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Original Research Article

Effectiveness of health education on knowledge and perception about pregnancy induced hypertension among Princess Nourah Bint Abdulrahman University students, Saudi Arabia

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ABSTRACT

Background: Pregnancy induced hypertension is common complication that may lead to maternal, perinatal morbidity and mortality around world. Increasing women's education will improve their health have which ultimately affect societies and economic levels. Aim was to measure effectiveness of health education on knowledge and perception regarding pregnancy induced hypertension among Princess Nourah Bint Abdulrahman university students.
Methods: Quasi-experimental study was conducted among 42 students at princess Nourah University. Hypertension related knowledge and perception were assessed pre-intervention and post-intervention using the same instrument. The health education program consisted of three sessions. This study was approved by Institutional Review Board (IRB) of Princess Nourah Bint Abdulrahman University. The students were divided into 21 intervention group and 21 control group.
Results: There was significant improvement in the total knowledge in both intervention and control groups by (p value =0.004 and 0.04 respectively). In addition, there was significant improvement in total perception for intervention group by (p value =0.00), while there was no statistical difference in control group. Results showed that health education improves both knowledge and perception of pregnancy induced hypertension. By increasing knowledge, poor outcomes could also be detected early, or maybe even avoided.
Conclusions: Health education intervention was effective in improving knowledge and perception of the intervention group.

Keywords: Health education, Knowledge, Perception, Pregnancy induced hypertension, University students

INTRODUCTION

Hypertensive disorder is a common health complication of pregnancy and it is an important reason for maternal and perinatal morbidity and mortality around the world.[1] Hypertensive disorder is defined as blood pressure level greater than or equal to 140/90 mmHg which may adversely affect the health of both the mother and her baby throughout pregnancy, during delivery, or after delivery.[2] The most two important complications of pregnancy induced hypertension are; eclampsia and preeclampsia which happens after week 20 of pregnancy.[3] The risk factors for its occurrence include obesity, being inactive, smoking, primigravida, family history, having twins or more, over 40 years old women and assistive technology like in Virto fertilization.[2] The consequences of pregnancy induced hypertension, involve: decreased blood flow to the placenta, slowed or decreased growth of the baby, injury to internal organs, premature delivery, preeclampsia (might increase the risk of future cardiovascular disease), eclampsia, stroke and placental abruption.[4]

Oyedi in his study showed that the pregnancy-induced hypertension increases the maternal mortality risk globally by13% ,the same study showed that women had a lack of knowledge about etiology and the risk factors of pregnancy induced hypertension.[5] Another study conducted by Wallis in United States shows that the incidence of pregnancy induced hypertension, has increased.[6] The statistics of the center of disease control shows that the complications from pregnancy-induced hypertension have become more common over the years, increasing from 5.3% of delivery hospitalizations in 1993 to 9.1% in 2014.[4] A study conducted by Jatoth in UK revealed that 24% of their respondents had low knowledge about pregnancy induced hypertension, and according to study in Iran, participants had poor knowledge toward pregnancy induced hypertension by (76.2%). [7,8]

To show the importance of the women health, WHO and world-bank set it as a priority for improving economy through educating women. It is clear that enhancing women's education will have a direct effect to their families, communities and the whole societies. [9,10]

This study aimed to a assess the effect of health education on knowledge and perception about pregnancy induced hypertension in Princess Nourah Bint Abdulrahman University students.

METHODS

The study was conducted from Mid Jan till mid-March 2020 by quasi experimental study. The sample size was calculated by Epi calculator.[11] Sample size calculation was based on percentage of unexposed with outcome 30% and percent of exposed with outcome will be 76.7%.[12] Participants were recruited through convenience sampling. The total sample was divided into 2 groups, the first one has 21 participant who got health education and the other 21 were control group. Selection criteria was any female students who were studying at princess Nourah Bint Abdulrahman colleges. There was no exclusion criteria.

