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# Implementation Of Group Antenatal Care In Low & Medium-Income Countries (LMICS) - An Integrative Literature Review

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***Abstract:***
*The review evaluated the previous evidence on the implementation of group antenatal care (GANC) in High-Income Countries (HICs) and Low- and Middle-Income Countries (LMICs). A literature search was done on Google, Google scholar, Advanced Google scholar and PubMed databases. Articles that were found to be eligible were screened and 31 (Thirty-One) papers were selected, 4 (Four) additional papers were obtained from the reference lists of two (2) of the chosen papers. Quality of the articles was evaluated by using the Joanna Briggs Institute and AXIS Critical Appraisal tool check lists. The implementation of group antenatal care in LIMCs was observed to be poor when compared to HICs. Despite several reported positive outcomes of implementation of group antenatal care in HICs like professional autonomy of the midwives, increase in health facility delivery, acceptance by pregnant mothers and reduction in infant morbidity and mortality rate, its implementation is still low in LMICs. Influencing factors needed for implementation of group antenatal care in LMICs were identified to be psychological preparation of health personnel, availability of infrastructure, awareness by the pregnant mothers, preference by the pregnant mothers and monitoring guidelines. In order to implement GANC in LMICs, there will be need for more systematic approaches to develop knowledge about the factors inherent in its implementation that will promote participants behavioral changes, which will lead to better perinatal (most especially hospital delivery) outcomes as well as factors that maximize the effectiveness of GANC in HICs.*

***Keywords:*** *Group Antenatal care, Autonomy of the Midwives, Health Facility Delivery, Maternal Morbidity and Mortality Rate (MMR), Infant Morbidity and Mortality Rate (IMR)*

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## I. Introduction

According to World Health Organization (WHO), Maternal Mortality Rate (MMR) is unacceptably high, with the death of about 287, 000 women during and following pregnancy and childbirth in 2020, almost 95% of all maternal deaths occurred in low and middle-income countries in 2020, and most could have been prevented (WHO, 2021).

Complications during pregnancy, childbirth, and delivery remain significant challenges that contribute to maternal morbidity and mortality most especially in developing countries, thus its inclusion in the Sustainable Development Goals (SDG 3) i.e. reduction of global maternal mortality ratio to less than 70 per 100,000 live births by 2030 (WHO, 2020).

Quality antenatal care (ANC) was identified by WHO as a preventive approach to reduce maternal morbidity and mortality rate if the pregnant women accessed adequately at health facility. Antenatal care provided by skilled health personnel has been identified to reduce maternal and infant morbidity and mortality rate (Ali et al., 2020).

Currently ANC is being provided individually in most Low- & Middle-Income Countries (LMICs) through traditional and focus antenatal care which different studies have been identified with flux (WH0, 2022).

Group Ante Natal Care (GANC)/Centering Pregnancy concept was introduced in a 1988 article published in the America Journal of Maternal Child Nursing, which described the program for adolescent mothers, currently in use in United States of America (USA) and other High-Income Countries (Sara, 2020). Recently, implementation of group ANC in High Income Countries (HICs) had been reported through studies to be accepted by both pregnant women and health personnel, improved attendance of pregnant women at the clinic and have better health outcomes for women and newborns (Fowler et al. (2000), Wiseman et al. (2022), Umar et al. (2022), Malachi et al. (2023) & Lanyo et al. (2024)).

The objective of this literature review is to explore, review and synthesize the empirical literature that reports on the concept of Group Antenatal Care (GANC)/Centering Pregnancy that is practice in HICs and LMICs, identify the perception of group antenatal care among the pregnant women and midwives, its benefits,

the needed structures for its implementation and direction for further studies. It may inform policy development on maternal-child health, help in facilitating hospital delivery, and reduction of maternal and infantile morbidity and mortality rate in LMICs.

