Jordan Journal of Nursing Research, Volume **2**, No. **4**, **2023**
DOI: https://doi.org/10.14525/JJNR.v2i4.08

Jordan Journal of Nursing Research

www.jjnr.just.edu.jo

Group *versus* Individual Prenatal Care and Maternal Outcomes in Jordan: An Integrative Review

Etap Mohammed Saleh Alswaiti, RN, MSN [1*]

*1 Specialty Hospital, Amman, Jordan. * Corresponding Author. Email: etalswaiti@gmail.com*

ARTICLE INFO

Article History:
Received: July 31, 2023
Accepted: November 30, 2023

ABSTRACT

Background: There has been an increasing trend on the implementation of group prenatal care, where women go along as a group rather than as individuals to attend their prenatal appointments. However, there is a paucity of studies that compared group *versus* traditional individual prenatal care within Jordanian healthcare settings. ***Purpose*:** To examine the differences between traditional individual and group prenatal care based on maternal outcomes among Jordanian pregnant women. ***Methods*:** An integrative review of studies published between 1993 and 2023 was performed across three databases (CINAHL, Medline and PubMed). No studies were found that investigated group prenatal care and no studies were found that examined maternal outcomes relating to group prenatal care. Nevertheless, a total of 9 studies were found that examined outcomes relating to traditional prenatal care. ***Results*:** Three themes were identified in relation to traditional prenatal care for Jordanian women; namely, (1) limitations of prenatal care, (2) barriers to prenatal care, and (3) expectations of pregnant women. However, even data on the relationship between traditional prenatal care and maternal outcomes was scarce such that there was evidence of prenatal care. The quality and extent of data were inadequate to strongly infer on the effectiveness of traditional prenatal-care programs for pregnant Jordanian women. ***Conclusion*:** There is a significant gap in literature on the implementation of group prenatal care among pregnant Jordanian women. Future research can investigate how developing, integrating and implementing group prenatal care for pregnant Jordanian women can influence maternal and neonatal health outcomes. ***Implications for Nursing*:** There is a potential for pregnant women to miss out on the benefits of group prenatal care over traditional prenatal care. Likewise, maternal health nurses will need to identify and implement strategies to overcome the limitations and barriers to traditional prenatal care in order to increase access and improve effectiveness of interventions.

Keywords: Group prenatal care, Individual prenatal care, Maternal outcomes, Jordan.

What does this paper add?

1. There is a scarcity of evidence on the effectiveness of traditional prenatal care offered for pregnant women in Jordan.
2. Pregnant women experience limitations, barriers to access, and different expectations in relation to traditional prenatal care.
3. While worldwide evidence arising from the implementation of group prenatal care demonstrates similar, if not improved, levels of maternal health outcomes compared to traditional prenatal care, the uptake of group prenatal care in Jordan is poor.

Introduction

There is overwhelming evidence that appropriate and adequate prenatal care is significantly related to positive maternal outcomes, such as early discharge from the hospital, commencement of early and exclusive

breastfeeding, higher levels of satisfaction on the birthing experience, lesser complications during labor and delivery, better self-confidence and efficacy for postnatal care, and better physical and mental health and well-being (Barrera et al., 2021; Corman et al., 2019; Peahl & Howell, 2021). Traditional delivery methods of prenatal care have been focused on the individual with consideration of personal, unique characteristics that might impact the course of the pregnancy, such as age, underlying medical conditions, medication use, previous pregnancies, and preferences on the birthing experience (Abraham, 2020; Ickovics et al., 2017; Laube et al., 2017). Individual prenatal care provided an opportunity for women to personalize their perinatal care with relevant healthcare professionals, gain control of how they would like their pregnancy journey to become, address issues and challenges that concern women, create environments, contexts and working relationships with clinicians that women feel will be beneficial and respectful to them, and formulate a positive attitude and outlook centered on their pregnancy and future status as a new mother (Carter et al., 2016; McDonald et al., 2016).

