

Screening Education Premarital With Behavior Preparation Pregnancy; Literature Review

Hikma^{1*}

¹ Midwifery Study Program, Muhammadiyah University of Palopo, South Sulawesi, Indonesia

Corresponding Author Email: hikmasita@gmail.com

Abstract

Premarital screening educational programs with pregnancy preparation behavior play an important role in equipping couples who are getting married with the knowledge, skills and support needed to understand and face the role of parenthood better. Objective: to analyze the relationship between premarital screening education and pregnancy preparation behavior. Method: This research is a literature review which aims to explore more information regarding matters related to premarital screening education and pregnancy preparation behavior. This study uses inclusion and exclusion criteria to select data to be included in the analysis. The data search process was carried out using related keywords, such as "education", premarital screening, "behavior" and "pregnancy preparation". The search time range includes research published in the last 10 years (2013-2023). Researchers collected and analyzed relevant articles from various literature sources. Data sources used in this research include databases such as Scencedirect, Pubmed and Google Scholar. The importance of maintaining health by eating nutritious food, maintaining a healthy body weight, doing regular physical activity, and ensuring that your health is good before pregnancy. With healthy preconception behaviors, the risk of spina bifida and other health problems in the fetus can be reduced, and the chances of having a healthy baby can be increased.

Keywords: Education; Pregnancy; Premarital; Screening.

1. Introduction

The preconception period is an important time period in pregnancy planning because health and physical conditions can affect the health of the baby to be born . The preconception time spans from three months to one year before conception , an opportunity for couples to prepare themselves physically and emotionally before becoming pregnant . Therefore, the importance of lifestyle and healthy habits can influence the quality of sperm and eggs [1] .

The preconception period provides an opportunity to change unhealthy behaviors; women exposed to the intervention were more likely to seek preconception health information and consult a health care provider regarding their desire to become pregnant. [2] . Preconception care requires interventions both before and between pregnancies to improve maternal and infant health [3] .

To improve preconception health, preconception screening can be done. Preconception screening, including reducing maternal and infant deaths, preventing unintended pregnancies, and preventing birth defects and infections , improves maternal and infant health by preventing complications during pregnancy and delivery [4], [5] . Minister of Health Regulation No. 97 of 2014 concerning health services during pre-pregnancy, pregnancy, childbirth and the post-natal period, the provision of contraceptive services and sexual health services [6] . Pregnancy preparation aims to prevent unwanted things. Some of these include fetal defects and recurrent miscarriages. According to the Centers for Disease Control and

Prevention (CDC), preconception health and health care need to be carefully prepared before the pregnancy program. Prospective married couples are advised to ensure their health condition before entering into marriage, especially if they want to have children immediately after marriage.

Preconception women, including prospective brides, are vulnerable to nutritional problems such as Chronic Energy Deficiency (CED) and anemia, which can affect pregnancy. The impact of anemia is very significant on maternal and fetal health, including maternal and infant mortality [7] . Likewise with women pregnant with CED is at risk of Low Birth Weight (LBW) [8] . Comprehensive health screenings, marriage counseling programs, and detailed reproductive health education to support healthy pregnancy planning among adolescent girls who intend to marry at a young age . Information from health workers during premarital health checks and via the internet [9] .

Preconception screening is an important thing to do before becoming pregnant. Research results show that age, place of residence, profession and attitude are related to the decision to carry out preconception screening [10] . Candidate awareness is still low the bride undergoes a health screening . Preconception screening services for prospective brides and grooms are services provided for prospective brides and grooms [11] . Therefore, the provision of IEC is effective in increasing reproductive health knowledge in preparation for marriage and pregnancy , so that prospective candidates the bride and groom have good knowledge after receiving IEC [12] .

Provider health services can provide appropriate education to all women planning pregnancy, especially those with chronic medical conditions . Application Healthy preconception behavior can help reduce the risk of spina bifida and other health problems in the fetus and increase the chances of having a healthy baby. Adequate intake of folic acid, avoiding alcohol consumption before and during pregnancy, and limiting consumption of harmful substances are essential to prevent the risk of spina bifida and congenital malformations in the fetus [13] , [14] .

