The Effect of Education Program of the Couples Based on the BASNEF Model on Spousal Support and Mental Health of Pregnant Women

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Abstract

Pregnancy is a natural physiological phenomenon while during pregnancy women are exposed to physical and mental changes which can affect their health and fetus. This study aimed to study the effect of young couples programs based on the BASNEF model on the mental health spouse support of pregnant women in 2014 years. This study was a quasi-experimental study. Statistical population was selected including 125 couples who referred to health centers of Hormozgan University of Medical Sciences. Centers were also selected through random cluster among health centers of Hormozgan and 2 centers were randomly assigned for implementation of intervention and 2 centers were selected as control. Training intervention was implemented on the basis of the BASNEF model which includes young couples training as face to face for four sessions of 60 minutes at health centers. 4 weeks after completing the training, post-test was performed. Instruments used in this study include 3 questionnaires: demographic information, BASNEF Model, spousal support, mental health assessment questionnaire, which was completed before and 4 weeks after the intervention in both intervention and control groups. Data was extracted and was analyzed using SPSS21 software. Average of knowledge, attitude, enabling factors, subjective norms, behavior in the intervention group showed significant differences than the control group (P <0.001). The spouses support and Mental health scores in the intervention group showed no significant difference than the control group (P <0.001). The programmed trainings using health education model be used instead of education. Educating young couples be used instead of individual care of pregnant women and also help to promote family health with the presence of their wives in prenatal care and applied proper education.

Keywords: BASNEF Model, spousal support, mental health

1. Introduction

Pregnant women are exposed to physical and mental changes that can affect their health and their babies. As maintain the physical health of women during pregnancy has great importance, facilitating psychological adjustment is also the most important goal of midwifery care (Bonari et al., 2004). Emotional instability and increasing personal, social, and psychological needs during this period can develop psychological problems. Depression, anxiety, isolation, phobia, substance abuse, emotional instability, irritability, sleep disturbances, and sexual relations are among the mental disorders that may be associated with pregnancy (NGOMA et al., 2012).

Mental health problems during pregnancy can have important consequences, including premature labor, complications during pregnancy and delivery, fetal growth retardation, depression, and postpartum psychosis (Janati, 2010). According to the research, severe depression of pregnant women increases the probability of complications during pregnancy, stillbirth, low birth weight, and increased risk of suicide.(Boyce et al .,2007) Researches demonstrate that mental disorders mother prevent her perfect care of herself, and is accompanied with consequences affecting the fetus or infant (Bonari et al., 2004). The absence or lack of social and emotional support for pregnant women is considered as the main indicator of stress during the pregnancy and studies have shown that there is a relationship between mental stress of mothers and low birth weight, miscarriage, and fetal

intrauterine growth retardation (Akbarzadah, 2012). Therefore in order to improve health outcomes for women and babies in the prenatal period, mental health services are required (Howard et al., 2013). The prevalence of mental disorders during pregnancy is 14% (Cunningham, 2014). The prevalence of mental disorders in Iran has been reported as 8-23%. Based on the studies, the prevalence of depression has been reported 28.8% and 15% for anxiety in pregnant women in Iran (Akbarzadeh, 2012).

Men play special roles in promoting women's health and the health of mother and baby during pregnancy, childbirth, and then partnerships requires cooperation between mother and father while fathers are able to learn this partnership through training (Gungor & Beji, 2007). Recently, the international institutions of reproductive health, promotion of male involvement has been highly considered due to the gender and health reasons. This issue is now a critical component of reproductive health policies and programs related to it (Simbar et al., 2010). Men need training and information so that they can support their spouse and obtain preparation for fatherhood. Therefore friendly and responsible approach can reduce the mother's condition, such as anxiety and fear (Kululanga, Sundby, & Chirwa, 2011). Serious conflicts with husband are examples of domestic violence that is the most important factor of maternal stress. During pregnancy, women who would benefit from the support of close individuals, especially their husbands, would feel more ability to withstand the pressures of pregnancy and childbirth (Sun et al., 2010).

