FAMILY-BASED MATERNAL SENSITIVITY MODELS (MSM) APPLICATION IN YOUNG MOTHERS IN RURAL AREA TOWARD PARENT'S ROLE PERCEPTIONS AND HOW TO KNOW HEALTH-SICK CONDITION IN INFANTS

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FAMILY-BASED MATERNAL SENSITIVITY MODELS (MSM) APPLICATION IN YOUNG MOTHERS IN RURAL AREA TOWARD PARENT'S ROLE PERCEPTIONS AND HOW TO KNOW HEALTH-SICK CONDITION IN INFANTS

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Abstract

Introduction: Parent's role is very important to be studied more deeply for optimal infants care. Young mothers as parents need more information in parenting, including knowing whether the baby is healthy or sick. The present research aimed to analyze the effects of family-based Maternal Sensitivity Models (MSM) application in young mothers toward parent's role perceptions and how to know health-sick condition in infants. Method: the research design used in the present research was Pre Experiment Pre-Post Test Design, with the sample of young mothers in Puskesmas Sumbersari and Sukorambi, Jember counted 50 respondents using purposive sampling technique in March-June 2017. The data were collected by doing intervention in applying family-based Maternal Sensitivity Models (MSM) with the help of media booklets and modules. The perception of young mothers during pretest and posttest was measured using questionnaires and likert scales. The data analysis were a kind of general data using descriptive analysis, while special data were Dependent T-Test (Paired T-Test). Results: it indicated that family-based Maternal Sensitivity Models (MSM) application had an effect on young mother's perception about parenting role in infant care and perception of health-sick condition in infants with p Value of 0.00, respectively. Discussion: health-care worrkers need to provide information about the role of parents in infant care, and get to know babies in health-sick condition.

Keywords: *Maternal Sensitivity Models (MSM), parent's role, helath-sick in infants, young mothers*

INTRODUCTION

The lack of mother's ability to care for the baby is usually experienced by young mothers who gave birth at the age of 13-19 years. This is consistent with Infant Health and Development Survey (IHDP) survey in 2004 which found that young mothersare less skilled as parents when assess about their ability to care for their infants (Depkes, 2007). Such phenomenon often occurs in the community, especially in rural communities. The lack of maternal competence in infant care is also supported by a research (Asmuji, Indriyani, 2014) showing that maternal competence in bathing the baby is still very poor. All respondents said that no one dared to bathe the baby before

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the umbilical cord off, and even found the condition that some repondents never bathe the baby because the role had been taken over by the family.

The baby's health condition is highly dependent on how parents do good and proper infant care. In addition, the parent's rolefor the baby, of course, cannot also be separated from the mother's experience in providing infant care. This is consistent with the results of the study (Vienna P, 2012) stating that most of good skills in early detection of growth and development of infant growth were 58 respondents (72%), there was a relationship between mother'scompetence about early detection of growth and development with the baby's growth.

Babies are a very vulnerable age group to experience the sickness. Improper care will result in the decrease of health status of infants, even will threaten their safety. This is depicted in the description of the research (Mahmudah, Cahyati, & Wahyuningsih, 2011) showing the results that one of the factors affecting the occurrence of death during the perinatal period is mother's knowledgethat is still poorin caring the baby. Mothers with insufficient knowledge about infant care can have an impact on inappropriate behavior in parenting. Regarding to such condition, if the perception related to babysitting competence has a risk to infant's health, the researchers arethen interested to intervene in developing perception, especially young mothersin improving parent competence with the present research entitled "Family-based Maternal Sensitivity Models (MSM) Application Family in Young Mothers in Rural Area toward Parent's Role Perceptions and How to KnowHealth-Sick Condition in Infants.

LITERATURE REVIEW

1. The Definition of Young Mothers

Young mothers can be defined asa woman who got married, has a child and/or children but tehor age is still no more than 20 years.

2. The Concept of Family

Family is a collection of two or more people who live together with rules and emotional attachments and individuals have their respective roles that become the part of family. Family generally has several functions, such as: a) biological function, b) psychological function, c) socialization function, d) economic function, e) education function, f) reproductive function, and g) health care/maintenance function (Friedman, MM, 2010)

Family's role describes a set of interpersonal behaviors, traits, activities, that relate to individuals in particular positions and situations. Various roles in the family include the role of father, mother and child. The family has also developmental tasks for infants, according to the fact that the childbearing family starts from the birth of the first child and continues until the first child reach the age of 30 months. The task of the development at this stage is: a) to strengthen the role of parent, b) an adaptation to changes in family members, roles, interactions, sexual relations and family activities, c) to maintain a satisfactory relationship with

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the spouse, d)) to nurture relationships affection (Wright LM & Leahey Maureen, 2009).

3. The Concept of Infant Care

Infants are individuals aged 0-12 months who are characterized by rapid growth and development and are accompanied by changes in nutritional needs (Hockenberry & Wilson, 2009).

The administration of infant care is based on the development of a mutual satisfaction of parents and infants.

a. Exclusive Breastfeeding

Breast milk is one type of food that is sufficient for all elements of the baby's needs, i.e., physical, psychological and spiritual needs. It contains nutrients, hormones, growth immunity, anti-allergies, and anti-inflammatory. Nutrition in breast milk includes nearly 200 nutrients (Hamilton, 2010).

b. Immunization

Immunization is an effort to provide immunity to infants and children by administrating the vaccine into the body so that the body makes anti-substance to prevent them from certain diseases. The complete basic immunization types in infants are BCG, hepatitis, DPT, measles and polio (Depkes, 2007).

c. Infant Nutrition

WHO, UNICEF, as well as health experts and health organizations agree that breast milk is the only food and drink needed by infants in the first six months of their lives. Breast milk is the main food source and most perfect for infants aged 0-6 months (Depkes, 2007). After the age of 6 months, each baby needs nutritious soft foods called Asiatic Food (MP - ASI) (Depkes RI, 2007).

d. Stimulation of Infant Growth

(Hockenberry, M. J & Wilson, 2009) state that stimulation is stimulation (sight, speech, hearing, touch) coming from the child's environment. Children who get direct stimulation will develop faster than children who are not even stimulated.

