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Efficacy of an Educational Booklet- about Physiological and Psychological Aspects during Pregnancy- on Prenatal Stress, Anxiety and Coping among Primigravida Women

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Abstract: **Pregnancy is considered a stressful event that may create a physiological and psychological threatening situation especially in pregnant woman for the first time .Therefore, it is mandatory to highlight the importance of physiological and psychological care for the pregnant women, from the onset of gestation, with the purpose of developing resources to adapt to the new situation and improve women's physical and psychological health.**

The aim of the study: The present study aimed to evaluate the efficacy of an educational booklet- about physiological and psychological aspects during pregnancy- on prenatal stress, anxiety and coping among primigravida women.

Study setting: The study was carried out at outpatient prenatal clinic in Tanta University Hospital.

Study design: A quasi- experimental research design was used.

Study subjects: - A convenience sample consisted of 60 pregnant women who attended the above mentioned setting .They were randomly assigned to an equal two groups (the study or control group).

Tools of data collection: -Four tools were used to collect the data of the study; Sociodemographic and Obstetric characteristics questionnaire sheet, State Anxiety Inventory (SAI), Perceived Stress Scale (PSS-10) and The Revised Prenatal Coping Inventory (NUPCI).

Results: -The study revealed that there was statistically significant difference between study and control groups in relation to anxiety, stress and coping after receiving an Educational Booklet- about physiological and psychological aspects during pregnancy.

Conclusion and recommendations: -The study concluded that educational booklet about the physiological and psychological aspects of pregnancy led to a significant decrease in anxiety and stress level, and better coping among primigravida women. The study recommended that healthcare planners, authorities, and health care providers should have policies and protocols that address screening and education for pregnant women about physiological and psychological aspects of pregnancy and coping strategies.

Keywords: **pregnant woman, psychological threatening, primigravida women.**

1. INTRODUCTION

The life course perspective on human development suggests that each major period of development during the life span brings a unique set of opportunities and challenges. Pregnancy is a remarkably dynamic period of growth and development that poses significant physiological, psychological and emotional challenges of the developmental transition especially for first -time pregnancy [(1,2)]. Although, pregnancy is a time of joyous anticipation for many women, it can be

difficult for some. As welcome as these challenges and changes may be, they often add new stressors to the lives of pregnant women who already face many demands at home and at work. These stressors have been linked to an increasing in anxiety, depression and distress symptoms. [3].

A growing body of empirical evidence, based on methodologically rigorous studies of primigravida women of different ethnicity, socioeconomic and cultural backgrounds identifies prenatal stress and anxiety as a significant source of distress and adverse outcomes that have an impact on the well – being of the woman, her baby and significant others[4-6] . Adverse outcomes of prenatal stress and anxiety include spontaneous abortions, pregnancy complications, shortened length of gestation, preterm delivery and /or low birth weight. Also, they are associated with reduced fetal heart rate, variability, greater motor activity, alterations in state, disturbances in fetal habituation, immunosuppressant, and increased fetal malformations and neonatal mortality [5, 7]. Furthermore, prenatal anxiety and stress have also been shown to have an impact on child development as it is estimated that up to 22% of the variance in child behavioral problems as walking and speaking delays, and learning and memory difficulties are related to them [3, 8]. These impacts seem to be lasting. For example, antenatal anxiety of mothers was related to behavioral or emotional problems of 4 years old children, an increasing in attention deficit hyperactivity disorder and other externalizing problems in their 8-9 years old children. [9, 10]

When the challenges of the developmental transition to motherhood is appraised as stressful and are not met with adaptive coping, there is the potential for mothers to experience stress that poses a risk to their own health and wellbeing as well as that of the developing child. [5]. In the event of a response to stress, the use of different and more or less effective coping strategies will play an important role in how stressful situations are handled during the changes that a normal pregnancy brings [1,11].