The value of health education programs depends on the effectiveness of the program and effectiveness of health education programs a lot depends on proper use of theories and models used in health education (Allahverdi Pour., 2005). In fact, selection of the model of health education is the first step in the process of designing a training program. BASNEF model is one of the models that is highly considered by the international agencies such as UNICEF due to the plentiful applications in the area of health and the World Health Organization's and the results of its application in Asian and African countries has shown great success (Safari, 2010).

BASNEF Model components include the words of behavior -attitude - abstract norms, and enabling factors. The previous studies based on the BAZNEF model in the field of health behaviors demonstrate that 60%, 70% - 20%, 30% and less than 10% of reason for lack of presenting behavior or changing it are related to enabling factors - attitude and abstract norms. This model is applied for evaluation of behaviors from the perspective of society. In addition to the knowledge and attitude, it is effective on subjective norms and enabling factors (Among the most important factors for behavior change) and therefore is implemented in developing countries. In summary, based on this model the person represents a new behavior when believes in adequacy of its benefits (medical and economic), knows its importance and then finds a positive attitude to change the previous behavior (Sarayloo. et al 2015). Accordingly, in this study, the effect of training program on the basis of Basnef model on couples in terms of spousal support and mental health of women is used.

2. Materials and Methods

This research is a quasi-experimental study. The research sample consisted of pregnant women and their husbands who referred to the health centers of Hormozgan University of Medical Sciences for receive prenatal care. The number of samples was estimated as the 125 couples in each of the intervention and control groups, with 95% of confidence level and power of 80%. To estimate a sample size for a proportion in a study, three numbers are needed standard deviation (δ), desired level of absolute precision (d), and confidence level (e.g. 1.96 for 95% confidence level) (Z).

The sample size formula is presented below:

$$n = \frac{Z^2\delta^2}{d^2} = \frac{1.96^2(21.3)^2}{4^2} = 125$$

The centers were chosen randomly through which 4 centers were selected from the list of centers and then 2 centers were randomly considered for training and 2 as the control center. Then 63 couples were selected from each center which was a cluster and were trained. Sampling was conducted through continuous and accessible method in the centers among the pregnant women who referred to health care centers for prenatal care and had the inclusion criteria and were willing to participate in this study. So that, the researchers explained aims of the study and after gaining the cooperation of the participants and their spouses were invited and consents were received, they were entered into the study. Inclusion criteria of women to this study included: 20 to 36 weeks from pregnancy (The reason for selecting this age was consolidation of pregnancy when 20 weeks were spent from pregnancy because termination of pregnancy before 20 weeks is defined as abortion and also since the goal was to review the pregnancy period, then 4 weeks after the intervention post- test was performed and 36 weeks were selected), health of the fetus (is ultrasound is normal), no death of a relatives in the past one year, lack of having known physical and