In recent years, there has been an increasing trend on the implementation of group prenatal care, where women go along as a group rather than as individuals to attend their prenatal appointments (Andrade-Romo et al., 2019). There are several models of group prenatal care currently implemented worldwide. For example, CenteringPregnancy ® is the most commonly used model in the United States (Liu et al., 2021). CenteringPregnancy ® is a program consisting of 2-hour sessions occurring every 2-4 weeks during the pregnancy that focuses on several aspects of care, such as nutrition, exercise, social support, health self-awareness and relaxation techniques. Each session can be attended by up to 5-12 women (Potter et al., 2019). Another example is *Expect with Me,* which was designed based on clinical guidelines for the delivery of prenatal care, patient and public involvement obtained through social media and technology, principles of group care, and data from randomized controlled trials that examined differences between prenatal care delivered to women in individual and group formats (Cunningham et al., 2019; Sayinzoga et al., 2018). Each session lasts for 90-120 minutes and participated in by 8-12 women. A structured curriculum is implemented from 14 weeks of pregnancy with topics, such as nutrition, physical activity, stress, mental health, and sexual health.

Data comparing the effectiveness of group *versus* individual prenatal care showed similar, if not improved, levels of outcomes. In a systematic review and meta-analysis involving four randomized controlled trials and ten observational studies, Carter et al. (2016) found no significant differences on the rates of preterm birth, breastfeeding or admission to neonatal intensive care among women who attended group versus traditional prenatal care. In addition, group care was found to be significantly associated with lower rates of low birth weight overall, but not among randomized controlled trials. In another systematic review and meta-analysis involving one randomized controlled trial, one secondary analysis of a randomized controlled trial, and 12 cohort studies, Kominiarek et al. (2019) found that group prenatal care was not associated with significant gestational weight gain compared to traditional prenatal care, although the authors noted the inconsistencies in outcome measurements. Sheeder et al. (2010) recommended the creation of a theoretical framework to guide the implementation of prenatal interventions in the context of group dynamics, and the consideration of intermediary factors, such as processes, socio-demographic characteristics, and delivery methods that might influence consistency of outcome measurement and reporting. Only with rigorous research designs, control of extraneous variables, and consideration of consistent delivery methods, there can be adequate generalizability of results related to pregnant women across different settings, communities and contexts (Sheeder et al., 2010).

In Jordan, there is a paucity of studies that compared group *versus* traditional individual prenatal care. Similarly, there is a lack of studies examining maternal health outcomes among pregnant Jordanian women other than nationally collected statistics, such as maternal mortality rate, infant mortality rate, and neonatal mortality rate. Data from the Jordan Maternal Mortality Surveillance and Response System showed that maternal mortality rates increased from 32.4 per 100,000 live births in 2019 to 38.5 per 100,000 live births in 2020. On the other hand, data from the United Nations Children's Emergency Fund (UNICEF) showed that the infant mortality rate only slightly decreased from 12.9 per 1,000 live births in 2020 to 12.5 per 1,000 live births in 2021. In addition, among pregnant women

aged 15-49 years, 91.5% had greater than or equal to 4 prenatal visits throughout the duration of their pregnancy. Given the value of prenatal care in achieving desirable perinatal outcomes, not to mention the possible benefits of cost-effective use of resources, investigating the benefits, and risks if any, of pooling resources during implementation of group prenatal care could contribute to the growing evidence of how such an intervention compares with individual prenatal care and how it might improve maternal care outcomes within the Jordanian context.

Aim

The purpose of this study was to examine the differences between traditional individual and group prenatal care based on maternal outcomes among Jordanian pregnant women.

Methods

An integrative literature review was performed to compare traditional individual and group prenatal care within the Jordanian context. A literature search was performed across three databases; namely, the Cumulative Index of Nursing and Allied Health Literature (CINAHL), Medline and PubMed. The search was performed using the keywords *individual prenatal care, antenatal care, group prenatal care, perinatal outcomes, maternal outcomes, prenatal outcomes,* and *perinatal care.* To situate the search to the Jordanian context, the keywords *Jordan* and *Jordanian* were added in the search strategy.

Duplicates were removed after generating the initial search. Afterwards, limiters were applied to narrow down the results. The search was limited based on years of publication (i.e., 2003 to 2023), language (i.e., English), and full-text availability. Selection of studies that were included in the review was based on inclusion-exclusion criteria. Inclusion criteria were (1) original research, (2) utilizing quantitative, qualitative or mixed-method design, and (3) examining individual *versus* group prenatal care among pregnant women in Jordan. On the other hand, exclusion criteria were (1) case study, (2) case series, and (3) editorials and other opinionated articles. Selected articles in the review were critically appraised using the checklists developed by the Joanna Briggs Institute (2022).

