How health care facilities and family support pregnancy through pregnant women's sports activities: a case study in Pidie district, Aceh, Indonesia

Cómo los centros de salud y las familias apoyan el embarazo mediante actividades deportivas para mujeres embarazadas: un estudio de caso en el distrito de Pidie, Aceh, Indonesia

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Abstract

Object: This study aims to evaluate which of the antecedents of distance to health care facilities, social support and quality of health services have a more dominant influence on antenatal care intentions and their impact on pregnant women's health through sport activities during pregnancy

Methods: The study was quantitative with survey method of 300 pregnant women in the third trimester in Pidie district, Indonesia. Data collected using questionnaire. The variables analyzed were distance from home to health care facilities, quality service from health care providers, social support (health providers, family and peers), antenatal care intentions and antenatal care behavior. SEM-PLS was used for data analysis.

Results: Factors that influencing antenatal care intentions were the quality of services and family support. Family support had the greatest impact on antenatal care intentions. Social support, distance and quality of services contributed 22.2% to antenatal care intentions. In combination with pregnancy care intentions, the contribution to pregnant women's physical health through sport activities during pregnancy was 44.3%.

Conclusions: This study confirms the importance of family support in improving antenatal care intentions and shows that antenatal care intentions are important in influencing antenatal care behavior for pregnant women's physical health through sport activities during pregnancy.

Keywords

Sport activities during pregnancy; social support; quality of service.

Resumen

Objetivo: Este estudio tiene como objetivo evaluar cuáles de los antecedentes de la distancia a los centros de atención de salud, el apoyo social y la calidad de los servicios de salud tienen una influencia más dominante en las intenciones de atención prenatal y su impacto en la salud de las mujeres embarazadas a través de actividades deportivas durante el embarazo.

Métodos: El estudio fue cuantitativo con un método de encuesta de 300 mujeres embarazadas en el tercer trimestre en el distrito de Pidie, Indonesia. Los datos se recopilaron mediante un cuestionario. Las variables analizadas fueron la distancia desde el hogar hasta los centros de atención de salud, la calidad del servicio de los proveedores de atención de salud, el apoyo social (proveedores de salud, familia y pares), las intenciones de atención prenatal y el comportamiento de atención prenatal. Se utilizó SEM-PLS para el análisis de datos.

Resultados: Los factores que influyeron en las intenciones de atención prenatal fueron la calidad de los servicios y el apoyo familiar. El apoyo familiar tuvo el mayor impacto en las intenciones de atención prenatal. El apoyo social, la distancia y la calidad de los servicios contribuyeron con un 22,2% a las intenciones de atención prenatal. En combinación con las intenciones de atención del embarazo, la contribución a la salud física de las mujeres embarazadas a través de actividades deportivas durante el embarazo fue del 44,3%.

Conclusiones: Este estudio confirma la importancia del apoyo familiar para mejorar las intenciones de atención prenatal y muestra que las intenciones de atención prenatal son importantes para influir en el comportamiento de atención prenatal para la salud física de las mujeres embarazadas a través de actividades deportivas durante el embarazo.

Palabras clave

Actividades deportivas durante el embarazo; apoyo social; calidad del servicio

Introduction

In Indonesia, particularly in Pidie district, Aceh province, it is known that there are two types of antenatal care that pregnant women still believe in and practice to prevent pregnancy complications, namely modern and traditional antenatal care. Modern antenatal care is called integrated antenatal care (ANC Terpadu). Integrated ANC is used to detect maternal and fetal health problems from the early stages of pregnancy (Kemenkes RI, 2020). Meanwhile, traditional antenatal care, which is still widely practiced from generation to generation (Cukarso & Herbawani, 2020), includes drinking herbal medicine, abdominal massage by traditional birth attendants, dietary restrictions, consumption of certain foods and behavioral taboos (Rachmayanti et al., 2023). There is a strong belief among people in the local community that if pregnant women do these things, the process of pregnancy will go smoothly right up to the time of giving birth (Triratnawati et al., 2016).