Several studies show that there is a relationship between premarital screening education and pregnancy preparation behavior. Therefore, this study aims to analyze the relationship between prospective bride and groom screening education and pregnancy preparation behavior

2. Method

Literature searches were carried out by accessing online electronic databases from Google Scholar , ScienDirect, and Pubmed. Other sources such as textbooks and National Health Reports, Theses and Dissertations are also used. At the start of the database search using inclusion criteria, namely journals and articles that researched premarital screening and pregnancy preparation behavior. Then use the exclusion criteria by looking at the time of publication in the year 2013-2023 . Each of these keywords is "education on prospective bride and groom screening, pregnancy preparation behavior" from other sources related to the study topic . The journal that has been obtained is entered into the Mendeley application. Next, create a matrix and synthesize the information from the sources that have been obtained and create a literature review.

3.1. Results

From The results of a literature search using a systematic literature review found 53 journals and articles with the keywords education, bride and groom, pregnancy, screening . Then using exclusion criteria by looking at the time of publication and suitability of the research, 300 pieces of literature were obtained.

In the final stage, an assessment is carried out by deleting journals that have the same title and author , incomplete text and verifying research results such as sample adequacy, anticipated bias, comparison groups, and suitability of statistical tests from the literature list. The author obtained 10 pieces of literature with full text and in accordance with established criteria .