Coping has been defined as the cognitive and behavioral efforts to master, tolerate or reduce external and/ or internal demands that are created by the stressful transaction [12]. Coping may be considered as either risk or protective factors that may explain mother differences in psychological status during pregnancy. In this respect, two important coping strategies are used during pregnancy: emotion-focused coping and problem-focused coping [13-14]. Emotion- focused coping includes for instance expression of feelings to others and is typically directed toward regulating affect surrounding a stressful situation. Meanwhile, Problem- focused coping is directed toward alleviating or managing the circumstances which produce stress and includes for instances planning and findings solution for the problem. [15, 16]

It is now acknowledged that the spectrum of psychological health of women during pregnancy especially among primigravida women requires attention both for the wellbeing of the women and the development of her child. Among several risk factors that may play a role in mood disturbances during pregnancy, stress and coping style have been mentioned. These two risk factors are amenable to intervention in contrast to others such as genetic and families background [11, 12]. So, it is vital to understand how pregnant women experience stress, anxiety and how they cope especially primigravida one.

There are few prescribed medicine for keeping anxiety and stress levels under control , but doctors don't prescribe theses medicines for the pregnant women as theses medicine show some side effects during pregnancy so leading a peaceful life is the only intervention to keep stresses under control [17, 18]. Providing extensive information about physiological, psychological changes and ways of coping with stress is one intervention that can lead to a peaceful life for pregnant women. [19,20]. So it is important that primigravida women become more aware of the possible adverse effects that stress and anxiety may have on them and their fetus and how to cope with the stress

A birth of a healthy newborn is the crucial goal of any pregnancy, to achieve this goal the nurses play a significant role in helping the pregnant woman, her husband, and her family. The series of obstacles may face the pregnant woman includes; misunderstanding, questions without answers and receiving inadequate information about changes of pregnancy, all those are common and too serious affecting woman's health. The nurse should solve these obstacles and gives support to the woman during these transitional critical processes.

So the present study was carried out to determine the efficacy of an educational booklet- about physiological and psychological aspects during pregnancy- on prenatal stress, anxiety and coping among primigravida women.

Aim of the Study:

This study aimed to evaluate the efficacy of an educational booklet- about physiological and psychological aspects during pregnancy- on prenatal anxiety, stress and coping among primigravida women.

Research Hypothesis:

Primigravida women who receive the educational booklet about the physiological and psychological aspects during pregnancy may exhibit lower anxiety and stress level, and better coping than those who do not take the educational booklet.

2. SUBJECTS AND METHOD

Study design:

A quasi- experimental research design was used.

Setting:

The study was carried out at outpatient prenatal clinic in Tanta University Hospital.

Subjects:

A convenience sample consisted of 60 pregnant women who attended the above mentioned setting .They were randomly assigned to an equal two groups (study and control group) 30 subjects for each.

Inclusion criteria:

- Age is from 18 to 35.

-Pregnant women with gestational age of at least 8 weeks.

- Primigravida with normal current pregnancy course

-Educated one at least preparatory education.

-Agree to participate in the study and return for a follow up visit.

Exclusion criteria:

-History of obstetric complains.

-History of psychiatric disorders and alcohol or drug abuse.

Tools of the study:

Four tools were used to collect data of the study.

Tool I: - Sociodemographic and Obstetric characteristics questionnaire sheet.

It was developed by the researchers to collect data about the study subjects regarding their sociodemographic characteristics which included age , education level, marital status, occupation ,and residence as well as obstetric characteristics whether their current pregnancy was naturally or by reproductive technology ,and whether their pregnancy was planned or not .

Tool II: Perceived Stress Scale (PSS-10)

This tool was adopted from the Arabic translation of the Cohen Perceived Stress Scale (PSS-10) Chaaya et al., (2010) [21] .The test-retest reliability of the Arabic PSS-10, was moderately high with Spearman's correlation coefficient of 0.74. It is used to measure pregnant women's perception of stress over the past month and to determine the likehood of whether perceived stress might be making them more susceptible to stress- induced compromise of their health. Each item is rated on a 5-point scale ranging from never (0) to almost always (4). PSS-10 scores are obtained by reversing the scores on the four positive items, e.g., 0=4, 1=3, 2=2 etc. and then summing across all 10 items. Items 4, 5, 7 and 8 are the positively stated items. The higher the score, the higher the perceived stress is .The total score ranges from 0-40 and higher score indicate greater stress.

Scoring system:

0-10 no stress -

- 11-20 mild stress
- 21-30 moderate stress
- 31-40 high stress.