Results

Study Characteristics

A total of 794 studies were generated in the initial search. After removing duplicates, applying limiters and utilizing the inclusion-exclusion criteria, no studies were found that investigated group prenatal care and no studies were found that examined maternal outcomes relating to group prenatal care. The search was extended to cover further 10 years (i.e., to include publication from 1993), but no studies on group prenatal care were found. As a consequence, no studies were found that compared maternal outcomes of group *versus* traditional individual prenatal care among pregnant Jordanian women.

Nevertheless, a total of 9 studies were found that examined outcomes relating to traditional prenatal care (Table 1). Of the 9 studies, 1 study was a randomized controlled trial (Abuidhail et al., 2019), 4 studies followed a descriptive, non-experimental quantitative design (Abdo et al., 2018; Abu-Baker and Savage, 2011; Gharaibeh et al., 2005; Khresheh et al., 2018), and 4 studies followed a qualitative design (Bawadi and AlHamdan, 2016; Hussein et al., 2020; Oweis & Abushaikha, 2004; Sweidan et al., 2008). However, prenatal care was viewed in varying ways and pertained to one or more components (rather than as a package of interventions) of preparing for childbirth. In addition, prenatal care was operationalized either as the usual standard of care which was offered to pregnant women presenting in Jordanian hospital settings or as an intervention tested for its effectiveness to achieve a particular maternal outcome. Analysis of results showed three themes relating to traditional prenatal care; namely, (1) limitations of prenatal care, (2) barriers of prenatal care utilization, and (3) expectations of pregnant women.

Theme 1: Limitations of Prenatal Care

Despite the evidence supporting the need to provide appropriate and effective prenatal care for pregnant women, Khresheh et al. (2018) noted that prenatal care in Jordan remains limited in scope and coverage; for instance, there were no organized programs that addressed the educational needs of pregnant women, prenatal care only comprised of regular examinations, and there was no consistency in the allocation of healthcare professionals during the prenatal period. In addition, while it was reported that 99% of women accessed some form of prenatal care during the first trimester, only 74% had 7 or more prenatal visits during

the length of the pregnancy, only 50% were informed about the signs and symptoms signalling pregnancy complications, and only 38% were informed about puerperal complications. Abu-Baker and Savage (2011) also found that one of the significant predictors of low folic acid utilization was the lack of access and availability of prenatal care. Moreover, Sweidan et al. (2008) examined hospital policies and practices concerning normal childbirth in a nationally representative sample of Jordanian hospitals, but only found acceptable levels of obstetric care during labor and delivery, and were not able to include an in-depth examination of policies and practices involving prenatal care. Pregnant Jordanian women can benefit from regular, consistent and complete prenatal care, considering that Gharaibeh et al. (2005) reported high scores of health responsibility and self-actualization and moderate scores of seeking interpersonal support and nutrition in their study of the lifestyle practices during the perinatal period.

Table 1. Selected studies

Authors	Design	Participants and Sample Size	Intervention	Results
Oweis and Abushaikha, 2004	Descriptive, cross-sectional	77 primigravid women	None	1. Majority of women expected a negative childbirth experience. 2. Expectations linked to limited labor preparation and advice. 3. Expectations of inadequate nursing and midwifery support during childbirth.
Gharaibeh et al., 2005	Descriptive, cross-sectional	400 pregnant women (≥ 20 weeks gestation)	None	1. Participants had high scores on health responsibility and self-actualization, moderate scores on interpersonal support and nutrition, and low scores on physical activity and stress management behaviors. 2. Health promotion and healthy lifestyle integrated with cultural belief systems should be incorporated in prenatal programs.
Sweidan et al., 2008	Descriptive, cross-sectional	30 hospitals	None	1. More focus of hospital-based maternity services on intra- than prenatal care. 2. No evidence of prenatal care offered within hospital settings. 3. Lack of social support during labor and delivery. 4. Hospitals have resources to meet obstetric emergencies; however, no examination of whether resources and infrastructures are adequate to meet prenatal care needs.
Abu-Baker and Savage (2011)	Descriptive, cross-sectional	300 pregnant women	None	1. Lower educational level was a barrier to accessing prenatal supplementation of folate and multi-vitamins among pregnant women. 2. Less access to prenatal care was one of the identified reasons for low folate and multi-vitamin uptake.
Bawadi and AlHamdan, 2016	Interpretive, phenomenological	12 pregnant women	None	1. Childbearing was seen as a cultural and spiritual journey for Jordanian women. 2. Prenatal care programs should integrate interventions with cultural beliefs and spirituality of women to increase engagement and acceptance. 3. Study did not examine whether current prenatal programs are culturally and spiritually sensitive to the needs of pregnant Jordanian women.