## II. Methodology

**Study design:**

Whittemore and Knafi (2005) integrative literature review method was used i.e. a clear identification of problem that shows that the review is addressing the problem, a well-defined literature search, evaluation of quality and reduction of data, analysis of the data and presentation of findings. The problem identified in this review was low implementation of group antenatal care in Low- & Medium-Income Countries (LMIC) and the research questions were benefits and enabling factors for implementing GANC. Population-Intervention-Comparison-Outcome (PICO) model was used to generate studies of interest, which identifies population of interest (HICs &LMICs), Intervention under study (group antenatal care), Comparison (none) and the Outcome (benefits and factors needed for implementation of GANC). A systemic search was conducted by using four on line databases: Google, Google scholar, Advanced Google scholar and PubMed, by inputting keywords and their synonyms which are maternal-child health; hospital delivery; behavioral change; maternal morbidity & mortality, group antenatal care, perinatal care, High Income Countries (HICs), Low- & Medium-Income Countries (LMICs). The chosen data base is user friendly and helpful in accessing medically related literature, open access data base, readily available and create an opportunity to view original peer-reviewed papers. Relevant papers were generated by using logic operators i.e. AND, NOT, and OR. Four studies were recruited from the reference list of articles through citation chain.

**Inclusion criteria:**

1. Works written in English within a time frame between 2018 through January, 2024.
2. Search term in the title or the keyword
3. Scholarly work published in peer reviewed journals.
4. Studies that included pregnant women attending centering pregnancy/group antenatal clinic.
5. Studies that used quantitative and qualitative method to analyzed and report on benefits of centering pregnancy/group antenatal care in both High-Income Countries (HICs) and Low & Medium -Income Countries (LMICs).
6. Studies from reference lists of the studies reviewed.

**Excluded criteria:**

1. One-page reviews
2. Letters
3. Studies published in other than selected language.
4. Groups that did not include antenatal care.

**Screening for research papers:**

210 articles were searched from the databases, 140 articles were identified from additional records, 206 were observed to be duplicates and removed. 144 articles were selected for relevance screening using the titles and abstract, 74 articles were excluded, 70 articles were chosen for full text evaluation. 31 articles met the eligibility criteria, and 4 articles were included after searching the reference lists (citation chaining) of the 31 articles.

(Fig. 1, Prisma Flow diagram).

The relative strengths and weaknesses of the qualitative and Quasi-experimental studies were assessed by using the Joanna Briggs Institute Critical Appraisal Tool checklists, the cross-sectional quantitative studies by were evaluated by using the AXIS tool.

