Preconception Health Education is Provided to Healthy Childbearing Couples in The Preconception Phase

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Abstract

Several biological, behavioral, and social preventative strategies can improve the chances of having a healthy baby during pregnancy. Preconception health care spans the entire reproductive life cycle. Early preconception counseling should attempt to improve both women's and men's sexual and reproductive health. It should begin with early instruction on healthy lifestyle behaviors, safe sex, and pregnancy planning for childbearing couples. This research aims to develop preconception health education for family-based childbearing age couples planning a healthy pregnancy in Deli Serdang district. The Equivalent Time Series Samples approach was employed in this study as a quasi-experimental approach. The total sample size was 90 couples of reproductive age. The analysis in this study was carried out descriptively to see the characteristics of each variable studied and to measure the effect of providing health education during the preconception period on the knowledge and perception of Couples of Childbearing Age about preconception health using a paired sample T test. The intervention provided is health education about preconception health provided to couples of childbearing age. The implementation of the research has received approval from the Health Research Ethics Committee of the Medan Health Polytechnic with the number: 01.25.174 /KEPK/POLTEKKES KEMENKES MEDAN 2023. There is a difference in the average variable knowledge of couples of childbearing age at pretest and posttest with an increase of 5, 2778, and there is also an increase in the perception variable with an increase of 0.8889, and the results of statistical tests using the Paired Samples Test obtained show differences in respondents' knowledge and perceptions before and after the intervention. Family-based preconception health education has been effective in raising the awareness and attitudes of childbearing couples regarding the planning and preparation of a healthy pregnancy as well as in motivating them to seek a check-up at a health care facility.

Keywords: Health Behavior, Health Services, Preconception Care, Pregnancy

INTRODUCTION

The family plays a role in optimizing the growth, development, and productivity of all its members through fulfilling nutritional needs and ensuring the health of family members. Within the family component, mothers and children are vulnerable groups. This is related to the phases of pregnancy, childbirth and postpartum in mothers and the growth and development phase in children. This is the reason why maternal and child health efforts are one of the priorities of health development in Indonesia (Kemenkes RI, 2022).

Since having healthy children, a healthy reproductive life, and a happy family are all dependent on reproductive health, everyone has the right to enjoy it. In low- and middle-income nations, women experience disproportionately high rates of unintended pregnancies, maternal mortality, disability, STIs (including HIV), gender-based violence, and other issues pertaining to their reproductive systems and partners' sexual behavior. Expanding the availability of

maternal health services by addressing pre-pregnancy health risks and conditions is thought to be a potential way to reduce unnecessary mother and infant mortality, as many bad health outcomes have their roots in the preconception period (World Health Organization, 2014).

Preconception health services are included in the Primary Prevention stage, namely health promotion and specific protection. Preconception health services have three target groups including; adolescents, prospective brides, and couples of childbearing age with priority on the perspective of promotive and preventive services through early identification and educational information communication. Preconception health services aim for the three target groups to carry out healthy living behaviors, conduct early detection of diseases and risk factors that can affect their reproductive health, and get intervention as early as possible if risk factors are found with the hope that each couple can prepare for optimal health in order to realize healthy and quality human resources and generations (Kemenkes, 2014).

In recent years, there has been a greater emphasis on the relevance of preconception care in reducing neonatal and birth problems. Research has demonstrated that an individual's health and lifestyle choices prior to conception have a considerable impact on their offspring's health outcomes. Preconception care can lower the prevalence of numerous neonatal and birth diseases by addressing modifiable risk factors and delivering tailored therapies, resulting in healthier pregnancies and better long-term health outcomes for children (Khekade et al., 2023). Preconception health services can increase the likelihood of having a healthy baby through several biomedical, behavioral, and social preventive interventions. Reproductive health services start during adolescence (girls and boys) to be physically, psychologically and socially healthy (World Health, 2013).