Required stimulation is sensory, motor, intelligence, language, emotion, autonomy, creativity, cooperation and leadership, moral-spiritual stimulation with sound, music, movement, touch, singing, playing, problem solving, crossing, drawing.

2.5 Family-based Maternal Sensitivity Models

A mother will instinctively have a character called mother insting. This sensitivity will lead the mother to be more responsive to her primary role in taking care of her baby she is responsible for. The role of parenting requires maternal competence whether cognitively, affectively or psychomotoric competences. Mother is the best nurse for the baby she was born with. In order to successfully optimize the role of the young mother, the family as the dominant social support should give support in achieving the success of the role. It also requires the role of health workers and health

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institutions as healthcare facilitators as well as a referral center if young mothers and families experience obstacles in carrying out the role of infant care. When described the family-based Maternal Sensitivity Models will form the following models:

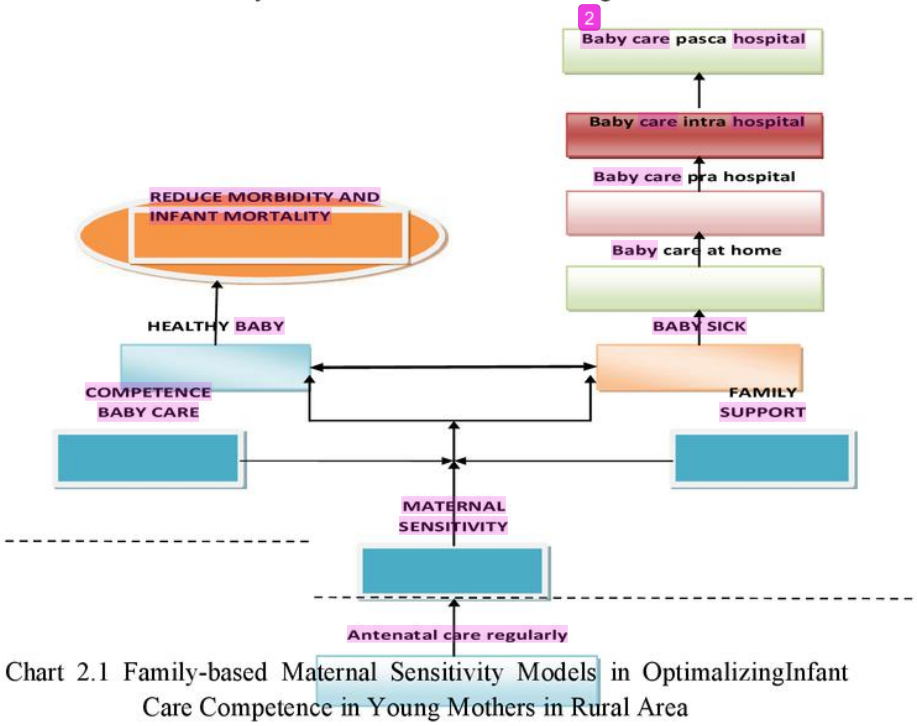

Chart 2.1 Family-based Maternal Sensitivity Models in OptimalizingInfant Care Competence in Young Mothers in Rural Area

Based on the above models, it can be described as follows:

a. The condition of healty and sick babies is a continuum range. The healthy constants of illness in infants are highly dependent on the baby's health condition on the existing environmental situation.
b. Babies are a very vulnerable age group experiencing the threat of illness and death.
c. Mother is the best nurse for babies in maintaining health status including achieving optimal growth and development function.
d. Mother sensitivity in recognizing changes in infant health status is needed to condition the right handling when the baby is in the home environment, pre-hospital, intra hospital and post-hospital.
e. Mother must have optimal ability in infant care.
f. Family is a support group that cannot be separated from mother-baby environment.

The steps in Family-based Maternal Sensitivity Models (MSM) can be seen below:

a. Pregnant women are given the motivation to do antenatal care routinely, so that the condition of welfare of mother and fetus can be well known.

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b. Mothers attend prenatal classes and educational activities during the antenatal period.
c. Mothers are given motivation to deliver health care.
d. Health-care workers perform postnatal education with FCMC approach on newborn care, involving families as family and social support.
e. Mothers and family are taught about infant care reviews, as well as the introduction of baby sick conditions.
f. Mothers and family are taught about the ability to make decisions during baby sick time.
g. Mothers and family carries out infant care efforts with techniques to approach infant care efforts correctly using booklet media.
h. Mothers and family monitor the baby's growth and development.
i. Health-care workers provide education on infant care, using the Infant Care Module media.

METHOD

Research Approach

The present research is conducted using Pra Experiment Pre-Post Test Design

Participant

The participants of the present research are young mothers in Puskesmas Sumbersari and Sukorambi Jember with 50 respondents.

Data Collection

Data collection techniques are conducted by intervening in applying family-based Maternal Sensitivity Models (MSM) with health education interventions on the role of parents in infant care as well as recognizing healthy infant-health conditions. Interventions are conducted using the help of media booklets and modules. The perception of young mothers during pretest and posttest was measured using questionnaires and likert scales. The sampling technique conducted by Purposive Sampling. The data retrieval period starts in March-June 2017.

Data Analysis

Data analysis used in the present research is general data using descriptive analysis, while special data using Dependent T-Test (Paired T-Test).

