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**Development of a Model of Pregnant Women's Behavior in Pregnancy Care**

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**ABSTRACT**

Maternal mortality is a problem in Indonesia, with indirect causes related to social, economic, behavioral, cultural and lifestyle factors. The aim to implement a behavioral model based on transcultural care (sunrise model) and PRECEDE in caring for pregnancy. The study with quasi experiment with the application of the model to the behavior of pregnant women who meet the inclusion criteria of 200 pregnant women for 3 months. The results of the pre and post test results obtained for the control group the siq value  $> 0.05$  on all variables which means there is no difference between pre and post in the control group. While in the treatment group the results obtained siq  $< 0.05$  in all variables which means there is a difference between pre and post in the treatment group. The test for differences in the behavior of pregnant women in the control and treatment groups using obtained that for data on pre (before treatment) has a value of siq  $> 0.05$  in all variables which means there is no difference between control and treatment in the pre test. While in the post group (after treatment) the results obtained siq  $< 0.05$  on all variables which means there is a difference between control and treatment in the post test. In conclusion, the Sunrise Model (Transcultural Care) and PRECEDE-based behavior development model affects pregnant women in caring for pregnancy. In providing services to pregnant women should consider the sunrise model and PRECEDE.

**Keywords:** Behavior, PRECEDE, Pregnant, Pregnancy care, Sunrise model

**INTRODUCTION**

Pregnancy is a critical period in a woman's life because pregnant women experience physical, mental, and social changes, and when not handled effectively cause serious problems[1][2]. Although pregnancy is a physiological phenomenon, some conditions can jeopardize the health of the mother or fetus, which can cause pregnancy to become a high-risk pregnancy (HRP) and cause women to experience stressful conditions[3]. Good mental health during pregnancy is very important for maternal and fetal health, when the level of prenatal attachment in participating pregnant women decreases, the level of stress increases, the level of stress depends on age, education, income, social support and health worker support[4]. Direct causes of maternal death are usually closely related to the health

conditions of the mother during pregnancy, labor and postpartum. While indirect causes are more related to the social, economic, geographical conditions and cultural behavior of the community. Optimal maternal behavior is important for reasoning, decision-making, and learning new information to prepare for a healthy birth and capital in caring for young infants for example through nutritional supplementation[5].

The behavior of pregnant women in caring for their pregnancy according to Leigniger's Transculture Care is influenced by several factors, including: Technological factors, religious factors and philosophy of life, social factors and family attachment, cultural values and lifestyle factors, regulatory and policy factors, economic factors and educational factors[6]. In addition, PRECEDE also

affects a person's behavior. Assessment of health problems must be based on a cultural perspective, which will get more specific results at the root of the problem[7]. The impact of pregnant women who do not take care of their pregnancies or do not detect pregnancy complications early, they do not know the condition of fetal growth, the risks of their pregnancies include continuous vomiting, high fever, swelling of the feet, hands and face accompanied by seizures, fetal immobility, bleeding in the birth canal, and premature rupture of membranes in addition to other problems[8].

The purpose of this study is to analyze the development of a behavioral model in pregnancy care.

## RESEARCH METHOD

The purpose of this study is to analyze the development of a behavioral model in pregnancy care, this study used a quasi-experiment design. This study is the third stage of study with the previous stage being the discovery stage of the pregnant women behavior model and continued with FGDs and model trials. Population and Sample: some pregnant women in the Surabaya City Health Office work area who meet the inclusion criteria. Inclusion criteria in this study include: Pregnant women who 1) Have KIA book, 2) Pregnant women have ANC at least 2 times, 3) Willing to be a respondent. Total sample: 200 pregnant women respondents (100 treatment respondents and 100 control respondents). Sampling technique: non probability sampling (consecutive sampling). The study was conducted from April to August 2023. The dimensions of transculture care include technological factors, religious and philosophical factors, social and kinship factors, cultural values and lifestyles, political and legal factors, economic factors, and educational factors. The PRECEDE component includes predisposing factors, enabling factors, and reinforcing factors, while the behavior of pregnant women is measured by the

dimensions: regularity of pregnancy checks, accuracy of taking drugs or vitamins, diet, observation of fetal movements, activity patterns. Data analysis in this study using Wilcoxon Test and mann whitney. The questionnaire used in this study has been tested for validity and reliability. This research has received a certificate of ethical eligibility description of ethical exemption "ethical exemption" No.EA/1887/KEPK-Poltekkes\_Sby/V/2023

## RESULT AND DISCUSSION

The results of study in the first stage, several obserb variables described in the study framework did not have an effect in this study. Transcultural care consists of indicators of technological factors, religion and philosophy of life, social and family attachment, cultural values and lifestyles, regulations and policies, economy, education, PRECEDE variables consist of indicators of predisposing, driving and enabling factors. While the behavior of pregnant women in caring for pregnancy consists of regularity of pregnancy checks, accuracy of taking drugs or vitamins, maintaining a diet, monitoring fetal movements and maintaining activity patterns during pregnancy[6].