Abdo et al., 2018	Descriptive, cross-sectional	1,111 pregnant women	None	1. Lower levels of knowledge and attitude were barriers to accessing prenatal services on genetic testing. 2. Receptivity to components of prenatal programs influences their successful implementation and women readiness to engage with healthcare professionals.
Khresheh et al., 2018	Mixed methods	107 primigravid women 3 doctors 3 midwives	Childbirth-preparation program	1. Prenatal program including childbirth preparation and focused on engagement between healthcare professional and women increased knowledge levels of women regarding pregnancy, birth and postpartum periods. 2. Prenatal program helped develop a trusting relationship between healthcare professionals and women. 3. Primary challenge identified in the successful implementation of the program were the commitment, capacity and engagement of pregnant women.
Abuidhail et al., 2019	Prospective, randomized controlled trial	112 women	Prenatal web-based breastfeeding education program	1. No significant differences were found between the experimental and control groups post-intervention on scores on breastfeeding self-efficacy and infant feeding knowledge and attitudes. 2. An increase of scores on breastfeeding self-efficacy was measured post-intervention, but this was not significant. 3. Intervention only covered one particular aspect of prenatal care (i.e., breastfeeding). 4. Use of information technology can help improve delivery of prenatal care programs.
Hussein et al., 2020	Qualitative interpretive	20 mothers who have given birth in the last 5 years	None	1. Giving birth in a public hospital was associated with feelings of helplessness, lack of privacy, and lack of adequate pain control. 2. Relevant changes should be implemented to improve maternal services which in turn could help positively influence birthing experiences. 3. Focus was on services during labor and delivery without attention to the quality of prenatal care.

Theme 2: Barriers to Prenatal Care

Studies have identified barriers to the successful implementation of a holistic, organized and standard prenatal program for pregnant women in Jordan. Identified barriers included factors at the individual level (i.e., micro), and factors at the organizational level (i.e., meso). Barriers at the micro-level included socio-demographic characteristics of pregnant women, such as age (i.e., younger women were less likely to access prenatal care), low levels of knowledge regarding pregnancy and possible complications, lack of social support (i.e., from partner, families and friends), and poor lifestyle behaviors in the areas of physical activity, stress management, self-actualization, nutrition, health responsibility, and interpersonal support (Abdo et al., 2018; Abu-Baker and Savage, 2011; Gharaibeh et al., 2005). On the other hand, barriers at the meso-level included lack of hospital policies, lack of childbirth preparation programs, poor implementation of safe labor practices, and medicalization of pregnancy (i.e., increasing Caesarean section rates and lack of attention to choices of pregnant women as to the type of childbirth they prefer) (Khresheh et al., 2018; Sweidan et al., 2008).

It can be noted that none of the studies examined barriers that might be present at the macro-level (i.e, societal-political level) although Khresheh et al. (2018) implied that there is lack of quality in supposed nationally implemented prenatal programs in Jordan. The study by Sweidan et al. (2008) that included a

nationally representative sample of Jordanian hospitals did not investigate why prenatal programs did not figure significantly in safe labor practices in hospitals and why maternity care focused highly on the intrapartum period without much attention to the pre- and post-natal stages. Integrating maternal care throughout the perinatal period has been shown to be influenced by socio-political and economic contexts, such as the ability of governments to fund accessible and usable heath service systems, social attitudes to the value of the human health workforce, political will to improve maternal and infant health across all socio-economic strata, and social determinants of health linked with unique belief systems and ideologies (de Jongh et al., 2016).

Nevertheless, structural barriers might be overcome with the implementation of interventions that bridge gaps of an organized prenatal care program. For instance, Abuidhail et al. (2019) demonstrated in their prospective randomized controlled trial that implementing a web-based educational program addressing the lack of information-technology resources in teaching breastfeeding during the prenatal period has the potential to improve breastfeeding self-efficacy scores. However, the intervention by Abuidhail et al. (2019) was not intended to replace a prenatal program, but only intended to address a single component of prenatal care which was breastfeeding self-efficacy and infant feeding knowledge and attitudes.