Traditional antenatal care cannot be considered poor antenatal care. However, at the moment routine integrated ANC needs to be carried out 6 times in a health facility, so the abnormalities of pregnancy can be detected early (Kemenkes RI, 2020). Traditional antenatal care causes pregnant women not optimal to utilize complete pregnancy checks at health facilities (Aryastami & Mubasyiroh, 2021). Hariyanti & Astuti, (2021) stated in their research that pregnant women who do not carry out ANC during pregnancy are at greater risk of experiencing complications during childbirth. Routine ANC visits encourage pregnant women to take recommended interventions for a pregnant women's and baby physical health, and reduce poor pregnancy outcomes (Khatri et al., 2022). For example, routine visits and health checks for the fetus and mother at antenatal care facilities can minimize symptoms of anemia in pregnant women (Wulandari et al., 2022). The impact on babies caused by anemia during pregnancy can increase the risk of premature birth, low birth weight (LBW) babies, intrauterine death (IUFD), intrauterine growth restriction (IUGR), asphyxia, stunting, and stillbirth (Tanziha et al., 2018).

The evidence shows that women who attend ANC visits as recommended are more likely to give birth in a health facility, receive postnatal care. Meanwhile, pregnant women who do not make ANC visits are more likely to give birth with the help of traditional birth attendants (Mwebesa et al., 2022). Pidie District is one of the districts with an Integrated ANC percentage below the government's target in the RPJMN (National Development Planning Agency, 2020). The following is a comparison between ANC targets in Indonesia, Aceh Province and RPJMN targets.

The percentage of ANC in Indonesia, based on the performance report of the Directorate of Health from 2019 to 2022, is quite good with an average performance above the strategic target, except in 2020 due to COVID-19 conditions. In contrast to Aceh Province, the ANC rate in RPJMN has been below the strategic target for the last four years. Based on data from the Pidie District Health Office for the last two years, the following graph shows the percentage of K1, K4, K6 and maternity attendance at health facilities in Pidie District during 2022 and 2023. The percentage of ANC visits from K1, K4 to K6 in the last two years has always decreased, pregnant women tend not to complete the ANC program. The percentage of pregnant women giving birth in health facilities in 2023 also decreased compared to 2022. The negative effects of not implementing integrated ANC are anemia, hypertension, and infections during pregnancy, heavy bleeding, IUGR (Intrauterine Growth Restriction), increased maternal and infant mortality and lack of maternal knowledge about breastfeeding (Kemenkes RI, 2020).

The suboptimal antenatal care behavior of pregnant women's physical health through sport activities during pregnancy women in Pidie Regency is caused by several factors such as distance from home to health facilities, quality of services and social support. The results of the preliminary study explain that pregnant women do not attend ANC regularly because of the distance between their homes and health facilities. Pidie Regency actually has 26 community health centers and 112 village health posts (Dinas Kesehatan Kabupaten Pidie 2023:16, 2024). However, the geography of Pidie, which consists of three regions - mountain, lowland and coastal - means that pregnant women have limited access to health facilities. While the quality of service from health providers is known, the door-to-door program for visiting pregnant women is not well implemented, resulting in pregnant women not being able to access antenatal care services at all times. In addition, social support from family, peers and health care providers also influences antenatal care behavior. According to the interviews with pregnant women in Pidie, their families are known to be supportive and give pregnant women the freedom to choose the type of antenatal care they want. However, some of them also said that if there are people close to them

who advise them to use traditional antenatal care instead of modern medical care, then they should do it. Based on the problems described above, the researcher is interested in analyzing which of the antecedents of distance to health facilities, social support and quality of health services have a more dominant influence on antenatal care intentions and their impact on pregnant women's physical health through sport activities during pregnancy.

Method

Research Design

This is a quantitative study with a cross-sectional approach. The dependent variable was antenatal care behavior, the antecedent variables were social support (family, health workers and friends), distance and quality of service, and the independent variable was antenatal care intention. All variables were measured simultaneously.

Data collection

The study was based in Pidie district, Aceh province. There were 12 health center working areas, representing mountain areas (Mane, Tangse, Keumala, and Geumpang), lowland areas (Pidie, Mutiara Timur, Ujung Rimba, and Raubee), and coastal areas (Simpang Tiga, Muara Tiga, Kembang Tanjung, and Batee) with the lowest performance of integrated ANC implementation during the data period January-November 2023. Data collection was carried out from November 2023 to November 2024 using a questionnaire. The population in this study was all pregnant women in the third trimester of pregnancy or 28-40 weeks of gestation from January to September 2023. The population was 4212 pregnant women, based on maternal and child health sector performance report of the Pidie District Health Office. The sampling technique used simple random sampling with proportional sampling.