This study analyzes Transcultural Care and Precede on maternal behavior in caring for pregnancy. Transcultural Care variables consist of indicators of technological factors, religion and philosophy of life, social and family attachment, cultural values and lifestyles, regulations and policies, economy, education, Precede variables consist of indicators of predisposing, driving and enabling factors, while the behavior of pregnant women in caring for pregnancy consists of regularity of pregnancy checks, accuracy of taking drugs or vitamins, maintaining a diet, monitoring fetal movements and maintaining activity patterns during pregnancy[8].

The model applied is based on significant indicators. The results of model

testing found that there were significant changes in behavior between groups given treatment, namely stimulating behavior from factors that proved significant. The results of this study behavior as a whole is influenced by Transcultural Care and Precede. Both become 2 factors that complement each other in shaping the behavior of pregnant women[8].

FGDs involved pregnant women, husbands, families, government officials, community leaders and health workers. During the FGDs, several strategic issues were identified and the following results were obtained:

1. People do not understand that pregnancy is a shared responsibility
2. There are no rules in the community that privilege pregnancy
3. Public facilities rarely have signs or information on special treatment for pregnancy
4. Pregnant women only use technology limited to social media
5. Pregnant women still think that the only source about maintaining pregnancy is from health workers
6. Pregnant women think that religion does not emphasize taking medicine or vitamins, so they think it is not supported religiously
7. Pregnant women have a myth that if the pregnancy is too guarded, the child born will be spoiled

8. Lack of education for pregnant women on how to monitor fetal movements
9. There is no information about the role of the family in supporting the monitoring of fetal movements
10. Pregnant women assume that fetal movement monitoring requires tools at an unaffordable cost

The module trial was conducted on 60 respondents and it was found that the application of the model was able to improve the behavior of pregnant women by obtaining a test of differences in the behavior of pregnant women in the control and treatment groups using mann whitney found that for data on pre (before treatment) has a siq value > 0.05 on all variables which means there is no difference between control and treatment in the pre test. While in the post group (after treatment) the results obtained siq < 0.05 on all variables which means there is a difference between control and treatment in the post test.

The implementation of the module that has been obtained is carried out on 200 respondents and based on these results, a module for the development of pregnant women's behavior in caring for pregnancy is then made and implemented with the following results. The frequency distribution of respondent characteristics base on homogeneity test in this study are in table 1 below.

**Table 1.** Frequency Distribution Respondents' Characteristics and Homogeneity Test

No	Characteristics	Category	Control		Treatment		P-Value
			Σ	%	Σ	%	
1	Age	20-24	33	33	47	47	0.489
		25-29	40	40	33	33	
		30-35	27	27	20	20	
		Total	100	100	100	100	
2	Last Level Of Education	Elementary School	40	40	30	30	1.000
		Junior High School	46	46	53	53	
		Senior High School	7	7	8	8	
		university	7	7	9	9	
		Total	100	100	100	100	
3	employment status	Work	67	67	80	80	0.682
		Not Working	33	33	20	20	
		Total	100	100	100	100	
4	How many	primigravida	53	53	40	40	0.465

pregnancies	multigravida	47	47	60	60
	Total	100	100	100	100

Table 1 explains of characteristics of respondents, it is found that the most age is in the age range of 25-29 years, the most last level of education is junior high school graduates, the most respondents are working and the most respondents are in their primigravida. The results of the characteristic test showed a p value/ $\sigma > 0.05$ , which means that the distribution of characteristic data between the control group and the treatment group is considered not different (homogeneous). The distribution of respondent characteristics based on normality test in this study are in table 2 below.

