- Deductive coding of audio recording and key notes into existing adaptation framework - Inductive coding of audio recordings and key notes and adapting existing framework	- PRT - ACRT	Identification anticipated challenges
Final debriefings	- Key notes taken during debriefing	- PRT - LRT	- Framework application experiences - Interpretation of concepts/ comprehensibility from different perspectives - Context validation by discussing preliminary results	- PRT - LRT - Evaluation team representative	2–4 weeks after each RQI	- Content analysis through team discussion	- ACRT	- Optimising framework structure - Optimising category names
Application of the framework	- Results of RQIs in framework - Key notes during daily and final debriefings	- ACRT - LRT	- Experience applicability in practice - Discover universal challenges categories	N/A	2–4 weeks after each RQI	- Content analysis through team discussion	- ACRT	- Identification anticipated challenges - Optimising framework structure
Advisory committee discussions	- Key notes	- ACRT - Advisory committee	- Final adaptations to complete "Anticipated Challenges Framework"	N/A	After completion of all RQIs	- Content analysis through team discussion	- ACRT - Advisory committee	- Optimising category names - Optimising Group Care Anticipated Challenges framework

[1] PRT: Project Research Team.
[2] LRT: Local Research Team.
[3] Context Validation: validating if the context is correctly interpreted by the project research team through discussion with local research team (and community research team, if applicable).
[4] CRT: Community Research Team.

[5] ACRT: Anticipated Challenges Research Team.

Table 3
Overview of collected data in the participating countries.

Country	# sites per country	Semi-structured interviews	Focus group discussions	RQI daily + final debriefings
Belgium	3 ANC[1]	48	1	10
Ghana	6 ANC	88	7	9
Kosovo	2 ANC	20	0	5
South Africa	1 ANC	30	0	4
Suriname	2 ANC, 2 PNC[2]	65	1	6
The Netherlands	6 ANC, 1 PNC	58	1	13
United Kingdom	2 ANC, 1 PNC	21	0	9
Total	**22 ANC, 4 PNC**	**330**	**10**	**56**

Care into regular care, Enrolment, (Possible) partner organisations, and Financials) were discovered. Furthermore, our results showed that implementing sites would benefit from a clear description of these challenges applied to their practice: reflecting on their challenges and mapping out the expected barriers and facilitators to tackle these challenges. The framework contains two columns to capture this information. Finally, the RQIs emphasized that an elaboration of a concrete action plan is needed to apply the necessary actions in practice. Therefore, we added another column to the framework to encourage the development of an action plan: what will be done, by whom and when? The final Anticipated Challenges Framework to support the implementation of Group Care is presented in Table 4.

The content of the framework

Surface structure anticipated challenges.

Content

The content of the sessions is described in the Group Care model and considered to be flexible. The RQIs confirmed the need to fit the content to the local context. Most common needed adaptations related to extra/less attention to certain topics, such as HIV or administrative formalities during pregnancy, and a shift in topics due to a limited number of sessions.

Materials

The RQIs pointed out the need to adapt the materials used during the Group Care sessions to the context. A logical necessity is to translate the materials to fit with the local language. But the need to adapt materials goes beyond translation. Several countries indicated that a multitude of languages are spoken within their diverse patient populations, and therefore visualising of the materials is necessary. In general, making materials culturally sensitive is key, irrespective of language.

Table 4
The anticipated challenges framework to support the implementation of group care.

Anticipated challenges category	Description of the anticipated challenges	Expected barriers/facilitators to tackle the anticipated challenges	Action plan: What/who/when?
SURFACE STRUCTURE ANTICIPATED CHALLENGE			
1. Content			
2. Materials			
3. Facilitators			
4. Timing			
5. Location			
6. Group composition			
DEEP STRUCTURE ANTICIPATED CHALLENGE			
1. Health assessment			
2. Scheduling Group Care into regular care			
3. Enrolment			
4. (Possible) partner organisations			
5. Financials			

Facilitators

According to the Group Care model, it is recommended to have a facilitator, who is a clinician, and a co-facilitator in each Group Care session. RQIs revealed that the eligibility of facilitators depends on the context. E.g. in some sites the group care facilitators would consist of two midwives. In other sites, the respondents addressed the need for social support for their vulnerable population, and therefore suggested a social worker as co-facilitator. Furthermore, there appeared to be a need for facilitator training to develop skills in facilitation of group discussion. At the time of the interviews, the Group Care training was planned for the future facilitators at the sites.