Data analyzed

The sample size in this study was 300 respondents. Inclusion criteria are all pregnant women in the third trimester who live in the Pidie district, are at the research site, can read and write, are willing to volunteer as a research sample and cooperate in following the agreed rules of the research process. The analysis technique used was structural equation modelling (SEM-PLS) (Sepdanius et al., 2024).

Results and Discussion

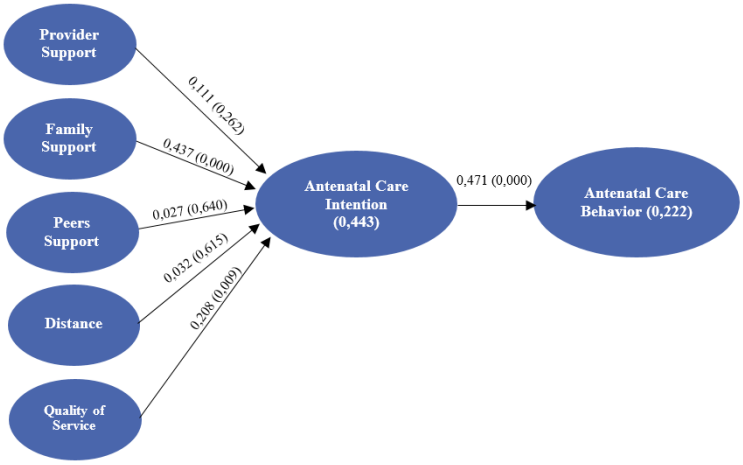
The study was conducted among 300 respondents in the third trimester of pregnancy in Pidie District. The following are the characteristics of the respondents based on distance, quality of services and social support (family, peers and health workers).

From the Table 1, it is known that 190 (63.3%) respondents received good support from their families during pregnancy. A total of 256 (85.3%) respondents could reach the health facility in <30 minutes or nearby. A total of 216 (72%) respondents said that the quality of service by health care providers in carrying out antenatal care was good. Furthermore, 216 (72%) respondents had good intentions in antenatal care. And also, 242 (80.7%) respondents had good antenatal care behavior (modern and traditional practices). The following are the results of the SEM PLS test for the variables analyzed in this study:

Table 1. Characteristics of Pregnant Women 3rd Trimester in Pidie District Year 2024

Characteristic	Categories							
	Very Less		Less		Good		Very Good	
	n	%	n	%	n	%	n	%
Health Care Provider Support	1	0.3	123	41	147	49	29	9.7
Family Support	5	1.7	64	21.3	190	63.3	41	13.7
Peers Support	143	47.7	103	34.3	51	17	3	1
Quality Service of Health Care Providers	0	0	54	18	216	72	30	10
Antenatal Care Intention	0	0	58	19.3	216	72	26	8.7
Antenatal Care Behavior	107	35.7	21	7	126	42	46	15.3
Distance	Near				Long			
	n		%		n		%	
	256		85.3		44		14.7	

Figure 3. Results of Research Model Analysis



The following table explains the relationship between the variables.

Table 2. Results of SEM-PLS analysis and The Determination Coefficient

Relationship Between Variables	Coefficient	T-Statistic	P values
Health Care Provider Support -> Antenatal Care Intention	0.111	1.121	0.262
Family Support -> Antenatal Care Intention	0.437	6.687	0.000
Peers Support -> Antenatal Care Intention	0.027	0.468	0.640
Distance -> Antenatal Care Intention	-0.032	0.503	0.615
Quality of Service -> Antenatal Care Intention	0.208	2.609	0.009
Antenatal Care Intention -> Sport activities During Pregnancy	0.471	8.397	0.000
Relationship Between Variables			R-square
Health Care Provider Support, Family Support, Peer Support, Distance and Quality of Service ➔ Antenatal Care Intention			0.222
Health Care Provider Support, Family Support, Peer Support, Distance, Quality of Service and Antenatal Care Intention ➔ Sport activities During Pregnancy			0.443