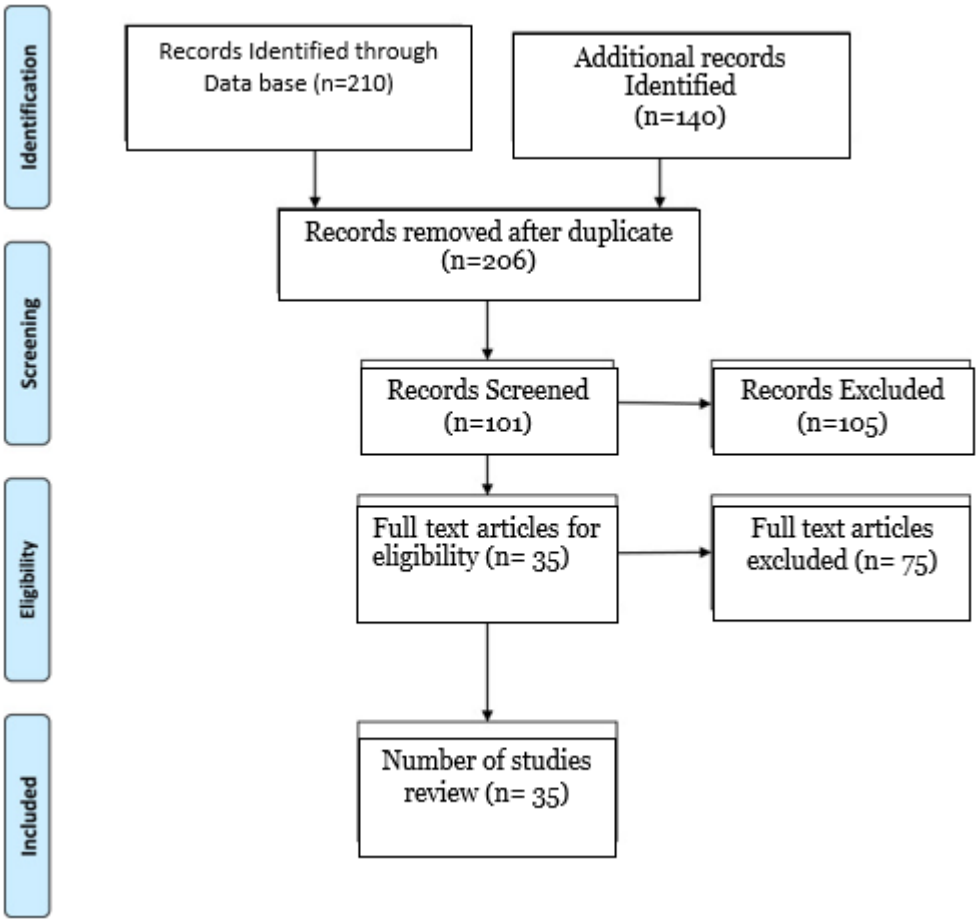


**Fig. 1 Prisma Flow diagram.**

**Evaluation of research articles:**

In the review, studies were evaluated on implementation of GANC in (High Income Countries) HICs and Low and Medium-Income Countries (LMICs), the perception and benefits, identified studies that uses meta-analysis and meta-synthesis were given highest priority, non-randomized well-designed and controlled studies were identified. Qualitative studies, descriptive or correlational studies, integrative reviews or randomized controlled trials were also recognized. Peer-reviewed professional organization article was considered. In this review, 10 out of 35 studies used quantitative cross-sectional design, 18 studies used qualitative design, 4 studies used missed methods and 3studies used systematic review.

**Analysis of research articles:**

The data were analyzed with consideration of purpose, methods, and findings of the reviewed studies. Taking into consideration the main findings, descriptions of group antenatal clinics were extracted and the benefits of GANC were identified and summarized.

## III. Results

The articles reviewed consist of 35 articles which include 18 (Eighteen) qualitative research, 10 (Ten) quantitative studies, 3 (Three) systematic review, and 4(Four) missed methods.

Variables were individual and community level outcomes, which were not uniformly operationally defined or measured consistently across studies. Some results were often mixed or non-significant.

26 (Twenty-Six) of the articles focused on the pregnant women perception and experience of group ante natal care, which were positive with emphasis on group interaction and improved communication with the midwives. 3 (Three) studies identified the benefits to the infants, most especially on low birth weight, use of emergency resuscitation of the newborn and early initiation of breast feeding. 6 (Six) studies reported on perception and experienced of midwife's care that facilitated GANC, it was reported that the midwives prefer the model due to interaction with the pregnant women and professional autonomy observed during implementation. 6 (Six) of the articles were on the structures that facilitated the implementation of GANC while 4 articles reported on other benefits of the antenatal care as a vehicle for delivering other services for example health facility delivery,

strategy for keeping newborn healthy, support for uptake of Intermittent preventive treatment in pregnancy (IPTp) and Insect treatment nets use (INT) for malaria during pregnancy, social connection within the groups and post-natal uptake of contraceptives. The identified articles were about benefits of implementation of group ante natal care in line with objectives of this literature review. The themes that appeared from the studies consist of perception, experience, benefits and implementation of group ante natal care. The results are presented below;