Data was collected by structured questionnaire designed by the researcher guided by previous studies.[13,14] The questionnaire was composed of three sections, first section consisted of 6 questions about the participants characteristics, second section about knowledge consisted of 8 questions and the answers were presented as multiple choice and the perception section consists of 5 questions and the answers were presented on five-point Likert scale and then in analysis stage the scale was transformed to three-pint Likert scale 1, 2 and 3 which represent disagree, neutral and agree respectively with total score 15 the cutoff point was taken at Q1and Q3. Knowledge answers scored 1 and 2 which represent wrong and correct answer respectively with total score 16 the cutoff point was taken at Q1and Q3.

Pilot study was conducted before the start of the study to test the clarity of the questionnaire and the modifications were done accordingly. The value of Cronbach's was 0.5 and it considered to be moderate.

Data collection procedure

The study was composed of 3-phases. It has been announced throw social media for Princess Nourah Bint Abdulrahman university students about the intervention for the participant, after that pre-test questionnaire was conduct before the intervention then they had an educational mini lecture, by using the PowerPoint, audio-visual method, and distributing flyers highlighting important information. Last phase, reassess the knowledge and perception of the audience after three weeks of the intervention to assess the effectiveness of the program using online survey.

Intervention

Intervention includes educational lecture and audio-visual method, and flyers. Educational lecture and the video talk about overview about pregnancy induced hypertension like definition and prevalence and types. Also its talks about the risk factors and complications for maternal and fetal. And its clarified signs and symptoms and, causes. Finally, we were clarified for the audience the knowledge and perception and, prevention. Also, the role of health education and the strong link between women's and maternal health. The flayer contains all the information that was explained and clarified during the educational cession in short points to ensure that the information is not forgotten after the lesson for the audience.

Statistics analysis

Data was coded, entered and analyzed using SPSS version 23 and presented by descriptive tables and appropriate test of significant was used. The applied tests of significant were Pearson Chi-square for comparison of intervention group and control group, McNemar for comparison between repeated readings and Wilcoxon sign ranked test to comparison between ranked data, 0.05 level was used as a cutoff point of significance.

Ethical consideration

Before starting the study, the approval from IRB: 18-0372 was received then we collect the data, identities were kept confidential, the participants were assured that their information was for the purposes of the study.

RESULTS

The demographic characteristics are shown in Table 1. The study sample (n=42) showed that 57.2% of the participant's age was between 17-20 years, and 2.4% was above 23 years. 66.7% of the participants were in health programs, and 33.3% were in non-health programs. The

levels from one to four represent 42.9% of the participants, and 57.1% were leveling from five to eight. 90.5% of the participants were single, 7.1% were married, and 2.4% were divorced. Regarding pregnancy among married students, 2.4% were pregnant once, 2.4% were pregnant twice, intervention and control groups were equal in number.

Table 1: Characteristics of the participants.

Characteristics		N	%
Age (years)	17-20	17	40.5
	21-23	24	57.1
	Above 23	1	2.4
	Total		100.0
Program	Health	28	66.7
	Non-health	14	33.3
Levels	1 to 4	18	42.9
	5 to 8	24	57.1
Marital status	Single	38	90.5
	Married	3	7.1
	Divorced	1	2.4
No. of pregnancy	Once	1	2.4
	Twice	1	2.4
	No pregnancy	40	95.2
Group	Control group	21	50
	Intervention group	21	50
	Total	42	100

Table 2 demonstrates that there was a statistically significant difference between pre and post-test for control regarding questions of sings of pre-eclampsia and complications of pregnancy-induced hypertension (p value =0.008 and 0.03 respectively). Also, there was a statistically significant between pre and post-test for the intervention group regarding questions of the type of pregnancy-induced hypertension and sign of pre-eclampsia (p value =0.003 and 0.03 respectively). Figure 1 shows that there was a statistically significant difference in total knowledge between pre and post for the control and intervention group by p value =0.04.

