



BRIDGING THE KNOWLEDGE GAP: A COMPARATIVE STUDY OF COUNSELING METHODS FOR ANTENATAL CARE IN PREGNANT WOMEN

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Abstract

Introduction: Knowledge of Antenatal Care (ANC) is crucial for the health of pregnant women and their unborn children. **Objectives:** This study compares the effectiveness of counselling alone versus a combination of counselling and video education on pregnant women's knowledge of integrated ANC at Puskesmas Sekardangan Sidoarjo. **Methods:** Using a quasi-experimental design with two post-tests only groups, 40 pregnant women were divided into two groups of 20. The control group received counselling, while the intervention group received both counselling and educational videos on ANC. ANC knowledge questionnaires were completed post-intervention and analyzed using the Mann-Whitney test. **Results:** Results indicated that 65% of the control group had poor knowledge levels, compared to 45% of the intervention group with good knowledge levels. There was a significant increase in knowledge in both groups, with a Z count of -3.525 and a significance value of $p = 0.000$, showing a significant difference between the groups. **Conclusion:** The study concludes that combining educational videos with counselling is more effective in enhancing pregnant women's knowledge about ANC than counselling alone. Health facilities are recommended to integrate educational videos into ANC counselling programs, with further research needed to explore technology in health education.

Keywords: Antenatal Care (ANC), Counseling, Educational Videos, Pregnant Women's Knowledge, Puskesmas Sekardangan Sidoarjo.

Introduction

The growth and development of the foetus in the womb is a critical period in an individual's life, with the health of the pregnant woman and the well-being of the foetus largely dependent on appropriate and quality antenatal care (ANC) (Geneva, 2016). The Indonesian Ministry of Health asserts that ANC services should include a minimum of six antenatal check-ups, including two ultrasound examinations by a doctor, for early detection of risk factors and complications of pregnancy. In 2022, the national maternal health service reached 86.2%, which is still below the RPJMN target of 90% (Kemenkes RI, 2023). Previous studies have shown an association between ANC frequency and neonatal mortality and obstetric complications, emphasising the importance of good education for pregnant women (Nasrun, 2017; Sam, 2021). However, challenges in improving pregnant women's knowledge about ANC still exist, with studies showing that most pregnant women have inadequate knowledge about ANC (Ningsih et al., 2022; Adiesti, 2018; Retnowati, 2022).

Knowledge gaps among pregnant women regarding ANC are still prevalent. Patel et al. (2016) found that only about 58% of women had adequate knowledge about ANC, with variables such as age, education, employment, and socioeconomic status significantly associated with their knowledge. Other factors such as low accessibility of information and lack of social support also hinder the

improvement of pregnant women's knowledge (Veronika et al., 2022). Although antenatal counselling and educational videos have been shown to be effective in improving knowledge (Safitri et al., 2021; Hajar, 2023), it is unclear how the effect of counselling alone and the combination of counselling with educational videos compare. This study aims to compare the two methods, with the hope of providing greater insight into the optimal way to provide information and support to pregnant women and to inform the development of more effective health education strategies.

This study aims to identify the knowledge of pregnant women about integrated Antenatal Care (ANC) in the control group who were only given counselling. Additionally, the study seeks to identify the knowledge of pregnant women about integrated ANC in the group that received both video education and counselling. Furthermore, the research will analyze the difference in knowledge between the group given video education and counselling and the control group. Through this analysis, the study aims to gain a deeper understanding of the effectiveness of these educational methods in enhancing pregnant women's knowledge about integrated ANC.

Methods

This study employs a quasi-experimental design using a post-test only with non-equivalent groups method to investigate the causal relationship of providing video education and counselling on pregnant women's knowledge about integrated Antenatal Care (ANC) at Sekardangan Community Health Center in Sidoarjo. The research aims to discern the effectiveness of these interventions in enhancing understanding of ANC among pregnant women.

The population includes all pregnant women attending Sekardangan Community Health Center in February 2024, while the sample consists of those meeting inclusion criteria: attending prenatal care at the health center or prenatal classes, willing to participate in the study, and in any trimester of pregnancy. A total of 40 participants are targeted, with 20 allocated to the intervention group and 20 to the control group, sampled using the compare two proportions technique.