The results of this study show the relationship between social support factors and antenatal care intention and its effect on antenatal care behavior. Based on the data analysis, it was found that support from health care providers did not have a significant relationship with antenatal care intention, with a coefficient of 0.111, a t-value of 1.121 and a p-value of 0.262. Although the coefficient was positive, meaning that greater support from health care providers should increase antenatal care intentions, this relationship was not statistically significant. In contrast, family support had a significant and positive effect on antenatal care intentions with a coefficient of 0.437, a t-value of 6.687 and a p-value of 0.000. This positive coefficient indicates that the higher the level of family support, the higher the level of antenatal care intention. Peer support did not show a significant relationship with antenatal care intention, with a coefficient of 0.027, a t-value of 0.468 and a p-value of 0.640. Although the coefficient was positive, meaning that greater peer support should increase antenatal care intentions, this relationship was not statistically significant. Distance did not have a significant relationship with antenatal care intention with a coefficient of -0.032, t-value of 0.503, and p-value of 0.615. This negative coefficient suggests that the greater the distance, the lower the antenatal care intention, although this relationship is not statistically significant.

Quality of services by health care providers also showed a significant effect on antenatal care intention with a coefficient of 0.208, t-value of 2.609, and p-value of 0.009. This positive coefficient indicates that the more health workers, the higher the antenatal care intention. Antenatal care intention has a significant effect on antenatal care behavior with a coefficient of 0.471, a t-value of 8.397 and a p-value of 0.000. The positive coefficient indicated that the higher the antenatal care intention, the better the antenatal care behavior. The results showed that among the different factors analyzed, family support had the greatest influence on antenatal care intentions. With a coefficient of 0.437 and a p-value of 0.000, family support was shown to have a significant and positive relationship. In other words, the higher the level of family support, the higher the intention to seek antenatal care. Family support is crucial in en-

couraging individuals to be more involved in their antenatal care, highlighting the important contribution the family makes to pregnant women's physical health through sport activities during pregnancy (Sousa et al., 2024).

The results of table 2 also showed that there was a 22.2% simultaneous contribution to antenatal care intentions from social support (provider, family, peers) distance, and quality of services. The implication is these factors collectively influence the intention to perform antenatal care. In addition, when these factors were compared with antenatal care intention, they contributed 44.3% to antenatal care behavior. This suggests that pregnancy care intentions have an important role in determining pregnancy care behavior.

The results showed that healthcare providers support did not have a significant effect on antenatal care intentions, with a coefficient of 0.111. Although it is expected that health provider support can motivate pregnant women to increase their intention to attend antenatal care, the results of this study show that the effect is not significant enough. In Pidie District, Aceh, factors such as limited health resources and uneven quality of services may have affected the effectiveness of health worker support. The state of the health infrastructure in this area may limit the ability of health workers to provide optimal support, thereby reducing the potential impact of such support on antenatal care intentions. In addition, ineffective communication between health workers and pregnant women and lack of adequate information about antenatal care may also reduce the positive impact of the support provided. Therefore, although health worker support is important, contextual and operational factors in Pidie District may significantly limit its impact on antenatal care intentions.

Family support had a significant and positive effect on antenatal care intentions with a coefficient of 0.437. The positive coefficient indicates that the higher the level of family support, the higher the level of antenatal care intention. Strong family support can provide pregnant women's physical health through sport activities during pregnancy women with a sense of security and comfort, thus increasing their motivation and intention to have regular antenatal care (Bernal & Moledo, 2022). The presence of instrumental, appraisal, emotional and informational support makes pregnant women feel more loved, appreciated and supported, which in turn increases the intention to use antenatal care to improve the health of the pregnancy and the fetus. The provision of family-centered care, as desired by patients and their families, has the potential to enhance pregnant women's and their families' understanding of the processes of pregnancy, labor, postpartum and infant care (Aisyah et al., 2024).The findings of this study are in line with the research by Alburuda & Damayanti, (2019), they state that family support makes an important contribution to increasing antenatal care intentions among pregnant women. Family support has been shown to increase pregnant women's commitment to attend the pregnancy care program, reduce anxiety and increase compliance with medical advice (Hawkins et al., 2021). Family support can be a motivating factor for pregnant women to be more proactive in their antenatal care (Vica et al., 2022). In addition, other research also states the importance of family support in influencing antenatal care intentions in relation to the provision of pregnancy-related information (Delgado et al., 2024). Family support not only influences antenatal care intentions, but also contributes to health care decision-making (Desti, 2023). Increased family support can reduce stress and increase pregnant women's adherence to care appointments (Hawkins et al., 2021).

