

The Effectiveness Of A Transtheory Model Based Health Promotion (Promkes) On Pre-Eclamsion Prevention Behavior In Pregnant Women In The Jember Regional Puskesmas

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ABSTRACT

Pre-eclampsia is a disease during pregnancy that often occurs and requires serious treatment. Since 2012 - 2016, pre-eclampsia has been ranked number 1 in the cause of MMR in East Java, pre-eclampsia cases (2016) amounted to 30.90% (East Java Provincial Health Office, 2016). Data from the Kalisat health center for January - April, the number of pregnant women at risk of pre-eclampsia was 193 with the number of pre-eclamptic pregnant women at 35 people. Likewise, at the Sumberjambe health center there were 268 people at risk of pre-eclampsia, 18 people were pre-eclamptic. This research is a continuation of phase 1 research entitled midwife health promotion model (promkes) for pre-eclamptic pregnant women based on stages of change. The aim of the research was to test the effectiveness of the health promotion model for pre-eclamptic pregnant women transtheory model. The design of this research is quasi-experimental. The sample was taken using a simple random sampling technique of 60 respondents. Instrument with questionnaire sheet and health promotion model. SPSS test analysis obtained a p value (0.000) < α (0.05) at all stages, so H_0 was rejected. There are differences before and after the health promotion was innovated. There is a need for additional innovative health promotion models to change the behavior of pregnant women.

INTRODUCTION

Pre-eclampsia is a complication in the pregnancy process whose incidence tends to increase over time and is one of the causes of morbidity and death in pregnant women (Billington & Mandy, 2010). Pre-eclampsia has been in first place since 2012 which causes maternal deaths in East Java Province, the number of pre-eclampsia cases in 2016 was 165 (30.90%) (Dinkes Provinsi Jawa Timur, 2017). Based on a workshop held at the Jember Regency hall on 13 August 2019, the trend of maternal deaths in Jember Regency from 2016 to 2017 increased from 33 to 49 deaths, although in the following year (2018) maternal deaths decreased by 41 people. In

2016, 10 mothers died due to pre-eclampsia, and in 2017, maternal deaths due to pre-eclampsia increased to 19 people. Even though in 2018 maternal deaths due to pre-eclampsia in Jember decreased to 7 people, this is something we need to be careful about so that deaths do not increase. According to information from the Jember Health Office in 2019, the number of maternal deaths due to pre-eclampsia from January to August has reached 7 maternal deaths, this shows that the number of maternal deaths due to pre-eclampsia may remain or increase until its peak at the end of 2019.

Pre-eclampsia is often detected too late due to a lack of public awareness of carrying out examinations (Situmorang, Damantalm, & Januarista, 2016). Examination of pregnant women is very important so that pregnant women who are currently experiencing pre-eclampsia do not fall into a condition such as eclampsia, because the consequences of this disease can range from mild to severe. In mothers, damage to body organs such as the brain, lungs, liver or kidneys can occur which can cause death in the mother, while in babies it will result in asphyxia, low birth weight or death (Icesmi Sukarni & Margareth, 2013). Lack of awareness among pregnant women will reduce their own level of health, so there is a need for a way to change this behavior. According to Notoatmodjo (2012) changing someone's behavior can be done in two ways, namely coercion and *education*. In order to improve health behavior, a more appropriate effort is to use an approach *education* namely through health promotion. Health promotion is any planned effort to influence other people, whether individuals, groups or communities, so that they do what is expected by health promotion actors (Notoatmodjo, 2012).). By using this method, it is hoped that pregnant women will have lasting good behavior.

In previous research, researchers conducted research with the title "Midwife Health Promotion Model (Promkes) for Pre-Eclamptic Pregnant Women Based on *Stage of Change*" (Bowden & Bassett, 2016). Is a health promotion model that has been innovated based on *The Trans Theoretical Model* in which there are five stages in changing a person's behavior, and at each stage there are efforts or treatments that can be done to reach the next stage, the five stages are *precontemplation*, *contemplation*, *preparation*, *Action*, and *maintenance* (Lenio, 2006). In this research, the material presented and the efforts made to promote health were based on the stages of behavior of pre-eclamptic pregnant women, treatment based on model theories that had been innovated. Because traditional health promotion programs are often not designed according to the stages of change in patient behavior, the researchers created an innovative promotional model so that pregnant women really gain knowledge about pre-eclampsia and realize the importance of understanding their pregnancy and knowing the basic needs of pregnant women, both physical and psychological needs in particular. pregnant women with pre-eclampsia (Maryani, Respati, & Astirin, 2016).

The results of previous research, namely the first stage after being given treatment, showed that the majority of respondents' behavior change stages were at 28% *action*, and the level of preparation is 26.7%, as well as the level *contemplation of* 25.3%. If the data before and after treatment shows that the change in behavior stages is from the *precontemplation* stage by 39% to 0%, the *contemplation* stage from 25% to 19%, the *preparation* stage from 11% to 35%, and the *action* stage from 0% to 21% .