Theme 3: Expectations of Pregnant Women

Studies have suggested that the extent of willingness of pregnant Jordanian women to be involved with prenatal care was affected by their expectations of the pregnancy and childbirth journey (Bawadi & AlHamdan, 2016; Hussein et al., 2020; Oweis & Abushaikha, 2004). In the study by Oweis and Abushaikha (2004), pregnant women expected their childbirth experience to be "frightening, very long, too difficult, and painful". Hussein et al. (2020), who interviewed women who have given birth in the last 5 years, found validated experiences of unbearable pain, lack of privacy, being left alone, and feeling of uncleanliness. While separated by a period of 16 years in their publication dates, both studies attributed the negative childbirth expectations and experiences to the lack of adequate prenatal care, preparation and education and the lack of midwifery support at the point of actual labor and childbirth.

Cultural and spiritual beliefs were also found to affect engagement of pregnant Jordanian women with available prenatal care. The phenomenological study by Bawadi and Al-Hamdan (2016) found that while being pregnant was seen as a spiritual journey for a Jordanian woman since the child was perceived as a "loan" from Allah, pregnant women can refuse prenatal visits that in their perspective might curtail the will of Allah on how the pregnancy should proceed during the labor and postnatal periods. For instance, diagnostic procedures designed for early detection of congenital problems and inherited diseases as part of a package of prenatal care might be refused on the basis that identification of a disease might influence pregnant women on whether to proceed with the pregnancy or not. The effectiveness of prenatal programs will depend not only on the integrity of the healthcare delivery system, but also on the extent to which such programs are culturally and spiritually sensitive to the beliefs and ideologies of Jordanian women, and by extension, their partners, families, and significant others.

Discussion

While there might be prenatal programs currently existing for pregnant Jordanian women as evidenced by statistics provided by the national government, this review highlighted two pertinent results that can significantly impact the quality of maternal care during the perinatal period and childbirth experiences. First, there is currently no evidence on the implementation of group prenatal care in Jordanian healthcare settings, and second, that there is paucity of studies that examined the effectiveness of currently existing traditional prenatal care.

The lack of group prenatal care in Jordan demonstrates that this particular intervention is currently limited in Western countries and might not yet appeal to the cultural sensitivities of Jordanians, and possibly Muslim women, who value the privacy and confidentiality attached to traditional prenatal care which focuses on the individual. Other reviews have demonstrated that group prenatal care has the potential to significantly reduce postpartum depression, anxiety, and stress symptoms (Buultjens et al., 2021), improve prenatal knowledge and utilization of family post-birth planning services (Andrade-Romo et al., 2019), and decrease risks of preterm birth, low birth weight and need for neonatal intensive care admissions (Abshire et

al., 2019), but the question of whether or not to offer group or individual prenatal care depends on the value placed by women on the benefits of being in a social group during an intimate life event, such as pregnancy and delivery. If pregnant Jordanian women value privacy and personalization of maternal care plans, group prenatal care might not be appropriate. In other words, the effectiveness of group prenatal care will depend not only on the quality and consistency of its implementation, but also on its personal and cultural acceptability to women who eventually will be the participants of the program. Andrade-Romo et al. (2019) reviewed the challenges of implementing group prenatal care and highlighted the need to consider the privacy preferences of pregnant women that might reduce their intention to engage with others during group sessions and therefore significantly curtail the effectiveness of the group prenatal care model.

On the other hand, despite that there was evidence of prenatal care, the quality and extent of data in literature were inadequate to strongly infer on the effectiveness of traditional prenatal care programs for pregnant Jordanian women. Studies included in the review highlighted the lack of an organized, systematic and standard prenatal care program in Jordan, which was hypothesized as one of the reasons for documented adverse maternal health outcomes, such as comparatively high maternal morbidity rate of Jordan against other developed countries, delay in seeking care, delay in transport, and delay in implementing hospital-based care (Abu-Baker and Savage, 2012; Khresheh et al., 2018). None of the studies included in the review was able to establish direct relationships between implementation of standard (traditional) individual prenatal care and maternal and neonatal health post-labor and delivery. As such, before transitioning to a paradigmatically different care model, such as group prenatal care, the evidence from this review emphasizes the need to re-examine existing prenatal care programs, identify challenges and issues that prevent their successful implementation, and establish models for evaluation of effectiveness and sustainability.

