

Nursing Intervention for High Risk Hypertension Pregnancy in Family Medicine Centers

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Abstract

High risk pregnancy associated with any physical, social or psychological factors that increase the risk of woman or fetal morbidity or mortality. **Aim:** The aim of the study was to evaluate the nursing intervention of high risk hypertension pregnancy in family medicine centers. **Design:** A quasi experimental design was used in this study. **Settings:** This study was conducted at 5 family medicine centers in Giza. **Sample:** Purposive sample of 130 women was used with a predetermined inclusion criteria. **Tools:** Two tools were used for data collection, first tool was an interviewing questionnaire for collecting data related to socio-demographic data of women, women knowledge related to pregnancy & women practices related to antenatal care, the second tool was follow up sheet of outcome after delivery about woman & fetus and medical record analysis. **Results:** This study found that total knowledge of the pregnant women had unsatisfactory in pre intervention it was improved to majority in post intervention & none of the pregnant women were done their antenatal practices satisfactory in pre intervention while it was improved to majority in post intervention. Majority of the outcomes of pregnant women (the fetus) had not any congenital anomalies and had viability of life. **Conclusion:** The nursing intervention was effective in improving women knowledge & practices regarding high risk hypertension pregnancy and their pregnancy outcomes. **Recommendation:** Develop nursing intervention program for high risk hypertension pregnant women about antenatal care, high risk hypertension factor in pregnancy, proper nutrition and proper practices during pregnancy in family medicine centers.

Key words: Hypertension, high-risk pregnancy, family medicine centers, intervention program and nursing care.

Introduction

Pregnancy is a normal physiological phenomenon. It is always accompanied by physiological and anatomic changes. Those changes may be accompanied by some problems and complications, which are

potentially life threatening to woman and /or the fetus (*WHO, 2010*).

Pregnancy itself is not a high risk condition as it is part of the reproductive process. Most of pregnancies proceed normally and result in a healthy babies. The most important step in ensuring a safe and healthy pregnancy is identifying women at

risk of complications and the best time to identify them is before they get pregnant. Factors such as life style, family health history, and the women overall health offer important information about potential risk (*Buck & Marecki, 2012*).

High risk pregnancy (HRP) is defined as pregnancy associated with complications due to obstetrics, medical, surgical or social problems, which significantly increase the risk of woman and /or fetal morbidity and mortality. Pregnant women with severe life threatening conditions, with good luck and good care can survive (*Mandeville and Troiano, 2010*).

Pregnancy induced hypertension defined as a systolic blood pressure (BP) in excess of 140 mm Hg, and/or a diastolic BP in excess of 90 mm Hg. Classification: Four categories: pre-eclampsia, gestational hypertension, chronic hypertension (essential and secondary), and pre-eclampsia superimposed on chronic hypertension. Pre-eclampsia has remained a significant public health threat in both developed and developing countries contributing to maternal and prenatal morbidity and mortality globally (*Backmann et al., 2013*).

Hypertension is the most common medical problem encountered in pregnancy and remains an important cause of maternal, and fetal, morbidity and mortality. It complicates up to 15% of pregnancies and accounts for approximately a quarter of all antenatal admissions (*WHO, 2010*).

The prevalence of high risk pregnancy was found to be (31.4%) , and more in lower education group (36.7%) as compared to higher education group (24.9%). In the lower socio-economic group, prevalence of high risk pregnancy (33.4%) was found significantly higher than the upper socio-economic group (19.7%) (*Kumar et al., 2013*).

Community health nurse (CHN) should assess and incorporate into the woman program, also should have skills to design programs that meet needs for pregnant women. The roles of the CHN are important when work in family medicine programs. These roles include: direct care giver, health educator, coordinator, and liaison for community resources, counselor, advocator, facilitator, evaluator, and administrator (*Judith and Spradley, 2013*).