Data will be primarily sourced from a questionnaire assessing knowledge about integrated ANC, comprising 20 closed-ended questions on ANC definitions, objectives, benefits, visit schedules, and procedures. Validity will be ensured using the product moment method, while reliability will be assessed via Cronbach's alpha coefficient. After calculating with the validity test, r count is greater than r table, then the questionnaire is valid. then the reliability test was carried out, obtained r count (Cronbach alpha) $>$ r table = Reliable (Consistent), which is 0.865 (high reliability).

The intervention involves providing video education alongside counselling to the intervention group, while the control group receives counselling alone. Subsequently, both groups will complete the questionnaire to gauge their understanding.

All procedures were approved and under the supervision of the Health Research Ethics Commission (KEPK) of the Faculty of Medicine, Universitas Airlangga, as stated in the Certificate of Ethical Completeness, No. 67/EC/KEPK/FKUA/2024.

Data analysis will employ the Mann-Whitney U test to determine differences in knowledge between the intervention and control groups. This study aims to contribute insights into optimizing maternal health education strategies, potentially leading to improved health outcomes for mothers and infants alike.

Results

The results of this study involved 40 respondents with various characteristics who met the inclusion criteria in this study. This test will describe the characteristics of respondents consisting of age, education level, employment status, number of gravid, husband's age, husband's education level, husband's employment status, knowledge level of pregnant women who were given counselling and those who were given counselling and video. To analyse the characteristics of respondents, the following distribution table was used:

Table 1. Characteristics of research respondents

Characteristics		Control Group		Intervention Group	
		f	%	f	%
Mother's age (years)	Age 20-35	20	100	17	85
	Age 36-40	0	0	3	15
Mother's Education	Primary School	0	0	2	10
	Junior High School	3	15	2	10
	Senior High School	13	65	7	35
	D3/S1	4	20	9	45
Mother's Occupation	Housewife	16	80	8	40
	Private Employee	4	20	6	30
	Teacher/Lecturer	0	0	3	15
	CIVIL SERVANT/ASN/POL RI	0	0	3	15
	Number of Gravid	1	11	55	6
	2	8	40	8	40
	3	1	5	2	10
	4	0	0	3	15
	5	0	0	1	5
Husband's age (years)	Age 20-25	3	15	1	5
	Age 26-35	15	75	14	70
	Age >36	2	10	5	25
Husband's education	Primary School	0	0	2	10
	Junior High School	0	0	1	5
	Senior High School	14	70	8	40
	D3/S1	6	30	8	40
	S2/S3	0	0	1	5
Husband's Occupation	Self-employed	3	15	3	15
	Private employee	15	75	12	60
	CIVIL SERVANT/ASN/POL RI	2	10	3	15
	Not working	0	0	2	10

This study involved 40 pregnant women with an age range of 21-40 years. The majority of respondents were aged 20-35 years, especially in the intervention group (85%). The education level of

the respondents varied, with the control group dominated by high school graduates (65%) and the intervention group dominated by D3 / S1 graduates (45%).

Most respondents were housewives, both in the control group (80%) and intervention group (40%). In the control group, the majority of respondents were pregnant with their first child (55%), while in the intervention group, most respondents were pregnant with their second child (40%).

The age of the respondents' husbands was mostly in the productive age range of 26-35 years, both in the control group (75%) and intervention group (70%). Husbands' education levels also varied, with the control group dominated by high school graduates (70%) and the intervention group having a balanced proportion of high school and D3/S1 graduates (40% each). The most common occupation of husbands was private sector employee, both in the control group (75%) and intervention group (60%).

Table 2. Pregnant women's knowledge about integrated ANC (Post-test results)

Knowledge Level	Control Group	Intervention Group
Poor	13 (65%)	4 (20%)
Fair	7 (35%)	7 (35%)
Good	0 (0%)	9 (45%)
Total	20 (100%)	20 (100%)

The level of knowledge of pregnant women about integrated ANC in the control group was mostly in the "poor" category (65%), while in the intervention group most were in the "good" category (45%).

The Mann-Whitney test showed a significant difference between the control group and the intervention group in terms of knowledge about ANC (p -value = 0.000). The mean knowledge rating in the intervention group (26.58) was higher than the control group (14.43).