**Table 2.** Distribution of Respondent Characteristics Based on Normality Test

Variables	Treatment	P-value Control	P-value Treatment
Regularity of Pregnancy Examination	Pre	0.006	0.000
	Post	0.002	0.000
Vitamin Consumption	Pre	0.003	0.000
	Post	0.000	0.000
Diet Pattern	Pre	0.004	0.006
	Post	0.004	0.000
Fetal Motion Monitoring	Pre	0.006	0.006
	Post	0.002	0.000

Variables	Treatment	P-value Control	P-value Treatment
Regularity of Pregnancy Examination	Pre	0.006	0.000
	Post	0.002	0.000
Activity Pattern	Pre	0.004	0.001
	Post	0.003	0.000

Description: using the normal Shapiro Wilk Test if the P-Value > 0.05

Table 2 explains explains of the results of the normality test show that the  $\sigma$  / p-value of each variable in the control and treatment groups obtained a value of <0.05, which means that the data for each variable both control and treatment are declared abnormal, in pregnancy checkup, vitamin consumption, diet pattern, fetal motion monitoring, activity pattern pre and post variable both control and treatment are declared abnormal, so for further tests using nonparametric methods, namely for the pre vs post test using the Wilcoxon test while for the difference test in the control vs treatment group using the Mann Whitney test. Analysis of pre and post maternal behavior in the treatment and control groups in this study are in table 3 below.

**Table 3.** Analysis of Pre and Post Maternal Behavior in the Treatment and Control Groups

Variables	Treatment		Mean Difference	P-Value	Control		Mean Difference	P-Value
	Pre Mean±SD	Post Mean±SD			Pre Mean±SD	Post Mean±SD		
Regularity of Pregnancy Examination	3.00±0.53 5	3.80±0.41 4	0.80	0.003	2.93±0.79 9	3.07±0.88 4	0.14	0.157
Vitamin Consumption	3.00±0.37 8	3.67±0.61 7	0.67	0.012	2.87±0.64 0	3.00±0.53 5	0.13	0.157
Diet Pattern	2.93±0.70 4	3.73±0.59 4	0.80	0.023	2.80±0.67 6	2.87±0.83 4	0.07	0.655
Fetal Movement Monitoring	2.87±0.74 3	3.80±0.41 4	0.93	0.008	2.93±0.79 9	3.07±0.88 4	0.14	0.317
Activity Pattern	3.33±0.61 7	3.93±0.25 8	0.60	0.013	3.20±0.67 6	3.27±0.70 4	0.07	0.564

Wilcoxon Test is different if the P-Value <0.05.

Table 3 explains of found that the results of the pre and post tests using the Wilcoxon Test show that for the control group the sig value > 0.05 in all variables which means there is no difference between pre and post in the control group. While in the treatment group the results obtained sig < 0.05 in all variables which means there is a difference between pre and post in the treatment group. Table 4 analysis of

differences in behavior of pregnant women in the treatment and control groups. This table explains that there are differences in behavior in regularity of pregnancy examination, vitamin consumption, diet pattern, fetal movement monitoring, activity pattern after getting treatment through the application of the sunrise rise and PRECEDE models but not in the control group.

**Table 4.** Analysis of Differences in Behavior of Pregnant Women in the Treatment and Control Groups

Variables	Pre		Mean Difference	P-Value	Post		Mean Difference	P-Value
	Control Mean±SD	Treatment Mean±SD			Control Mean±SD	Treatment Mean±SD		
Regularity of Pregnancy Examination	2.93±0.79 9	3.00±0.53 5	0.07	0.763	3.07±0.88 4	3.80±0.41 4	0.73	0.013
Vitamin Consumption	2.87±0.64 0	3.00±0.37 8	0.13	0.454	3.00±0.53 5	3.67±0.61 7	0.67	0.003
Diet Pattern	2.80±0.67 6	2.93±0.70 4	0.13	0.598	2.87±0.83 4	3.73±0.59 4	0.86	0.004
Fetal Movement Monitoring	2.93±0.79 9	2.87±0.74 3	0.06	0.824	3.07±0.88 4	3.80±0.41 4	0.73	0.013
Activity Pattern	3.20±0.67 6	3.33±0.61 7	0.13	0.594	3.27±0.70 4	3.93±0.25 8	0.66	0.002

Mann Whitney test is different if the P-Value < 0.05

Table 4 explains of found that after testing the differences in the behavior of pregnant women in the control and treatment groups using Mann Whitney, it is found that for data on pre (before treatment) has a sig > 0.05 value on all variables which means there is no difference between control and treatment in the pre test. While in the post group (after treatment) the results obtained sig < 0.05 on all variables which means there is a difference between control and treatment in the post test. The table above shows that there are differences in the application of the sunrise rise model and PRECEDE is able to change behavior about regularity of pregnancy examination, vitamin consumption, diet pattern, fetal movement monitoring, activity pattern.

This study found that the application of the development module that has been prepared through the modeling and FGD

stages has been able to change the behavior of pregnant women in caring for their pregnancy. By combining the role of Transcultural Care on the behavior of pregnant women, especially the regularity of pregnancy checks, diet, taking drugs and vitamins, and PRECEDE on the behavior of pregnant women, especially monitoring fetal movements, activity patterns have been able to change the behavior of pregnant women in caring for their pregnancy.