Significance of the study

Egyptian National Hypertension Project (2008) (ENHP) demonstrated that hypertension is common among Egyptians. Hypertensive pregnancy disorders complicate roughly 10% of all pregnancies. May trade off placental functioning and along these lines, influence the fetal formative milieu. Is along these lines exceedingly conceivable that have results for the formative outcomes of the posterity. Be that as it may, their role in the formative plasticity phenomenon named 'programming' remains generally unexplored. Maternal mortality rate: 33 deaths/100,000 live births.

In Egypt, it was found that maternal mortality rate has declined dramatically from 174/100,000 live births in 1992-1993 down to 84/100,000 in 2000. The maternal mortality ratio was 54/100,000 live births (*WHO, 2009*). According to (*WHO, 2008*) reduction of maternal and infant mortality and morbidity due to complications of pregnancy depends on improving the quality of antenatal care.

Family medicine centers are specialized centers providing different types of health care activities and services for maintaining, promoting, preventing and cureting health care for women and children (*Deepa, 2012*).

Aim of the study

The aim of the study: evaluate the nursing intervention of high risk hypertension pregnancy in Family Medicine Centers through: (a) assessing knowledge and practices of women about high risk hypertension pregnancy (b) assessing the health condition of women to detect their needs. (c) designing and implementing a nursing intervention according to women needs. (d) evaluating the program improvement through their knowledge's, practices and their outcome of pregnant women.

Research hypothesis:

The nursing intervention will improve the health of high risk hypertension pregnant women and their outcomes through knowledge, practices .

Subjects and methods:**Research Design:**

A quasi experimental design was utilized to meet the aim of the study.

Setting:

The study was conducted in five Family Medicine Centers in Giza. The total number of family medicine centers are 22 centers, 20 % of them were chosen randomly, their names Reaia madenit elomal center, Sehy embaba center, Elagoza center, Meet okba center, and Warak elhaddar center .

Sample:

A Purposive sample was used in this study. The total number of women attending the Family Medicine Centers at April, (2015) was 130 women were chosen all of them according to criteria: diagnosis transient hypertension of pregnancy (30) women in Reaia Madenit Elomal family

medicine center, (25) in Sehy Embaba family medicine center, (27) in Elagoza family medicine center , (26) in Meet Okba family medicine center , and (22) in Warak Elhaddar family medicine center .

Tools:

Two tools were used in this study :

First Tool: An interviewing questionnaire was developed by the researcher to assess: (a) socio-demographic characteristics of the women (b) women knowledge related to pregnancy antenatal care (c) women practices related to pregnancy ante natal care.

The Scoring system:

Classified into two score levels; (a) correct answers was scored "1" (b) incorrect answers was scored "zero". Score level was considered "satisfactory" with knowledge and practices if the percent score was $\geq 60\%$ and "unsatisfactory" if the percent score was $< 60\%$.

Second Tool: This tool is divided into two parts: (a) follow up sheet of outcome after delivery, used to collect data about woman and fetus. (b) medical record analysis used to collect data about diagnosis and laboratory investigations.

Pilot study

A pilot study was carried out on 13 (10%) of the study subjects in order to test the applicability, clarity, relevance, feasibility of conduction of study tools the developed tools, as well as estimated the average time needed to complete all questions in data collection tools. Results obtained were studied and analyzed. Accordingly modifications were made for the final development of the study tools.

Statistical Analysis:

The collected data were organized, categorized, tabulated and statistically analyzed using the Statistical Package for Social Science SPSS (version 23) . Also Microsoft office excel is used for data handling and graphical presentation to evaluate the studied women changes throughout the study phases (pre and post). Data were presented in tables and chart. The statistical analysis includes: percentage (%) , Chi-Square (X^2) and P value.

Significance of the result:

Non significant (NS) if $P > 0.05$
Significant (S) if $P < 0.05$

Highly significant (HS) if $P < 0.001$

Result:

The socio-demographic characteristics of the high risk hypertension pregnant women (table,1) demonstrated that 45.4% of them aged over 30 to 35 years , 52.3 % of the women had intermediate education, while 10.8% of them had high education , 79.2% of the women were house wife, while 20.8% of them were employee. Also this table shows that, 62.3% of women had one kid, while the women which had equal or more than 5 kids were 3.1%, only 58.4% of women had insufficient income. Regarding, consanguinity the results revealed that, 30.0% of women were consanguinity 61.5% of them were first degree of relative and 38.5% of them were second degree of relative.