Tool III: State Anxiety Inventory(SAI)

State Anxiety Inventory (SAI) was developed by Spielberger (1983)[22] . The scale has been adopted and translated into Arabic language, validated; reliability tested and standardized on different Egyptian subjects by Abdel-Khalek (1989)[23]. Its test-retest reliability was 0.91. It is a self -reported scale for measuring the situational anxiety and contains 20 items .All items are rated on 4 point likert type scale from almost never to almost always. Total score ranges from 20-80 .Higher score indicate greater anxiety.

Scoring system:

- ≤ 20 no anxiety
- 21-40 mild anxiety.
- 41- 60 moderate anxiety
- 61-80 sever anxiety.

Tool IV: The Revised Prenatal Coping Inventory (NUPCI).

It was developed by Yali & Lobel (1999)[24]. It is used to measure pregnancy specific coping. It contains 32items and each item is rated on a five point likert scale ranged from (0) never to (4) very often. It is divided into three reliable coping subscales which named;

-Planning - preparation subscale :-(15 items) like statement " Made plans to get baby clothes or supplies".

-Avoidance subscale :- (11 items) like statement," Slept in order to escape problem"

- Spiritual positive coping subscale :-(6 items). Like statement "Prayed that the birth will go well".

Each subject rates how often each style of coping was used during the course of the pregnancy. Total score ranges from 0 -132.Higher score indicate greater coping.

Scoring system:

<60% low adaptive coping

60-75 moderate adaptive coping

>75 high adaptive coping

Method:

- **An official permission** to carry out the study was obtained from Dean of the faculty of Nursing to the director of the identified study setting to take their permission to collect data.

-- **Ethical considerations**

-An informed consent of the study subjects included in the study was obtained after appropriate explanation of the nature and purpose of the study.

-Anonymity and confidentiality of the collected data and the right to withdraw from the study at any time was assured.

-Nature of the study did not cause harm and/or pain to the entire sample.

-Developing tools: Tool (1) was developed by the researchers after a thorough review of related literature. Reliability of tool 2 and 3 was done (0.91- 0.74) respectively previously by the original researchers. Tool (4) was translated by the researchers to Arabic language. Then, it was tested for translation and content validity by a group of five experts in the psychiatric and mental health nursing and obstetric and gynecological nursing fields. The required modifications were carried out accordingly. Then a test–retest reliability was applied on it to ascertain the reliability (r= 854).

- **A pilot study**: - Before embarking on the actual study, a pilot study was carried out. The purpose of the pilot study was to test the clarity, applicability, and feasibility of the tools. In addition, it served to estimate the approximate time required for interviewing the participants as well as to find out any problem or obstacle that might interfere with data collection. The pilot study was conducted on 6 pregnant women and they were excluded later from the actual study .According to its results, no modifications were made.

- **The actual study:**

-Phase one: - Assessment phase :-(pretest)

The researchers distributed the tools of the study on both the study and control group in outpatient prenatal clinic to assess their psychological states (anxiety, stress and coping) at 8-15 gestation weeks. After a full explanation of the aim and the scope of the study, the researchers distributed the tools of the study on the individual basis on both the subjects of study and control groups as initial baseline assessment for their basic psychological state. The researchers asked the subjects to fill the tools in the presence of the researcher for any clarification.

- **Phase two: - Development and Distribution of Educational booklet**

-The educational booklet was distributed only on the subjects of study groups after explanation the content of the booklet. The educational booklet was developed by the researchers after review of recent related literatures. **The objective** of the educational booklet was providing pregnant women with information about physiological and psychological changes during pregnancy and ways of coping with anxiety and stress.

-The educational booklet composed mainly of four parts:-

- First part: Knowledge concerned with physiological changes during pregnancy and the importance of women mental health during pregnancy

- Second part: This part is concerned with providing knowledge about psychological changes during pregnancy as general and specifically anxiety and stress and causes and impact of anxiety and stress on mothers.

-Third part contained information about ways of coping with stress such as awareness to symptoms of own stress and anxiety, problem solving, relaxation technique, time management, listening to music, physical exercise and healthy diet and final part contained message to the husband as source of support for pregnant women about the importance of women mental health during pregnancy .

The content of booklet is presented in the simple language and picture for clarification.

- The researches give their telephone numbers to subjects of study (study and control group) and take their telephone number after their permission for calling them periodically to ask them for any clarification in the booklet and to arrange appointments for conducting evaluation of the educational booklet with the scheduled antenatal clinic visit.