RESULTS

After the research process, it obtained the results that are illustrated as follows:

Table 1.1 Frequency Distribution of Young Mothers' Profession withBabies being Cared in Puskesmas Sumbersari and Sukorambi Jember 2017. n = 50

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Profession	Number	Percentage
Not working	18	36.0
Labors or traders	10	20.0
Farmers	6	12.0
Civil Servants	9	18.0
Self-Employers	7	14.0
Total	50	100.0

Based on the description shown in Table 1.1 above, the greatest number of young mother's profession with the babies being cared in Puskesmas Sumbersari and Sukorambi is those who did not work amounted 18 respondents (36%).

Table 1.2 Frequency Distribution of Young Mothers' Profession with Babies being Cared in Puskesmas Sumbersari and Sukorambi Jember 2017. n = 50

Education Background	Number	Percentage
Elementary-Junior High School	16	32.0
Senior High School	28	56.0
Higher Education	6	12.0
Total	50	100.0

Based on the description shown in table 1.2 the greatest number of young mother's education background with babies being cared in Puskesmas Sumbersari and Sukorambi is senior high school with 28 respondents (56%).

Table 1.2 Frequency Distribution of Racial Type of Young Mothers with Babies being Cared in Puskesmas Sumbersari and Sukorambi Jember 2017. n = 50

Education Background	Number	Percentage
Madura	26	52.0
Jawa	24	48.0
Total	50	100.0

Based on the description shown in table 1.2 the number of young mother's education background with babies being cared in Puskesmas Sumbersari and Sukorambi is almost the same with those who were in Java amounted26 respondents (54%) and 24 respondents (48%), respectively.

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Table 1.4 The Effects of Family-based Maternal Sensitivity Models (MSM)toward Parent's Role Perceptions on Infant Care in Puskesmas Sumbersari and Sukorambi Jember 2017.
n = 50

Variable	Mean	Std. Deviation	Std. Error Mean	P Value
Parent's Role Perceptions on Infant Care				
Pretest	60.00	6.999	.990	0,00
Posttest	72.20	8.640	1.222	

Based on table 1.4 application of Maternal Sensitivity Models (MSM) according to family influence to perception of young mother on parent role in infant care, it obtained *p*-value 0,00.

Table 1.5 The Effects of Family-based Maternal Sensitivity Models (MSM) toward Parent's Role Perceptions on Health-Sick Condition in Infants in Puskesmas Sumbersari and Sukorambi Jember 2017. n = 50

Variable	Mean	Std. Deviation	Std. Error Mean	P Value
Perception on Health-Sick Condition in Infants				
Pretest	59.80	9.145	1.293	0,00
Posttest	72.80	10.698	1.513	

Based on the description shown in table 1.5 family-based MSM application affects young mother's perceptions on health-sick conditions in infants with *p*-value 0,00

DISCUSSION

Caring for infants can be defined as doing care in order to meet the needs of everyday babies and to facilitate their growth and development. The process neededto do in infant care requires the ability of parents in understanding and knowing it appropriately. The results showed that the provision of information through Maternal Sensitifity Models (MSM) approach with the topic of information is parent's role in infant care, proved to have an effect to improve the perception of young mothers with *p*-value 0.00. Young mothers who previously had a perception of 60 (moderate category), after being given intervention increased to 72 (good category). This is consistent with the research conducted by Safitri, Widayati and Aini (2014) that there is a very significant difference between mother's knowledge and skills before and after being given education and training of kangaroo method with *p*-value = 0.000 and 95% confidence interval (Safitri , EA., Widayati, Aini, 2014). In addition, when the baby may experience some deviation of health status, such as LBW, then the parent's role is needed in proper care. Parent's ability can be obtained through one way by giving a training or providing health education about the necessary of information.When

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performing the parent's role as a baby sitter in charge, it is also necessary to recognize the condition of the baby in a healthy or sick condition. The results showed that after given information through Maternal Sensitivity Models (MSM) approach with the topic of information about healthy and sick infants, there was a change of perception before and after intervention with *p*-value of 0.00. This means that through the process of providing information, parents who in this case, are young mothers who have babies, have a better perception after health education. The ability to recognize the health status of infants is very useful in improving the sensitivity of parents in making decisions when the baby is in a condition of illness or deviation in growth and development.Through the ability to recognize such condition, mothers can seek infant care more optimally. This is in accordance with the statement of Indriyani, D., Asmuji, and Wahyuni (2016) that describes that one of parent's roles is infant care, recognizing the signs of healthy and sick babies and optimizing their growth and development. Also, this is in accordance with the statement of Ministry of Health (2011) that there are 3 components in the implementation of the strategy of MTBS namely: Component I: improving the skills of health-care workers in management of infant illness cases (doctors, nurses, midwives, health workers) Component II: improving health system for disease handling Toddlers are more effective Component III: improving family and community practice in home care and searching for help cases of sick children (improving family and community empowerment, known as "Integrated Community-Based Pain Management"). For successful implementation of MTBS, the proportion of emphasis on all three components must be the same.

Based on the previous description, it is very important to improve the empowerment of family and society. In addition, the research that supports the results of the present research is conducted by (Wahyuni &Wulyani, 2015) to get the results that the variable of breastfeeding, MP-ASI and the role of parents have a significant relations with the condition of infants aged 12 months. Also a research conducted by (Aries &Yulianti, 2015) on Behavioral Health Maintenance and Environmental Health Behavior Associated with ARD of Underfives showsthat 51% less health maintenance behavior, 65.3% health seeking behavior, and 57.1% less environmental health behavior. Therefore, it can be concluded that health care and environmental health behavior less affect the incidence of ARI in infants. According to the researchers based on the results of the study and some related literatures, it is very important that young mothers as a parent shouldknow more properly about their role. In addition, another important thing the parents need to notice is to know the baby's conditionwhether he is healthy or sick, so this perception will trigger parent's sensitiveness in making the right decision in infant care.