**Perception and experience of group antenatal care:**

The perception of group antenatal care by different stakeholders were reported by researchers; pregnant mothers, post- natal mothers, vulnerable pregnant mothers, midwives and other health care providers, most of the studies are in HICs. In a study by Sultan et al (2019), among mothers that participated in GANC sessions in Bangladesh, the mothers appreciated receiving pregnancy in group setting and their preference for the group antenatal care in comparison to traditional care. In the same vein, Fowler et al (2020), identified in a study among the female military patients, that GANC was seen as means of giving them more access to care and that they were able to participate in the care. Furthermore Malchi et al. (2023), explored 15 adolescent pregnant women's perception of group prenatal care in Iran, during pregnancy from November 2021 to May 2022 and observed effectiveness of group prenatal care in promoting feelings of empowerment and satisfaction of adolescent pregnant women. Also, Holman-Allgood et al. (2024), explored health care providers' perspectives on the successes, challenges, and suggestions for future directions regarding the implementation of CenteringPregnancy using a descriptive qualitative design as an exploratory method in northwest Arkansas, findings provide insight for positive future implementation of Centering Pregnancy for Marshallese and other Pacific Islander individuals.

Experiences of pregnant women, mothers and health care personnel that participated in the group antenatal (GANC) were reported to be positive thus resulting in the acceptability of the care model. Ahrne, Malin & Erica, Schytt et al (2019), conducted a study to explore Somali-born parents' experiences of antenatal care in Sweden, antenatal care midwives' experiences of caring for Somali-born parents, and their respective ideas using eight focus group discussions with 2-8 participants in each, three with Somali-born mothers, two with fathers and three with antenatal care midwives, it was found that mothers, fathers and midwives thought that language-supported group antenatal care might help to improve communication, provide mutual support and enable better dialogue, but they were concerned that group care should still allow privacy when needed.

Furthermore, McNeil (2019), conducted a phenomenological study among 12 (twelve) women in the post-partum period, it was observed that GANC gave the participants more positive experience and information than they expected, and even when compared with traditional ANC.

Health care providers experience on group antenatal care was examined in published literature that considered health care professionals' experiences of facilitating group antenatal care by Lazar *et al. (2021)*, systematic searches were conducted in seven databases (Cinahl, Medline, Psychinfo, Embase, Ovid Emcare, Global Health and MIDRS) in April 2020. Qualitative or mixed methods studies with a significant qualitative component were eligible for inclusion if they included a focus on the experiences of health care providers who had facilitated group antenatal care. Prisma screening guidelines were followed and study quality was critically appraised by three independent reviewers. The findings were synthesised thematically. Health care providers 'experience of delivering group antenatal care was positive overall. Opportunities to deliver high-quality care that benefits women and allows providers to develop their professional role were appreciated. Also, Dai et al (2022), in a study that explored Chinese pregnant women's experience in the Internet-based CenteringPregnancy management model applied the Internet-based CenteringPregnancy in a tertiary hospital between 2018 and 2019 in Wuhan, Hubei Province, using qualitative purposive sampling, a total of 9 pregnant women who had experienced Internet-based CenteringPregnancy were recruited. A semi-structured interview was used to collect qualitative data, and Colaizzi's 7-step method of phenomenological data analysis was used to analyze the collected data. Identified that the Internet-based CenteringPregnancy management model positively affected pregnant women's empowerment, psychological, and social support.

**Benefits of group antenatal care:**

Quantitative, qualitative and missed studies reported on benefits of group antenatal care to pregnant women, infants and health care providers.

Studies reported benefits of GANC to pregnant women, Grenier L. et.al (2019), conducted a study to access the effectiveness of GANC, compared to individual ANC, to improve rates of facility-based deliveries using facility-based cluster-randomized controlled trial (cRCT) in Nasarawa State, Nigeria, and Kagumu and Machakos in Kenya. Participants are at least 8 pregnant women within the same gestational age (i.e. $\leq 24$ weeks) at the time of enrollment. It was observed that women who enrolled in GANC were more likely to deliver in a facility, GANC received higher attendants than traditional ANC. Umar & Abubakar (2022), also examined the role played by the group antenatal care services in participatory learning session that led to the reduction in maternal morbidity and mortality rates, using cross sectional study design with mixed of both qualitative and