Based on data from the Kalisat and Sumberjambe health centers, these health centers are the health centers that have contributed to maternal deaths since 2016 (Yudhia F. Syafrudin, 2009). In the working area of the Kalisat health center there was 1 maternal death in 2016 due to pre-eclampsia, 2 maternal deaths in 2017 and 1 mother has not yet ended 2019. has died. The number of cases of pregnant women who were at risk of experiencing pre-eclampsia in 2018 was

334 with the number of cases of mothers who were pre-eclamptic as many as 56 people, from 2019 to April the number of pregnant women who were at risk of pre-eclampsia was 193 people with the number of pregnant women who were pre-eclamptic. eclampsia by 35 people. Meanwhile, in the Sumberjambe Community Health Center working area, 1 maternal death was recorded in 2017 and as of August 2019, 1 mother had died. In 2018, 808 pregnant women were at risk of developing pre-eclampsia, while 72 pregnant women were experiencing pre-eclampsia. In 2019 up to April, 268 people were recorded as being at risk of pre-eclampsia, while 18 pregnant women were recorded as having pre-eclampsia.

Based on previous research data and results, the researchers wanted to test the effectiveness of the health promotion model for pre-eclamptic pregnant women based on the transtheory model. In this follow-up research (second stage) researchers will conduct trials on products that have been provided in previous research, namely promotions innovated at the Jember Regency Regional Health Center, namely Kalisat and Sumberjambe as an effort to see the effectiveness of the products that have been designed by researchers. Based on the above background, the research problem can be formulated as follows: What is the effectiveness of the Transtheory-Based Health Promotion Model (Promkes) on Pre-Eclampsia Prevention Behavior in Pregnant Women in Jember Regency Regional Health Centers.

Analyzing the effectiveness of the transtheory-based health promotion model (Promkes) on pre-eclampsia prevention behavior in pregnant women at the Jember District health center (Phase 2).

This research has a number of benefits that have an impact on various parties. For educational institutions, the results of this research can be used as a reference for the development of science and technology. Meanwhile, for the Jember District Health Service, this research provides valuable input in efforts to improve the quality of human resources, especially midwives in their work area (Sutriyani, 2015). For midwives themselves, this research helps improve the quality of antenatal care services, especially in providing health information to patients in their work area. Apart from that, the benefits of this research are also felt by the public, especially pregnant women, who can avoid the risk of pre-eclampsia thanks to the results of this research. Thus, this research makes a significant contribution in improving the quality of health services and safety for pregnant women in the work area of the Jember District Health Service.

METHOD

The research method used is quantitative, which is a method that can be used to answer research problems related to numbers and statistical programs (Wahidmurni, 2017). Using design *quasi experiment* with approach *cross sectional* namely a comparative analytical research design which aims to determine the differences before and after treatment between variables (Dharma, 2011). This research is *Research and Development (R&D)* used to develop and validate educational products Borg & Gall (1983) in Silalahi (2018). R&D in this research is the development of a health promotion model for pre-eclamptic patients based on *Stage of Change (The Transtheoretical Model)*. This research is a method that deliberately aims to develop and test the effectiveness of certain models that are more effective, efficient, productive and meaningful. This step is known as the R&D cycle consisting of: reviewing the results of previous treatment, then continuing with developing it into a product, testing the designed product, and reviewing and correcting the product based on the test results (Prawirodirjo, 2014).

RESULTS AND DISCUSSION

Respondent characteristics

In this section, we will describe the characteristics of the 60 respondents who were pregnant women in the Kalisat and Sumberjambe Community Health Center areas. The respondents in this study were pregnant women who were preeclamptic and at risk of preeclampsia and the researchers involved doctors, villages and regional coordinator midwives to assess and obtain recommendations for the instruments made by the researchers.

Tabel 1

General characteristics of respondents to research on the effectiveness of health promotion (Promkes) based models *transtheory model* on pre-eclampsia prevention behavior in pregnant women in Jember Regency regional health centers in 2019

No	Respondent Characteristics	Parameter	Σ	%
1	Age	< 20 years	15	25
		20 – 35 years	35	58,3
		> 35 years	10	16,7
		Total	60	100
2	Education	Not completed in primary school	4	6,7
		SD	25	41,7
		Junior High School	14	23,3
		SMA	14	23,3
		D4/S1	3	5
		Total	60	100
3	Work	Doesn't work	49	81,7
		Officer	2	3,3
		Self-employed	5	8,3
		Farmer	4	6,7
		Total	60	100
4	Parity	Primipara	23	38,3
		Multiparous	15	25
		Grande is multiparous	22	36,7
		Total	60	100

Table 1 informs the characteristics of respondents from several factors, namely in terms of age, education, employment and parity. The results showed that the majority of respondents were aged 20-35 years (58.3%), some respondents (41.7%) had elementary school education, almost the majority of respondents (81.7%) did not work (housewives), the majority of respondents first pregnancy was (38.3%). This shows that the respondents of this study fall into the category of factors that trigger pre-eclampsia, so health promotion needs to be carried out so that pre-eclampsia can be treated.