- **Phase three: Evaluating the efficacy of educational booklet**

Evaluation efficacy of educational booklet was done by reapplying the tools of the study on both the study and control groups twice at:

- 20-26 gestation weeks. Post -test 1

- 30-36 gestation weeks. Post-test 2

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-Statistical analysis

The data were coded, entered and analyzed using SPSS (version 20). For quantative data the range, mean, and standard deviation were calculated. For qualitative data comparison was done using chi-square. For comparison between means of two parametric variables student t-test was used .spearman's correlation coefficient was used for evaluation between variables of the study. A significant was adopted at P value < 0.05 for interpretation of results of significance. High significance was adopted at P value < 0.01.

3. RESULTS

Table 1: Distribution of Subjects of Study and Control Groups Regarding Their Sociodemographic Characteristics

Socieo-demographic characteristics	Groups				Chi-square and T-test	
	Study		Controls			
	N 30	%	N 30	%	t or X^2	P-value
Age						
Range	20-32		20-35		t=0.502	0.605
Mean±SD	26.33±2.988		26.20±3.448			
Marital stats						
Married	30	100	30	100	-	-
Age of married						
Range	19-28		18-28		t=0.369	0.713
Mean±SD	23.966±2.988		23.70±2.588			
Level of education						
Preparatory	2	6.67	1	3.33	2.736	0.255
Secondary	11	36.67	6	20		
University	17	56.67	23	76.67		
Occupation						
Working	20	66.67	26	86.67	3.441	0.064
Not working	10	33.33	4	13.33		
Residence						
Urban	11	36.67	9	30	0.3	0.584
Rural	19	63.33	21	70		
Income						
Enough	24	80	26	86.67	0.483	0.487
Not enough	6	20	4	13.33		
Living with whom :-						
Husband	16	53.33	6	20	7.702	0.021*
Husband and his family	12	40	22	73.33		
wife family	2	6.67	2	6.67		

Table 1 illustrated distribution of subjects of study and control groups regarding their sociodemographic, it can noticed that, rang of age of both study and control group was (20-32 &20-50) respectively, the most percentage of both groups had university education level (56.67&76.67) respectively and all subjects of both study and control groups are married. Regarding living with whom, 40% of study group were living with the husband and his family compared to 73.33% of control group.

Table 2: Distribution of Subjects of Study and Control Groups Regarding Their Obstetric Characteristics

Obstetric characteristics	Groups				Chi-square and T-test	
	Study		Controls			
	N 30	%	N 30	%	t or X^2	P-value

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History of abortions						
Yes	6	20	3	10	1.196	0.274
Non	24	80	27	90		
If yes ,Number of abortion						
One	2	33.33	0	0	1.897	0.168
Two	4	66.67	3	100		
Pregnancy by IVF(In vitro fertilization)						
No	30	100	30	100	-	-
This pregnancy was						
Planned	5	16.67	0	0	7.387	0.007*
Not planned	25	83.33	30	100		
Any complain during current pregnancy						
No	30	100	30	100	-	-

Table 2 reveled distribution of subjects of study and control groups regarding their obstetric characteristics, it can noticed that the most percentage of both study and control groups had no history of abortion (80 % - 90 %) respectively and all subjects of study and control groups their pregnancy was not by In vitro fertilization(IVF) and had no complain during their current pregnancy .There were no any significant difference between study and control groups except in living with whom and pregnancy by IVF .

Table 3: Comparison the Efficacy of the Educational Booklet on the Total Mean Score of Perceived Stress Scale between Subjects of Study and Control Groups Pre and Post Receiving Educational Booklet

Follow –up	Study group N=30			Control group N=30			T-test	
	Mean	±	SD	Mean	±	SD	T	P-value
Pre-test 8-15 gestation weeks	35.667	±	7.875	33.400	±	2.541	1.501	0.138
Post-test 1 20-26 gestation weeks	27.400	±	5.506	30.400	±	1.476	-2.882	0.006
Post-test 2 30-36 gestation weeks	25.000	±	6.711	31.133	±	1.925	-4.812	0.000

Table 2 represents comparison the efficacy of the Educational booklet on the total mean Score of Perceived Stress Scale between subjects of Study and Control group before and post receiving educational booklet. The table showed that in pre-test, there was no statistically significant difference between mean score study and control groups in relation to subjects' stress p=0.138. Meanwhile in the post- test 1 and post -test 2 after receiving educational booklet, there was statistically significant difference in mean score of study and control groups in relation to subjects' stress p< 0.05. This means that study group who receive educational booklet exhibit lower and stress than subjects of control group.