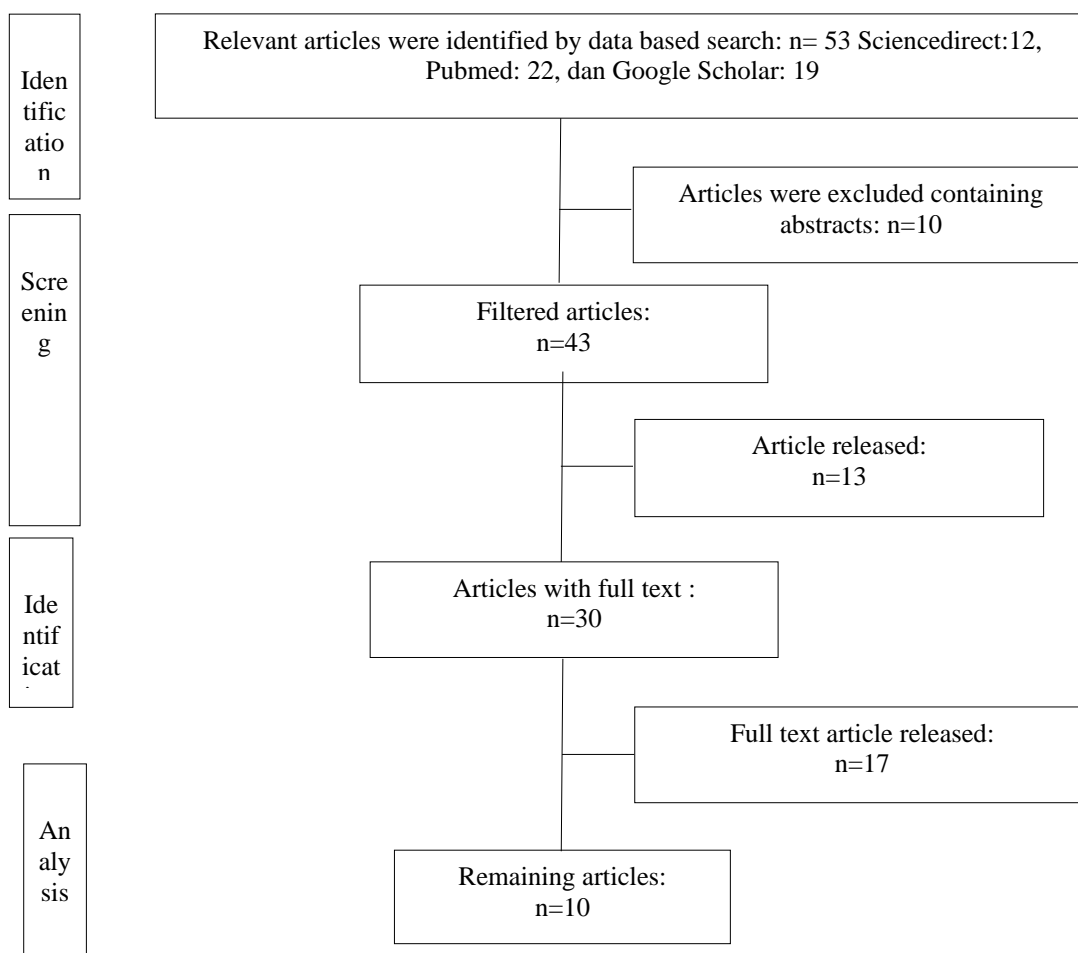


Figure 1 PRISMA Flowchart

3.2. Discussion

Review of educational articles on premarital screening with pregnancy preparation behavior is an educational program designed to provide knowledge, skills and support to couples who are getting married so that they can understand and face their role as parents better . The following are some research results that became a reference in this research.

Table 1 Literature Findings

No	Author/Journal/Title	Method	Study Outcomes
1.	July Oktalia, Herizasyam/ Journal of Health Science and Technology / Maternal Readiness for Pregnancy and the Factors That Influence It	Cross Sectional	<p>There is a significant relationship between the factors of husband's education level, income of couples of childbearing age, mother's knowledge and level of exposure to information and mother's readiness to face pregnancy . (P value < 0.05).</p> <p>The results of the regression analysis found that the income of couples of childbearing age and exposure to information were the most dominant factors in influencing the mother's readiness to face pregnancy (P Value <0.05).</p>
2.	Tawanti, Ika et al/ Indonesian Journal of Midwifery Scientific / Factors Associated with the Behavior of Prospective Brides and Grooms Regarding the Implementation of Premarital Screening	Cross Sectional	<p>Most prospective brides and grooms have positive attitudes towards screening pre-wedding, namely 31 respondents (77.5 %).</p> <p>There are several factors related to The bride and groom's behavior regarding the implementation of premarital screening includes age with a p value = 0.020, education with a p value = 0.025, occupation with a p value = 0.032, knowledge with a p value = 0.034, attitude with a p value = 0.020, support family with p value = 0.044. (p-value < 0.05)</p>

3.	Utami, Kusniyati Setyawati, Irni Ariendha, Dian Soekmawaty Riezqi / Majapahit Hospital / Knowledge and Attitudes of Prospective Brides Regarding Pre-Wedding Health Preparations in Gunungsari District, West Lombok 2018	Cross Sectional	The 152 respondents, 40.8% of respondents had good attitudes, 47.4% had good knowledge
4.	Hartini, Isti / Journal of Health (JoH) / The Effect of Using Preconception E-Modules on Healthy Pregnancy Preparation Behavior in Women of Childbearing Age	Quasi experiment	There is an influence of using the preconception e-module on healthy pregnancy preparation behavior, showing that there is a difference in the mean pre-test and post-test behavior in the experimental group and the control group after being given treatment in both groups (P-Value). behavior improvement between the experimental group that was given the e-module and the control group that was given the leaflet. That the preconception e-module has more influence on the behavior of women of childbearing age in preparation for a healthy pregnancy.
5.	Sari et al/ Malang Journal of Midwifery (MAJORY) / the relationship between self-efficacy and preparation for a healthy pregnancy in prospective brides	Cross Sectional	There is a relationship between self-efficacy and preparation for a healthy pregnancy in prospective brides
6.	Setyawati, Irni. Handayani, Sri/ Qamarul Huda	Retrospective	Most respondents did not preparing for pregnancy and perceiving the need to consume