Tabel 2
Stages of behavior change (*Stage of Change*) in pregnant women before and after being given treatment at the Kalisat and Sumberjambe health centers in 2019

Stage Change	Before		After	
	Frequency (n)	Presentase (%)	Frequency (n)	Presentase (%)
<i>Precontemplation</i>	32	53,3%	2	3,4%
<i>Contemplation</i>	14	23,3%	3	5%
<i>Preparation</i>	12	20%	19	31,6%
<i>Action</i>	2	3,4%	20	33,3%
<i>Maintenance</i>	0	0%	16	26,7%
Total	60	100	60	100

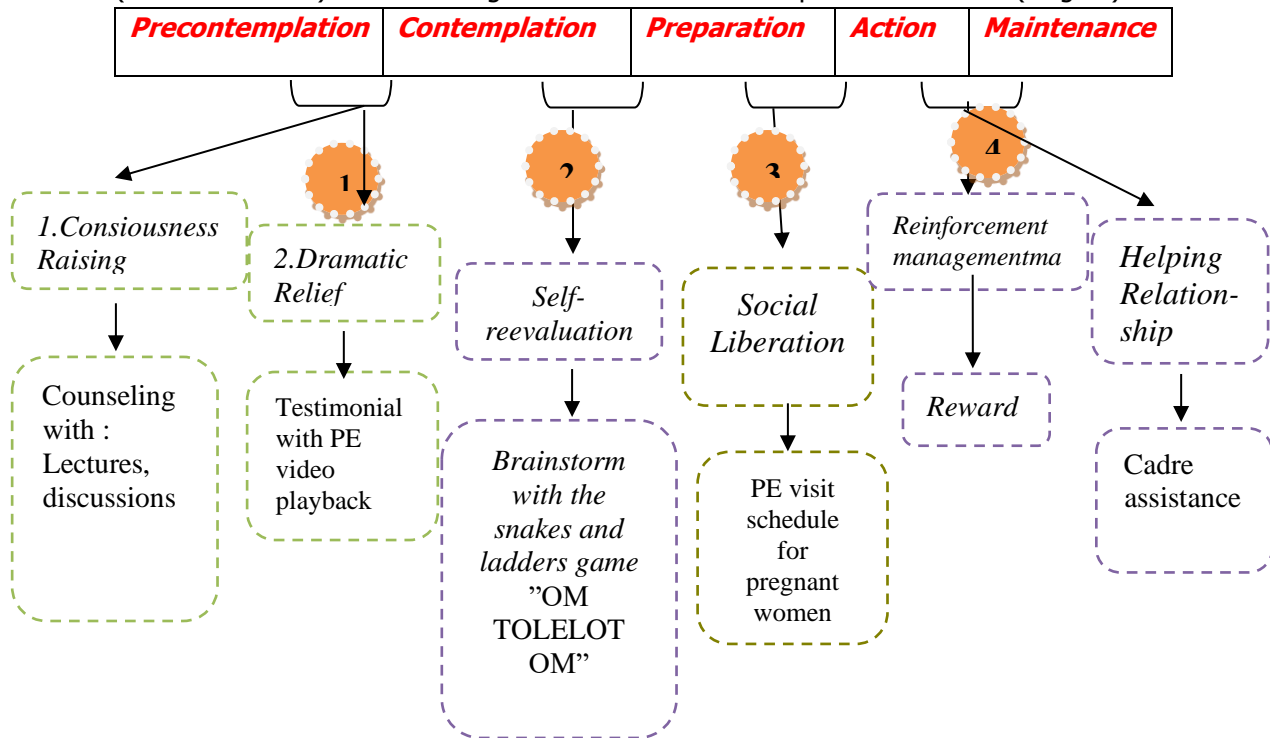
From table 2 it shows that changes in behavior stages before and after being given a promotion are from stage *precontemplation* by 53.3% to 3.4%, stage *contemplation* from 23.3% to 5%, stage *preparation* from 20% to 31.6%, and level *action* from 3.4% to 33.3% and the last one from *maintenance* which was previously 0% became 26.7%.

Tabel 3
Distribution of each stage of behavior change (*Stage of Change*) in pregnant women before and after being given treatment at the Kalisat and Sumberjambe health centers in 2019

Previous stages	Σ	Stages after					Σ			
<i>Precontemplation</i>	<i>Contemplation</i>	<i>Preparation</i>	<i>Action</i>	<i>Maintenance</i>	<i>Precontemplation</i>	<i>Contemplation</i>	<i>Preparation</i>	<i>Action</i>	<i>Maintenance</i>	
32	3	2	3	17	8	2				3
	2									2
14	1		0	2	8	4				1
	4									4
12	1			0	4	8				1
	2									2
	2						0	2		2
	0							0		0
32	6	2	3	19	2	16				6
	0				0					0

Table 3 shows that the distribution of each stage of behavior change (*Stage of Change*) before and after being given the health promotion is from the stage *precontemplation* amounting to 32 people distributed into *contemplation* as many as 3 people, *preparation* as many as 17 people, *action* as many as 8 people, *maintenance* 2 people, but there are those who remain at the stage *precontemplation* as much as 2 people. Of the 14 people previously in level *contemplation* distributed to be *preparation* 2 people and *action* as many as 8 people and *maintenance* 4 people. From stage *preparation* a total of 12 people were distributed into 4 people in stages *action* and 8 people in *maintenance*. Next, the 2 people who were previously in *action* after receiving the health promotion, move to *maintenance*. The table shows that after being given the health promotion, there was a change in the stages of the respondents. In previous research, the methods used were less varied. For this research, experts recommended adding methods in the stages of change. Finally, we were challenged to develop a method based on the transtheoretical model.