quantitative data collection methods with simple random sampling on pre - tested questionnaire. Additionally, a focused group discussions and key informant interviews were held with the health care providers including the antenatal care focal person and community representatives on their experiences and insight in Group antenatal care The findings show that the major factors associated with increased Group Antenatal care services uptake at the primary health care facility context were organization of services flow, access and satisfaction of the services offered by the facility, understanding the concept of ANC by the health workers. In the study by Heberlein et al.(2020), that examined whether Medicaid-enrolled women in CenteringPregnancy group prenatal care had higher rates of (1) postpartum visit attendance and (2) postpartum uptake of contraceptives, compared to women in individual prenatal care, linking birth certificates and Medicaid claims for women receiving group prenatal care in 18 healthcare practices and applied preferential-within cluster propensity score methods to identify a comparison group, accounting for the nested data structure by practice. The researchers examined five standardized, claims-based outcomes: postpartum visit attendance; contraception within 3 days; and any contraception, long-acting reversible contraception (LARC), and permanent contraception within eight weeks and assessed outcomes using logistic regression for two treatment levels: (1) any group attendance compared to no group attendance and (2) attendance at five or more group sessions to at least five prenatal care visits, including crossovers attending fewer than five group sessions (minimum threshold analysis). Women attending at least five group sessions had higher rates of postpartum visit attendance (71.5% vs. 67.5%, $p < .05$). Women with any group attendance ($N = 2834$) were more likely than women with individual care only ($N = 13,088$) to receive contraception within 3 days (19.8% vs. 16.9%, $p < .001$) and to receive a LARC within eight weeks' postpartum (18.0% vs. 15.2%, $p < .001$). At both treatment levels, group participants were less likely to elect permanent contraception (5.9% vs. 7.8%, $p < 0.001$). Women meeting the five-visit group threshold were not more likely to initiate contraception or LARCs within 8 weeks' postpartum. Renbarger et al. (2021), also conducted a study aimed to identify the influence of the four constructs of social support on positive pregnancy experiences in CenteringPregnancy, a group prenatal care (GPNC) model A qualitative descriptive design, semi-structured interviews were conducted with 11 women who had participated in at least 6 of 10 GPNC sessions at a family practice medicine residency. Participants were asked to describe their experiences in GPNC. Using a standard content analysis, four constructs of social support (emotional, informational, instrumental, and appraisal) were identified through three major themes: (1) informational support, offered by peers in GPNC settings, promotes learning and prepares women for motherhood; (2) emotional and appraisal support, offered by peers in GPNC, improves emotional well-being and helps women build lasting, supportive connections with peers, and (3) emotional, informational, instrumental, and appraisal support work in tandem to create positive relationships between women and health care providers.

Furthermore, in a study by Grenier et al. (2022), that explores the experience and effects of G-ANC on both women and providers to inform an integrated theory of change for G-ANC in LMICs, the paper reported on multiple secondary outcomes from a pragmatic cluster randomized controlled trial of group antenatal care in Kenya and Nigeria conducted from October 2016—November 2018 including 20 clusters per country. Collected qualitative data from providers and women providing or receiving group antenatal care via focus group discussions (19 with women; 4 with providers) and semi-structured interviews (42 with women; 4 with providers). Quantitative data were collected via surveys administered to 1) providers in the intervention arm at enrollment and after facilitating 4 cohorts and 2) women in both study arms at enrollment; 3–6 weeks postpartum; and 1 year postpartum. Through an iterative approach with framework analysis, explored the interactions of voiced experience and perceived effects of care and placed them relationally within a theory of change. Selected variables from baseline and final surveys were analyzed to examine applicability of the theory to all study participants. Findings support seven inter-related themes. Three themes relate to the shared experience of care of women and providers: forming supportive relationships and open communication; becoming empowered partners in learning and care; and providing and receiving meaningful clinical services and information. Four themes relate to effects of that experience, which are not universally shared: self-reinforcing cycles of more and better care; linked improvements in health knowledge, confidence, and healthy behaviors; improved communication, support, and care beyond G-ANC meetings; and motivation to continue providing G-ANC. Also, on benefits of group antenatal care, Marton et al. (2022), conducted a study to compare 'Emergency Room' (ER) utilization between pregnant women participating in group prenatal care and individual prenatal care, using a retrospective cohort study, utilizing Medicaid claims and birth certificate data from a statewide expansion of group care, to compare ER utilization between pregnant women participating in group prenatal care and individual prenatal care. They found that group care was associated with a significant reduction in the likelihood of having any ER utilization (–5.9% among women receiving any group care and –6.0%). Malchi et al. (2023), also evaluate the effect of group prenatal care (GPNC) on the empowerment of pregnant adolescents, using a trial study, 294 pregnant adolescents (aged 15-19 years) were randomly assigned into the GPNC ($n = 147$) and individual prenatal care (IPNC; $n = 147$) groups, where they received 5 sessions of GPNC (90-120 min) and IPNC, respectively, between the $16^{th}$ and $40^{th}$ weeks of pregnancy. The study observed that GPNC can improve pregnant adolescent empowerment.