psychological problems, lack of anti-depressant drugs. Inclusion criteria of men for the study included having husbands of pregnant women referred to health centers, lack of known physical and mental problems, and lack of anti- depression drugs. If antidepressant drugs were consumed, fetal death, exclusion of couples from training sessions or continue to participate in the study, were excluded from the study. (Figure 1)
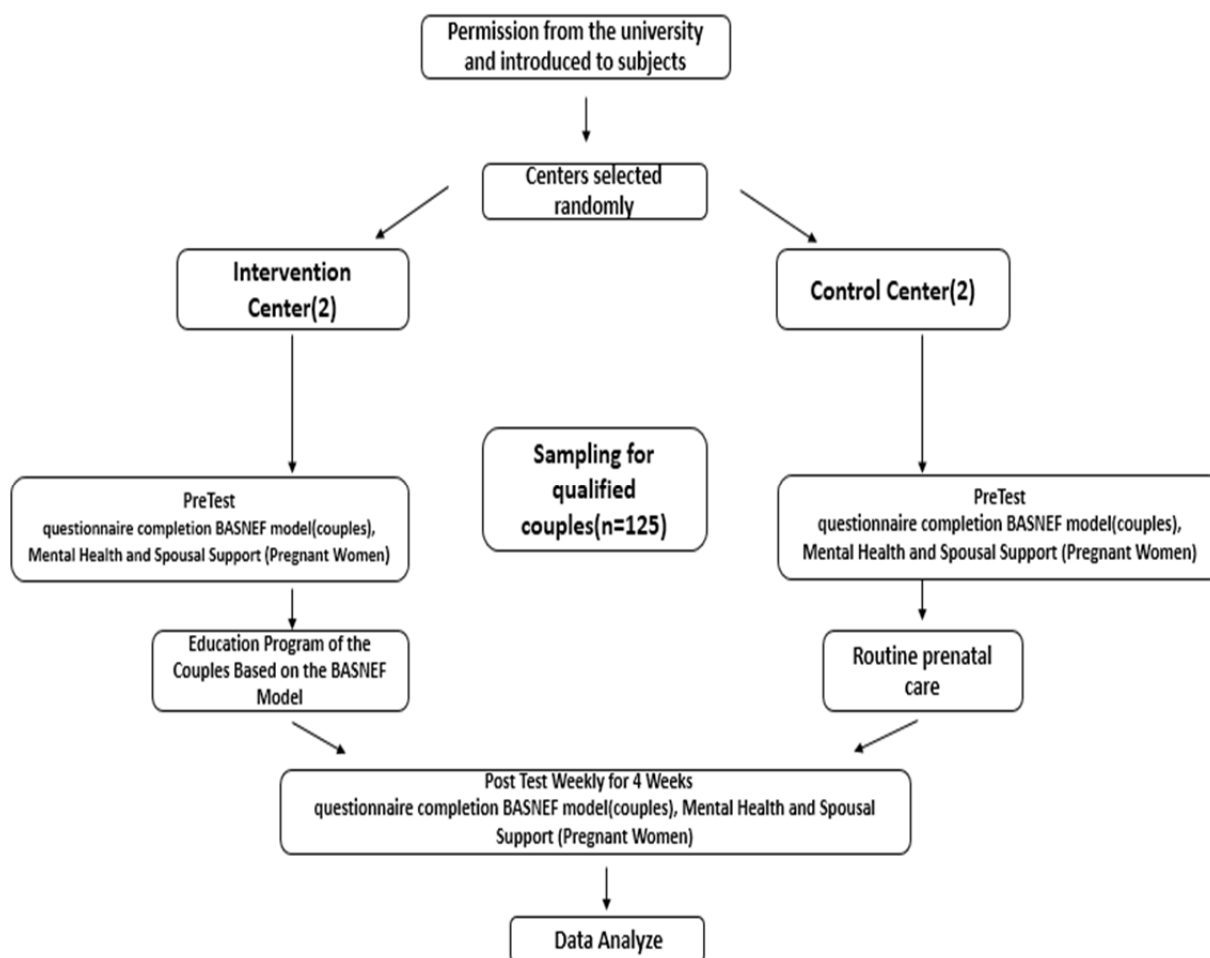

Figure 1.

Data collection tool was a researcher-made questionnaire of demographic questions included data, 30 demographic questions. A questionnaire of BASNEF Model components contained 28 questions (9 knowledge, 8 attitude, 3 subjective norms, and 8 enabling factors questions) and scoring was conducted for all questions as the correct answers were given 1 point while the negative answer was assigned no score. In the rest of the questions that were measured with the Likert scale, in a way that responsive stated their opinions on different levels, including strongly agree, agree, neutral, disagree, strongly disagree and for each answer scores between 1 and 5 were considered. In the Likert scale score the positive and negative questions should be considered and then one key should be prepared for questions. If a statement was positive, the highest score was given to the totally disagree option otherwise totally agree option was awarded with the highest score.

The researcher made questionnaire of spousal support consisted of 17 questions about the physical, psychological, and sexual support that was completed by pregnant women at the first session and 4 weeks after the end of the training course and was measured using Likert scale so that responsive represented their opinions on different levels, including strongly agree, agree, neutral, disagree, strongly disagree and for each answer, a score between 1 and 5 was considered that the lowest score and the highest score were 85 and 17 respectively.

Mental Health Assessment Questionnaire is a valid means for measuring mental disorders, which is designed by Goldberg (1972) for non-psychotic psychiatric disorders. The questionnaire consisted of 28 questions designed in

four sub-scales and each scale has also seven questions. The scales include: physical disorder, anxiety, social dysfunction, and depression. From 28 questions, 1 to 7 items are related to the physical symptoms. 8 to 14 items measures anxiety symptoms, 15 to 21 items evaluate symptoms of the social function while 22 to 28 items measure symptoms of depression. In order to sum up the scores zero score was considered for "never", score 1 for "as usual", score 2 for "more than usual", and score 3 for "much more than usual".

