## **Original Research**

## POEDJI ROCHJATI SCORE CARD AS MEDIA FOR PRECONCEPTION COUNSELING

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#### ABSTRACT

Preconception care (PCC) is a health approach that includes promotive and preventive activities to detect risk factors and interventions carried out to expectant mothers by considering biological, behavioral, and social aspects that affect their health. This study studied the effect of PCC counseling using Poedji Rochjati Score Card (PRSC) on premarital knowledge about highrisk pregnancies. This study was quasi-experimental with 52 respondents divided into 4 groups, namely intervention and control groups, 2 groups with partners, and 2 groups without partners that were chosen through total sampling by applying inclusion and exclusion criteria. Knowledge was measured using pretest and posttest questionnaires. The intervention given was in the form of counseling using PRSC for  $\pm$  20 minutes. There were differences in knowledge between the intervention and control group among respondents without partners. Preconception counseling using PRSC was effective for women attending premarital health checks. Applying PRSC as media for counseling could improve knowledge in high-risk pregnancy that could be avoided.

Keywords: Preconception counseling; poedji rochjati score card; maternal health

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#### Hii j nii j tu:

- 1. Vhe PEE counselini ehhect usini Poedli Tochlati Ucote Eatd \*PTUE+on pteo atital moy ledi e about hii h-tismptei nancies y as studied.
- 2. PTUE hot pteconception counselini is effective hot y oo en to io ptove moy ledi e about hii h-ismptei nanc{.

## INTRODUCTION

Maternal and Child Health (MCH) is an indicator in determining the health of the community, even the success of the public health care system. According to the Department of Health, Surabaya in 2018, as the nationwide case, the major causes of maternal death were preeclampsia/eclampsia, postpartum bleeding, and infection, while other causes are minor. It has shown that the lack of knowledge of mothers about pregnancy was one of the factors that influence maternal mortality (Sari et al. 2014). Another study found that

a mother's antenatal care (ANC) regularity had no relation with early detection of maternal mortality causes (Dewi & Sulistiyono 2017), thus suggesting the implementation of preconception care. Rreconception care (RCC) is a medical approach that includes promotion and prexention actixities to detect risk factors and interxentions to consider in terms of biological, social behaxior, and maternal health (Steel et al. 2018). O eanwhile, antenatal care (ANC) gixen to mothers during pregnancy aims to improxe the mother and baby's health (Alemu & Aragaw 201: ). In other words, PCC can be defined as a series of interventions that aim to improve the quality of women's health and conception outcomes through prevention and management of risk factors (King et al. 2019). Moreover, PCC aims to improve a partner's ability to make decisions related to their reproductive health (Zee et al. 2013). Optimizing health before conception was important for men and women in reproductive age because of maternal and paternal factors that affect preconception health. However, the understanding of the PCC importance was still low (Lan et al. 2017).

Various complications in pregnancy and childbirth are associated with risk factors during organogenesis, and can actually be modified. However, most of the complications actually appeared before the pregnancy occurred, which is known as the preconception period (Poels et al. 2018). Thus, preconception counseling was needed as a preventive health promotion activity from biomedical side, health behavior, and social behavior of a person before pregnancy to improve health conditions in preparing healthy mothers and babies (WHO 2012).

The Regulation of the Ministry of Health Number 97 of 2014, had provided reproductive health services for teenagers as well as female adults prior to their pregnancies, and required that premarital health check and counseling could be undertaken before a marriage certificate was issued. Midwives, especially those working in public health service providing preconception care within pre-marital health check, can take active roles as counselors.

The counselling target was huge as pre-marital healthcheck was required nationally. Additionally, based on the Center of Statistics for Indonesia in 2018, adolescence reproductive health has not been integrated in schools and non-health related college's curricula, while the percentage of married women aged <21 years was 58.65% contributing to pregnancies among women aged <21 years which reached 45.99%. A 75-page pocket book on reproductive health for bride and groom has been issued by the Ministry of Health, but its use in pre-marital counseling and effectiveness have not been evaluated. With the tight schedule, there are worries on whether midwives can provide enough time to discuss the book with the target. A simpler education media for counseling highlighting the risks for developing highrisk pregnancy needed to raise the awareness of brideand-groom-to-be on the matter to minimize their own risks. This study aimed to improve the knowledge of the bride-groom-to-be on high-risk pregnancy through counseling using PRSC.

## MATERIALS AND METHODS

This was a quasi-experimental study designed to examine the effect of counselling on bride's with and without groom's knowledge on high-risk pregnancies. Using Federer's formula, sample size was determined, and 52 respondents were recruited, 13 respondents were non-randomly assigned to each of four groups that were 2 intervention and 2 control groups. Consecutive sampling was applied. Evaluation was done based on pre- and post-tests later after intervention. Variables in this study were counselling with the use of PRSC and knowledge about high-risk pregnancy.