Concerning pregnant women according to their previous current medical and gynecological history (table, 2) shows that the women with hypertension were 100% followed by 58.5% were anemia ,16.9% of them had diabetes , 71.6% had not any surgical & gynecological operation , 84.6 % of the women had multi gravida and 65.4% their previous delivery was caesarean section.

As regards women's knowledge, high statistically significant differences were observed between pre & post nursing intervention (table, 3) results revealed that, 18.5% and 16.9% of the pregnant women had a satisfactory knowledge about suitable age for pregnancy, schedule of antenatal visits, respectively in pre nursing intervention improved to 100% and 89.2% in post nursing intervention . Also the same table revealed that 16.9% and 30% had a satisfactory knowledge about high-risk group for high blood pressure during pregnancy and dangers of high blood pressure on the mother and fetus in pre- program advanced to 86.2% and 89.2 % in post nursing intervention, it shows that, 13.1% of them had a satisfactory knowledge about danger signs of high risk hypertension in pre nursing intervention improved to 88.5% in post- nursing intervention.

Concerning the pregnant women according to their total satisfactory knowledge during pregnancy (figure,1) shows that total knowledge of the pregnant women (0.7% , 22.3% and 17.6%) had a satisfactory knowledge about pregnancy & high risk hypertension, sexual relationship and nutrition in pre nursing intervention it was improved to 100% in post nursing intervention .

Concerning the pregnant women according to their total reported practices during pregnancy in pre and post nursing intervention (figure, 2) shows that none of the pregnant women were done their antenatal practices satisfactory in all items (hygiene practices, breast care practices, dental care practices, perineum care practices and physical exercises practices) in pre nursing intervention while increased to (100% & 99.2%) respectively in post nursing intervention.

Regarding the effect of nursing intervention on postpartum health condition (table, 4) shows that, (53.1% , 56.2%) of the

pregnant women had normal delivery and complete duration but (59.4% , 96.9% and 87.5%) had not any complication during labor, sugar and albumin not present in urine respectively. It also shows that, (81.3% and 90.6%) had normal pulse & movement of fetus and normal involution uterus respectively. Also results indicated that (100.0% and 81.2%) of women had normal abdominal examination, temperature and blood pressure respectively.

Concerning their pregnancy outcome (table, 5) shows that, 100.0% of the babies with not any congenital anomalies and viability of life. Also (90.6%, 59.4% and 43.8%) of the babies' normal weight, jaundice and needed to incubator after delivery respectively.

Table (1): Distribution of the pregnant women according to their characteristics (n = 130).

Items	No	%
Age in years :		
< 25	20	15.4
30 -	59	45.4
35 -	30	23.0
> 40	21	16.2
Mean \pmSD = 32.5 \pm4.9		
Education level :		
Illiterate	17	13.1
Intermediate education	68	52.3
Education above the average	31	23.8
High education	14	10.8
Occupation:		
House wife	103	79.2
Employee	27	20.8
Number of kids:		
Not present	14	10.8
1-	81	62.3
3-	31	23.8
5 \geq	4	3.1
Monthly Income:		
Sufficient	17	13.1
Insufficient	76	58.4
Sufficient & save	37	28.5
Consanguinity:		
	39	30.0
Degree of relative:		
1 st	24	61.5
2 nd	15	38.5

Table (2): Distribution of the pregnant women according to their current medical and gynecological history (n = 130).