CONCLUSION

The present research concludes that family-based Maternal Sensitivity Models (MSM) application significantly affects young mother's perceptionstowardtheir role in infant care with *p*-alue 0.00. It also found that family-based Maternal Sensitivity Models (MSM)application affects young mother's perceptionstoward health-sick condition in infants with *p*-value 0.00.

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IMPLEMENTATION OF PROJECT BASED LEARNING METHOD (PjBL) TO IMPROVE STUDENTS' ABILITY AND COMMUNITY PARTICIPATION IN HIV PREVENTION

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Aims: To identify the ability of students ability and community participation before and after the implementation of *Project Based Learning method*. **Design:** This research uses Quasi Experimental method with pre and post test. The sample of this research is 40 nursing students in Faculty of Nursing Universitas Airlangga and 20 community people. The study was conducted from 13 November to 30 December 2015. **Result:** Before *Project Based Learning* 10% students have enough knowledge and 90% have good knowledge. After *Project Based Learning* 100% have good knowledge. There is a significant difference between the knowledge before and after *Project Based Learning* (p = 0.002). Before the *Project Based Learning* 60% students have a positive attitude while the remaining 40% have negative attitude in HIV prevention. After *Project Based Learning* 92.5% have positive attitude. There is a significant difference between students' attitude before and after *Project Based Learning* (p = 0,001). Before the *Project Based Learning* 85% community respondents have good participation while the remaining 15% have enough participation in HIV prevention. After *Project Based Learning* 100% have good participation in HIV prevention. There was a significant difference the participation of community between before and after (p = 0.001). **Conclusion:** Implementation of *Project Based Learning* improves knowledge and attitude of student in HIV AIDS prevention. Implementation of learning method with *Project Based Learning* improves community participation in HIV AIDS prevention. *Project Based Learning* can be continuously developed to overcome various other problems in society through contribution from nursing students.

Keyword: Project Based Learning, knowledge, attitude, community participation, HIV AIDS

INTRODUCTION

The current curriculum developed by High Education is required to change the lecturer-centered approach into a student-centered approach. These skills consists of problem-solving skill, critical thinking, collaboration, and communication (Harsono, 2008; Kurdi, 2009). *Project Based Learning (PjBL)* is a learning method that provides the opportunity for educators to manage learning in the classroom with involving project work. *PjBL* is a innovative learning method containing complex tasks based on questions and challenging problems, and it requires students to design, solve problem, make decision, conducting investigation, as well as providing opportunities for students to work independent (Lasauskiene & Rauduvaite, 2015)

In these days, the HIV / AIDS epidemic in Indonesia is already a global crisis and a severe threat to social development and progress. The cases of HIV / AIDS have

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increased rapidly. In Indonesia, the total number of HIV / AIDS case reached to 143,899 consisting of 98.390 HIV and 45.499 AIDS with 8,235 deaths (Kemenkes, 2014)

There have been many HIV prevention programs, but community participation is lacking. Community participation can be enhanced through socialization of HIV / AIDS as an effort to increase community awareness and knowledge. The community's strategic role in preventing HIV / AIDS includes educating family member based on religious norms, active participation in implementing HIV / AIDS prevention program. Society also plays an important role to reduce stigma and discrimination of HIV patients (Latifa & Purwaningsih, 2016)

High education has an important role to be able to reduce stigma and discrimination from society, which is through community development program related to change of view of society in patient of HIV / AIDS. This study aims to identify the knowledge and attitude of students on before and after the implementation of PjBL. Another purpose is to identify community participation on before and after the implementation of PjBL.

LITERATURE REVIEW

Nowadays, The HIV AIDS case is increasing, followed by the development of stigma and discrimination in patients. Stigma and discrimination can encourage patients to hide their condition thereby reducing treatment compliance for patients Society needs to get the right information about HIV AIDS because it has an important role in the prevention and control of HIV AIDS (Feldacker, Ennett, & Speizer, 2011; Watthayu, Wenzel, & Panchareounworakul, 2015)

Project Based Learning (PjBL) is an innovative learning method that requires student to design and solve problems. PjBL can develop student competence, lecturer and student collaboration. Another benefit of the PjBL is to improve teamwork, critical thinking, problem solving, and learning motivation of student (Kaya, Şenyuva, Işık, & Bodur, 2014; Lasauskiene & Rauduvaite, 2015; Zouganeli, Tysso, Feng, Arnesen, & Kapetanovic, 2014)

Throughout PjBL, students are expected to have good competence on HIV AIDS. The students can provide the right education to the community in order to increase the role of HIV AIDS prevention in Indonesia.

METHOD

Research design

This study used quasi experiment with data measurement before and after intervention.

Respondents

There are 60 respondents in this study, consisting of 40 students who were taking Hematology immunity course and 20 members of the community.

Data collection

The data were collected by using questionnaire that have been tested for validity and reliability. Questionnaire used to measure knowledge, attitude, and community participation.

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Data analysis

Data analysis used descriptive statistics and wilcoxon test. Confidence level is at 95%. If sig> 0.05, Ho is accepted. If sig <0.05, Ho is rejected.

RESULTS

Before the *PjBL* activity, 4 respondents (10%) have a sufficient level of knowledge and 36 respondents (90%) had a good knowledge level. After activity, 40 respondents (100%) have good knowledge.

Table 1 Student knowledge data

	Pretest result	**Posttest result**
mean	38.28	40.10
SD	3.43	2.83
	Wilcoxon Test Sig Value (2 tailed) = 0.002	

Wilcoxon Signed Rank Test is obtained p = 0.002 ≤ 0.05 so it shows that there is a significant difference between the knowledge of students before and after the *PjBL activity.* After the application of PjBL, all students have knowledge with good category. Based on the average score, it also earns an increasing score on the data post test application of *project-based learning.* The increasing score is supported by the educational status, where all the respondents are nursing students.