Timing

An organisational challenge refers to the timing of the Group Care sessions compared to the current perinatal care. Common aspects to consider when planning the Group Care sessions are the availability of a space for Group Care (e.g. when a waiting room is free and therefore could be used as Group Care room), availability of the participants (e.g. some prefer during working hours when other kids are at school, others prefer in the weekends, etc.), and weather conditions (e.g. too hot in the afternoon). It is important to take into account the possibilities of participants, facilitators and the organising site.

Location

Finding a suitable location to facilitate Group Care appeared to be challenging. When deciding on a location, accessibility for participants, facilitators and the organising site should be considered. For instance, the Group Care location should be easily accessible by public transport, or if this is not an option, reach out to the community. Some sites proposed creative suggestions to find a suitable location for Group Care, such as public places like a church or school. A more frequent suggestion was the organisation of Group Care sessions in a waiting room at the site.

Group composition

The sixth surface structure anticipated challenge category is the group composition. We distinguished five different aspects in this category. First, the target population to which Group Care will be organised might differ between a specific group and the total pregnant people/parents population at the site. When offering Group Care to the total population, a distinction could be made between sites that will leave the choice to patients whether they opt for Group Care, and sites at which Group Care will become standard care for all pregnant people/parents. In addition to the target population, adherence to maximum two languages per group, as recommended, was anticipated to be

unfeasible in several sites. Next, the feasibility of the number of participants of eight to twelve per group, as described in the Group Care model, was also considered challenging for some sites. Either smaller groups (hard to reach population) or larger groups (large patient population) were expected. The last two aspects of group composition that we identified are gestational age and group stability. Some sites considered groups with mixed gestational ages and/or unstable groups, meaning that the group will consist of different women every Group Care session. These considerations mainly occurred when groups were expected to be smaller groups, and thus this flexibility was opted as a possible solution to reach full group size. Another reason to consider these mixed and/or unstable groups was the cultural habit to not stick to an exact time of a planned consultation. During the debriefings, it was discussed that careful attention should be paid to unstable groups, as they may impact the interactive learning aspect and community building, two of the Group Care core components. The main need appeared to be the development of a concrete plan elaborating on these different group composition aspects.

Deep structure anticipated challenges

Health assessment

Following the Group Care model, the health assessment, consisting of a self-assessment in which the women are involved with their care, and a short individual medical check-up, is included as part of the Group Care sessions and takes place in the same room. The inclusion of this core component was indicated as challenging for different reasons. Most common were logistical challenges such as finding a room suitable to create a private corner, or the need for additional equipment for Group Care. The inclusion of this core component was sometimes questioned, for instance when the type of health care provider currently involved in the perinatal care is not the same as the one involved in Group Care. This was the case in all the participating obstetrician-led countries, as the Group Care sessions were planned to be facilitated by midwives. Therefore, Group Care demands not only a shift from one-to-one care to care in a group, but also a shift from obstetrician-led care during pregnancy to midwifery-led care in those countries. Another challenging element was the shortage of staff, making it difficult for them to dedicate two facilitators for two hours to a Group Care session. Furthermore, healthcare providers doubting the pregnant person's/parents' capability of performing the self-assessment emerged several times during the interviews. But the vast majority of the interviewed pregnant people/parents clearly stated that they do believe in their own capabilities to carry this out.

Scheduling group care into regular care

Making the Group Care model fit into the regular perinatal care is challenging. The major challenge occurring was fitting the Group Care sessions schedule with the medical check-ups indicated by protocol at the sites or by national guidelines. E.g. in countries where the standard antenatal care trajectory consists of 4 appointments, there is a major difference to bridge to reach the suggested number of ten Group Care sessions. And even though the number of Group Care sessions is considered flexible as described by the Group Care model, a certain number of Group Care sessions is needed if you want to hold on to the community building core element of Group Care. Integrating Group Care into regular care appeared to involve more than barriers related to the number of sessions. Many countries have already developed a perinatal care trajectory, both locally and nationally, and making Group Care fit into it is often intertwined with political decisions and therefore complex.

Enrolment

Adaptations in the current organisation of enrolment of pregnant people/parents to perinatal follow-up appeared to be needed when implementing Group Care. Several common aspects of challenges related to enrolment were distinguished: the intended group composition (see 'Group Composition'), possible dependence on others for enrolment (e.g. when another health care provider should refer the pregnant people/parents to Group Care instead of the facilitators themselves), and communication strategies (to health care providers, pregnant people/parents, and other stakeholders). The RQIs were clear: the development of an enrolment plan is recommended in every site. This plan should clarify who does what and when. It was striking that many sites had given little concrete thoughts so far to the content of such an enrolment plan.