PRSC is a score card that is used as a family-based antenatal screening tool to find risk factors for pregnant women. Furthermore, the card makes it easier to recognize conditions experienced by pregnant women to prevent obstetric complications during childbirth. This card has been used especially in East Java to group of pregnant women at risk according to the score and early detection of high-risk pregnancy. The counselling technique used was that the researchers and respondents sat facing one another. 1 PRSC was given to respondents who came with or without their partners and 1 for the researchers. According to risk factors for pregnant women, the counselling materials were described respectively all 20 items, namely 1) too young to be pregnant ( $\leq 16$  years); 2) too old for the first pregnancy ( $\geq$  35 years); 3) pregnancy interval  $\geq$  10 years; 4) pregnancy interval  $\leq 2$  years; 5) having > 4 children; 6) too old to be pregnant ( $\geq 35$  years); 7) too short ( $\leq 145$  cm); 8) history of miscarriage; 9) previous labour with forceps/ vacuum, manual placenta, infusion/ transfusion; 10) history of caesarean section; 11) disease in pregnancy (anaemia, malaria, TBC, cardiac disease, diabetes, STI); 12) edema in pregnancy (face and feet) and high blood pressure; 13) twin pregnancy; 14) hydramnion; 15) intra uterine fatal death; 16) postdate; 17) breech position; 18) transverse lie position; 19) bleeding during pregnancy; 20) preeclampsia/eclampsia.

Counseling was delivered for 20 minutes. Knowledge was assessed prior and after interventions using questionnaires in pre- and post-tests. To evaluate the difference before and after counseling knowledge, this study used paired-t test for normally distributed data, while Wilcoxon signed-rank test was applied when data were not normally distributed. Meanwhile, to determine the effect of counselling that increased knowledge, paired-t test was applied for normally distributed data and Mann-Whitney test was run when data distribution was not normal. Vj ku uwf { y cu cr t qxgf d{ y g J gcnj Tgugctej Gy keu Eqo o kwgg \*MGRM+ qh y g Hcewn{ qh O gf kekpg. Wpkxgtukcu Cktrcpi i c wpf gt c f getgg P q04521GIMGR IHMWC 1423; 0

Characteristics			seling		Non counseling Total			Fotal	P value		
	W	ithout	with p	partners	Wi	ithout	with	partners	-		
	partners				partners					_	
	n	%	n	%	Ν	%	n	%	Ν	%	
Age										5.77	
<20 years	2	15.4	0	0	0	0	1	7.7	3		0.243
20-35 years	10	76.9	13	100	13	100	11	84.6	47	90.38	
> 35 years	1	7.7	0	0	0	0	1	7.7	2	3.85	
Total									52	100	
Profession											
Work	10	76.9	12	92.3	11	84.6	11	84.6	44	84.61	0.951
Does not work	3	23.1	1	7.7	2	15.4	2	15.5	8	15.39	
Total									52	100	
Education											
Basic	1	7.7	1	7.7	1	7.7	2	15.4	5	9.62	.994
Secondary	6	46.2	6	46.2	7	53.8	5	38.5	24	46.15	
High	6	46.2	6	46.2	5	38.5	6	46.2	23	44.23	
Total									52	100	
Income											
< minimum	8	61.5	11	84.6	6	46.2	7	53.8	32	61.54	0.283
≥ minimum wage	5	38.5	2	15.4	7	53.8	6	46.2	20	38.46	
Total									52	100	

Table 1. Baseline characteristics of respond	dents
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Data collection was conducted in the Public Health Center, Keputih, Surabaya in October-November 2019. Prior to this study, respondents who met the inclusion and exclusion criteria before had been given an explanation on the research that would be carried out and informed-consent was taken. The intervention groups (with and without partners) were given a pre-test questionnaire, counseling and post-tests respectively, whereas the control groups (with and without partners) were then categorized as well and enough. The intervention used in this study was PRSC as the media of PCC to within  $\pm 20$  minutes. Each respondent was allowed to ask questions after the counseling material was delivered.

## RESULTS

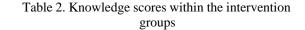
## **Characteristics of respondents**

In this study, the characteristics of respondents were categorized based on their age, education, employment and income status (Table 1).

#### Knowledge scores on pre- and post-tests

## Intervention group

There was an increase in the average score of knowledge held by the intervention, and knowledge of the respondents had quite a good category (Table 2).