The results of this study found that the regularity of prenatal check-ups in pregnant women was influenced by technological factors, religion and philosophy of life, social and family attachment, regulations and policies, education and push factors. The accuracy of taking drugs or vitamins in pregnant women is influenced by social and family

attachments, cultural values and lifestyles, regulations and policies, economics, and predisposing factors, enabling factors and push factors. Diet in pregnant women is influenced by technological factors, social and family attachment, regulations and policies, predisposing factors, enabling factors and push factors. Fetal movement monitoring in pregnant women is influenced by technological factors, predisposing factors and enabling factors, and activity patterns in pregnant women are influenced by religious factors and philosophy of life, cultural values and lifestyles, regulations and policies, education, enabling factors and push factors.

Culture is defined as the thoughts, communications, actions, customs, beliefs, values, and institutions of a racial, ethnic, religious, or social group. Nursing culture refers to the learned and inherited ways of life, values, symbols, patterns, and normative practices of members of the nursing profession within a given society. In order to serve the unique and diverse needs of patients in the United States, it is imperative that nurses understand the importance of cultural differences by assessing, incorporating, and reviewing their own values and beliefs related to their health and healthcare organizations, only then can they support the principle of respect for the individual and the ideal of transcultural care[9].

Providing care requires tools and techniques to deal with culturally different patients and maintain quality of care in a diverse hospital environment. Language resources, language tools and cultural knowledge are useful tools for nurses when communicating with transcultural patients. This helps nurses gain confidence and predict patient needs, resulting in safer and more productive nursing care practices[9].

The concept of "transcultural nursing" has been used in nursing care since 2004 and is included in the nursing curriculum at many universities in Turkey. However, there is a lack of providing

adequate knowledge to provide culturally sensitive nursing care in the studies. Most of the studies in this review used quantitative methods. Qualitative studies can be beneficial in determining cultural factors and allow the acquisition of in-depth knowledge in determining nurses' views on this issue. In future study, studies should be conducted using different methods; examining the characteristics of different cultures; determining the influence of technological development and regional practices on culture, which are subjects that are rarely studied; and analyzing areas such as travel and violence[10].

Challenges to transcultural service provision are intrapersonal struggles, cultural conflicts, diverse expressions of pain and suffering, and navigation of personal and organizational constraints. Overcoming these challenges requires nurses and learners to practice self-criticism and tolerate differences, develop interpersonal and psychological skills, and collaborate with peers and patients' families[11].

Mindful and reflexive practices that are transcultural and trauma-informed will go a long way in improving the healthcare experience and healing journey of immigrants and refugees in the mental health care system. While there are guidelines to inform such practices in the DSM-5, some requirements, such as a supported learning environment that includes education, resources, and standardized tools, are not implemented across mental health services in London, Ontario. Additionally, the complexity of intergenerational and familial trauma highlights the need to use family-based models of care, which are also poorly supported by existing appointment and billing models. Families collectively face past and present challenges, ensuring the family as a whole embarks on their healing journey will build resilience to support that healing. Strong support from service providers and community agencies led to the development of a transcultural and

trauma-informed family-based mental health consultation service. The next phase of study will assess the usefulness of this model for improving the health outcomes of traumatized immigrant and refugee families. Outcome-focused intervention study is needed to demonstrate the effectiveness of family-based approaches that explore the social and cultural determinants of immigrant and refugee health as they settle into new lives[12].

Healthcare delivery today reflects a history of change, responding to changing lifestyles, cultural diversity, population needs and expectations. In today's healthcare environment, it is imperative for healthcare professionals to be mindful of the cultural factors that influence health. These factors include the complex and interdependent biological, intellectual, psychological, social and spiritual needs of the individuals they work with. However, there are challenges for those who provide healthcare to people with intellectual disabilities. This article presents the challenges of transcultural care for people with intellectual disabilities, highlighting biomedical/sociocultural perspectives in healthcare, communication, and the disparities experienced by people with intellectual disabilities. As a population group, people with intellectual disabilities can often be considered part of a larger culture rather than a culture within itself, and this article seeks to emphasize that intellectual disability is itself an interconnected culture. By highlighting intellectual disability as a cultural community within a larger community, it calls for a transcultural response to services at several levels. Healthcare professionals can provide culturally appropriate services for people with intellectual disabilities within a transcultural framework to enhance person-centered care approaches[13][14].