	Health Journal / Perceptions of Pregnant Women Regarding the Need for Folic Acid, Iron, and Calcium as Pregnancy Preparation in Mataram City and West Lombok Regency		folic acid and not consume iron. There is a significant difference in preparation for pregnancy between respondents who perceive the need to consume folic acid, iron and those who do not, while there is no difference in preparation for pregnancy between respondents who perceive the need to consume calcium and those who do not.
7.	De Wolf f et al/ Acta Obstet Gynecol Scand/ Degree of pregnancy planning and recommended pregnancy planning behavior among women with and without chronic medical conditions – A large hospital-based cross-sectional study	Cross Sectional	Women with chronic medical conditions were more likely to adhere to recommended planning behaviors;intake of folic acid, not drinking alcohol before pregnancy and not consuming alcoholic beverages in early pregnancy.
8.	Hall et al/ Lancet Public Health / Addressing reproductive health needs across the life course: an integrated, community-based model combining contraception and preconception care	Case study	This model emphasizes the importance of health before pregnancy and highlights the need for system-level training and support for health professionals who can provide these services.
9.	Anteneh Berhane and Tefera Belachew/ Clinical Nutrition Open Science / Effect of preconception pictured-based health education and	Trial design	This study will assess participants' pre-pregnancy nutritional status, including measurements of weight and height, as well as food intake using the Food Frequency Questionnaire (FFQ). Effects of preconception image-based health education and

	counseling on adherence to iron-folic acid supplementation to improve maternal pregnancy and birth outcomes among women who plan to become pregnant: “Randomized Control Trial”		counseling on adherence to iron folic acid supplementation and its impact on maternal pregnancy and birth outcomes among women planning to become pregnant.
10.	Priani et al/ 2019/ Enfermeria Clinica	Quasi experimental	Education Preconception can be used to increase knowledge related to preconception health in women before marriage who plan to have children immediately or postpone pregnancy after marriage.

The results of a literature review from 10 journals show that pregnancy planning in women with and without chronic medical conditions, and compliance with folic acid intake, and physical activity [13]. Self-efficacy influences a person's health behavior, including behavior in preparing for pregnancy during the preconception period. Pregnancy that is not properly prepared can trigger various problems in pregnancy and childbirth such as; CED, anemia, antepartum hemorrhage, and LBW. There is a moderate relationship between self-efficacy and preparation for a healthy pregnancy in prospective brides [15].

Income factors of couples of childbearing age and exposure to information are the most dominant factors in influencing the mother's readiness to face pregnancy (P Value <0.05) [16]. Complications during pregnancy can be caused by various factors, one of which is the lack of preparation for pregnancy before conception. Preparation pregnancy do not consume substances iron And perceived to consume only folic acid [17]. Knowledge and attitudes of prospective brides regarding pre-wedding health preparation from 152 respondents, respondents who had good attitudes were 40.8%, good knowledge was 47.4% [18]

Educational education preconception can increase preconception health knowledge in women before marriage who plan to have children immediately or postpone pregnancy after marriage. An interesting finding in this study was regarding the group intervention that took part in preconception education training. The increase in preconception nutritional knowledge was more significant than preconception physical health and lifestyle knowledge. One aspect that is increasing is knowledge about the benefits of folic acid. Before being given preconception education, most of the intervention group respondents (69.5%) knew the benefits of folic acid. However, after preconception education, all respondents (100%) identified the benefits of folic acid for reducing the risk of congenital defects in babies [19].

Model integrated community-based, namely contraception and preconception care to meet reproductive health needs. Importance pre-pregnancy health and the need for system-level training and support for health professionals who can provide services [20]. Giving

intervention in the form of education health through the media of WANDARZI smart modules that are interesting and easy to understand can improve or change premarital women's attitudes about nutrition and preventing CED during pregnancy. Health education interventions through the WANDARZI smart module have proven effective in improving or changing unmarried women's attitudes about nutrition and preventing chronic energy deficiency (CED) during pregnancy [21].

Use e-module preconceptions be an influence on healthy pregnancy preparation behavior in women of childbearing age [22]. In addition to educational media modules on preconception, there is a booklet. Premarital booklets are very suitable, practical and effective for use as information media in providing health services through counseling for prospective brides and grooms regarding preconception care and preparing for a healthy and safe pregnancy and birth [23]. This is in line with the results of research by Irawati et al, that there are differences in knowledge and attitudes towards catin reproductive health related to preventing pregnancy risks. In this study, although they both increased knowledge of reproductive health, the health education method using booklets increased knowledge of reproductive health for prospective brides and grooms compared to health education using the lecture method alone [24].