Before the *PjBL* activity, there are 24 respondents (60%) having a positive behaviour and the remaining respondents is negative in HIV. After the *PjBL* activity, there are 37 respondents or 92.5% who are positive.

Table 2 Data on student attitude

	Pretest result	**Posttest result**
mean	16.08	18.45
SD	2.19	1.32
	Wilcoxon Test Sig Value (2-tailed) = 0.001	

Result of *Wilcoxon Signed Rank Test obtain* sig (2-tailed) with p = 0.05 0,001≤ so that there is a significant difference between the attitude of student before and after the *PjBL activity.*

Before the activity, There are 17 respondents (85%) having good role while the rest has moderate role. After the *PjBL* activity, there is 100% respondents who has a good participation in HIV

Table 3 Community Participation Data

	Pretest result	**Posttest result**
mean	30.8	32.75
SD	3.9	2.9
Wilcoxon Test Value Sig (2-tailed) = 0.001		

From Table 3, it can be seen *Wilcoxon Signed Rank Test,* sig (2-tailed), is p = 0.05 0.001≤ so that there is a significant difference between the role of the community before and after activity of *PjBL*

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The increase number of role can be supported by the age factor of the community respondents, where the majority is <35 years old. The age affects how a person be able to receive well-informed information. Implementation of *PjBL is* undertaken by student which is through the public health education on HIV AIDS.

DISCUSSION

Knowledge or cognitive is a very important domain in enforcing one's actions. Knowledge is influenced by the learning process in individual, group and community from less informations of health to understanding health, and from not being able to overcome the problem to being able to cope with its own problem (Notoatmodjo, 2010) In *PjBL,* the students learn looking at problem and gather information through various media to devise a settlement of the problem. The group learning also helps students to exchange new information so it enhance their understanding of HIV AIDS prevention efforts. The PjBL is a learning method that is able to improve student softskill (Musa, Mufti, Latiff, & Amin, 2012; Rais, 2010)

Formation of behaviour is related to knowledge. By gaining many experiences, a person has a tendency to be better, get inspired by its experience that will affect one's behaviour [11]. In respondents who remain negative, it can be explained that behaviour changes are influenced by internal process. It needs time and every person will respond differently to change. Respondents who are still acting negative are caused by the learning process on the respondent takes longer to respond changes in behaviour.

Behavior is formed from 3 domains, namely: knowledge, attitude and actions that are related each other. Behavior can be changed with changing knowledge and attitude. Through the application of the *PjBL,* students actively try to solve problems through health education about HIV prevention. *The PjBL* is an innovative learning method to develop students' competence, teamwork, critical thinking, problem solving, and learning motivation of students (Kaya et al., 2014; Lasauskiene & Rauduvaite, 2015; Zouganeli et al., 2014)

Health education provided aims to change the wrong view in the community about the scheme of HIV/AIDS transmission. A good educational method will be able to improve the knowledge and behaviour of the community. Therefore, the role of community participation will increase.

CONCLUSION

Application of PjBL increases the knowledge and attitude of students in HIV/AIDS prevention. Application of PjBL learning method can increase community participation on HIV/AIDS prevention. PjBL learning method can be developed continuously to overcome various other problems that exist in society through the contribution of students.

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EFFECT OF GREEN BAY EXTRACT ON HEMOGLOBIN CONTENT ON PREGNANT WOMAN

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ABSTRACT

Hemoglobin was very important for pregnant women because it serves to meet the needs of the mother and supply food and oxygen to the fetus through the placenta. The decrease in hemoglobin levels especially in the second trimester requires iron for the formation of hemoglobin. The iron in the spinach is easily digested so that the spinach extract can be used as an anemic drug. This study aims to determine the effect of green spinach extract on hemoglobin levels in pregnant women in the Village Banjarsari District JetisMojokerto regency. The design of this research is preexperimental with pretest-post test one group design approach. The population in this study were all pregnant women in Banjarsari Village, Jetis Sub-district, Mojokerto Regency, in May 2017, 49 people. The sampling technique of this research is purposive sampling with sample number 23 people. Independent variable in this research is giving green spinach extract, and dependent variable is hemoglobin level. The measuring instrument uses a digital Hb meter. The results of this study indicate that almost all respondents who experienced mild anemia become not anemic (83,3%), most of respondent having anemia become not anemia (60%). The result of P-paired sample analysis showed that P value <α so that H1 is accepted, meaning that there is influence of green spinach extract on hemoglobin level in pregnant women in Banjarsari Village, Jetis Sub-district, Mojokerto Regency. This is because the iron in the spinach leaf extract will be metabolized in the body to form transferrin and ferritin useful in the formation of hemoglobin.

Keywords: green spinach extract, hemoglobin, pregnant women

INTRODUCTION

Hemoglobin is very important for pregnant women because it serves to meet the needs of the mother and supply food and oxygen to the fetus through the placenta (Ministry of Health RI, 2016). In pregnancy the need for oxygen is higher thereby triggering increased production of erythropoietin. As a result, plasma volume increases and red blood cells (erythrocytes) increase. However, an increase in plasma volume occurs in larger proportions when compared with an increase in erythrocytes resulting in a decrease in hemoglobin (Hb) concentration due to hemodilution (Abdulmuthalib, 2009). This decrease in hemoglobin levels requires iron for hemoglobin formation. One source of iron from vegetable materials is green spinach (Amaranthushybridus L). The iron in the spinach is easily digested so that the spinach extract can be used as an anemic drug (Bangun, 2010).