Possible partner organisations

To implement Group Care as pregnancy follow-up/parenting care, a need for interaction and cooperation with (possible) partner organisations to achieve a sustainable implementation became clear. The possible embodiment of this was very diverse. Actions to cooperate were desired in relation to different aspects of the implementation, such as enrolment (e.g. cooperation with GP to refer pregnant people/parents to Group Care), location (e.g. for the rent of a room), and facilitators (e.g. facilitators from different organisations), among others.

Financials

The last deep structure anticipated challenge category includes challenges related to financials. Both direct and indirect costs challenges were identified. The development of a plan to map the costs of the implementation of Group Care appeared to be needed. Several themes came out of the RQIs, including cost to set up Group Care (e.g. to cover the materials such as floor mats, facilitation materials, blood pressure machines which participants can use themselves), payment of the facilitators, the rent of a room dedicated to Group Care, and initiatives to make the Group Care sustainable at the site. An additional difficulty emerged when postnatal Group Care is to be implemented as continuous care, because postnatal care is often provided by other care providers than antenatal care, and often falls under a different funding system.

Supplementary Table 3 illustrates the content and application of the Anticipated Challenges Framework by describing clear examples from the RQIs for each of the anticipated challenges categories, and the expected barriers and facilitators to address these. The last column of the framework, where the anticipated challenges are linked with an action plan, is not filled out as this goes beyond the scope of this paper.

Discussion

Implementation challenges were anticipated in every site if sustainable implementation is to be achieved, confirming the complexity of Group Care implementation. By conducting context analyses through RQIs in 26 sites in seven countries in the pre-implementation phase of Group Care implementation, we identified 11 anticipated challenges categories, divided into six surface structure and five deep structure anticipated challenges categories. The surface structure anticipated challenges categories are: Content; Materials; Facilitators; Timing; Location; and Group Composition. The deep structure anticipated challenges categories are: Health assessment; Scheduling Group Care into regular care; Enrolment; (Possible) partner organisations; and Financials. The framework encourages sites that are planning to implement Group Care to describe (1) the anticipated challenges, (2) the expected barriers and facilitators to tackle these challenges, and (3) a concrete action plan. The CFIR, which is broadly applicable, well-known and frequently applied in implementation science, served as a solid foundation in this research to ensure that all contextual implementation domains were explored and captured in our supportive framework (Damschroder et al., 2022; Kirk et al., 2016). The Anticipated Challenges Framework is a translation of this comprehensive CFIR into a practical tool, focused on and ready for use in Group Care implementation during the pre-implementation phase. We invite researchers and other stakeholders involved in Group Care implementation to examine uptake.

The numerous anticipated challenges that emerged in each site is consistent with previous research on Group Care implementation where these challenges are scattered and provide little guidance on applicability in another context (Abrams et al., 2018; Mcneil et al., 2016; Patil et al., 2013; Van De Griend et al., 2020). Our Anticipated Challenges Framework consolidates the anticipated challenges emerging in each of the 26 sites in our study and is therefore widely applicable. Multiple elements of the Anticipated Challenges Framework are reflected in various studies, such as group composition and, linked to this, enrolment into the groups (Abrams et al., 2018; Talrich et al., 2023a; Talrich et al., 2023b). These studies confirm that the anticipated challenges concerning enrolment are legitimate, and best considered from the pre-implementation phase. While self-assessment, and often the abilities of the pregnant people to be involved in this, are sometimes questioned beforehand in this and other studies, the experiences after training and facilitating the sessions appear positive in the existing literature (Lazar et al., 2021; Patil et al., 2013). This was confirmed by the pregnant people/parents in our study, who indicated that they did believe in their own abilities to perform self-assessment. This demonstrates that, among other things, training and practice can make a challenge remarkably less complex. The facilitator training appears to be critical for facilitators' confidence to make this shift from traditional care to an interactive facilitative empowering style of care (Gresh et al., 2022). Similarly, in our study, future facilitators confirmed looking forward to the training prior to facilitating Group Care. Thus, training might be an important strategy to tackle anticipated implementation challenges, which could be elaborated in the action plan of the Anticipated Challenges Framework. This action plan could be strengthened by linking it to implementation strategies, e.g. those described by The Expert Recommendations for Implementing Change (ERIC) project (Grol et al., 2013; Powell et al., 2015; Waltz et al., 2019).