Table 4: Distribution of the studied subjects of Study and Control group according to their total means score of State Anxiety Inventory Pre and Post Pre and Post Receiving Educational Booklet.

Follow –up	Study Group N=30			Control Group N=30			T-test	
	Mean	±	SD	Mean	±	SD	T	P-value
Pre-test 8-15 gestation weeks	60.900	±	9.593	57.067	±	4.884	1.696	0.095
Post-test 1 20-26 gestation weeks	40.433	±	9.853	55.133	±	3.540	-5.075	0.000
Post-test 2 30-36 gestation weeks	32.533	±	10.461	55.900	±	6.365	-6.426	0.000

Table 4 revealed distribution of the studied subjects of study and control group according to their total means score of state anxiety inventory pre and post receiving Educational booklet. The table illustrated that in pre-test, there was no statistically significant difference between mean score of study and control groups regarding subjects' anxiety p=0.095. On the other side, , there was highly statistically significant difference in mean score of study and control groups in relation to subjects' anxiety in both post- test 1 and post -test 2 p< 0.001. This means that mean score of anxiety of subjects of study group is lower compared to those in control group in post –test 1 and post –test 2 (40.433± 9.853 , 32.533± 10.461)&(50.133±3.540,. 46.900±6.365)respectively.

Table 5: Comparison The Efficacy of the Educational Booklet on Total Mean Score of Revised Prenatal Coping Inventory Subscales between Subjects of Study and Control Group Pre and Post receiving Educational Booklet

Revised Prenatal Coping Inventory Subscales		Study group N=30			Control group N=30			T-test	
		Mean	±	SD	Mean	±	SD	T	P-value
Planning and preparation coping subscale	Pre	38.067	±	11.480	41.567	±	13.410	-1.086	0.282
	Post	50.567	±	10.666	43.233	±	8.993	1.309	0.196
	Follow up	54.767	±	11.884	43.567	±	7.181	2.840	0.006
Avoidance Coping subscale	Pre	36.767	±	7.955	28.167	±	8.742	-1.490	0.142
	Post	33.400	±	6.966	31.967	±	6.156	0.845	0.402
	Follow up	26.333	±	4.003	31.533	±	5.144	3.026	0.004
Spiritual coping subscale	Pre	15.367	±	4.672	16.900	±	5.255	-1.194	0.237
	Post	20.333	±	4.003	19.700	±	4.129	0.603	0.549
	Follow up	22.033	±	4.789	19.133	±	3.665	2.634	0.011

Comparison the efficacy of the Educational booklet on total mean score of Revised Prenatal Coping Inventory between subjects of study and control group before and post receiving educational booklet represented in table 5. It was found that there was significant difference between subjects of study and control group (pre-post –post –test 1 and post –test 2) regarding planning and preparation coping subscale in which total mean score of study and control group before receiving educational booklet was (38.067±11.480 &41.567±13.410) respectively compared to (54.767±11.884&43.567±7.181) respectively after receiving educational booklet .Concerning avoidance coping subscale, it can notice that mean score of subjects of study group before receiving educational booklet was 36.767 ±7.955 compared to 26.333±4.003 after receiving .In relation to spiritual coping subscale, there was significant difference between subjects of study and control group (pre-post –post –test 1 and post –test 2) .

Table 6: Distribution of the studied subjects of Study and Control group according to their total means score of Revised Prenatal Coping Inventory State Pre and Post Receiving Educational Booklet.