If at any sub- scale score 6 and in a total of four subscales scores more than 22 was achieved, then it represents symptoms of the disease (numbering from the right at all questionnaires is from 0 to 3). Validity indications of the questionnaire were evaluated in different studies and sensitivity of 88-84% and specifity of 82-79% were estimated. In order to evaluate researcher-made questionnaire, content validity and test-retest were used and answers of two steps with reliability coefficient (α=0.84) was approved.

Before starting the training intervention, questionnaires were completed by partners. Couples were trained based on the BASNEF model components (knowledge, attitude, subjective norms, and enabling factors) face-to-face for 60 minutes in 4 meetings. Training booklets were prepared in order to increase couples knowledge level that contain in addition to the content, a summary of the contents of education in educational sessions to remind and greater emphasis on important topics. In order to remind and pay more attention to the issue, reminder text messages that contained short messages about supporting the wife during pregnancy was sent at a rate of one per week, and total of 4 times for each couple.

At the first session, couples were trained in order to increase awareness about physiological changes during pregnancy (in physical, emotional and sexual terms). The recommendations and the requirements of spousal support during the pregnancy were expressed at a short speech. At the end of each session, the next meeting date was set. Second session which was consideration of the attitudes of couples, training was implemented in order to adjust the attitude toward the changes during the pregnancy through giving proper information about appropriate behaviors in pregnant women and the importance of mental health during the pregnancy and the effect of psychological disorders on the pregnancy outcomes and the role of spouse and his correct behaviors. The third session of training was considering the normative beliefs that were implemented by inviting people to choose the most important and influential couples (mother in law, father in law or both) and with an emphasis on their important effects in changing the behaviors of couples during the pregnancy. Fourth session was implemented by focusing on the enabling factors on the basis of the skills that subjects need for changes including problem solving, time management, and decision-making skills. In order to deal with the removal of the samples in the sample size, it was predicted that if each sample was removed, it was replaced. Due to development of the good relationship between the researcher and couples, creating a useful educational environment with care and respect due to the high number of patients in the study and the crowds, these issues are less considered in the routine care; however according to greet of visitors, there was no sample removal which was one of the positive points of the present study. In the control group also routine care during pregnancy was represented by a midwife in clinic and no intervention was implemented.

Then 4 weeks after completing training on the basis of the plans, the couples were invited and the questionnaires were re- completed. In order to analyze the results according to data type, descriptive statistics were used for providing information as the relative frequency distribution and chi-square test and ANOVA statistical methods. All these calculations were performed using the Spss software (version 21).

3. Results

The results obtained from the chi-square statistical test, it is seen that none of the demographic variables have had a significant statistical difference in the experimental and control group (P>0.05). The average age of women (53.6%) was from 23 to 30 years and the average age of men (49%) was between 27 and 37 years and the duration of marriage (49.6%) was between 3 and 7 years. Most of the pregnancies were wanted (88%) and the gender of the fetus was reported to be female in 73% of the cases. Most of the subjects had a diploma and were housewives. Also, most of the subjects were at a middle economic level and had an income which was higher than 7 million Rials. The results of the independent t-test showed that there was no significant statistical difference between the two groups before the interference in the physical dimension, anxiety dimension, social performance dimension and depression dimension. The independent t-test showed that there has been a significant statistical difference in the experimental group in comparison with the control group before and after the educational (Table 1).