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According to WHO, pregnant women's Hb level less than 11gr% ranges from 20% to 89% (Manuaba, 2010). According to the World Health Organization (WHO) (2012) prevalence of pregnant women with hemoglobin levels less than 11gr% to 41.8% in the world, and Asia ranked second in the world after Africa with prevalence percentage of pregnant women with hemoglobin levels less than 11gr% of 48.2%. Research conducted by Merida et al (2014) concerning the effectiveness of Combination Therapy Extract Spinach and Tomato to Improvement of Hemoglobin on Pregnant Women with Anemia in Puskesmas Sail Pekanbaru 2014 states combination therapy extract of green spinach and tomato effective to increase hemoglobin levels in pregnant women With anemia.

Nuraysih (2015) on the effectiveness of combination therapy extracts of spinach-orange sunkis-honey on hemoglobin levels in pregnant women with anemia in the working area UPTD District Health Clinics South Pontianak in 2015 showed that there was a significant effect on hemoglobin levels in the experimental group and the group Controls before and after treatment of a combination of green spinach extract-orange sunkis-honey in pregnant women with anemia. Rohmatika research results et al (2016) Data from preliminary studies on 2-6 January 2016 in the village of BanjarsariJetisMojokerto, obtained the data that there were 15 pregnant women who visit the village, and Hb examination performed in 5 pregnant women with the result 2 (40%) levels Hbnya Under 11g% or anemic, the results of the mother interview said that the mother consumed rice and side dishes, and rarely ate vegetables, and 3 people (60%) Hb content above 11g%. Mother interviews say that mothers consume rice, vegetables and side dishes every day, and drink milk for pregnant women.

Efforts made in order to overcome the problem of decreasing hemoglobin levels can be done by consuming foods containing iron such as spinach vegetables and taking supplements of blood enhancer during pregnancy (Emilia &Freitag, 2010). The government has implemented a Fe tablet program. Provision of iron tablet is integrated with the service of pregnant women (antenatal care) (Ministry of Health RI, 2013). Based on the above background, researchers are purposed to examine the effect of green spinach extract on hemoglobin levels in pregnant women in Banjarsari Village, Jetis Sub-district, Mojokerto Regency.

LITERATUR REVIEW

1. Definition of haemoglobin

   Hemoglobin as part from erythrocyte serves as a carrier of oxygen throughout the body tissues, therefore if there is a deficiency of hemoglobin resulting in anemia so that body activity, especially thinking power will decrease (Kuntarti, 2009).

   Decreased levels of hemoglobin in pregnant women may lead to anemia that has an impact of abortion, IUFD, IUGR, preterm labor, possible birth defects, infants born with anemia. Low birth weight babies have a high mortality and morbidity risk (Manuaba et al., 2012).

2. Concept of green spinach extract

   Leaf green spinach (Amaranthushybridus L) has iron (Fe) content of 3.9 mg per 100 grams (Bangun, 2010). The existing iron in the foodstuff is iron element. Only Fe ++ is absorbed by the small intestine. To regulate the entry of iron in the body then the body has a proper way. Iron can only enter the mucosa if it can be in contact with apoferritin. The amount of apoferritin present in the intestinal mucosa depends on the body's iron content. When the iron in the body is enough then all apoferritin in the intestinal mucosa bound by Fe to Ferritin. Iron-bound β-globulin apart derived from the intestinal mucosa is also derived from the spleen, where the erythrocytes are old into the tissue of the spleen and then bound to the

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β-globulin (being transferrin) and then follow the blood flow to the bone marrow to be used Erythoblasts form hemoglobin.

RESEARCH METHODS

The design of the research is preexperimental with one group pretest osttest design approach. In this study population is all pregnant women in the Village Banjarsari District JetisMojokerto regency in May 2017 a number of 49 people. Sampling taking in this research using purposive sampling technique.Large sample of 23 people. The data analysis used is T-pair Sample Test.

General Data of Respondents

Table 2 Frequency Distribution of Respondents Based on General Data in Banjarsari Village, Jetis Sub-district, Mojokerto Regency in 2017

No	General Data	Frequency	Percetage (%)
	Age		
1	<20 years old	2	8,7
2	20-35 years old	20	87,0
3	> 35 years old	1	4,3
	Educational Level		
1	Low (elementary, junior high school)	7	30,4
2	Moderate (senior high school)	11	47,8
3	High (Bachelor)	5	21,7
	Working		
1	Working	7	30,4
2	Not working	16	69,6
	Pregnancy		
2	2	12	52,2
	Body Weight Raising		
2	10-12 Kgs	10	43,5
	Pregnancy Old		
2	29-40 weeks	11	47,8
	Jumlah	23	100

Source: Primary Data 2017

Custom Data

1. Hb level before given Spinach Leaf Extract

Table 3 Distribution of frequency of respondents based on Hb content before given Spinach Leaf Extract at Banjarsari Village, Jetis Sub-district, Mojokerto Regency, 2017

No	Hb Level	Frequency	Percetage (%)
1	≥11 g/dl	0	0
2	9-10,9 g/dl	18	78,3
3	7-8,9 g/d	5	21,7
4	<7 g/dl	0	0
	Total	23	100,0

Source: Primary Data 2017

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2. Hb level after given Spinach Leaf Extract

Table 4 Distribution of frequency of respondents based on Hb content after being given Leaf Spinach Extract at Banjarsari Village, Jetis Sub-district, Mojokerto Regency, 2017

No	Hb Level	Frequency	Percetage (%)
1	≥11 g/dl	18	78,3
2	9-10,9 g/dl	5	21,7
3	7-8,9 g/d	0	0
4	<7 g/dl	0	0
	Total	23	100,0

Source: Primary data of research in 201

Table 4 shows that almost all respondents had aHb rate of ≥11 g / dl, ie 18 respondents (78.3%).