However, arguing the significance of examining existing traditional prenatal care programs in Jordan does not preclude the possibility of successfully adopting and transitioning to group prenatal care. In fact, the recognized limitations of a nationally implemented standard prenatal program in Jordan can be evidence in support of introducing group prenatal care as an alternative model. For the reasons previously stated, nurse administrators and policy makers will need to develop, plan, adopt and integrate group prenatal care that will be culturally and spiritually acceptable for pregnant Jordanian women, taking into account the unique characteristics of its healthcare delivery systems, and the contexts underlying the social, economic, and political landscape that supports pregnancy and childbirth practices.

Implications for Nursing

There are two main implications for nursing that can be identified following this review. First, limitations in the components of traditional prenatal care and barriers that pregnant women experience in accessing such service call for the development and implementation of strategies among maternal health nurses aimed at improving the service design and widening accessibility and availability of traditional prenatal care. This is a significant undertaking which will require multi-disciplinary input not only from other healthcare professionals, but also from different government agencies, non-government sectors, and industry. Second, the lack of evidence base and poor uptake of group prenatal care would mean that pregnant women miss out on the benefits of such interventions. Maternal health nurses will have to explore options and strategies that will encourage the adoption and implementation of group prenatal care within Jordanian primary and secondary maternal healthcare settings.

Conclusions

There is a significant gap in literature on the implementation of group prenatal care among pregnant Jordanian women, thereby making it difficult to make comparisons of its effectiveness in achieving health outcomes against traditional prenatal care. In addition, there is also scarcity of evidence linking the implementation of traditional prenatal care in Jordan with maternal and neonatal health outcomes. While the review was limited by the inclusion of academic publications alone, the lack of research suggests that delivery of prenatal care in Jordan is currently underexplored. Future research can investigate how developing, integrating and implementing group prenatal care for pregnant Jordanian women can influence maternal and neonatal health outcomes, and

how implementing group prenatal care can improve healthcare services that were not delivered by traditional individual prenatal care.

REFERENCES

Abdo, N., Ibraheem, N., Obeidat, N., Graboski-Bauer, A., Batieha, A., Altamimi, N., & Khatatbih, M. (2018). Knowledge, attitudes, and practices of women toward prenatal genetic testing. *Epigenetics Insights*, *11*, 2516865718813122.

Abraham, C. (2020). Rethinking the traditional prenatal care model. *Obstetrics & Gynecology*, *135* (5), 1024-1026.

Abshire, C., Mcdowell, M., Crockett, A.H., & Fleischer, N.L. (2019). The impact of CenteringPregnancy group prenatal care on birth outcomes in Medicaid eligible women. *Journal of Women's Health*, *28* (7), 919-928.

Abu-Baker, N., & Savage, C. (2012). Knowledge and practices of folate and multi-vitamin supplementation among Jordanian pregnant women. *Journal of Research in Nursing*, *17* (3), 275-286.

Abuidhail, J., Mrayan, L., & Jaradat, D. (2019). Evaluating effects of prenatal webbased breastfeeding education for pregnant mothers in their third trimester of pregnancy: Prospective randomized control trial. *Midwifery*, *69*, 143-149.

Andrade-Romo, Z., Heredia-Pi, I. B., Fuentes-Rivera, E., Alcalde-Rabanal, J., Cacho, L. B. B., Jurkiewicz, L., & Darney, B.G. (2019). Group prenatal care: Effectiveness and challenges to implementation. *Revista de Saude Publica*, *53.*

Barrera, C. M., Powell, A. R., Biermann, C.R., Siden, Y., Nguyen, B. H., Roberts, S. J., …, & Peahl, A. (2021). A review of prenatal care delivery to inform the Michigan Plan for Appropriate Tailored Health Care in pregnancy panel. *Obstetrics & Gynecology*, 10-1097.

Bawadi, H.A., & AlHamdan, Z. (2017). The cultural beliefs of Jordanian women during childbearing: implications for nursing care. *International Nursing Review*, *64* (2), 187-194.

Buultjens, M., Farouque, A., Karimi, L., Whitby, L., Milgrom, J., & Erbas, B. (2021). The contribution of group prenatal care to maternal psychological health outcomes: A systematic review. *Women and Birth*, *34* (6), e631-e642.

Carter, E.B., Temming, L.A., Akin, J., Fowler, S., Macones, G.A., Colditz, G.A., & Tuuli, M.G. (2016). Group prenatal care compared with traditional prenatal care: A systematic review and meta-analysis. *Obstetrics and Gynecology*, *128* (3), 551.