Lewis et al. (2021), identified the benefits of group antenatal care to newborn and infants in a study carried out to compare birth outcomes for patients receiving Expect with Me (EWM) group prenatal care or individual care only using Type 1 hybrid effectiveness-implementation trial (Detroit and Nashville, 2014-2016). Post-hoc analyses indicated EWM patients utilizing the integrated information technology platform had lower risk for low birthweight infants (RR 0.47, 95% CI 0.24, 0.86) than non-users. In the same vein, Apetorgbor et al, (2024),conducted a study to assess the impact of G-ANC on mothers' recognition of newborn danger signs and recall of actions that can be taken to keep newborns healthy; and (2) determine if G-ANC impacted utilization of postnatal care for newborns within 48 h, at 6–7 days, or at 6 weeks after birth a cluster randomized controlled trial at 14 health facilities in the Eastern Region of Ghana that compared G-ANC (grouping women by gestational age) to standard individual antenatal care. They found out that pregnant women who participated in G-ANC had significantly higher knowledge of newborn danger signs than those participating in I-ANC. Women in group care also had greater knowledge of strategies for keeping a newborn healthy when compared to women in individual care. Furthermore, Wagijo et al (2024), carried out a study to assess the effects of participating in CenteringPregnancy (CP) on maternal, birth, and neonatal outcomes among low-risk pregnant women in the Netherlands. A total of 2124 pregnant women in primary care were included in the study. Data were derived from the Dutch national database, Perined, complemented with data from questionnaires completed by pregnant women. A stepwise-wedge design was employed; multilevel intention-to-treat analyses and propensity score matching were the main analytic approaches. Propensity score matching resulted in sample sizes of 305 nulliparous women in both the individual care (IC) and the matched control group (control-IC) and 267 in the CP and control-CP groups. For multiparous women, 354 matches were found for IC and control-IC groups and 152 for CP and control-CP groups. Main outcome measures were maternal, birth, and neonatal outcomes. It was found out that compared with the control-CP group receiving standard antenatal care, nulliparous women participating in CP had a lower risk of maternal hypertensive disorders (odds ratio [OR], 0.53; 95% CI, 0.30-0.93) and for the composite adverse maternal outcome (OR, 0.52; 95% CI, 0.33-0.82). Breastfeeding initiation rates were higher amongst nulliparous (OR, 2.23; 95% CI, 134-3.69) and multiparous women (OR, 1.62; 95% CI, 1.00-2.62) participating in CP compared with women in the control-CP group.