Previous research entitled health promotion model (Promkes) for midwives for pre-eclamptic pregnant women based on stage of change, researchers only intervened with respondents using an average of one method. From the precontemplation to contemplation stage, the researcher used the Consciousness raising method which contained (lectures and discussions) as well as dramatic relief in the form of videos containing testimonials. Contemplation to preparation stage using method *Self-reevaluation berupa brainstorming* by using the snake and ladder Om Telolet Om, stage *preparation the action* researchers use *Self liberation* such as recommendations for more frequent ANC visits and the last stage *action the maintenance* researchers use *Reinforcement management* (in a complimentary way) and *Helping relationship* (cadre assistance). The following is a model table used in previous research (stage 1)



Because stage 1 is considered less effective in increasing the stages of change in respondents' behavior, researchers are trying to add/develop methods. At stage *precontemplation* go to stage *contemplation*, to increase awareness of the stage *contemplation* Researchers still use two methods, namely through process *consciousness raising* (increased awareness) and *dramatic relief*. However, there is method development, in *consciousness raising* The researchers used additional methods in the form of screening pre-eclampsia videos, which previously only consisted of lectures and discussions, then the process *dramatic relief* researchers use testimonial method by directly presenting one of the respondents to tell about the conditions they have experienced. Next is the second stage, namely *Contemplation* (Contemplation). At stage *contemplation* the *preparation* there is one process namely *Self-reevaluation*, In this case the researcher attempts to use methods *brainstorming* and self-evaluation. Method *brainstorming* used is by playing snakes and ladders which is given the title 'OM Telolet OM'

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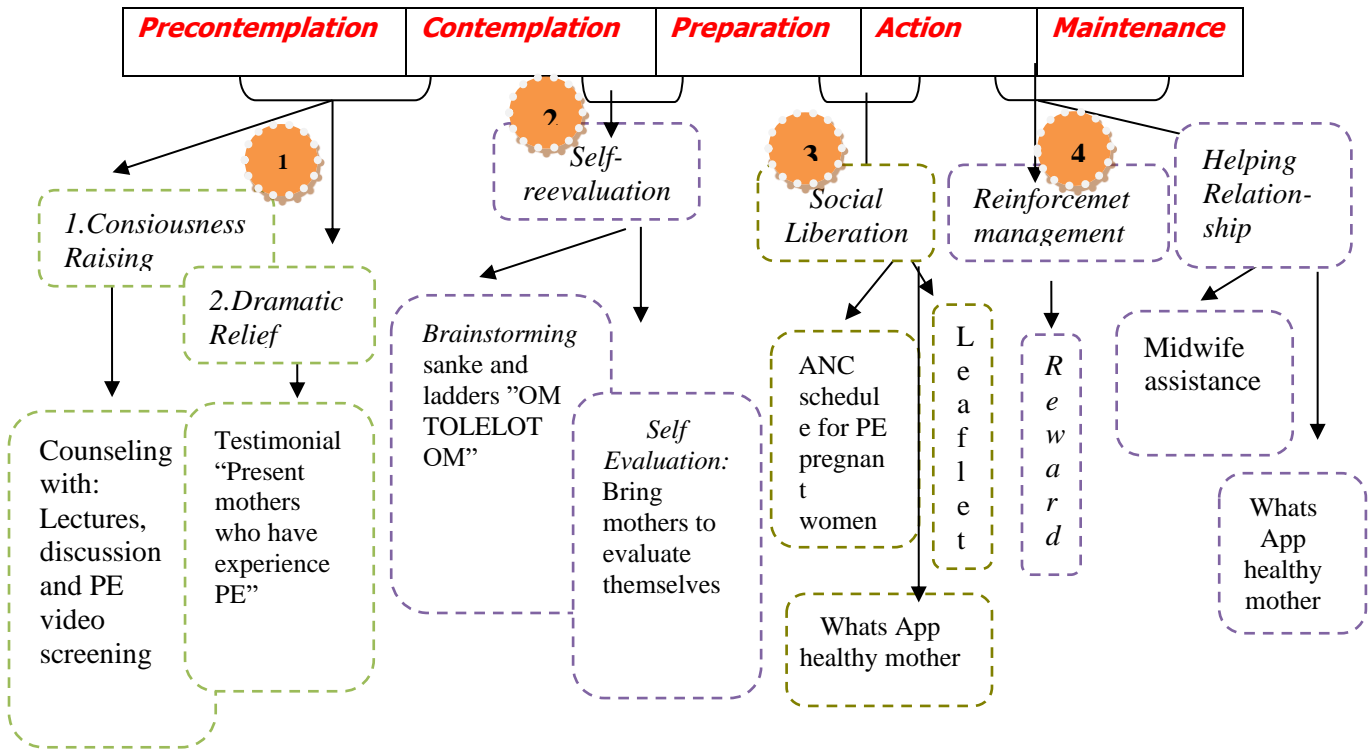
Figure 1

Game picture Snakes and ladders "OM TELOLET OM"

Snakes and ladders "OM TELOLET OM" can be played by at least two people guided by a facilitator (midwife). On the snake and ladder board there are start and finish signs which end at number 33. There are 6 cards available with 2 different colors, namely red and yellow. Before the game starts the cards are placed according to the color of the cards on the snake and ladder board. The player who has the first turn can roll the dice, then move the pawn according to the dice number that comes out. Next, if the pawn goes up the ladder or down the ladder, the player must take a card according to the color on the snake and ladder board. On the cards there are questions that players must answer. Questions asked about what preeclampsia is, causes, risks and how to prevent preeclampsia. The game ends until the player reaches the finish. In this case, the facilitator is tasked with providing a more complete explanation regarding the answers given by the players, the researcher can also add more if the explanation is considered incomplete.