	Intervention group					
Statistical	without r	oartners	with partners			
	Pre-test	Post-	Pre-test	Post-test		
		test				
Average	70.77	85.38	73.85	89.23		
Standard	22.9	9.67	19.8	6.4		
deviation Median	80	80	80	90		
Minimum-	30-90	70-100	40-100	80-100		
Maximum* Category Knowledge	Enough	Well	Enough	Well		

\*) Min-max range of knowledge scores of 0-100

#### Control group

Table 3. Knowledge scores within control groups

	Control group					
Statistical	without	partners	with partners			
-	Pre-test	Post-test	Pre-test	Post-test		
Average	73.07	70	72.3	70.77		
Standard deviation	13.77	10.8	14.23	11.15		
Median	70	70	70	70		
Minimum-	50-100	50-90	40-90	50-90		
Maximum* Category Knowledge	Enough	Enough	Enough	Enough		

\*) Min-max range of knowledge scores of 0-100

In the control group that did not get the intervention before the posttest, there was no increase in the average score of knowledge and were in the same category between pre-test and post-test.

#### Effect of counseling on knowledge

In this study, counseling using PRSC significantly increased the knowledge of respondents. It was found that there were significant differences in the average knowledge scores of the respondents in the intervention group.

 Table 4. Differences of knowledge scores on pre-test

 and post-test

G	Knowledge score			
Group name	Pre-test	Pre-test	p value	
Intervention without partners	70.77	85.38	0.011	
Intervention with partners	73.84	89.23	0.032	
Control without partners	73.07	70	0.264	
Control with partners	72.3	70.77	0.549	

Table 5. Differences of knowledge scores between pretest and posttest of intervention and control groups 0.004

C	Knowledge score			
Group name	Pre-test	Pre-test	p value	
Intervention without partners	70.77	85.38		
Control without partners	73.07	70		
Intervention with partners	73.84	89.23	0.018	
Control with partners	72.3	70.77		

Based on Table 4 and Table 5, there was a significant difference between the pre-test and post-test knowledge of the pre-married women without partners and with partners in the intervention and control groups. There was an effect of counseling on increasing knowledge in each group.

# Differences of knowledge between with and without partners intervention groups

Table 6. Differences of knowledge scores on pre- and post-tests between groups with and without partners

<u> </u>	Kno		
Group name	Pre-test	Post-test	p value
Intervention without partners	70.77	85.38	.920
Intervention with partners	73.84	89.23	.)20
Control without partners Control with partners	73.07 72.3	70 70.77	0.719

The independent-t test in the intervention group with a result of p>0.05 showed that there was no significant difference in increase of the knowledge of prospective brides who were neither with their partners nor with their partners after being given counseling. The Mann-Whitney test in the control group with results p>0.05 showed that there was no significant difference in the increase of knowledge of the prospective bride and groom who were not accompanied by their partners or accompanied by their partners who were not given counseling.

## DISCUSSION

Mother's age will determine maternal and new-born health with regard to the condition of pregnancy, childbirth, postpartum and breastfeeding and caring for the baby. It is also in line with the relevant government programs on the Maturation Age of Marriage in women up to 21 years, while data on Demographic and Health Survey in 2017 showed that the median age at first marriage of Indonesian women was in the range of 20-24 years old. Similarly, in accordance with the Indonesian Constitution No. 16 2019 permitted the marriage age when men and women have reached 19 years, as it was expected to reduce the birth rate and decrease the risk of maternal and child mortality.

These findings illustrate that the average bride began to marry after completing secondary school and even through college. Based on Indonesian Ministry of National Development Planning in 2017, these data also indicate that most respondents had met their target, namely to increase the participation of women at school and delay marriage age. Education level helps to determine a person's ability to absorb and understand science (Notoatmodjo 2010). There are external factors that can affect a person's knowledge, namely education, mass media exposure, economic, social relationships and experience (He et al. 2016, Rezaei et al. 2021).

The difference of pre-married knowledge before and after counseling using PRSC may come from clients, counselors, materials and the media given counselors. Media and booklets are important tools in improving clients' knowledge (Farudin 2011), namely the PRSC. Counseling is a method of delivering information provided face-to-face, to assist clients in improving their ability in dealing with problems (Wong et al. 2018). Factors that may affect counseling is a the source, message, the media used, and the factor of the recipient of the information (individual characteristics, social and cultural conditions, the values that exist in the community and experience) (Nasir & Muhith 2009). The counseling process could also affect the information obtained by the respondent, where this study set the counseling process for a conducive area to an enclosed space according to the respondents and the researchers' deal (agreement).