Items	No	%
Current medical health problems :		
Anemia	76	58.5
Hypertension	130	100.0
Diabetes	22	16.9
Healthy	22	16.9
Surgical &gynecological history		
Dilatation &curettage	15	11.5
Other mentioned	22	16.9
Not present	93	71.6
Gravida:		
Primary gravida	20	15.4
Multi gravida	110	84.6
Mode of previous delivery		
Normal	45	34.6
Caesarean section	85	65.4

Table (3): Distribution of the pregnant women according to their satisfactory knowledge about pregnancy and high risk hypertension pregnancy in pre and post nursing intervention, (n = 130).

Items	Pre Satisfactory		Post Satisfactory		X ²	P value
	No	(%)	No	(%)		
Normal pregnancy						
Suitable age for pregnancy	24	18.5	130	100.0	178.9	0.000
Schedule of antenatal visits for follow up	22	16.9	116	89.2	136.4	0.000
High blood pressure during pregnancy						
Causes of high blood pressure during pregnancy	11	8.5	110	84.6	151.5	0.000
High-risk group for high blood pressure during pregnancy	22	16.9	112	86.2	124.7	0.000
Dangers of high blood pressure on the mother and fetus	39	30.0	116	89.2	94.7	0.000
High risk hypertension pregnancy						
Danger signs that require a doctor	17	13.1	115	88.5	147.7	0.000

Fig. (1): Distribution of the pregnant women according to their total satisfactory knowledge during pregnancy in pre and post nursing intervention, (n = 130).

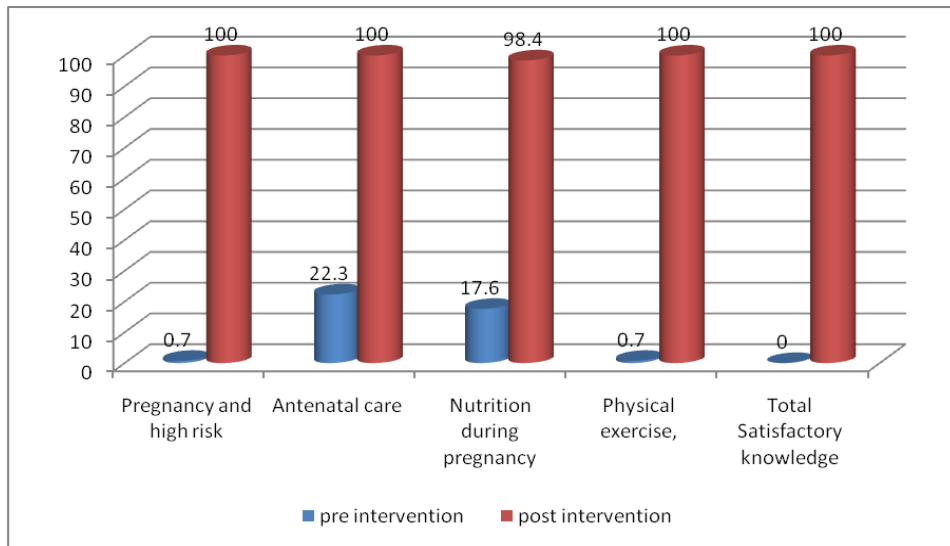


Fig. (2): Distribution of the pregnant women according to their total reported practices during pregnancy in pre and post nursing intervention, (n = 130).