This article reviews current long-term care policies to highlight the importance of considering the cultural needs of Taiwan's indigenous people to

improve the efficiency and impact of long-term care programs. In addition, the findings strongly recommend that additional resources be made available to meet the long-term care needs of indigenous people. Finally, culturally-specific long-term care service strategies should be disseminated to improve welfare to alleviate and comfort the feelings of indigenous people. Significant influence between culture capital and lifestyle on breastfeeding, and intervention model of culture capital and lifestyle influence breastfeeding in Madurese community[15][16].

The results suggest that there is room to improve the cultural competence of nurses in Yunnan through education that enables them to provide high-quality transcultural nursing care. Training topics could include transcultural knowledge, cultural sensitivity, minority languages, and in-depth multicultural experiences. Other suggested improvements include a resource room for transcultural services, accommodation of religious and dietary needs, and dedicated staff leading transcultural services in the hospital[17].

The nurse identifies the sociocultural aspects of women with sexually transmitted infections and recognizes the presence of influencing factors: technology, religion, economics, politics, and law, kinship and social, cultural values, and ways of life. Final considerations: The study found that care delivery by nurses at the health center was close to the sociocultural aspects of these women when considering each individual's beliefs and values, especially regarding the context of their lives and care experiences[18].

A historical overview of Leininger's Cultural Caring Diversity and Universality Theory also known as Cultural Caring Theory (CCT) and the evolution of the Sunrise Enabler is presented along with a description of the theory's purpose, goals, principles, basic assumptions, key core constructs, and orientational definitions.

Recent articles, books and book chapters provide relevant examples to enhance scientific understanding and application of the theory constructs. Proposed future directions include using CCT to guide discovery study and translational study projects for evidence-based nursing practice; developing nursing courses and curricula to prepare culturally competent nurses; guiding future culturally competent administrative and leadership policies and procedures; informing public policy related to cultural diversity and underserved populations; promoting grant-writing initiatives to increase cultural diversity in recruiting nursing staff, supervisors, and faculty; and promoting the admission of nursing students from underserved and/or diverse backgrounds[19].

The participants' perceived level of cultural competence varied. All participants agreed that transcultural nursing content should be integrated in the nursing curriculum, and suggested different strategies to improve their knowledge, skills and attitudes. It is important to listen to students and consider their opinions when designing cultural teaching and learning activities[20][21].

As cultural diversity among patients increases, it becomes important for nurses to be prepared and efficient in providing culturally aligned care. The purpose of this study was to examine factors affecting transcultural self-efficacy (TSE) among Korean nurses. Low levels of TSE lead to avoidance behaviors and ineffective communication in the care of foreign patients, resulting in unsatisfactory clinical performance. Effective educational programs and administrative guidelines may be important for nurses to improve their TSE[22].

Many aspects of Centering Pregnancy are readily adoptable. We made 10 substantive transcultural modifications and articulated considerations for transcultural modifications. Discussion/conclusions: This study describes transcultural considerations for

modifying the Centering Pregnancy model and provides implications for use in other isolated populations of pregnant women. This study provides accurate data that transcultural plays an important role in pregnancy care[23].

A review of international literature highlights higher neonatal mortality rates in migrant patients and their babies. Explanatory hypotheses include late pregnancy follow-up with difficulties accessing services, language barriers, and differences in cultural representations of pregnancy support. On the one hand, we propose to elucidate cultural factors that may influence caring relationships during the perinatal period. On the other hand, we provide tools for anthropological and psychological understanding to improve the exchange of cultural representations around pregnancy follow-up, infant needs, and obstetric or postnatal complications. The demand for specialized transcultural opinions should be more systematic; transcultural postures can be adapted to each care professional. This requires professionals to address explicitly the impact of culture in care and consider their own cultural distance. Specific advice is recommended in certain situations of cumulative vulnerability (complex trauma, perinatal depression with cultural symptom codes), barriers or refusal of services for cultural reasons and to avoid cultural misunderstandings. We detail two modalities: mediation and discussion groups around cultural issues conducted in maternity wards. The institutional work we propose in multidisciplinary teams in maternity wards also allows the acquisition of transcultural competencies[24].

Family participation in infant care is still unstable, but should be an integral element of culturally attuned care, so as to collaborate with the full recovery of preterm infants. Good collaboration between family and health professionals with culturally based care benefits the mother. Traditional leaders also play an important role in the successful care of



preterm infants[25].

The transcultural levers described here make it possible to limit cultural misunderstandings and promote the therapeutic alliance. This presupposes professionals will simultaneously analyze their cultural countertransference and acquire the knowledge and know-how necessary to understand the elements of cultural, political, and social issues required to develop clinical proficiency. Conclusion: This combined theoretical-clinical article is intended to be pedagogical in nature. It provides guidelines for conducting a transcultural child psychiatric/psychological interview in the perinatal period aimed at assessment and therapy[26].