After the game "OM TOLELOT OM" the researcher carried out the second method, namely self-evaluation, the respondents were gathered, then the researcher brought the atmosphere to a calm and comfortable state, then brought the respondents to evaluate themselves. The third stage is stage *preparation the action*, to get to that stage only by means *Self liberation*. At this stage the researcher explained the importance of adhering to the schedule and type of examination, apart from that the researcher added providing leaflets on preeclampsia and establishing a connection to a health education class in the form of a Whats App group for healthy mothers.

Meanwhile, the final stage is stage *action* up to a level *maintenance* has several processes. In an effort to increase the effectiveness of the model, researchers use processes *reinforcement management* and *helping relationship*. *Reinforcement management* is a reward and process *helping relationship* whereas in previous research the assistance was provided by cadres, this time the assistance was changed to regional midwives and respondents were also included in the Whats App group for healthy mothers so they could get counselors and friends to discuss. This method is applied in order to maintain the positive behavior that you already have. The following is the development of the transtheoretical model in stage 2.



Analisis Data SPSS

Results of statistical test analysis *Paired T-Test* for each stage of behavior change before and after treatment is given:

1. Level *Pre Contemplation*

H0 = There is no difference in value *Pre Contemplation* before and *Pre Contemplation* after
 Decision: H0 is rejected because the calculated t value (-8.857) is greater than the t table 0.05 (1.671). and Asymp. Sig. (2-tailed) 0.000 is smaller than α 0.05
 Conclusion: There is a significant change between the values *pre conteplation* before and *pre conteplation* after which means there is an influence of the use of the method in increasing the respondent's stage.

2. Level *Contemplation*

H0 = There is no difference in value *contemplation* before and *contemplation* after.
 Decision: H0 is rejected because the calculated t value (10.713) is greater than 0.05 (1.671) and Asymp. Sig. (2-tailed) 0.000 is smaller than α 0.05
 Conclusion: There is a significant change between the values *contemplation* before and *contemplation* after which means the use of the method *brainstorming* and self-evaluation can improve the respondent's stage.

3. Level *Preparation*

H0 = There is no difference in value *preparation* before and *preparation* after.
 Decision: H0 is rejected because the calculated t value (15.513) is greater than 0.05 (1.671) and Asymp. Sig. (2-tailed) 0.000 is smaller than α 0.05
 Conclusion: There is a significant change between the values *preparation* before and *preparation* after which means there is an influence of the method used in increasing the respondent's stage.

4. Level *Action*

H0 = There is no difference in value *action* before and *action* after.

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Decision: H0 is rejected because the calculated t value (13.812) is greater than 0.05 (1.671) and Asymp. Sig. (2-tailed) 0.000 is smaller than α 0.05

Conclusion: There is a significant change between the values *action* before and *action* after which means the use of praise and mentoring methods applied can increase the respondent's level.

5. Level *Maintenance*

H0 = There is no difference in value *maintenance* before and *maintenance* after.

Decision: H0 is rejected because the calculated t value (8.651) is greater than 0.05 (1.671) and Asymp. Sig. (2-tailed) 0.000 is smaller than α 0.05

Conclusion: There is a significant (meaningful) change between the values *maintenance* before and *maintenance* after, which means there is an influence of the method used in increasing the respondent's stage with an average cumulative increase before and after of 6,400.

6. Overall Level (cumulative)

H0 = There is no difference in value *maintenance* before and *maintenance* after.

Decision: H0 is rejected because the calculated t value (9.978) is greater than 0.05 (1.671) and Asymp. Sig. (2-tailed) 0.000 is smaller than α 0.05

Conclusion: There is an average difference between the cumulative stage scores before and the cumulative stage after, which means there is an influence of the use of all methods used in increasing the respondent's stage.

Discussion

Developing a health promotion model for pre-eclamptic pregnant women that is innovated based on the level of behavior change

Before carrying out model socialization, researchers developed an innovative health promotion model. as we know that Prochaska and Di Clemente in their theory *Trans Theoretical Model* identifying a process that a person will undergo as long as that person undergoes a change in behavior (Bowden & Manning, 2011). This model tries to explain a person's readiness to change to healthy behavior and until this behavior becomes a habit. In *Trans Theoretical Model* There are five stages, namely *precontemplation*, *contemplation*, *preparation*, *action*, dan *maintenance* (Faradhina Syafrudin, 2009). These stages have different methods to get to the next level.