Table 1. Comparison of the average scores of the areas of mental health evaluation questionnaire

Components	Control	Experimental
	Mean of standard deviation	Mean of standard deviation
Physical	8.10	3.96
	4.37	2.93
Anxiety	9.86	4.85
	4.55	2.72
Social performance	9.35	4.91
	3.70	2.64
Depression	3.97	2.69
	2.48	1.04
Total	29.80	14.78
	14.46	8.92

The results obtained from the scores of the items of the BASNEF model before the interference did not show a significant statistical difference: approach, subjective norms and enabling factors. comparing the score of awareness in the experimental group and the control group showed that there is a significant difference between the two groups in terms of the score of awareness (P=0.001). And also by comparing the average score of attitude, it was shown that there is a significant difference between the two experimental and control group in terms of the score of attitude (P=0.001). By comparing the subjective norms in this research, which was the educational session with the presence of the man and his mother in-law, it was shown that there is a significant difference between the experimental and the control group after the interference (p=0.001). The independent t-test showed that there is a significant difference between the enabling factors of the mental health of the pregnant women in the two experimental and control groups after the interference (P=0.001), (Table 2).

Table 2. Comparison of the average scores of various items of the BASNEF model

Spousal Support	Control		Experimental	
	standard deviation	Mean	standard deviation	Mean
Before the interference	12.38	60.27	16.39	66.85
after the interference	11.98	59.82	6.75	80.6

The score of spousal support (P=0.001) has had a significant statistical difference in the experimental group before and after the interference. (Table 3)

Table 3. Comparison of the Spousal Support

Components	Control	Experimental
	Mean of standard deviation	Mean of standard deviation
Awareness	31.43	40.44
	5.27	3.39
Attitude	22.49	27.22
	3.04	3.03
Subjective norms	8.12	9.55
	1.77	0.74
Enabling factors	19.08	22.49
	6.29	3.03

Intention of behavior	14.20	19.48
	2.78	1.32

4. Discussion

The present research was conducted with the aim of studying the effects of training programs on couples based on the BASNEF model on spousal support and mental health of pregnant women while the results of statistical analysis between intervention and control groups revealed a significant difference with the BASNEF based training program in terms of the spousal support and improvement of the mental health of pregnant. The findings showed that Basnef based training can affect all aspects of mental health (health, anxiety, social dysfunction, depression). These findings are consistent with the results of the study of (Ebadifard et al., 2010) in which the effect of training program based on BASNEF model on the preventive behaviors in term of mental health among adolescent girls in Tehran. (Taghdisi et al., 2011) demonstrated the effectiveness of BASNEF model in improving the health of cancer patients. Additionally, the study conducted by (Bastani et al., 2010) revealed that training of relaxation based on the self-efficacy theory was effective on mental health of the pregnant women. They also showed that self-efficacy theory plays a role in relaxation and reduction of anxiety and stress in pregnant women that was consistent with the results of this study as well as they revealed that training based on the models and theories can be effective in mental health. Studies demonstrated that model-based training had a positive impact on improving behavior. Therefore it is also recommended that in the health programs health training models should be used instead of using the traditional education training plan to its impact be measurable.

According to the components of BASNEF model, training sessions were also held, before the intervention the awareness of couples was high that was consistent with the results of (Sharifirad et al., 2010) in which the impact of an training program based on Basnef model on breastfeeding behavior of pregnant women was examined, in the case of maternal awareness about the benefits of breast milk. In this study, since studied women and their husbands had university education level, then they showed high knowledge about mental health changes during their pregnancy, but planned and purposeful programs are needed to have correct dealing with these changes.

Studies also revealed that increasing the awareness of the change in attitude towards the issue cause in the present study, this part of the training model (part II) also achieved a higher score after intervention and it demonstrated that correct attitudes of couples the towards psychological changes during pregnancy increases after training that is consistent with the results obtained by (Ebadifard et al., 2010) that results in the field of mental health in adolescent girls who showed that score of the students' attitudes increased significantly compared to control group after the intervention.

According to the third part of the training model was on the subjective norms, (Sharifirad et al.,2010) in their study revealed that subjective norms (spouse, mother in law, husband, and friends) had no effect on the behavior of pregnant mothers. Additionally, research of (Ebadifard et al., 2010) also demonstrated that after the training intervention, subjective norms in the control group had no significant difference with the mental health of girls in Tehran and requires more time to show impact the education on these variables that was not consistent with the findings of this research. In the present study subjective norms including mother and mother in law had a significant impact on improving the mental health of pregnant women and spouse support during the pregnancy. In fact, it can be said that an individual is influenced by numerous individuals in the society while people who have great influence in one's life or are very effective (family of men and women), however they can be agree or disagree with individuals behavior. Results of different studies on this component of model revealed that since due to the aim of study, subjective norms are selected by the people themselves, then in one study, subjective norms may be family, friends, relatives and society .