For stakeholders who have lived in their respective countries for a long time, cultural differences involve different family and community norms, religious beliefs, lifestyles, and habits. These components are perceived to be at odds with healthcare norms and values, and they mediate two key and related aspects of the relationship between healthcare users and providers: accessibility and communication. Conclusion: Communication and access to healthcare are key for healthcare users, and they are the most frequent source of misunderstanding and conflict between them and healthcare professionals. Impact: It is important to extend the investigation of cultural issues in healthcare to stakeholders and users. There is no doubt that healthcare professionals should be trained in cultural competence; however, cultural competence training is not the only thing that needs to be improved. There must be a paradigm shift in healthcare across Europe: from cultural integration and individual diversity to organizational[27].

The PRECEDE-PROCEED model can be used as the theoretical framework for health promotion interventions across population groups, and these interventions are particularly effective with regard to knowledge improvement[28]. The PRECEDE-PROCEED model provides an

excellent framework for health intervention programs especially in screening contexts, and could improve the understanding of the relationship between variables such as knowledge and screening. Given the complexity of a behavioral change process, certain important predisposing factors could be measured in future studies, and during health intervention planning[29]. The present study was designed to develop Nutrition Education Program (NEP) based on PRECEDE-PROCEED model (PPM) to address healthy eating behavior among middle school girls aged between 4 and 12 years. Results showed that NEP was quite successful for long-term results. A significant increase in total caloric intake was observed after 8 weeks of NEP intervention ( $1694 \pm 217$  Kcal) as compared to before intervention ( $1329 \pm 318$  Kcal). Similarly, carbohydrate, protein, and fat content was also increased in daily diet. Conclusively, NEP based on PPM has great impact on healthy lifestyle of middle school girls. Significant difference was observed in score of health variables before and after NEP intervention[30]. A questionnaire based on the development of the PRECEDE-PROCEED model was developed, validated, and the structural interrelationship between the two recommended methods of providing education to maintain oral and dental health was explained[31].

## CONCLUSION

The behavior development model based on transcultural care (sunrise model) and PRECEDE is able to improve the behavior of pregnant women in caring for pregnancy, especially in the regularity of pregnancy examination, vitamin consumption, diet pattern, fetal movement monitoring, activity pattern. On this basis, the combination of the role of transcultural care (sunrise model) and PRECEDE is the basis for the development of this model. Changes in behavior can be seen with the model development approach that has been obtained and proven to significantly

change the behavior of pregnant women in caring for their pregnancy. The recommendation in this study is the need to study the behavioral development model that supports pregnant women, such as husbands, families and surrounding communities.