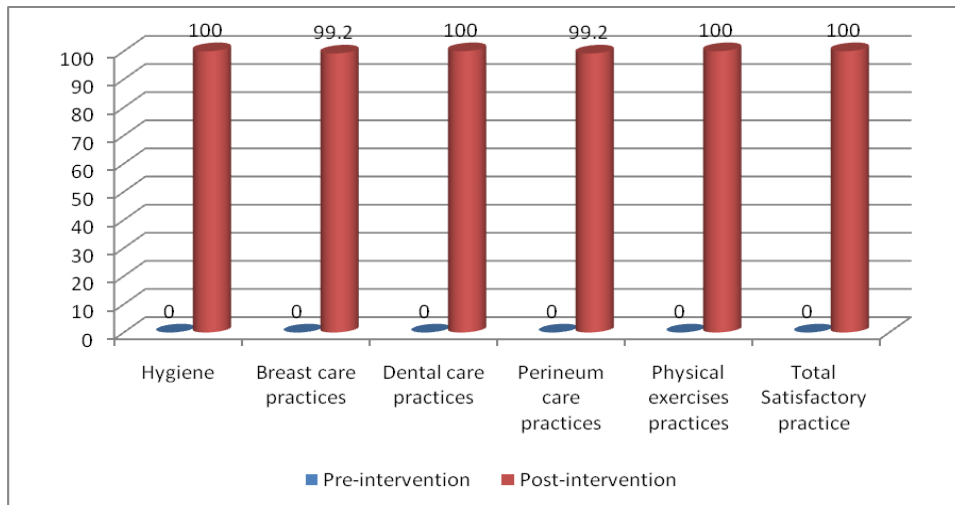


Table (4): Distribution of the pregnant women according to their postpartum health condition, (n = 32)

Items	Frequency (N= 32)	Percent (%)
Mode of delivery:		
Normal delivery	17	53.1
Caesarean section	15	46.9
Duration of labor:		
Prolonged labor	14	43.8
Normal duration	18	56.2
Pulse and movement of fetus:		
Normal	26	81.3
Examination and involution of :		
Normal abdominal	32	100.0
Normal uterus	29	90.6
Measurement of:		
Normal blood pressure	26	81.2
Normal temperature	32	100.0
Complication during labor:		
Not present	19	59.4
Urine analysis of:		
Sugar (not present)	31	96.9
Albumin (not present)	28	87.5

Table (5): Distribution of the pregnant women according to their pregnancy outcome (n=32).

Items	No	%
Gender:		
Male	9	28.1
Female	23	71.9
Number of babies:		
Single	29	90.6
Twins	3	9.4
Congenital anomalies:		
Not present	32	100.0
Baby weight /g:		
< 2500 g (low birth weight)	3	9.4
2500 g : 3500 g (normal)	29	90.6
Complication of infant after delivery:		
Jaundice	19	59.4
Reduction or stop of pulsation	13	40.6
Baby need to incubator:	14	43.8
Viability of life:		
Viable	32	100.0

Discussion

Regarding socio-demographic characteristics data of the pregnant women, the present study finding showed that, the age of the pregnant women ranged between < 25 - > 40 years, the highest percentage less than half of them were between the age of >30 to 35 years and their mean age 32.5±4.9 (table,1). This result disagrees with *El-Zanty & Way, (2010)* who reported that, most pregnancies occur in women ages 15 to 40 years. Pregnancies before the age of 15 and after the age of 35 have an increased risk of complications in an Egyptian health survey

Marriage is preferred at an early age but there are some barriers fading to youth that main cause delay in marriage age

Regarding to woman educational level it was found that more than one half of the pregnant women had intermediate education, while one tenth of them had illiterate (table, 1). These finding were opposite to the study done by *Keshavarzi, et al., (2011)* in Kermanshah who found that about one third of women were illiterate and mentioned that education level is important factors which participate with women dealing and reaction with intervention program about high risk pregnancy.

In this study, it is found that nearly two thirds of study sample the husbands were relative at 1st degree (table,1). This finding supported by *Al Shami, et al., (2012)*, who found the same result of pregnant women in Al - Ain, United Arab Emirates were their husband relative & pointed out that relative is the major cause of complication during pregnancy and delivery. Also accordance with *Ashwer, (2011)* professor of

pediatrics and genetics in National Research Center (NRC) of Egypt who reported that the most of problems as congenital defect, abortion, prenatal morbidity and mortality in upper Egypt due to endogamy.