The placental growth, energy partitioning, and epigenetic remodeling of fetal genes can all be impacted by the mother's nutritional state both before and after conception. Numerous diets frequently lack certain micronutrients that are crucial for brain development. For instance, enzymes involved in cell division, oxygen metabolism, myelination, synapse formation, and other brain processes all crucial for cognitive development need iron. Better nutrient reserves at conception and during pregnancy can therefore be achieved by micronutrient supplementation during the preconception period, leading to improved outcomes for the health of the mother and child (Nguyen et al., 2021). Ensuring that women approach pregnancy in good health is becoming increasingly vital, as around half of all women experience unwanted or unexpected pregnancies worldwide (Poix & Elmusharaf, 2023)

According to the findings of the Indonesian Health Survey conducted in 2023, 27.7% of pregnant women in Indonesia suffered from anemia. 18.9% of pregnant women reported

having problems such as vomiting, amniotic discharge, hemorrhage, chest pain, and hypertension, while 16.9% of pregnant women had Chronic Energy Deficiency (CHD) (BPS, 2023)..

In the Health Profile of Deli Serdang Regency in 2022, the number of maternal deaths was 16 cases per 42,363 live births, this number has decreased from 23 cases of 41,886 live births in 2021. Most maternal death cases occur during the post partum period. The most common causes of maternal death were haemorrhage with 6 cases, hypertension with 5 cases, and other causes with 5 cases (Dinas Kesehatan Deli Serdang, 2023).

This study is to measure the effect of preconception health education on the knowledge and perceptions of childbearing age couples so as to form a healthy family of childbearing age couples in the preconception period to prepare for a healthy pregnancy in Deli Serdang Regency.

METHODS

This study used a quasi-experimental design with a non-equivalent group design, in which observations of the variables studied were made before and after treatment in both the intervention group and the control group. The research location was in Deli Tua sub-districts, Deli Serdang Regency, and the research period was from August to October 2023. The population in this study were couples of childbearing age who planned to become pregnant in at least the next 3 (three) to 6 (six) months in Deli Tua sub-districts, Deli Serdang Regency. The total sample size was 90 couples of reproductive age. Sampling was carried out using the purposive sampling method, sampling based on considerations made by the researcher on the basis of previously known characteristics or attributes of the population.

Measurement of knowledge and perceptions of respondents was measured using a questionnaire as a pre-test given to respondents before the intervention and post-test given after the intervention. Intervention in the form of preconception health education which contains material about reproductive health and health preparation in the preconception period. Educational interventions were given to respondents using lecture and brainstorming methods and were conducted twice, with an interval of 1 week between sessions. Preconception health education can help create a healthy family during the preconception period, which is characterized by the behavior of the childbearing age couple to check their health at medical facilities. It can also affect the knowledge and perception of the childbearing age couple about the health of the preconception period.

The data from the pre-test and posttest results were analyzed descriptively to see the characteristics of each variable studied and then presented in a frequency distribution table. To measure the effect of preconception health education on the knowledge and perceptions of childbearing age couples about preconception health, an analysis was carried out using the paired sample T test.

This research has received approval from the Chairperson of the Health Research Ethics Commission of the Health Polytechnic of the Ministry of Health Medan with number: 01.25.174/KEPK/Poltekkes Kemenkes Medan/2023.

RESULTS

The results of research on preconception health education in family-based childbearing age couples in Deli Tua sub-district, Deli Serdang Regency, obtained the following results:

1. Characteristics and Sociodemographics of Respondents

Table 1. Characteristics and Sociodemographics of Couples of Childbearing Age

Variable	Categori	Frequency	%
Age of Respondents	20-35 years	64	71.1
	>35 years	26	28.9
Marriageable Age	< 20 years	11	12.2
	> 20 years	79	87.8
Number of desired children	1 – 3 children	80	88.9
	> 3 children	10	11.1
Number of children alive	1-3 children	85	94.4
	>3 children	5	5.6
Education	Lower Education	17	18.9
	Secondary Education	71	78.9
	Higher Education	2	2.2
Work	Housewives	82	91.1
	Civil Servant	3	3.3
	Self employed	4	4.4
	Employee	1	1.1
Religion	Islam	89	98.9
	Katolik	1	1.1
Tribe	Javanese	71	78.9
	Karo	7	7.8
	Batak	5	5.6
	Mandailing	7	7.8
Getting Preconception Info	Ever	68	75.6
	Never	22	24.4

Table 1 shows that the majority of respondents were in a healthy reproductive age; based on age at marriage, 12.2% of respondents were married at a high risk age of <20 years; based on level of education, 18.9% of respondents had a low level of education; based on occupation, 91.1% of respondents were housewives and 24.4% had never received information on preconception.