## REFERENCES

- [1] N. M. Kyle Jackson, Erika Erasmus, "Fatherhood and high-risk pregnancy: a scoping review," *BMC Pregnancy Childbirth*, vol. 23, no. 168, pp. 1–6, 2023, doi: 10.1186/s12884-023-05422-x.
- [2] T. K. Kobra Mirzakhani, Abbas Ebadi, Farhad Faridhosseini, "Well-being in high-risk pregnancy: an integrative review," *BMC Pregnancy Childbirth*, vol. 20, no. 1, p. 526, 2020, doi: 10.1186/s12884-020-03190-6.
- [3] N. de M. N. Ana Lúcia de Medeiros, Sérgio Ribeiro Dos Santos, Rômulo Wanderley de Lima Cabral, Juliana Paiva Góes Silva, "Assessing nursing diagnoses and interventions in labour and high-risk pregnancies," *Rev Gauch. Enferm*, vol. 37, no. 3, p. e55316, 2016, doi: 10.1590/1983-1447.2016.03.55316.
- [4] N. N. A. A. Yasemin Şanlı, "Effects of Stress in Pregnancy on Prenatal Attachment, and Contributing Factors," *Psychiatr Danub*, vol. 34, no. 1, pp. 25–33, 2022, doi: 10.24869/psyd.2022.25.
- [5] K. G. D. Elizabeth L Prado, Ulla Ashorn, John Phuka, Kenneth Maleta, John Sadalaki, Brietta M Oaks, Marjorie Haskell, Lindsay H Allen, Steve A Vosti, Per Ashorn, "Associations of maternal nutrition during pregnancy and post-partum with maternal cognition and caregiving," *Matern Child Nutr*, vol. 14, no. 2, 2018, doi: 10.1111/mcn.12546.
- [6] S. Evi Pratami, Sukesni, "Model of Maternal Behavior in Pregnancy-Based Care Transcultural Care Theory (Sunrise Model) and Precede-Based," *Open Access Maced J Med Sci*, vol. 5, no. 10(G), pp. 619–24, 2022, doi: 10.3889/oamjms.2022.8871.
- [7] S. L. Isa HES Gustafsson Jertfelt, Alice Blanching, "Cultural perspective in open-ended interviews – The importance of being adaptable," *Cult. Psychol.*, vol. May, 2016, doi: 10.1177/1354067X16650809.
- [8] E. Pratami, Sukesni, E. Husni, A, and Nursalam, "The Behavioral Model development of pregnant women in accordance to pregnancy treatment lifestyle," *Clin. Epidemiol. Glob. Heal.*, vol. 12, no. 100802, 2021, doi: 10.1016/j.cegh.2021.100802.
- [9] K. P. Risa Larsen, Elisabeth Mangrio, "Interpersonal Communication in Transcultural Nursing Care in India: A Descriptive Qualitative Study," *J Transcult Nurs*, vol. 32, no. 4, pp. 310–7, 2021, doi: 10.1177/1043659620920693.
- [10] N. B. Songul Caglar, "Transcultural Nursing Care in Turkey," *Florence Nightingale J Nurs*, vol. 28, no. 1, pp. 110–23, 2020, doi: 10.5152/FNJJN.2020.18008.
- [11] J. L. T. Sharoon Shahzad, Nizar Ali, Ahtisham Younas, "Challenges and approaches to transcultural care: An integrative review of nurses' and nursing students' experiences," *J. Prof. Nurs.*, vol. 37, no. 6, 2021, doi: 10.1016/j.profnurs.2021.10.001.
- [12] N. W. Lloy Wylie, Rita Van Meyel, Heather Harder, Javeed Sukhera, Cathy Luc, Hooman Ganjavi, Mohamad Elfakhani, "Assessing trauma in a transcultural context: challenges in mental health care with immigrants and refugees," *Public Heal. Rev*, vol. 39, no. 22, pp. 39–22, 2018, doi: 10.1186/s40985-018-0102-y.
- [13] O. D. Gerard Crotty, "Transcultural care and individuals with an intellectual disability," *J Intellect Disabil*, vol. 20, no. 4, pp. 386–96, 2016, doi:

- 10.1177/1744629515621466.
- [14] M. Z. Nataliya Kasimovskaya, Natalia Geraskina, Elena Fomina, Svetlana Ivleva, Maria Krivetskaya, Nina Ulianova, "Russian nurses' readiness for transcultural care of palliative patients," 2023, vol. 1, no. 87, pp. 1–8, 22AD, doi: 10.1186/s12904-023-01198-1.
- [15] D. Pratami, Evi; Husni, Ervi; Isfentiani, "Breastfeeding Model in Madurese Viewed from Culture Capital and Lifestyle According to Pierre Bourdieu.," *Indian J. Forensic Med. Toxicol.*, vol. 13, no. 4, pp. 1633–8, 2019, doi: 10.5958/0973-9130.2019.00539.5.
- [16] M. H. Yi-Maun Subeq, "A Reflection on the Policy of Transcultural Long-Term Care for the Indigenous Peoples in Taiwan," *Hu Li Za Zhi*, vol. 63, no. 3, pp. 5–11, 2016, doi: 10.6224/JN.63.3.5.
- [17] X. W. Ling Tong, Tong Tong, Ariko Noji, Tadashi Kitaike, "Nurses' experiences of providing transcultural nursing care to minority patients in Yunnan province: A descriptive qualitative study," *Nurs Heal. Sci.*, vol. 24, no. 3, pp. 661–9, 2022, doi: 10.1111/nhs.12959.
- [18] E. G. R. C. Jéssica Lima Soares, Ingrid Grangeiro Bringel Silva, Maria Regilânia Lopes Moreira, Álissan Karine Lima Martins, Vitória de Cássia Félix Rebouças, "Transcultural theory in nursing care of women with infections," *Rev Bras Enferm*, vol. 73, no. 4, 2020, doi: 10.1590/0034-7167-2019-0586.
- [19] H. B. W.-A. Marilyn R McFarland, "Leininger's Theory of Culture Care Diversity and Universality: An Overview With a Historical Retrospective and a View Toward the Future," *J Transcult Nurs*, vol. 30, no. 6, pp. 540–57, 2019, doi: 10.1177/1043659619867134.
- [20] I. H.-E. Isabel Antón-Solanas, Elena Tambo-Lizalde, Nadia Hamam-Alcober, Valérie Vanceulebroeck, Shana Dehaes, Indrani Kalkan, Nuran Kömürçü, Margarida Coelho, Teresa Coelho, Antonio Casa Nova, Raul Cordeiro, Lucía Sagarra-Romero, Ana B Subirón-Valera, "Nursing students' experience of learning cultural competence," *PLoS One*, vol. 16, no. 12, 2021, doi: 10.1371/journal.pone.0259802.
- [21] B. L. Stephanie Listerfelt, Isabell Fridh, "Facing the unfamiliar: Nurses' transcultural care in intensive care - A focus group study," *Intensive Crit Care Nurs*, vol. 55, 2019, doi: 10.1016/j.iccn.2019.08.002.
- [22] S. H. T. HyunJung Ham, "Factors Influencing Transcultural Self-Efficacy Among Nurses With Foreign Patient Care Experience," *J Transcult Nurs*, vol. 33, no. 1, pp. 87–95, 2022, doi: 10.1177/10436596211016514.
- [23] M. D. F. Sahoko H Little, "Transcultural Modifications of a Japanese Language Group Prenatal Care Program for Transcultural Adaptation," *J Transcult Nurs*, vol. 30, no. 2, pp. 106–14, 2019, doi: 10.1177/1043659618785230.
- [24] M. R. M. Rahmeth Radjack, Stéphane Hemmerter, Elie Azria 3, "Relevance of the transcultural approach to improve the care relationship in the perinatal period," *Gynecol Obs. Fertil Senol*, vol. 51, no. 6, pp. 342–7, 2023, doi: 10.1016/j.gofs.2023.04.007.
- [25] D. V. D. S. Ana Celi Silva Torres Nascimento, Aisiane Cedraz Moraes, Rita da Cruz Amorim, "The care provided by the family to the premature newborn: analysis under Leininger's Transcultural Theory," *Rev Bras Enferm*, vol. 73, no. 4, pp. 1–8, 2020, doi: 10.1590/0034-7167-2019-0644.
- [26] M. R. M. Rahmeth Radjack, Muriel Bossuroy, Hawa Camara, Fatima Touhami, Anaïs Ogrizek, Juliette Rodriguez, Marion Robin, "Transcultural skills for early