The earliest stage, namely *precontemplation* is the stage where the respondent has not thought about changing behavior because the respondent does not yet know that there is a problem with him. At this stage, information is needed to raise awareness of its needs.. Bowden & Manning (2011) explain that to raise awareness in respondents we can use health advice and gentle, non-judgmental questions. At stage *precontemplation* lead to *contemplation* There are three efforts that can be made, namely with effort *consciousness raising*, *dramatic relief* and *environmental reevaluation*. To increase awareness of the stage *contemplation* Researchers used two methods, namely through process *consciousness raising* (increased awareness) and *dramatic relief*. *Consciousness raising* is an effort to change a person's behavior by increasing their awareness of the negative consequences that arise if preeclampsia is not treated, so it is necessary to provide information such as counseling using lectures (power points), discussions and through showing preeclampsia videos, then in the process *dramatic relief* researchers use Testimonial method, the method used is to bring one of the respondents forward to tell about their condition from when the mother was pregnant and diagnosed with preeclampsia until the mother experienced eclampsia (seizures). In this way, it is hoped that it can touch the feelings and emotions of other respondents, and after the respondent is aware we can proceed to the next stage.

The second stage is *stagecontemplation* (contemplation), at this stage we know that someone intends to start changing their behavior, the respondent already has the motivation to change. However, respondents still behave incorrectly regarding their health but are aware that their actions are risky, for this reason communication is needed so that respondents remain motivated and can make specific plans. If they are at this stage, it means that the respondent is already at the stage of initiating change. At *stagecontemplation* the *preparation* there is only one process viz *self-reevaluation* is a reassessment of oneself. Where respondents assess what they feel and think about the behavior that has been carried out and the hope is that respondents will become aware of their behavior. In this case the researcher attempted to use methods *brainstorming* and self-evaluation. Method *brainstorming* which is implemented is with the snake and ladder game which is given the title "OM TELOLET OM":

Olahraga **M**minimum 3 times/week

THE queen of inspection visits

Ldetect as early as possible

Obesity is avoided

LPay attention to your body's condition with adequate rest

ANDdukasi

Tavoid stress

Othat's it **M**food that enters the body

With this game, it is hoped that mothers can assess their own behavior, so that they better understand that changes are needed for a better life. After the snakes and ladders game, the researcher carried out the second method in the form of self-evaluation, in this case the respondents were gathered first and then invited to close their eyes, the researcher brought the atmosphere to a calm and comfortable state, then brought the respondents to evaluate themselves, regarding the behavior that the respondents had carried out so far. and trying to make respondents aware that the behavior they have carried out will have a negative impact in the future if it is not immediately corrected. After this activity, it is hoped that respondents will be able to reassess themselves and that respondents' hearts will be touched to change.

The third stage is *stagepreparation* is the stage where respondents intend to take action, respondents begin to make action plans such as consulting with experts, taking health education classes or buying health books. This action plan is used as an alternative solution to get rid of bad behavior (Lenio, 2006). To move up a *stageaction* There is only one effort that can be used to change someone's behavior, namely the process *Self liberation* namely, there is a commitment to the trust that the respondent already has. At this stage the researcher explained the importance of complying with the recommended examination schedule and the importance of complying with the types of examinations related to pregnancy with preeclampsia (I Sukarni & Margareth, 2013). In the case of preeclamptic mothers, the visit schedule should be more frequent than the normal pregnancy schedule. The minimum visit for a normal pregnant woman is 4 times. In this study, researchers innovated examinations for preeclamptic pregnant women with a schedule for TM I to be carried out 3 times (once a month), TM II to be carried out once every 2 weeks, and then TM III to be carried out once a week, and mothers were instructed to immediately check at any time. if any danger signs appear. This aims to determine the condition of pregnant women with preeclampsia so that with more routine examinations the mother will be better monitored and detected earlier. Apart from that, the researcher provided leaflets on preeclampsia material so that respondents could read at any time and the researcher created a health education class group in the form of a Whats App group for healthy mothers, in this group respondents could

consult about their condition, researchers or regional midwives could provide information and provide motivation to respondents.

Meanwhile on stage *action*, In this stage, actions can be observed, respondents have made efforts to modify their behavior, with the experience they have gained and a supportive environment, respondents can overcome problems. they behave according to the action plan that has been made. This action stage requires commitment from the respondent because it requires sufficient time and energy to try to behave well, from this effort the respondent gets recognition from the social environment (Lenio, 2006). For stage *action* up to a level *maintenance* There are several processes that can be taken, namely: *Reinforcement management*, *Helping relationship*, *Counter conditioning*, and *Stimulus control*. In an effort to increase the effectiveness of the model, researchers use a process *reinforcement management* and *helping relationship*. *Reinforcement management* is giving rewards to pregnant women with preeclampsia related to the actions they take. The rewards given are in the form of praise in public, for example regarding the mother's habit of checking regularly and on time because this is considered an award. Apart from that, researchers also use processes *helping relationship* with give support to change behavior, for example having a companion to use as a friend to discuss problems. In this research, assistance was provided by regional midwives, and respondents were also included in the Whats App group for healthy mothers to get counselors and friends to discuss. This method is applied in order to maintain the positive behavior that you already have.

Implementing a health promotion model for preeclamptic pregnant women that is innovated based on the level of behavior change

In implementing the health promotion model that has been developed, it is carried out through 3 stages of activity, the first stage is identifying the level of behavior change in preeclamptic pregnant women before being given the innovative health promotion, the second stage is implementing the innovated health promotion model and the third stage is identifying the level of behavior change in Preeclamptic pregnant women after being given innovative health promotion

Identifying the level of behavioral change in pregnant women before being given innovative health promotions

From the results of this research data, it shows that before being given treatment with the innovative health promotion model, the stage of behavior change for most of the respondents, 53.3%, was at the *Precontemplation*, level *contemplation* as big as 23,3%, *action* by 3.4%.