Peer support did not show a significant relationship with antenatal care intentions, with a coefficient of 0.027. Although the coefficient was positive, meaning that greater peer support should increase antenatal care intentions, this relationship was not statistically significant. While in theory peer support may influence by providing shared experiences and social motivation (Chang et al., 2022). But in this study did not find such an influence to be significant. Peer support often involves sharing personal experiences and information, which can help pregnant women feel more prepared and possibly less alone (McLeish & Redshaw, 2015). However, in this study, peer support may not have been sufficient to significantly influence antenatal care intentions, which could be due to differences in the quality or consistency of peer support compared to family or health professional support.

The results also showed that distance did not have a significant relationship with antenatal care intention, with a coefficient of -0.032. Negative coefficient indicates that the greater the distance, the lower antenatal care intention, although this relationship was not statistically significant. The distance to health facilities is generally expected to influence antenatal care intentions, the results of this study show that physical distance does not have a significant direct effect on these intentions. In Pidie District,

Aceh, geographical conditions and transport infrastructure may influence how pregnant women access health services. Although the distance may be a factor, pregnant women in the area can overcome the challenge of distance in a number of ways, such as using available transport or getting help from family or other community members. In Pidie District, social support and access to information may be a greater role in increasing antenatal care intentions, reducing the impact of distance as a major factor (Fitraniar et al., 2022).

Discussion

Quality of service by health care providers shows a significant relationship with the antenatal care intention, coefficient 0.208. The coefficient is positive, which means that the higher quality of service, the higher antenatal care intention. In Pidie, the quality of service by healthcare providers is very important, it can provide the accurate information and practical advice that pregnant women need to make decisions about pregnancy care. In areas, where resources are limited and health infrastructure may not be optimal, the presence of qualified health care providers can have a positive impact. Responsiveness support from healthcare providers in Pidie District can increase pregnant women's physical health through sport activities during pregnancy and motivate to carry out antenatal care programs. Thus, the high quality of service is an important factor in increasing antenatal care intentions in the region. The findings of this study are consistent with the study by Salma et al., (2021) they state that quality of service by health care providers had a significant effect on antenatal care intentions (Drigo et al., 2020). Good quality can create an impression of satisfaction with healthcare services, and vice versa. Furthermore, several studies also state that positive interactions between pregnant women and health care providers, can increase antenatal care intention (Belachew et al., 2023). Quality of service contributed to antenatal care intentions through increased pregnant women's physical health through sport activities during pregnancy and play a role in strengthening pregnant women's intentions to attend regular antenatal care (Bonita et al., 2020).

Subsequently, Delgado et al., (2024) stated that healthcare providers who provide consistent support and intensive monitoring can increase antenatal care intentions. This study shows that healthcare providers who are proactive in providing information and support tend to make pregnant women feel more committed to antenatal care (Drigo et al., 2020). And more recently, Agbi et al., (2023) found that positive experiences with healthcare providers, including a personalized approach and attention to individual needs, can influence pregnancy care intentions. Support and quality care from healthcare providers are important in increasing pregnant women's motivation to maintain their health during pregnancy (Agbi et al., 2023).

Antenatal care intention has a significant effect on antenatal care behavior with a coefficient of 0.471. The positive coefficient indicates that the higher the antenatal care intention, the better the antenatal care behavior. Pregnant women with high intentions tend to be more motivated to attend antenatal care, even though they may face various barriers such as distance or limited resources. High antenatal care intentions act as the main motivating factor for attending antenatal care (Panjaitan et al., 2019). Din et al., (2022) also found that antenatal care intentions play an important role in determining the level of antenatal care compliance, pregnant women with high antenatal care intentions will show good antenatal care behaviors. A study by Mukti et al., (2023) found that antenatal care intentions directly influence antenatal care behavior through individual motivation and commitment. This study highlighted that strong intentions can motivate pregnant women to be more disciplined in following the care plan and paying attention to their health during pregnancy (Mukti et al., 2023).

Conclusions

There are only two variables that have a significant relationship with antenatal care intentions, which are quality of service and family support. Family support had a more dominant and significant influence on antenatal care intentions. In addition, antenatal care intention also had a significant effect on antenatal care behavior. Social support, distance, and service quality collectively contributed 22.2% to ante-

natal care intentions. Combined with antenatal care intention, the contribution to antenatal care behavior was 44.3%. This study highlighted the importance of family support in increasing antenatal care intentions, and showed that antenatal care intentions were important in influencing antenatal care behavior on pregnant women's physical health through sport activities during pregnancy.

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