Follow –up	Study group N=30			Control group N=30			T-test	
	Mean	±	SD	Mean	±	SD	T	P-value
Pre-test 8-15 gestation weeks	78.500	±	23.307	86.633	±	27.186	-1.244	0.218
Post-test 1 20-26 gestation weeks	104.300	±	21.512	98.900	±	18.119	1.052	0.05
Post-test 2 30-36 gestation weeks	113.567	±	24.537	98.233	±	15.335	2.903	0.005

Table 6 revealed distribution of the studied subjects of study and control group according to their total means score of Revised Prenatal Coping Inventory State pre and post receiving educational booklet. It can noticed that, in pre-test, there was no statistically significant difference between mean score of study and control groups regarding subjects' coping p=0.218. On the other side, the result showed that, there was statistically significant difference in mean score of study and control groups in relation to subjects' coping in both post- test 1 and post -test 2 p< 0.05 . This means that mean score of coping of subjects of study group is increased compared to those in control group in post –test 1 and post –test 2 (104.300± 21.512, 98.900± 18.119)&(113.567±24.537,. 98.233±15.335)respectively.

4. DISCUSSION

Pregnancy is considered a vital event that may create a threatening situation especially in women pregnant for the first time .Therefore, its mandatory to highlight the importance of physiological and psychological care for the pregnant women with the purpose of developing resources to adapt to the new situation and improve women's health [25- 26].

The present study aimed to evaluate the efficacy of an educational booklet- about physiological and psychological aspects during pregnancy- on prenatal anxiety, stress and coping among primigravida women. In the present study, the educational booklet yielded significant decrease in anxiety and stress levels in subjects of study group when compared to those in the control group. This findings may be due to the series of obstacles that may face the primigravida woman includes; misunderstanding, many questions without answers and inadequate giving knowledge about changes of pregnancy, all those are common and affecting physical and psychological health of woman. In most cases primigravida woman experience the journey of pregnancy without adequate preparation and knowledge about physiological and psychological changes during pregnancy. Lack of knowledge and misunderstandings of primigravida woman lead them perceive pregnancy as stressful event and unwelcomed journey and become under the threats of inadequate information. Providing subjects of study group with knowledge about expected pregnancy changes particularly common physiological and psychological aspects such as stress and anxiety make them more aware about their psychological aspects. They become more psychologically prepared for their psychological changes and as result become more psychologically control on pregnancy.

Additionally, the presence of educational booklet with pregnant mother is considered easily source of relevant and needed information at any time she wants. In this context an Egyptian study carried by El-Kurdy et al. (2017) to evaluate the effect of antenatal education on childbirth self-efficacy for Egyptian primiparous women and based on results of study, they recommend by designing comprehensive updated booklet of physically and psychologically preparation for pregnant women specially primigravida and distributed through private and different affiliated Egyptian antenatal clinics. [27]

In the same stream, Asghari et al. (2016) indicated in their findings that educating pregnant women about the symptoms and psychological changes that they can expect, and about other aspects of pregnancy, birth, and parenting is likely to decrease pregnancy –specific stress [28]).

The findings of the present study is consistent with the findings of Devilata and Swarna (2015)' they concluded that psychological predelivery preparation was found to be effective in reducing anxiety among primigravida mothers. [29] Also, Barlow et al. (2012) in their study on primigravida anxiety concluded that parenting programs are effective in improving maternal psychosocial health in the short-term, including maternal anxiety and stress. [30].

Coping has been defined as the cognitive and behavioral efforts to master, tolerate or reduce external and/ or internal demands that are created by the stressful transaction. The present study revealed the education booklet led to profound increase in coping methods among subjects of study group compared to control one. This may be due to, when primigravida women educate about psychological aspect or changes during pregnancy and providing with information about dealing with these changes and how coping with these changes. Educational booklet provides subjects of the study with different ways of coping as problem solving, relaxation technique, time management, express feeling, physical exercise, healthy diet and seeking for social and professional help. So they may become more self-confidence and more control on their changes and more insight about ways of coping. In this respect, researches have repeatedly suggest that people cope better with illness and stress when they feel a sense of personal influence or control over aspect of it [29, 31].