The encouragement to develop an action plan combined with the proactive character of the Group Care Anticipated Challenges Framework adds significant value for Group Care implementation worldwide. Our research illustrated the multitude of anticipated challenges at the pre-implementation phase when aiming to implement Group Care, which aligns with previous research where the pre-implementation phase is considered a critical stage in the implementation process (Alley et al., 2023; AM, 2020). A greater chance of achieving a sustainable implementation is described when from the pre-implementation phase a clear implementation process is described and, linked to it, process fidelity (i.e. fidelity to the implementation process) takes place (Alley et al., 2023). The application of our Anticipated Challenges Framework by sites planning to implement Group Care accordingly contributes to a sustainable implementation or expose when the challenges are disproportionate to the options to tackle them. This occurred during our research, where in two of the participating sites preliminary analysis of the collected data and discussion with the research teams revealed that sustainable implementation was, at that time, unfeasible. This had led to the decision to stop the implementation process of Group Care at these sites in the pre-implementation phase. Early detection of the challenges and reflection on the actions needed, prevented a large investment in those sites that would not have led to the desired result of sustainable implementation of Group Care. Our framework mapped challenges, barriers, and facilitators to tackle these, and was able to provide sufficient insight into the feasibility of the implementation in these sites. Thus, besides supporting the implementation of Group Care, the framework can contribute to optimal investment of resources through early detection of the implementation challenges. Furthermore, we invite implementation teams from diverse health care services to apply the Anticipated Challenges Framework to evaluate its broader relevance and utility beyond Group Care implementation.

Limitations/strengths

The greatest strength of this study involves the application of different types of triangulation to map the different perspectives of anticipated challenges when implementing Group Care. To incorporate all contextual determinants of implementation, the CFIR served as a solid foundation. Thereby, all results and decisions were discussed among and within the research teams to exclude researcher bias. The diversity in countries promotes the transferability of the research results and thus contributes to the broad applicability of the developed framework. Despite these strengths of the study, there are limitations to consider. Due to Covid-19 pandemic, the project researchers were not able to visit all the sites, which would have contributed to an even better understanding of the local context. This was responded through site visits by the local researchers. Another limitation includes the lack of ad verbatim transcriptions and corresponding coding of all interviews, focus group discussions and debriefings because of the large amount of data and time constraints. This is compensated for by an interpretative pragmatic analysis, always in dialogue with the different research teams. We incorporated in practice the range of suggestions described by Ramanadhan et al. (Ramanadhan et al., 2021) to ensure and communicate rigor in pragmatic qualitative analysis. Finally, all RQIs took place in the pre-implementation phase. Different challenges may arise during other phases of the implementation. Therefore, it would be an added value to test this framework in sites already beyond the pre-implementation phase of Group Care implementation.

Conclusion

This study explored the anticipated challenges when planning to implement Group Care, incorporating the perspectives of service users, (future) facilitators, and key stakeholders. The developed Anticipated Challenges Framework to support the implementation of Group Care is co-created by various research teams from across the world. It contains the identification of anticipated challenges divided in 11 categories, the facilitators, barriers, and initiation of a concrete action plan to tackle these challenges. The various forms of triangulation applied to identify the anticipated challenges make this framework applicable in many different contexts and this way unique and an added value to support implementation of Group Care globally. Application of the Anticipated Challenges Framework offers important insights to health systems administrators and other key stakeholders before implementing Group Care. In the medium- and long-term, these insights may lead to greater possibilities for sustainability and to the most cost-effective approaches for implementing Group Care, and consequently optimised perinatal health care.

List of abbreviations

CFIR	Consolidated Framework for Implementation Research
GC_1000	Group Care for the first 1000 days
RQI	Rapid Qualitative Inquiry

Ethics approval and consent to participate

Ethical approval was obtained from ethics committees in all seven countries, namely

- Medisch-ethische toetsingscommissie Leiden Den Haag Delft; reference number N20.157/Dj/dj
- Navrongo Health Research Centre Institutional Review Board Approval; reference number NHRCIRB413
- NHS Research Ethics Committee (Bromley); reference number IRAS 292,310; granted provisional approval

- Commissie Ethiek UZ Brussel; reference number 2020–345
- Kosovo Chamber of Doctors
- Human Research Ethics Committee, Health Sciences Faculty, University of Cape Town, Cape Town
- Medical Ethical Commission/Director of Suriname's Ministry of Health, reference January 26, 2021

Consent for publication

Not applicable.

Availability of data and materials

The datasets generated and/or analysed during the current study are not publicly available due to privacy issues/ethics but are available from the corresponding author on reasonable request. Data are located in controlled access data storage of TNO, GC_1000 project lead located in The Netherlands.

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CRediT authorship contribution statement

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Declaration of competing interest

The authors declare that they have no competing interests.

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Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.midw.2024.104166.

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