In this study, the role of counseling significantly increased the knowledge of respondents. It was found that there were significant differences in the average rise of the knowledge possessed by respondents in the intervention group, and the group that was given counseling. Counseling is basically a method that is intended to help a person recognize the condition and the problem today, as well as to find alternatives to resolve the issue (Runcan et al. 2013). In this study, counseling provision was not to find out the problems experienced by the bride and groom as respondents, but for the purposes of prevention (Gibson & Mitchell 2016). This study was in line with Garthwaite and Wilkes's study in 2018 on preconception counseling theory, namely (1) building up awareness of women about problems that can affect pregnancy, so that they can make decisions; (2) managing and modifying risk factors; (3) optimizing management of chronic diseases suffered; and (4) identifying women who are at high risk of having babies with genetic disorders (Garthwaite & Wilkes 2018).

The limitation of this study was not ideal compared to the theory that the ideal interval for measuring the scores of post-test after being given health education was 15-30 days to anticipate the respondents still remember about the pre-test and the possibility that the respondents obtained information from sources other than counseling that had been given (Notoatmodjo 2010). In this study, post-test was administered immediately after the counseling, because knowledge of the respondent was the improvement that occurred purely due to counseling without being affected by other things. In addition, anticipation was also done to anticipate whether the respondents did not come back or not to fill in the post-test questionnaire. Moreover, to determine the effect of counseling on knowledge, this study also found out that there were differences in knowledge between women who came without and with partners, both in the intervention and the control groups. The respondents who came with their partners, allowed to discuss before answering the questionnaires. The results showed no difference in knowledge between women given counselling with and without partners.

This study showed that counselling increased knowledge of brides who came with or without their partners. This finding was in contrast to a study which provided counseling to pregnant women in the 3rd trimester with or without partners about postpartum (Khotimah et al. 2016). Counseling with a companion has the advantage of providing a good additional knowledge to partners or family respondents (Khotimah et al. 2016). Counselings are tailored to client's needs. Therefore, although the authors delivered the intervention as uniform as possible for all clients, there were some unavoidable minor adjustments from client to client. Nevertheless, the main topic of counseling was still about PRSC. During the study, there was no specific schedule of premarital check-up in the public health center, so that it could not be ascertained that every day, there were premarital persons/couples who came, thus taking more time to collect the respondents needed.

In this study, we noticed that when answering the pretest and post-test questions, the pre-married women who came with their partners and had a discussion to determine the answer options, but basically the women were able to answer the questions presented in the questionnaire herself.

Through this research, it can be concluded that the provision of counseling only to the bride-to-be is sufficient to increase knowledge about high-risk pregnancies. There had been no other studies on premarital women that differ knowledge with or without their partners. Based on the instruction by the Department of Health, for Public Health Centers in Surabaya, health check-up along with reproductive health education should be provided in pre-married couples, unless the bride and groom couples are in the region of different health centers.

A study found that premarital relationships education effectively improved 50-60 % the communication between partner (Fawcet et al. 2010). Similarly, Halford et al. (2008) found that it was important to provide education in premarital phase on the bride and groom to produce a pair of mutual support in terms of health and producing healthy off-springs. Counseling using PRSC as a premarital preparation in knowledge had provided good understanding to the participants about risk factors that could affect maternal health to be avoided.

## Strength and limitation

The use of Poedji Rochjati Score Card (PRSC) as a tool for counseling is a practical and comprehensive approach that considers multiple aspects of preconception care. The study focused on an important aspect of reproductive health, preconception care, which can have a significant impact on maternal and fetal outcomes but, did not include a long-term follow-up to assess the impact of the counseling on actual pregnancy outcomes and control for other potential confounding factors that could influence knowledge about high-risk pregnancies, such as education level or access to information.

## CONCLUSION

Counseling using PRSC has a positive impact on the improvement of brides' knowledge on high-risk pregnancy. There was no significant difference in brides' knowledge who came with or without partners. Brides-to-be who get counseling should be able to plan her pregnancy to produce the next generation of healthy and support each other and get used to maintain a healthy life. Midwives can improve premarital knowledge and skills through counseling in preparing for pregnancy and to identify risk factors that could reduce MMR. This study recommended, especially in East Java, where the PRSC was found that PRSC could be used not only to measure and classify the risk in pregnancy, but also to prevent the risks. Developing a premarital counseling program in public health center could also provide positive impact in creating a healthy marriage and improving the pregnancy outcome by managing the risks.

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#### **Conflict of interest**

None.

#### **Funding disclosure**

None.

## Author contribution

NH collected, analyzed, and interpreted the data, drafted, revised, and approved the final manuscript. MIAA conceptualized the design of the study, analyzed and interpreted the data, drafted, revised, and approved the final manuscript. SH conceptualized the design of the study, interpreted the data, revised, and approved

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