Benefits of GANC to health care professional was identified by Jolivet et al. (2018), in a study that reviewed the existing evidence on group ANC in LMICs for use in an urban setting in India after looking at local, national and global guidelines to tailor the model content. Mixed methods i.e. Systematic scooping review and qualitative methods were used, participants are physicians, auxiliary nurse midwives, administrators, pregnant women, and support persons from three different types of health facilities in Vadodara. Providers and recipients of care saw GANC as a vehicle for delivering more comprehensive ANC services, improving experience of care, empowering women to become more active partners and participants in their care and potentially addressing some current health system challenges. Also, Lazar *et al.* (2021), conducted a study to examine published literature that considered health care professionals' experiences of facilitating group antenatal care. Systematic searches were conducted in seven databases (Cinahl, Medline, Psychinfo, Embase, Ovid Emcare, Global Health and MIDRS) in April 2020. Qualitative or mixed methods studies with a significant qualitative component were eligible for inclusion if they included a focus on the experiences of health care providers who had facilitated group antenatal care. Prisma screening guidelines were followed and study quality was critically appraised by three independent reviewers. The findings were synthesised thematically. Nineteen papers from nine countries were included. The researchers found three main themes emerging within provider experiences of group, nineteen papers from nine countries were included. Three main themes emerged within provider experiences of group antenatal care. The first theme, 'Giving women the care providers feel they want and need', addresses richer use of time, more personal care, more support, and continuity of care. The second theme, 'Building skills and relationships', highlights autonomy, role development and hierarchy dissolution. The final theme, 'Value proposition of group antenatal care', discusses provider investment and workload. In the same vein, Wiseman et al. (2022) conducted a study to identify the challenges and opportunities for rolling out a bespoke model of group antenatal care called Pregnancy Circles (PC) within the National Health Service. Explorative qualitative study was used, participants are seven midwives who facilitated PCs. Three senior midwives with implementation experience participated in the co-design process. It was found out that GANC support midwifery philosophy of care i.e. professional autonomy, continuity of care and peer support, interpersonal relationship with pregnant women.

**Structure for group antenatal care:**

In implementation of group antenatal care model in High Income Countries (HICs) studies have identified needed structure that will facilitate its implementation and acceptance by both health care professionals and pregnant women. A study conducted by Ibanez-Cuevas et al. (2020), to identify the barriers and facilitators to implementing the GANC model in Mexico from health personnel's perspective, using qualitative descriptive method (interview-semi structured), the most relevant barriers reported at the structural level were the availability of physical space in health units and the work overload of health personnel. The need for physical space was also

reported by Sawtell et al. (2023), in a pilot trial study that determined optimum methods for testing the effectiveness of group antenatal care in NHS settings serving populations with high levels of socio-economic deprivation and cultural, linguistic and ethnic diversity using an individual randomized controlled trial (RCT) of a model of group care (Pregnancy Circles) delivered in NHS settings serving populations with high levels of deprivation and diversity conducted in an inner London NHS trust. It was found out that seventy-four participants were randomized, two more than the a priori target. Three Pregnancy Circles of eight sessions each were run. Interviews were undertaken with ten pregnant participants, seven midwives and four other stakeholders; two observations of intervention sessions were conducted. Progression criteria were met at sufficient levels for all five measures: available recruitment numbers, recruitment rate, intervention uptake and retention and questionnaire completion rates. Outcome measure assessments showed feasibility and sufficient completion rates; the development of an economic evaluation composite measure of a 'positive healthy birth' was initiated,