Discussion

This study found that the level of knowledge of pregnant women about integrated ANC in the control group who only received counselling was still insufficient. This indicates that counselling alone was not effective in improving their knowledge. This low level of knowledge could be due to several factors, including the lack of strong behavioural models and adequate reinforcement in the counselling process (Bandura, 1986), as well as the limitations of counselling in activating other sensory channels besides verbal. In addition, the reality of basic health facilities, which often rely on counselling as the only educational method, also contributes to the low level of knowledge of pregnant women (Noviyanti & Hidayati, 2019; Setyowati & Kusumawati, 2021).

On the other hand, the intervention group that received both counselling and educational videos showed better knowledge levels. The combination of these two methods was more effective because the educational video provided a richer and more interesting learning experience, making it easier for pregnant women to understand and remember the information. This is in line with Mayer's (2014) multimedia learning theory that emphasises the importance of visual and auditory combinations in improving understanding and retention of information.

Statistical analysis using the Mann-Whitney test also showed a significant difference between the intervention and control groups. This finding further strengthens the argument that the addition of educational videos in the intervention has a significant impact in improving the knowledge of pregnant women. This difference can be explained through Sweller's (1994) cognitive load theory,

where educational videos help reduce the cognitive load of pregnant women so that they can focus more on understanding the material. In addition, interesting and interactive educational videos can increase pregnant women's motivation and interest in learning (Thomas et al., 2020). This is in line with research conducted by Sulaiman, et al in 2021 on health education videos, which showed that videos can be an effective tool in improving health knowledge, attitudes and behaviours in various population groups, including pregnant women.

The results of this study are in line with previous studies that show the effectiveness of audiovisual media in improving understanding and retention of health information, such as research by Kim et al. (2019) and Anderson et al. (2021). These findings have important implications for healthcare providers to consider integrating educational videos in their counselling programmes, as well as for health policy makers to support the use of multimedia technology in health education.

This study also highlights the importance of using varied learning media in improving the effectiveness of health education for pregnant women. This finding supports Setyowati & Kusumawati's (2021) research which shows that the use of varied learning media can increase the effectiveness of health education for pregnant women. Educational videos, as a form of learning media, are proven to be able to overcome the limitations of counselling in terms of delivering information that is consistent, structured, and can be repeated as needed.

Furthermore, this study also found that increasing the knowledge of pregnant women through educational videos can have a significant positive impact on ANC (Antenatal Care), such as increased adherence to pregnancy checks, the ability to recognise pregnancy danger signs, readiness for childbirth and caring for babies, and the ability to make the right decisions related to maternal and infant health. This is in line with WHO (2016) and ACOG (2018) recommendations on the importance of health education and access to accurate health information for pregnant women.

Nonetheless, this study has some limitations. The time limitation of the study hindered the evaluation of the long-term effects of the intervention. In addition, the variability of individual responses to the educational video material and the level of engagement of pregnant women while watching the video may also affect the results of the study. Therefore, further research is needed to explore how different types of media and video content can be further optimised for health education, as well as to assess the long-term effects of using educational videos on pregnant women's health behaviours and pregnancy outcomes.

Conclusion

This study identified a significant difference in the level of knowledge of pregnant women about integrated ANC between the group that received only standard counselling and the group that received a combination of counselling and educational videos. The results showed that the combined intervention effectively improved pregnant women's knowledge about integrated ANC. This finding underscores the importance of using audiovisual media, such as educational videos, as a tool in ANC counselling programmes. Educational videos not only enhance the information conveyed, but also increase pregnant women's interest and understanding of ANC materials.

Improving pregnant women's knowledge about integrated ANC has positive implications for maternal and foetal health. Pregnant women who have adequate knowledge about ANC tend to be more compliant with the ANC visit schedule, better prepared for childbirth, and better able to recognise danger signs during pregnancy. This can contribute to a reduction in maternal and infant mortality, as well as an improvement in the quality of life of pregnant women and their babies.

Various parties, including health workers, educational institutions, and policy makers, can utilise the results of this study to improve the quality of ANC services. Puskesmas and other health facilities can consider integrating educational videos into their ANC counselling programmes.

Educational institutions can include materials on the use of audiovisual media in their curricula to prepare future health workers with relevant skills. Policymakers can develop guidelines and standards that support the use of technology in maternal and child health services.

Further research is needed to explore the long-term effects of using educational videos in ANC counselling and to identify the most effective implementation strategies. In addition, research could also investigate how social and cultural factors influence the effectiveness of this intervention. Thus, this study makes an important contribution to the development of more effective and evidence-based ANC programmes and opens up opportunities for further research to improve maternal and child health.

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