Skiner (1938) in the book Notoatmodjo (2012) said that behavior is a person's response that arises because of external stimulation. Meanwhile, in the world of health, behavior can be interpreted as a person's response to stimuli related to illness, disease, service systems, food and drink and one's environment. Even though we know that behavior is a form of response, responding will vary because it depends on the characteristics of each person. So it can be concluded that even though the stimulus given is the same, the response can be different. These different responses can be caused by intrinsic factors such as intelligence level, emotional level and external factors which often influence a person's behavior including the physical, social, economic and cultural environment.

Notoatmodjo (2003) explains that knowledge is the result of knowing, some knowledge is obtained from the five senses. The higher a person's knowledge and understanding of health, the more their perspective on health will improve. This level of knowledge is related to the level of education a person has, the higher the level of education a person has, the wider their

knowledge (Rahardjo & Wati, 2017). As we know, education is a teaching and learning process, the result of this education is behavior change.

In this study, the education level of some of the respondents was 41.7% who had completed elementary school, 23.3% each from junior high school and high school, 5% bachelor's degrees and 6.7% of respondents who had not completed elementary school. From this it is known that education greatly influences a person's behavior. Higher education will influence a person's behavior and decision making, because the higher a person's education, the greater the opportunity for understanding information. This is reinforced by research conducted by Rahardjo & Wati (2017) regarding the relationship between education level and Kadarzi's behavior, which states that there is a relationship between education and behavior, because someone with higher education is more open and accepts new things more easily (De Bruijn & Heuvelhof, 2002).

Implement an innovative health promotion model

After obtaining the respondent's stage, the researcher grouped the respondents based on the stage they had, obtained data on respondents in the Kalisat health center area, namely that there were 13 respondents in the stage *precontemplation*, 9 respondents leveled *contemplation*, 7 respondents at the level *preparation*, and 1 leveled respondent *action*. Meanwhile, for the respondents who are in the Sumberjambe health center region, 19 respondents are at the level *precontemplation*, 5 respondents leveled *contemplation*, 5 respondents at the level *preparation*, and 1 leveled respondent *action*.

From this data we can see that respondents are spread across all stages, therefore researchers will use all methods to improve the stages that respondents belong to. After the respondents were grouped, they were given socialization regarding the innovative health promotion model that would later be applied to them. Each researcher is responsible for two groups, groups *precontemplation* and *contemplation* held by the first researcher and the group *preparation* and *action* held by the second researcher.

In implementing the model, the researcher first carried out the intervention to the group that had the initial stages, namely *precontemplation* in the form of lectures, discussions, video screenings and then testimonials. Meanwhile, pregnant women are at this stage *contemplation* Wait a moment and listen to the explanation given by the researcher. Likewise in the second research group. Researchers carried out interventions at group stages *preparation* first and then proceed to the group stages *action*.

In practice, the mother listened very enthusiastically, especially during the testimonial activities. From the Kalisat community health center area, testimonials were given by mothers who had experienced seizures during pregnancy, where the mother was referred to the hospital and finally underwent surgery, and received postpartum care in the hospital for 10 days, meanwhile the baby was not crying at birth and was immediately taken to action space (Maryani et al., 2016). In the Sumberjambe area, the testimony was delivered by a mother who had experienced severe preeclampsia but did not have seizures. At 37 weeks of gestation, the mother received treatment in hospital for 3 days until finally surgery was carried out and the baby was born weighing 2550 grams.

From this testimony, the researcher added about the situation experienced by the mother, namely that the mother experienced preeclampsia and even fell into a state of eclampsia which could be dangerous for the mother and the fetus she was carrying. As we know, the baby born to the mother in the first testimony experienced asphyxiation (the baby did not cry), while the other baby was born with a fairly small body weight. This is in accordance with the theory put forward by Sukarni & Margareth (2013) that the consequences of preeclampsia or eclampsia

can range from mild to severe, apart from occurring in the mother, the consequences of this disease can affect the baby, such as the baby can experience asphyxia, experiencing excessive weight gain. low and can lead to death.

After the first group was finished, the researcher continued the intervention in the other groups. In the snakes and ladders game Om Tolelot Om there were 9 mothers who were invited to play, who were divided into 2 groups. The first group was coordinated by the researcher, while the second group was coordinated by the regional midwife (Lalita, Manueke, & Alow, 2019). During the game, pregnant women feel very happy and enjoy themselves, apart from understanding more about pre-eclampsia, mothers can reminisce about their childhood.

Identifying the level of behavior change in pregnant women after being given innovative health promotion

After conducting socialization in the form of implementing the health promotion model that had been innovated, analysis was carried out and the results showed that there was a change in respondent behavior to a certain extent *action* amounted to (33.3%), *preparation* (31,6%), *maintenance* (26,7%), *contemplation* (5%), but there were still respondents who did not experience changes, remaining in the stage *precontemplation* namely (3.4%).