In sustaining group antenatal care, Novick et al. (2020), conducted a study that examined barriers to sustainability and offers suggestions for sustaining group care programs, qualitative research guided by interpretive description. Semi structured interviews with 17 professionals were conducted in 4 sites in one community to explore barriers to sustaining group care and key ingredients for sustainability. Sites were 2 clinics that had provided group prenatal care, a clinic currently providing group prenatal care, and a clinic currently providing group well-child care. Two clinics have continued providing group care and 2 have discontinued it. Participants included midwives, physicians, nurses, and nurse practitioners. Interviews were audio recorded, transcribed, and entered in *ATLAS.ti*. A priori and inductive coding schemes were developed; code content was compared across individuals, participant types, and settings. The researchers identified five themes, which were: administrative buy-in, robust recruitment, clinician and staff buy-in, owning it, and sustainability mindset. Group care needs to be sold to many different constituencies: administrators, staff and clinicians, and patients. Furthermore, they observed that sustainability requires having a conscious awareness of the importance of sustainability from the outset, taking ownership by adapting group care to needs of settings, creating venues for expressing divergent viewpoints and problem-solving, and recognizing that these processes are ongoing with change occurring incrementally. It also includes addressing the need for long-term financing findings. In the same vein, Masters et al. (2024), conducted a study with the following objectives to: (1) examine organizational characteristics that support implementation of 'Expect with Me' group prenatal care and (2) identify key factors influencing adoption and sustainability. Five clinical sites were studied, implementing group prenatal care, collecting qualitative data including focus group discussions with clinicians (n = 4 focus groups, 41 clinicians), key informant interviews (n = 9), and administrative data. The utilized a comparative qualitative case-study approach to characterize clinical sites and explain organizational traits that fostered implementation success. Characterized adopting and non-adopting (unable to sustain group prenatal care) sites in terms of fit for five criteria specified in the Framework for Transformational Change: (1) impetus to transform, (2) leadership commitment to quality, (3) improvement initiatives that engage staff, (4) alignment to achieve organization-wide goals, and (5) integration. Two sites were classified as adopters and three as non-adopters based on duration, frequency, and consistency of group prenatal care implementation. Adopters had better fit with the five criteria for transformational change. Adopting organizations were more successful implementing group prenatal care due to alignment between organizational goals and resources, dedicated healthcare providers coordinating group care, space for group prenatal care sessions, and strong commitment from organization leadership.

## IV. Discussions

The findings from this study shows that implementation of group antenatal care is still low in Low- and Medium-Income Countries, despite its benefits to the pregnant women, newborn and infants. Fowel et al (2020) observed that GANC allowed pregnant women to have more access to care and actively participated in delivery of the care given to them while Anderson et al (2020) stated that it increases the mood of adolescent pregnant mothers in his studies in HICs. Positive outcomes from implementation of GANC in HICs have been observed by research findings to date but limited studies in LMICs. Studies in Nigeria and Kenya by Greiner et al (2019), identified willingness of mothers to accept GANC and the increase in hospital attendance by GANC mothers when compared with mothers that attended traditional ANC. GANC require more systematic approaches to develop more knowledge about the factors inherent in GANC that promote participants behaviour changes, which lead to better perinatal (most especially hospital delivery) outcomes as well as factors that maximize the effectiveness of GANC in HICs.

## V. Limitations

There were limitations identified in this study. The articles reviewed were published majorly in HICs, limited in size in LMICs hence, the results may not necessarily reflect the current socio-economic and cultural diversity in LMICs which studies have shown to affect utilization of individual antenatal care. Previous

experiences and benefits from LMICs data could have influenced recall bias of its implementation in LMICs with shared past experiences by participants.

## VI. Conclusion

This integrative research emphasized the benefits of implementation of GANC in HICs that underpinned its acceptance by the pregnant mothers and health professionals. The review further stressed on the recorded success in the HICs, most especially on using the group participation to educate pregnant women on monitoring of their health, educating the pregnant women on birth plans, birth preparedness and complication readiness, and fidelity among the group members. There is need to explore in-depth through research, the socio-culturally adapted GANC for pregnant women in LMICs, because of cultural perceptive of ANC and role of husband in reproductive health decision making, most especially pregnancy.

With the recorded success in HICs, GANC can be implemented in LMICs to reduce observed maternal mortality and morbidity through hospital service utilization for quality ANC and facility delivery. Implementation of GANC in LMICs will be influenced by various factors related to policy, psychological preparation of health personnel, availability of infrastructure, awareness by the pregnant mothers, preference of the pregnant mothers and monitoring guidelines.

The findings of these studies can be useful for stimulating health personnel toward implementation of GANC in the context of shortage of health personnel in LMICs.

Finally, regarding the observed benefits of GANC in the literature reviewed, future research can be directed to test the acceptance of GANC by pregnant mothers in LMICs.

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