The effectiveness of preconception image-based health education and counseling on adherence to iron folic acid supplementation and its impact on maternal pregnancy and birth outcomes among women planning to become pregnant [25]. Flipchart media has been proven to be effective in increasing brides' knowledge and attitudes in preventing stunting [26]. Preconception counseling using KSPR is effective for women who undergo premarital health examinations. The application of KSPR as a counseling medium will increase knowledge about high-risk pregnancies that can be avoided [27]. There are significant differences in attitudes and motivation between groups given health education and those not given health education [28].

Giving counseling carried out three times a week had a significant effect ($p=0.001$) on increasing premarital women's knowledge and attitudes about preconception nutrition [29]. Digital education media innovations are managed for health workers, and there is direct virtual interaction, so that it is not one-way and can be accessed without being limited by space and time [30]. Most prospective brides and grooms have positive attitudes towards screening pre-wedding, namely 31 respondents (77.5%) [31].

4. Conclusion

From all the literature that has been reviewed, it can be concluded that premarital screening education with pregnancy preparation behavior is an educational program designed to provide knowledge, skills and support to couples who are getting married so that they can understand and face their role as parents better.

Premarital screening education has a significant impact on pregnancy preparation behavior. By getting the right education and information about premarital screening, couples can understand the importance of preparing themselves physically, emotionally and mentally before entering the pregnancy phase. Education Premarital screening is a health evaluation and can identify risk factors that may affect pregnancy, and seek treatment or counseling if

necessary. Understanding Better preparation for pregnancy can help reduce the risk of complications during pregnancy and delivery.

Education Premarital screening plays an important role in helping couples to make informed and responsible decisions about pregnancy, and to prepare well for their role as parents. With adequate knowledge, couples can take the necessary preventive steps to increase their chances of having a healthy and happy pregnancy, as well as reduce the risks that may arise during the pregnancy and birth process.

1. Pregnancy planning in women, both with and without chronic medical conditions, plays an important role in the health of mother and baby. Compliance with folic acid intake and physical activity are also important factors in preparing for pregnancy.
2. The level of self-efficacy influences behavior in preparing for pregnancy during the preconception period. Prospective brides who have high self-efficacy tend to be better prepared to face pregnancy well.
3. Factors such as the income of couples of childbearing age , exposure to information, knowledge and attitudes of the prospective bride and groom also influence the mother's readiness to face pregnancy.
4. Preconception education, both through intervention groups and smart module media, is effective in increasing knowledge and attitudes regarding preconception health in women before marriage.
5. The use of various media, such as e-modules, booklets, flipcharts, and preconception counseling, has proven effective in increasing the knowledge and attitudes of prospective brides regarding pregnancy preparation and reproductive health.
6. Counseling that is carried out intensively and repeatedly has a significant influence on increasing knowledge and attitudes regarding pregnancy preparation.
7. Digital educational media innovation can be an effective alternative in disseminating reproductive health information and pregnancy preparation, especially for health workers.

5. Reference

- [1] Susilawati and Kuspriyanto, *Nutrition in the Life Cycle* . Bandung: PT Refika Aditama, 2016.
- [2] M. Poels, HF van Stel, A. Franx, and MPH Koster, "The effect of a local promotional campaign on preconceptional lifestyle changes and the use of preconceptional care," *Eur. J. Contracept. Reprod. Heal. Care*, vol. 23, no. 1, pp. 38–44, 2018, doi: 10.1080/13625187.2018.1426744.
- [3] A. Goodfellow, J. Frank, J. Mcateer, and J. Rankin, "Improving preconceptions of health and care : a situation analysis," *BMC Health Serv. Res.* , pp. 1–8, 2017, doi: 10.1186/s12913-017-2544-1.
- [4] EV Yulivantina, M. Mufdlilah, and HF Kurniawati, "Implementation of Preconception Screening for Prospective Brides," *J. Health. Reproduction* , vol. 8, no. 1, pp. 47–53, 2021, doi: 10.22146/jkr.55481.
- [5] AN Azizah, "Analysis of Preconception Services for Prospective Brides in the Era of Adapting to New Habits of Covid-19," *J. Indonesian Midwifery.* , vol. 12, no. 2, pp. 74–82, 2021, [Online]. Available: <http://jurnal.unw.ac.id:1254/index.php/ijm/article/view/260/253>
- [6] Ministry of Health, "Regulation of the Minister of Health Number 97 of 2014 concerning Health Services for the Pre-Pregnancy Period, Pregnancy Period, Childbirth