As regards to current medical history of the studied sample (table ,2) the finding of the present study showed that majority of sample had hypertensive and more than one half anemic. This result agree with *Topalovaka et al., (2009)* stated that pre-eclampsia syndrome and anemia disorder affect nearly 70% of pregnant women in Bulgarian

As regards to women knowledge (table, 3) the present study finding that the minority of the sample had satisfactory knowledge about high risk pregnancy as high-risk group for high blood pressure more than one tenth of sample had satisfactory knowledge and danger signs that require a doctor one tenth had a satisfactory knowledge in pre nursing intervention, all of them improved to majority after taking nursing intervention (table, 3). This result accordance to *Canadian Institute of Health Information, (2008)* who mentioned that most high risk hypertension pregnancy had poor knowledge about high risk pregnancy and danger signs of pregnancy. In addition, health education & nursing intervention about risk pregnancy is always updating pregnant women and promote better pregnancy health development. The increasing of information may be increase & influence knowledge and plan of care about high risk of pregnancy and how prevent it.

High significant association between total knowledge about hygiene in pre and post nursing intervention (figure, 1). This results are in accordance

with study done by *Ibrahim et al., (2011)* who found that high significant between pregnant women knowledge in family medicine Bangladesh .

The present study detected high significant association between total knowledge about nutrition of pregnancy in pre and post nursing intervention (figure ,1) .This results agree with *Fowles , (2005)* showed high significant between Mexican American pregnant women knowledge towards nutrition .

The results of present study showed that less than one quarter of the sample washed hands satisfactory done as stated in pre nursing intervention, increased to more than two thirds in post nursing intervention (fig, 2). This result are in accordance with recommendation by *Evans et al., (2012)*in Royal Collage Nursing that the essential hand washing are principles of infection prevention and control standard infection control precaution

The present study detected high significant association between total practices about breast care in pre and post nursing intervention (fig,2) This finding disagreement with *Adam and Hewell, (2011)* who found that insignificant differences between pre –antenatal care routine and post natal care in South-Western.

This study emphasized high significant association between total practices about physical exercises in pre and post nursing intervention (fig, 2). This results agree with *Riberior and Milanez, (2012)* who found a majority of Nigerian pregnant women demonstrated inadequate practices about antenatal exercise

The present study detected high significant association between total practices about breast care in pre and post nursing intervention (figure, 2) .This finding disagreement with *Adam and Hewell, (2011)* who found that insignificant differences between African-American ethnic pregnant women about breast care routine .

The study (figure,2) showed that none of the total sample satisfactory done as stated their practices in pre nursing intervention, developed to majority in post nursing intervention. This finding in post intervention agree with *Bamanikar and Kee, (2013)* who found the majority of the pregnant women in U.S.A. done the right and complete dental care during pregnancy.

The current study is measured the effect of nursing intervention on high risk hypertension pregnant women post partum health condition in family medicine centers. The result of present study (table, 4) reveals that more than one half of studied sample delivered normal, normal duration, delivered at hospital and had not any complication during labor respectively (table,4).This study disagree with *Obro &Dare, (2007)* in West Africa who found that more than two thirds of women are important and independent risk factor for adverse pregnancy outcome as prolonged labor, caesarean section, vaginal bleeding, perinatal health and more of them delivered at home. It could be experience and intervention program may be effect on pregnancy outcome. The present study showed that more than one half of studied sample had jaundice and less than one half need incubator after delivery (table, 5). This finding agree with *Jan, (2012)* in Japan who found that the delivery complication of perinatal &death for women with hypertensive disorder compared with non

hypertensive women. It could be experience, baseline information and nursing intervention may be guide planning for health promotion and prevention of high risk hypertension in pregnancy & labor to woman and their fetus.

Conclusion

From the result of the present study and research hypothesis it was concluded that the knowledge and practices of women study sample were unsatisfactory in pre-nursing intervention and improved to satisfactory after nursing intervention implementation. This was proved by the presence of statistical significant difference between pre & post nursing intervention. This difference high significant in total knowledge and practices.

Recommendation

In light of findings the present study recommended that:

1- Develop educational program for high risk hypertension pregnant women about:

- Antenatal care
- High risk factor in pregnancy and high risk pregnancy
- Classifications of high risk hypertension pregnancy and its complications
- Proper nutrition during pregnancy
- Proper practices during pregnancy

2- Further researches to improve the health of high risk women through knowledge, practices and their outcomes

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