3. Differences Analysis of Hb Levels before being given Spinach Leaf Extract with Hb Level after being given Spinach Leaf Extract at Banjarsari Village, Jetis Sub-district, Mojokerto Regency in 2017

Table 5 Cross-Table Difference Hb Levels before being given Spinach Leaf Extract with Hb Level after being given Spinach Leaf Extract at Banjarsari Village, Jetis Sub-district, Mojokerto Regency, 2017

Before	After				Total	
	Hb≥ 11 g/dL		Hb 9-10,9 g/dl			
	f	%	f	%	f	%
Hb 9-10,9 g/dl	15	83,3	3	16,7	18	100
Hb 7-8,9 g/dl	3	60	2	40	5	100
Total	18	78,3	5	21,7	23	100
pvalue= 0,000	α=0,05					

Source: primary data of research in 2017

Table 5 shows that almost all respondents whose Hb levels were 9-10.9 g / dl to ≥ 11 g / dL (83.3%), most respondents whose Hb levels were 7-8.9 g / dl to ≥ 11 g / DL (60%). The result of T paired samples test shows that ρ value = 0,000 and α = 0,05 so that ρ value <α thus H1 is accepted means that there is Influence of Spinach Leaf Extract to Hemoglobin Level in Pregnant Women in Banjarsari Village, JetisSubdistrict, Mojokerto Regency, 2017.

DISCUSSION

1. Hb level before given Spinach Leaf Extract

Table 3 shows that almost all respondents had Hb levels of 9-10.9 g / dl, ie 18 respondents (78.3%), and 5 people (21.7%) Hb levels of 7-8.9 g / dl. Hemoglobin is very important for pregnant women because it serves to meet the needs of the mother and supply food and oxygen to the fetus through the placenta (Ministry of Health RI,

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2016). In pregnancy the need for oxygen is higher thereby triggering increased production of erythropoietin. As a result, plasma volume increases and red blood cells (erythrocytes) increase. However, an increase in plasma volume occurs in larger proportions when compared with an increase in erythrocytes resulting in a decrease in hemoglobin (Hb) concentration due to hemodilution (Abdulmuthalib, 2009).

Respondents whose Hb levels of 7-8.9 g / dl were caused during pregnancy increased blood volume (hypervolemia). Hypervolemia is the result of an increase in plasma volume and red cell (red blood cell) in the body but this increase is unbalanced ie the plasma volume of increase is much greater to give effect that is reduced hemoglobin concentration. In addition, the lack of consumption of green vegetables as a source of iron forming hemoglobin will make the levels of iron in the body decreased and Hb levels also decreased. Lack of consumption of other nutrients such as vitamin C can also reduce the absorption of iron in the body so it can not be absorbed by the body properly to be used to form hemoglobin. Table 2 shows that almost half of respondents have medium education (SMA), ie 11 respondents (47.8%). Education will form a good mindset where the mother will be easier to receive information so that knowledge can be formed. This knowledge is used as a basis for mother to behave to prevent and overcome anemia so that mother does not decrease Hb level. In accordance with Munir (2011) which mentions the low knowledge can lead to the formation of poor health behavior. The occurrence of decreased Hb levels during pregnancy can be overcome through the provision of health education to pregnant women with regard to the level of education. Mothers with basic education can be done through the provision of counseling and two-way communication in order to achieve a better understanding of the material. Mothers of middle education can be done counseling and health socialization. Mothers with high education can be done by providing KIE (Information Communication and Education) (Ridayanti et al, 2013).

Maternal education affects the ability of the mother to absorb information about pregnancy, either the changes that occur during pregnancy, or the disturbances that occur in pregnancy and how to prevent it, in this case is anemia. Mothers with secondary education will tend to be easier to get information, but not all health problems are obtained from formal education, so even if the mother has a secondary education, do not always know what to do to avoid anemia during pregnancy by consuming adequate nutrition, because Assume that weakness, fatigue, lethargy is a natural thing happening in pregnancy so left alone is not addressed. Table 2 shows that most do not work, ie 16 respondents (69.6%). Employment affects the economy so that it is driven by inadequate economic needs that the need to meet nutritional intake is ignored. In addition, this type of work affects activity. Jobs that require heavy activity with not offset by sufficient nutrient intake can lead to decreased hemoglobin levels either directly or indirectly (Zarianis, 2011).

Work requires a lot of energy, pregnant women who work will lose energy in large quantities and red blood cells will die faster so that requires iron intake to form new red blood cells and hemoglobin to transport energy and nutrients.

Table 2 shows that most of the respondents were second pregnant, ie 12 respondents (52.2%). Frequent motherhood during labor may lead to anemia, especially in near-term pregnancies where the mother's body has just lost blood in labor, then another pregnancy requires more red blood cells to carry oxygen for the mother and baby's life. If the nutrients are not adequately consumed can cause anemia.

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Table 2 shows that most respondents experienced weight gain <10 Kg, ie 28 respondents (66.7%). During pregnancy, the mother will gain weight around 10-12 kg, while pregnant women with height less than 150 cm is about 8.8 - 13.6 kg (Arisman, 2012). Weight gain is less than 10 kg because of gestational age not yet approaching labor so that has not experienced weight gain maximally. Respondents with anemia will experience less weight gain because of reduced nutritional intake due to decreased hemoglobin, because Hb levels function to bring nutrients to the fetus, if the nutrients that are brought to the fetus is less, then weight gain is also less because the fetal growth is not as good as the mother who is not anemic .

Table 2 shows that most of the respondents were 13-28 weeks pregnant, ie 12 respondents (52.2%). At the beginning of the second trimester the growth of the fetus is very rapid and the fetus is actively moving, ie sucking and swallowing the amniotic fluid so that more oxygen needs are required. As a result the need for iron is increasing to offset the increased production of erythrocytes and susceptible to the occurrence of anemia, especially iron deficiency anemia (Abdulmuthalib, 2009). Respondents experiencing anemia caused by trimester 2 occurs rapid growth of fetus so that physiologically hemodilusi to help alleviate the work of the heart. Hemodulution occurs since 10 weeks of pregnancy and peaks at 32-36 weeks' gestation. Therefore, many pregnant women experience anemia in pregnancy.