In this study, all health promotion program models were used to improve respondents' behavioral stages, different from the previous year which only used three stages. Previous research conducted on 75 respondents obtained results from 39 respondents who were at stage *precontemplation* after receiving the health promotion, they rose to the stage *contemplation* as many as 19 respondents and 20 respondents to the level *preparation*. Meanwhile, the current research consists of 32 respondents who are in the early stages (*precontemplation*) After receiving the intervention, it was distributed to 2 respondents who remained at the stage *precontemplation*, 3 respondents are in the contemplation stage, 17 respondents are in the preparation stage, 8 respondents are in the action stage and 2 respondents are in the *maintenance*. Likewise at other stages, there were 25 respondents *contemplation* in previous research, distributed in stages *preparation* as many as 15 respondents and 10 respondents were ranked *action*. Meanwhile, in this study, 14 respondents were in the stage *distributed contemplation* at the level of *preparation* as many as 2 respondents, 8 respondents to the level *action* and 4 level respondents *maintenance*. From these data we can see that the distribution of changes in stages is becoming more comprehensive, this shows that with the development of the methods used, respondents understand better and can move them to change their behavior so that this model can be said to be more effective in achieving goals.

Even though we know that in this study there were 2 respondents who remained at stage *precontemplation*, Where This respondent was a respondent who had not finished elementary school and was 25 years old with her third pregnancy. Meanwhile, another respondent finished elementary school at the age of 38, pregnant with her third child. From this data we can draw the conclusion that a person's level of education and possessions also influence the behavior they carry out. Even though the same intervention is given, the response can be different (Notoatmodjo, 2012).

Evaluate the results of developing a health promotion model

At the activity stage of evaluating the innovated health promotion model, post test activities were carried out to determine changes in behavior in preeclamptic pregnant women before and after being given the innovated health promotion. The changes in behavioral stages that occurred in respondents before and after receiving the innovative health promotion showed positive things. If we compare the percentage of respondents before and after being given the

health promotion, we can see that the changes are quite significant from stage to stage. *precontemplation* 53,3%, after being given an innovated health promotion it became 3.4%, *contemplation* 23,3% become 5%, level *preparation* from 20% to 31.6%, level *action* 2.4% changed to 33.3%, and the last level *maintenance* which there is no 0% to 16%.

Test analysis results *paired t-test* by using spss it shows that at each stage the decision H_0 is rejected which can be concluded that there is a significant change between the before and after values. Likewise with the cumulative analysis of all stages, after testing the calculated t result is greater than the t table ($9.978 > 1.671$) with the Asymp value. Sig. (2-tailed) 0.000 is smaller than α 0.05, which means that the cumulative stages before and after experiencing significant changes, with an average of (*mean*) the cumulative value before and after increased by 6,400 so there was an influence on the use of the method applied. Based on the analysis above, treatment by providing health promotion has been developed based on *Transtheoretical model* effectively used to change or improve the stages that respondents have (LaMorte, 2019).

Recommendations from the development of a health promotion model

At this stage, the researcher held a joint discussion with the head doctor of the Community Health Center, the village head and the coordinating midwife as a basis for the researcher's study in providing recommendations (Manuaba, 2010). The purpose of this discussion is to discuss and share the conditions of respondents before and after implementing the innovative health promotion, as well as to find out their opinions about the methods used. From the results of discussions with doctors, it was clear that this health promotion model was good enough to be implemented and could possibly be continued with several additions. An addition that could be implemented might be to activate *babinsa* so that if there is a pregnant woman who does not want to be examined while the mother is in the risk category, then *babinsa* can accompany her and take her to health services. The solution that can be offered is coordinating with the village head so that *babinsa* can be empowered.

Based on the results of discussions with doctors and midwives, the research coordinator can submit an analysis and recommendation that the researcher will discuss with the village head regarding the empowerment of *babinsa* in overseeing pregnancy checks for high-risk pregnant women. It was suggested to the head doctor of the community health center that activities such as health promotion could be carried out in pregnant women's classes every month. At this stage, the researcher held a joint discussion with the head doctor of the Community Health Center, the village head and the coordinating midwife as a basis for the researcher's study in providing recommendations (Prawirohardjo, 2010). The purpose of this discussion is to discuss and share the conditions of respondents before and after implementing the innovative health promotion, as well as to find out their opinions about the methods used. From the results of discussions with doctors, it was clear that this health promotion model was good enough to be implemented and could possibly be continued with several additions. An addition that could be implemented might be to activate *babinsa* so that if there is a pregnant woman who does not want to be examined while the mother is in the risk category, then *babinsa* can accompany her and take her to health services. The solution that can be offered is coordinating with the village head so that *babinsa* can be empowered.

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CONCLUSION

Based on the research results and discussions and recommendations obtained, several important points can be concluded. First, the behavioral stages of pregnant women at risk of pre-eclampsia before being given health promotion that has been innovated are mostly at the precontemplation stage. Second, creating a health promotion model that has been innovated based on the level of behavior change requires improvement to reach the desired level of perfection. Third, after being given innovative health promotion, there was a positive change in the level of behavioral change in pre-eclamptic pregnant women, most of whom were at the preparation and action stages. Fourth, there are significant changes in the behavioral stages before and after implementing the health promotion model. Finally, the results of recommendations from competent experts are very valuable and provide input and suggestions that can be used to improve the next research stage. Thus, this study provides a better understanding of behavioral changes in pregnant women with pre-eclampsia and opens the door to the development of more effective health promotion models in the future.

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