The fourth component of model was enabling factors on behavior changes which were consistent with the results of the study conducted (Sharifirad et al., 2010). On the other hand, Taghdisi in 2010 didn't find enabling factors in order to improve the health of cancer patients effectively. Enabling factors included the skills including resources and environmental obstacles that can help or prevent behavioral changes, such as: time, money, required special skills, adequate and usable health services. According to the aim of this study including mental health and spouse support, it was found that problem-solving skills, anger control, and stress as enabling factors influence behavior change and show its effects.

Therefore, application of BASNEF training model is study of behavior from the perspective of society. In addition to the impact on knowledge and attitudes, it also is effective on subjective norms and enabling factors (One of the important factors in behavior change and selection). For this reason, in developing countries this model is used to

change behavior. Among the other results of this study, the effect of training on spousal support and mental health of pregnant women can be mentioned. The results of the study of (Mullany, Becker& Hindin, 2007) which was conducted with the aim to study the impact of co-wives on supporting the pregnant women through holding prenatal training courses on the mothers health, and it was revealed that the pregnant women who were trained both themselves and their husbands, demonstrated better health behaviors compared with women who had trained alone. Simbar and colleagues, in their research emphasized on the need to train parents to participate in prenatal care in order to provide educational programs to inform the spouses about mental changes of mothers in this era and achieving their participation. In the study of (Mortazavi & Mirzae, 2012) that was conducted in order to determine the educational needs of fathers to participate in prenatal care, revealed that more than 95% of participants (men and women) were agreed with training and the required content for fathers included fathers familiarity with risk signs during pregnancy and postpartum problems and nutrition problems during pregnancy. In this study, spouses' education based on the BASNEF training model could have a positive impact on their support in pregnancy that was consistent with the results of the above studies. Accordingly, men need to have training and information to provide supporting for their wives and be ready for fatherhood (Boyce et al., 2007). The results of the present research showed that training on Basnef model is effective on improving physical, anxiety, depression and social function dimensions (NGOMA et al ., 2012). Found that behavior - supportive care in Japanese pregnant women affects their mental health.

Given the crucial role midwives during pregnancy and childbirth and after childbirth and their focus on pregnant women health and also ignoring the mental health during this period and relationship with spouse which has great importance to the health of the mother and fetus, are among the duties of midwives that has particular importance given to this aspect of pregnancy and they should be responsible for mental health of pregnant women, their spouses and their families and try to improve physical and mental health of pregnant women with proper training. Therefore midwife can teach spouses by a good teaching model-based program so that they also support women in difficult situations of pregnancy and childbirth.

Since the questionnaire spousal support and mental health of pregnant women was completed in the presence of their wives was one of the limitations of this study, then in this study, researcher tried to create an intimate and comfortable space to responsive express their views (Make sure that this information was confidential and will only be studied by the researcher and their spouses will obtain on information). It is suggested that in future studies to investigate the effect of training young couples based on the Basnef model on spousal support and mental health of pregnant women from early pregnancy and the results be compared. It is also suggested that the impact training young couples based on Basnef model be examined on spousal support mental and physical health of pregnant women with the aim of study the impact on physical health.

5. Conclusion

Due to the need for mental health care in prenatal care and since in this research, training based on the Basnef model has been effective on the mental health of pregnant women, therefore it is recommended that the planned training model used for health training be used in health plans instead of routine training. Given the importance of mental health in pregnant women and its impact on the health of the fetus, family, and ultimately the health of society as well as a greater incidence of mental illness in pregnancy, implementation of mental health screening for pregnant women is recommended in the integrated programs of maternal health during pregnancy in health centers. Given that the use of this learning model is effective in promoting educational and mental health status of pregnant women, therefore, family health experts, midwives and health workers are recommended to use this training model. The results of this study showed that couples training programs can be used to improve and change health plans during the pregnancy instead of individual care programs on pregnant women and help to improve family health with the presence of husbands in cares during the pregnancy and proper applying the training.

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Competing Interests Statement

The authors declare that there is no conflict of interests regarding the publication of this paper.

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