- and the Post-Birth Period, Providing Contraception Services, and Sexual Health Services," *Article* . p. [cited 2018 Jan 7]; 3-8, 2014.
- [7] C. Fariski, FF Dieny, and HS Wijayanti, "Diet Quality, Nutritional Status and Anemia Status of Preconception Women Between Villages and Cities," *Gizi Indonesia* . , vol. 43, no. 1, p. 11, 2020, doi: 10.36457/gizindo.v43i1.401.
- [8] S. Fatimah and NT Yuliani, "The Relationship between Chronic Energy Deficiency (KEK) in Pregnant Women and the Incidence of Low Birth Weight (LBW) Babies in the Rajadesa Community Health Center Work Area in 2019," *J. Midwifery Public Heal.* , vol. 1, no. 2, 2019, doi: 10.25157/jmph.v1i2.3029.
- [9] NAK Pertiwi, R. Indraswari, and BT Husodo, "Healthy Pregnancy Planning for Prospective Brides Who Intend to Marry at an Early Age in Semarang Regency in 2020," *J. Health. Masy.* , vol. 9, no. 3, pp. 360–367, 2021.
- [10] P. Wang , 13, no. 1, 2013, doi: 10.1186/1471-2458-13-217.
- [11] EV Yulivantina, Gunarmi, and S. Maimunah, "Qualitative Study: Perceptions of Prospective Brides towards Preconception Screening in Yogyakarta City. A Qualitative Study: Bride-To-Be Perception to Preconception Screening in Yogyakarta City," vol. 2, no. 2, pp. 75–80, 2021.
- [12] M. Yuliani, I. Mulyati, and M. Maesaroh, "Effectiveness of Information Communication and Education (KIE) about Reproductive Health for Prospective Brides (Catin) in Preparing for Marriage and Pregnancy," *Med. Science Works. Health.* , vol. 5, no. 2, 2020.
- [13] MG De Wolff, M. Johansen, AL Rom, J. Midtgaard, A. Tabor, and HK Hegaard, "Degree of pregnancy planning and recommended pregnancy planning behavior among women with and without chronic medical conditions – A large hospital-based cross-sectional study," *Acta Obs. Gynecol Scand* , vol. 100, no. 6, pp. 1051–1060, 2020, doi: 10.1111/aogs.14069.
- [14] D. Chitayat *et al.* , "Folic acid supplementation for pregnant women and those planning pregnancy: 2015 update," *J. Clin. Pharmacol.* , vol. 56, no. 2, pp. 170–175, 2016, doi: 10.1002/jcph.616.
- [15] S. Sari, Nina, A. Toyibah, D. Apsari, Duhita, and R. Wahyu, "The Relationship between Self-Efficacy and Healthy Pregnancy Preparation for Prospective Women," *Malang J. Midwifery* , vol. 5, no. 2, pp. 95–107, 2023, [Online]. Available: <https://ojs.poltekkes-malang.ac.id/index.php/MAJORY/article/view/4226>
- [16] O. Juli and Herizasyam, "Maternal Readiness for Pregnancy and Factors That Influence It," *J. Science and Technology. Health.* , vol. 3, no. 2, pp. 147–159, 2016.
- [17] I. Setyawati and S. Handayani, "Perceptions of Pregnant Women Regarding the Need for Folic Acid, Iron, and Calcium as Preparation for Pregnancy in Mataram City and West Lombok Regency," *J. Health. Qamarul Huda* , vol. 6, no. 2, pp. 1–5, 2018, doi: 10.37824/jkqh.v6i2.2018.31.
- [18] K. Utami, I. Setyawati, and DSR Ariendha, "Knowledge and Attitudes of Prospective Brides Regarding Premarital Health Preparations in Gunungsari District, West Lombok 2018," *Hosp. Majapahit* , vol. 12, no. 2, pp. 23–29, 2020, [Online]. Available: <http://ejournal.stikesmajapahit.ac.id/index.php/HM/article/view/648>
- [19] IF Priani, Y. Afyanti, and W. Kurniawati, "Preparing pregnancy through Preconception Education Training," *Enferm. Clin.* , vol. 29, no. Insc 2018, pp. 304–309, 2019, doi: 10.1016/j.enfcli.2019.04.140.
- [20] J. Hall *et al.* , "Addressing reproductive health needs across the life course: an integrated, community-based model combining contraception and preconception care," *Lancet Public Heal.* , vol. 8, no. 1, pp. e76–e84, 2023, doi: 10.1016/S2468-2667(22)00254-7.