Additionally, this education helped primigravida women to develop adapting coping strategies such as active and problem -focused coping strategies resolve the stressor and thereby protect against adverse birth outcomes. This obviously appears in the result of the current study which planning and problem solving as coping method improved after receiving educational booklet. In this respect, Mangeli et al. (2009) used educational pamphlet containing physical and psychological changes of pregnant women, and signify the necessity of couples' awareness about common psychological changes and coping during pregnancy after proving its effectiveness in reducing maternal stress and anxiety and increasing marital satisfaction [32]. Davis et al. (2012), showed that pamphlets and an educational package were more efficient than conventional methods, and that the number of pregnant women' visits to physicians dropped from 20% to 2%. [33]. Additionally Baghdari et al. (2015) reported that women who psychologically adapted better to motherhood roles

in pregnancy were more self- confident in coping with motherhood roles in the postpartum period, and that they were more satisfied with life and motherhood [35]. Malekpoor et al. (2016), also noted that educational booklet and support help primigravida women adapt to and accept the realities, and decrease their psychological strains [35].

5. CONCLUSION

This study concluded that the educational booklet about the physiological and psychological aspects of pregnancy led to a significant decrease in anxiety and stress level, and increase in coping among primigravida women.

6. RECOMMENDATIONS

Based on the study findings, the study recommended the following:

- Healthcare planners, authorities and health care providers should have policies and protocols that address screening and education for primigravida women about physiological and psychological aspects of pregnancy and coping strategies that could guide them during pregnancy.

- Designing comprehensive updated booklet of physiological and psychological changes during pregnancy and distributed through private and different affiliated Egyptian antenatal clinics.

- Designing and implementing psych educational training programs in antenatal clinic as a protocol of nursing care.

REFERENCES

[1] **Girija Kalayil Madhavan k, Kalayil G& MelbaS**. Prevalence of pregnancy, anxiety and associated factors. International Journal of Africa, Nursing Sciences, 2015; 3: 1–7.

[2] **Saunders T.A, Lobe M, Velso G & Meyer BA.** Perinatal maternal stress is associated with delivery analgesia and unplanned cesareans. Journal of Psychosomatic Obstetric Gynecology, 2006; 27 (3): 141-146.

[3] **Hamilton J, &Lobel M.** Types, patterns, and predictors of coping with stress during pregnancy: Examination of the Revised Prenatal Coping Inventory in a diverse sample .Journal of Psychosomatic Obstetrics &Gynecology , 2008; 29(2):97-104.

[4] **A. Kızılırmak K & Baser M,** The effect of education given to primigravida women on fear of childbirth, Applied Nursing Research ,2016;29: 19–24.

[5] **Bennett HA**. Prevalence of depression during pregnancy: systematic review. Journal of Psychosomatic Obstetrics &Gynecology, 2010; 103(4):698-709.

[6] **Cury F.A & Menezes P.R**: Prevalence of anxiety and depression in private setting sample. Archives of Women's Mental Health, 2010; 10 (1): 25-32.

[7] **Dole N**. Maternal stress and preterm birth .American Journal of Epidemiology**, 2013;** 157: 14 -24.

[8] **Lobel M, Cannella D.& Graham J.** Pregnancy –specific stress, prenatal health behaviors, and birth outcomes**.** Health Psychology.2008; 27(5):604-15.

[9] **Bergman K.** Maternal stress during pregnancy predicts cognitive ability and fearfulness in infancy. Journal of Academy of Child and Adolescent psychiatry, 2007; l46 (11):1454-1463.

[10] **Meijer LI, Bockting L.C, Beijers .C & Verbeck T.** Pregnancy outcomes after a maternity interventions for stressful emotions (PROMIS): study protocol for a randomized controlled trail 2011. Trails 12- 15.

[11] **Serçekuş P, & Başkale H,** Effects of antenatal education on fear of childbirth, maternal self-efficacy and parental attachment, Midwifery., 2016; 34:166-172.

[12] **Cury A.F, Savoia G M & Menezes RP**. Coping style and depressive symptomatology during pregnancy in a private setting sample . The Spanish Journal of Psychology**,** 2012; 15(1): 295 -.305.

[13] **Lucero S**. Religious coping with stressors of a first time pregnancy as a predictor of adjustment among husbands and wives , MSc thesis ,Ohio ,State University, Graduate College of Bowling Green, August 2010.

[14] **Sarani A, Azhari S,Mazlom SR, & Aghamohammadian Sherbaf H**. The relationship between psychological hardiness and coping strategies during pregnancy . Journal of Midwifery &Reproductive Health, 2015; 3(3):408-417.

[15] **Yali AM & Lobel M.** Stress-resistance resources and coping in pregnancy. International Journal of psychology, 2012; 15(3):289-309.