2. Hb level after given Spinach Leaf Extract

Table 4 shows that almost all respondents had aHb level of ≥11 g / dl, ie 18 respondents (78.3%), and 5 people (21.7%) Hb levels 9-10.9 g / dl.Spinach is processed into more extract provides health benefits compared to boiled or cooked. A decrease in hemoglobin levels in the body requires iron for the formation of hemoglobin. One source of iron from vegetable materials is green spinach (Amaranthushybridus L). The iron in spinach is easily digested so that the spinach extract can be used as an anemic drug (Bangun, 2010).

Respondents whose Hb rate was ≥11 g / dl were 100% of mothers <20 and 35, 81.8% of middle-educated respondents, 80% of working mothers, 81.8% of respondents who were pregnant with their first child, and 83 , 3% of respondents with gestational age 13-28 weeks. Respondents with gestational age 13-28 weeks which means trimester 2 still consume Fe tablet so get more intake of Fe besides from spinach leaf extract. The first child's pregnancy means the mother has never given birth and has never lost much blood so that not much Fe is wasted. Mothers with secondary education are sufficiently able to absorb information when giving IEC about the consumption of balanced nutritious food that always given midwife every time doing antenatal examination so that understand what to do in order not to anemia. Working mothers may not have higher activity than mothers who do not work, because mothers who work in an agency get priority to not work so that weight given with spinach leaf extract hbnya can be normal. The above-mentioned factors lead to differences in Hb levels after spinach extract, due to age differences that cause physiological differences in metabolizing iron, the difference in education in which mothers with higher education tend to be more informed about nutritional needs during pregnancy because more Easy to absorb information from various sources, differences in work because of the higher one's activity, the hemoglobin level is very risky decreased because the body needs oxygen in large quantities but not balanced with the formation of hemoglobin enough so that many red blood cells that die and cause hemoglobin decrease. Differences in gestational age can also cause differences in the results of elevated Hb levels after being given spinach extract, since the age of 2nd trimester pregnancy still increases the volume of fluid resulting in hemodilution or blood thinning, so consumption of iron does not give a significant effect on pregnant women.

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3. Relationship Levels of Hb before given Spinach Leaf Extract with Hb Level after being given Spinach Leaf Extract

Table 5 shows that almost all respondents whose Hb levels were 9-10.9 g / dl to ≥ 11 g / dL (83.3%), most respondents whose Hb levels were 7-8.9 g / dl to ≥ 11 g / DL (60%). The result of T paired samples test shows that ρ value = 0,000 and α = 0,05 so that ρ value <α thus H1 is accepted means that there is Influence of Spinach Leaf Extract to Hemoglobin Level in Pregnant Women in Banjarsari Village, JetisSubdistrict, Mojokerto Regency, 2017.

Green spinach leaves (Amaranthushybridus L) has iron (Fe) content of 6.43% mg per 180 gram. The function of iron is to form red blood cells, so that if the production of red blood cells in the body enough then the hemoglobin level will be normal (Arisman, 2012). Iron is a mineral that is needed in the process of hemopoiesis, but iron is a substance that is difficult to be absorbed by the body. In the process of digestion, iron undergoes a reduction process of the ferrite form (Fe3 +) to ferro (Fe2 +) to be easily absorbed. Only Fe ++ is absorbed by the small intestine. Iron can only enter the mucosa if it can be in contact with apoferritin. When the iron in the body is enough then all apoferritin in the intestinal mucosa bound by Fe to Ferritin. Iron-bound to β-globulin aside from intestinal mucosa also comes from the spleen, where erythrocytes are old into the lymphatic tissue to then bind to β-globulin (to transferrin) and then join the bloodstream to the bone marrow for use Erythoblasts form hemoglobin (Kuntarti, 2009).

Respondents who did not change the status of anemia caused by the fact that the amount of Hb level increased, but not significant so that the anemian status remains. This is due to many factors that cause the mother does not change Hb levels, can be caused by food factors that do not meet the intake of Fe, or because of high activity so that the need for oxygen and high energy but the intake of Fe does not meet the needs.

CONCLUSION

1) Levels of hemoglobin in pregnant women before being given green spinach extract in the Village Banjarsari District JetisMojokerto regency mostly Hb levels 9-10.9 g / dl.
2) Levels of hemoglobin in pregnant women after being given green spinach extract in the Village Banjarsari District JetisMojokerto regency most of the Hb ≥11 g / dl.
3) There is influence of green spinach extract on hemoglobin level in pregnant women in Banjarsari Village, JetisSubdistrict, MojokertoRegency, that can increase Hb level.

SUGGESTION

1. For Pregnant Women
   Eat fresh green spinach and cooked as a vegetable, consume nutritious foods, avoid or reduce heavy activity, perform regular pregnancy checks to monitor pregnancy conditions and Hb levels.
2. For Educational Institutions
   Conduct cross-community cooperation in terms of counseling about anemia in pregnancy and utilization of green spinach extract to increase pregnant women's hemoglobin levels.
3. For Health Workers
   Giving HE about anemia in pregnancy and how to overcome it, handling pregnant women who have anemia, so as not to risk pregnancy and disrupt the welfare of the fetus.
4. For Health Service Institutions
   Increase the compulsory effort to consume 90 Fe tablets in second trimester pregnant women in anemia prevention efforts so that the welfare of mother and fetus is more awake.

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FAMILY-BASED MATERNAL SENSITIVITY MODELS (MSM) APPLICATION IN YOUNG MOTHERS IN RURAL AREA TOWARD PARENT'S ROLE PERCEPTIONS AND HOW TO KNOW HEALTH-SICK CONDITION IN INFANTS

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