2. Average Knowledge and Perception of Preconception Health of Couples of Childbearing Age Before and After Preconception Health Education

Table 2. Average Knowledge and Perception of Preconception Health of Respondents Before and After Preconception Health Education

Variable	Mean	SD	Minimum	Maximum
Pre-test Knowledge	78,0000	13,08572	60	100
Post-test Knowledge	83,2778	10,19917	50	100
Pre-test Perception	78,6111	10,73239	50	100
Post-test Perception	79,5000	14,06346	50	100

Based on the information presented in Table 2, there is a difference in the average knowledge between the pretest and posttest in the intervention group with an increase of 5.2778 and in the perception variable there was also an increase of 0.8889.

3. Differences in Knowledge and Perception of Preconception Health of Couples of Childbearing Age

Table 3. Test Differences in Knowledge and Perception of Preconception Health of Couples of Childbearing Age Intervention Group with *Paired Samples Test*

Variabel	Paired Differences					t	df	Sig (two-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pre-test Knowledge Post-test Knowledge	-6.66667	11.53889	1.21631	-9.08344	-4.24989	-5.481	89	<.001
Pre-test Perception Post-test Perception	-7.27778	15.32716	1.61562	-10.48799	-4.06757	-4.505	89	<.001

From the data in table 8, it can be seen that based on the results of statistical tests using the Paired Samples Test. There is a difference in the average variable knowledge of couples of childbearing age at pretest and posttest with an increase of 5, 2778, and there is also an increase in the perception variable with an increase of 0.8889, and the results of statistical tests using the Paired Samples Test obtained show differences in respondents' knowledge and perceptions before and after the intervention.

DISCUSSION

The results of this study are consistent with Hussein's (2016) research that women who receive preconception health education and counseling will be more likely to improve their knowledge and positive health behaviors. Interventions involving multifactor reproductive

health risks are a priority strategy in primary prevention (Hussein et al., 2016). The importance of providing health education and health promotion for women to increase their level of knowledge about preconception health care (Teshome et al., 2020).

Changing women's beliefs and attitudes about the impact of their own abilities and actions on pregnancy outcomes can be effective in improving their health-promoting behaviours and may help to expand the development and evaluation of preconception health programmes to improve their attitudes. Preconception counselling programmes should consider strengthening women's internal beliefs, with an emphasis on the effects of partner behaviour and attention on pregnancy and fetal outcomes (Mirghafourvand et al., 2019).

Knowledge of preconception health was both an enabler and a barrier for engaging in health behaviors, according to a systematic analysis of 42 quantitative and qualitative research examining the obstacles and facilitators to women's preconception health behaviors (Kandel et al., 2021). There was talk of the challenges women in Australia who had received instruction on sexual and reproductive health faced when trying to have further conversations with elderly family members (Lang et al., 2020).

The research findings showed that women's knowledge about preconception health care was low. Factors affecting women's knowledge of preconception health care were the educational status of the woman and her husband, pregnancy planning status, follow-up for medical illnesses and frequency of prenatal visits. Cultural, individual, societal, and psychological aspects should be addressed in behavior change treatments intended to help people optimize their health before conception in order to enable behavior change (Welshman et al., 2023).

Most respondents went to health services after receiving preconception health education increased knowledge among mothers will place greater value on the perception of preconception health preparation. This suggests the need to increase the knowledge of women of childbearing age about the need for preconception health preparation. Lack of knowledge about preconception health care may be caused by a lack of continuous information from both health professionals and other media sources. (Linda et al., 2021).

Enhancing health professionals' knowledge and abilities is crucial to the effective execution of preconception care. The goal of educational programs should be to increase public knowledge of preconception care. Training healthcare professionals on the most recent advancements in preconception care can be accomplished through the use of internet resources, workshops, conferences, and continuing education programs. Giving medical professionals the

right information and abilities will enable them to help patients and provide preconception care services in an efficient manner (Khekade et al., 2023).

CONCLUSION

Family-based preconception health education has been effective in raising the awareness and attitudes of childbearing couples regarding the planning and preparation of a healthy pregnancy as well as in motivating them to seek a check-up at a health care facility.

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