[16] **Guardino C & Schetter C**. Coping during pregnancy: a systematic review and recommendations .Health Psychological, 2014; 8(1):70-94.

[17] **Morling B, kitayama S.& Myamatomy A .** American and Japanese women different coping strategies during normal pregnancy . Personality and Social Psychology Bulletin, 2003; l29 (12):1533-1546.

[18] **woods S.M & Melvill J.L.,** .Maternal stress during normal pregnancy. Journal of Obstetrics and Gynecology, 2016; 202 (1):611-617.

[19] **Peñacoba-Puente C,Carmona-Monge F,Marin-Morales D &,Naber K**. Coping strategies of Spanish pregnant women and their impact on anxiety and depression. Research in Nursing& Health, 2013; 36:54-56.

[20] **Mohamadirizi S, Fahami F., & Bahadoran P**. Comparison of the effect of multimedia and illustrated booklet educational methods on women's knowledge of prenatal care. Iranian Journal of nursing and Midwifery Research .2014; 19(2):127-131.

[21] **Chaaya M1, Osman H, Naassan G, &Mahfoud Z.** Validation of the Arabic version of the Cohen Perceived Stress Scale (PSS-10) among pregnant and postpartum women . BMC Psychiatry. 2010; 15: 10-11.

[22] **Spielberger, C. D.** State-Trait Anxiety Inventory: Bibliography (2nd ed.). Palo Alto, CA: (1983) Consulting Psychologists Press.

[23] **Abdel-Khalek M A**. The development and validation of an Arabic form of the STAI: Egyptian results. Personality and individual difference 1989; 10 (3): 277-285.

[24] **Yali AM & Lobel M .**Coping and distress in pregnancy: an investigation of medically high risk women. J Psychosom Obstet Gynaecol. 1999; 20(1):39-52.

[25] **Carmona-Monge F, Marin-Morales D& Penacoba-P C**. Influence of coping strategies in the specific worries of pregnancy .Anales de psicologia. 2012; 28(2):338-343.

[26] **Lobel M, Hamilton J& Cannella D**. Psychosocial perspectives on pregnancy: prenatal maternal stress and coping .Social and Personality Compass. 2008; 1600-1623.

[27] **El-Kurdy R , Hassan I , Hassan N &, El-Neme A.** Antenatal Education on Childbirth Self-Efficacy for Egyptian Primiparous Women: A Randomized Control Trial. Journal of Nursing and Health Science, 2017; 6 (4): 15-23.

[28] **Asghari E, Faramarzi M&Mohammadi A**. The effect of cognitive behavioral therapy on anxiety, depression and stress in women with preeclampsia . Journal of Clinical and Diagnostic Research, 2016; 10(11):1-5.

[29] **Devilata T& Swarna S .**Effectiveness of pre delivery preparation on anxiety among primigravida mothers at maternal child health centre Tirupati, AP, and India. IOSR Journal of Nursing and Health Science, 2015; 4 (6):19-24.

[30] **Barlow J, Coren E& Stewart-Brown S**. Meta-analysis of the effectiveness of parenting programs in improving maternal psychosocial health. British Journal of General Practice. March 2012; 52(476): 223–233.

[31] **Dunkel Schetter C.** Psychological science on pregnancy: Stress processes, biopsychosocial models, and emerging research issues. Annual Review of Psychology, 2016; 62(1):531–558

[32] **Mangeli M, Ramezani T& Mangeli S**. The effect of educating about common change in pregnancy period and way to cope with them on marital satisfaction of pregnant women .Iran I Medical Education .2008;8(2):305-16.

[33] **Davis T, Fredrickson D&, Bocchini C**, .Improving vaccine risk/benefit communication with an immunization education package: a pilot study. Ambul Pediatr .2002; 2:193-200.

[34] **Baghdari N, Sadeghi sahebzad E, &Kheirkhah M**. The effect of pregnancy –adaptation training package on the anxiety of pregnant women with a prior history of fetal or neonatal death . Journal of Midwifery &Reproductive Health.2015; 3(2):355-360.

[35] **Malekpoor M, Farahani H, Aghaei A& Bahrami A**. Effect of life skill education on stress in mothers of mental retardation and usual child .Research Expert Child,2016 .;20(2):661-76.