- [21] A. Astuti, MH Nurmalita, and DD Anggraini, "The Influence of the 'WANDARZI' Smart Module on Changes in Women's Knowledge and Attitudes about KEK during Pregnancy," *Health. Madani Med.* , vol. 11, no. 2, pp. 139–148, 2020.
- [22] I. Hartini, "The Effect of Using Preconception E-Modules on Healthy Pregnancy Preparation Behavior in Women of Childbearing Age in Wonosobo Regency in 2022," *J. Heal.* , vol. 9, no. 2, pp. 63–72, 2022, doi: 10.30590/joh.v9n2.474.
- [23] G. Kostania, AL Ahmad, and S. Yunita, "DEVELOPMENT OF PRE-MARRIAGE BOOKLET AS INFORMATION MEDIA IN HEALTH SERVICES FOR PROSPECTIVE BRIDES," *J. Midwifery...* , 2020, [Online]. Available: <https://www.jurnal.stikesmus.ac.id/index.php/JKebIn/article/view/367>
- [24] H. Irawati, A. Kartini, and SA Nugraheni, *THE EFFECT OF BOOKLET EDUCATION ON KNOWLEDGE AND ATTITUDES TO PROSPECTIVE BRIDES' REPRODUCTIVE HEALTH REGARDING RISK PREVENTION...* . eprints.undip.ac.id, 2019. [Online]. Available: <http://eprints.undip.ac.id/80372/>
- [25] A. Berhane and T. Belachew, "Effect of preconception pictured-based health education and counseling on adherence to iron-folic acid supplementation to improve maternal pregnancy and birth outcomes among women who plan to become pregnant: 'Randomized Control Trial,' " *Clin. Nutr. Open Sci.* , vol. 41, pp. 98–105, 2022, doi: 10.1016/j.nutos.2021.12.002.
- [26] N. Fauziatin, A. Kartini, and S. . Nugraheni, "The Effect of Health Education using Flip Sheet Media on Stunting Prevention in Prospective Brides," *VISIQUES J. Health. Masy.* , vol. 18, no. 2, pp. 224–233, 2019, [Online]. Available: <http://publikasi.dinus.ac.id/index.php/visikes>
- [27] N. Simanungkalit, S. Handayani, and MIA Akbar, "Poedji Rochjati Score Card as a Media for Preconception Counseling," *Folia Medica Indonesia.* , vol. 57, no. 4, pp. 310–316, 2021, doi: 10.20473/fmi.v57i4.26818.
- [28] LES Bustami, Yulizawati, AA Insani, and A. Nurdiyan, "The Effect of Peer Education Method Health Education Regarding Preconception Screening on the Attitudes and Motivation of Women of Childbearing Age," *Tunas-Tunas Ris. Health.* , vol. 7, no. 2, pp. 62–66, 2017.
- [29] LG Doloksaribu and AM Simatupang, "The Influence Of Preconceptional Nutritional Counseling On The Knowledge And Attitudes Of Pre-Married Women in Batang Kuis District," *WAHANA Inov.* , vol. 8, no. 1, pp. 63–73, 2020.
- [30] Tarsikah and LP Wulandari, "Analysis of Preconception Care Digital Educational Media Needs," *J. Educator. Technol. Inf.* , vol. 5, no. 2, pp. 333–341, 2022.
- [31] I. Tawanti, B. Widyaningsih, Eka, and N. Fitriani, Wiwin, "Factors Related to the Behavior of Prospective Brides and Grooms Regarding the Implementation of Premarital Screening," *Indonesia. J. Midwifery Sci.* , vol. 2, no. 1, pp. 14–20, 2023.