- childhood professionals,” *Front Psychiatry*, vol. 21, no. 14, 2023, doi: 10.3389/fpsy.2023.1112997.
- [27] I. A.-S. Benjamin Gaya-Sancho, Valérie Vanceulebroeck, Nuran Kömürçü, Indrani Kalkan, Antonio Casa-Nova, Elena Tambo-Lizalde, Margarida Coelho, Evy Present, Seda Değirmenci Öz, Teresa Coelho, Sofie Vermeiren, Arzu Kavala, Benjamin Adam Jerue, Berta Sáez-Gutiérrez, “Perception and Experience of Transcultural Care of Stakeholders and Health Service Users with a Migrant Background: A Qualitative Study,” *Int J Env. Res Public Heal.*, vol. 18, p. 19, 2021, doi: 10.3390/ijerph181910503.
- [28] K. H. L. Junghee Kim, Jaeun Jang, Bora Kim, “Effect of the PRECEDE-PROCEED model on health programs: a systematic review and meta-analysis,” *Syst Rev*, vol. 11, no. 1, p. 213, 2022, doi: 10.1186/s13643-022-02092-2.
- [29] G. L. T. R. Saulle, A Sinopoli, A De Paula Baer, A Mannocci, M Marino, A G De Belvis, A Federici, “The PRECEDE-PROCEED model as a tool in Public Health screening: a systematic review,” *Clin Ter*, vol. 171, no. 2, pp. e167–e177, 2020, doi: 10.7417/CT.2020.2208.
- [30] H. K. G. Asma Arshad, Fouzia Shaheen, Waseem Safdar, Muhammad R TaAsma Arshad, Fouzia Shaheen, Waseem Safdar, Muhammad R Tariq, Muhammad T Navid, Asma S Qazi, Mohammad A Awan, Muhammad W Sajid, Humphrey K Gartiriq, Muhammad T Navid, Asma S Qazi, Mohammad A Awan, “A PRECEDE-PROCEED model-based educational intervention to promote healthy eating habits in middle school girls,” *Food Sci Nutr*, vol. 11, no. 3, pp. 1318–27, 2022, doi: 10.1002/fsn3.3167.
- [31] H. H. Yoshiaki Nomura, Tomoaki Matsuyama, Kakuhiro Fukai, Ayako Okada, Mitsuo Ida, Noriaki Yamauchi, “PRECEDE-PROCEED model based questionnaire and saliva tests for oral health checkup in adult,” *J Oral Sci*, vol. 61, no. 4, pp. 544–8, 2019, doi: 10.2334/josnusd.18-0288.