Corman, H., Dave, D., & Reichman, N.E. (2019). The effects of prenatal care on birth outcomes: Reconciling a messy literature. In: *Oxford Research Encyclopedia of Economics and Finance.*

Cunningham, S.D., Lewis, J. B., Shebl, F.M., Boyd, L.M., Robinson, M.A., Grilo, S.A., …, & Ickovics, J.R. (2019). Group prenatal care reduces risk of preterm birth and low birth weight: A matched cohort study. *Journal of Women's Health*, *28* (1), 17-22.

De Jongh, T.E., Gurol-Urganci, I., Allen, E., Jiayue Zhu, N., & Atun, R. (2016). Barriers and enablers to integrating maternal and child health services to antenatal care in low- and middle-income countries. *BJOG: An International Journal of Obstetrics & Gynaecology*, *123* (4), 549-557.

Gharaibeh, M., Al-Ma'aitah, R., & Al Jada, N. (2005). Lifestyle practices of Jordanian pregnant women. *International Nursing Review*, *52* (2), 92-100.

Hussein, S.A.A.A., Dahlen, H. G., Ogunsiji, O., & Schmied, V. (2020). Jordanian women's experiences and constructions of labour and birth in different settings, over time and across generations: A qualitative study. *BMC Pregnancy and Childbirth*, *20* (1), 1-15.

Ickovics, J., Lewis, J., Kershaw, T., & Magriples, U. (2017). Group prenatal care compared with traditional prenatal care: A systematic review and meta-analysis. *Obstetrics & Gynecology*, *129* (1), 203-204.

Khresheh, R., Almalik, M., Owies, A., & Barclay, L. (2018). Implementation of a childbirth preparation program in the maternal and child health centres in Jordan. *Midwifery*, *61*, 1-7.

Kominiarek, M.A., Lewkowitz, A.K., Carter, E., Fowler, S.A., & Simon, M. (2019). Gestational weight gains and group prenatal care: A systematic review and meta-analysis. *BMC Pregnancy and Childbirth*, *19* (1), 1-16.

Laube, D.W., James, A., Rickell, M., & Rickell, M.E. (2017). Group prenatal care compared with traditional prenatal care: A systematic review and meta-analysis. *Obstetrics & Gynecology*, *129* (1), 204.

Liu, Y., Wang, Y., Wu, Y., Chen, X., & Bai, J. (2021). Effectiveness of the CenteringPregnancy program on maternal and birth outcomes: A systematic review and meta-analysis. *International Journal of Nursing Studies*, *120*, 103981.

McDonald, S.D., Sword, W., Eryuzlu, L.N., Neupane, B., Beyene, J., & Biringer, A.B. (2016). Why are half of women interested in participating in group prenatal care? *Maternal and Child Health Journal*, *20*, 97-105.

Oweis, A., & Abushaikha, L. (2004). Jordanian pregnant women's expectations of their first childbirth experience. *International Journal of Nursing Practice*, *10* (6), 264-271.

Peahl, A.F., & Howell, J.D. (2021). The evolution of prenatal care delivery guidelines in the United States. *American Journal of Obstetrics and Gynecology*, *224* (4), 339-347.

Potter, J.E., Duthely, L.M., Diaz-Mendez, N., Smith, L., Messick, B.J., Echenique, M., ..., & Villar-Loubet, O. (2019). Implementing CenterinPregnancy group prenatal care for minority women living with HIV at an urban university hospital. *Journal of Midwifery & Women's Health*, *64*(4), 451-461.

Sayinzoga, F., Lundeen, T., Gakwerere, M., Manzi, E., Nsaba, Y.D.U., Umuziga, M.P., …, & Walker, D. (2018). Use of a facilitated group process to design and implement a group antenatal and postnatal care program in Rwanda. *Journal of Midwifery & Women's Health*, *63* (5), 593-601.

Sheeder, J., & Yorga, K.W. (2017). Group prenatal care compared with traditional prenatal care: A systematic review and meta-analysis. *Obstetrics & Gynecology*, *129* (2), 383-384.

Sweidan, M., Mahfoud, Z., & DeJong, J. (2008). Hospital policies and practices concerning normal childbirth in Jordan. *Studies in Family Planning*, *39* (1), 59-68.

United Nations Children's Emergency Fund. (2023). Country profiles: Jordan. https://data.unicef.org/country/jor