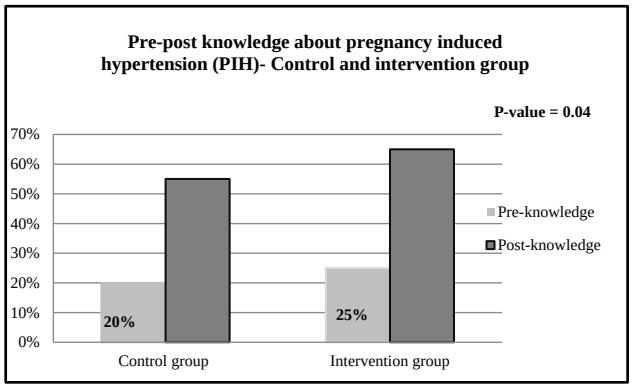

Figure 1: Pre-post knowledge about pregnancy-induced hypertension (PIH)-control and intervention group.

*McNemar test.

Table 2: Pre-post knowledge about pregnancy induced-hypertension control and intervention group.

Items	Control				*P value	Intervention				*P value
	Pre		Post			Pre		Post		
	N	%	N	%		N	%	N	%	
Definition of hypertension	12	57.1	8	38.1	0.3	12	57.1	12	57.1	1.0
The value of the pregnancy induced hypertension	15	71.4	18	85.7	0.4	14	66.7	16	76.2	0.6
The risk of hypertension	18	85.7	21	100	0.1	18	85.7	21	100	1.0
Type of pregnancy induced hypertension	5	23.8	14	66.4	0.1	6	28.6	17	81.0	0.003
Time of appearance the pregnancy-induced hypertension	4	19.0	6	28.6	0.6	3	14.3	8	38.1	0.1
Symptoms of pre-eclampsia	16	76.2	19	90.5	0.3	18	85.7	19	90.5	1.0
Sign of pre-eclampsia	6	28.6	14	66.7	0.008	9	42.9	16	76.2	0.03
Complication of the pregnancy induced hypertension	9	42.9	15	71.4	0.03	11	52.4	16	76.2	

*McNemar-Test is the test of significant.

Table 3: Pre-post perception about pregnancy-induced hypertension (PIH)-control.

Items	Control												P value
	Pre						Post						
	Agree		Neutral		Disagree		Agree		Neutral		Disagree		
Do you think	N	%	N	%	N	%	N	%	N	%	N	%	
1-Healthy lifestyle important in order to prevent PIH?	18	85.7	2	9.5	1	4.8	21	100	0	0	0	0	*0.3
2-PIH controllable?	9	42.9	12	57.1	0	0	21	100	0	0	0	0	*0.01
3-PIH dangerous for the mother health?	11	52.3	10	47.7	0	0	20	95.2	1	4.8	0	0	*0.02
4-PIH dangerous for the baby health?	12	57.1	8	38.1	1	4.8	21	100	0	0	0	0	*0.05
5-Antenatal care help in early detection of PIH?	19	90.4	1	4.8	1	4.8	20	95.2	1	4.8	0	0	*0.9

*Wilcoxon signed ranks test.

Table 4: Pre-post perception about pregnancy-induced hypertension (PIH)-Intervention group.

Items	Control												P value
	Pre						Post						
	Agree		Neutral		Disagree		Agree		Neutral		Disagree		
Do you think	N	%	N	%	N	%	N	%	N	%	N	%	
1-Healthy lifestyle important in order to prevent PIH?	16	76.2	4	19	1	4.8	20	95.2	0	0	1	4.8	*0.02
2-PIH controllable?	14	66.7	5	23.8	2	9.5	17	80.9	3	14.3	1	4.8	*0.00
3-PIH dangerous for the mother health?	12	57.1	8	38.1	1	4.8	19	90.5	2	9.5	0	0	*0.01
4-PIH dangerous for the baby health?	13	61.9	8	38.1	0	0	17	80.9	0	0	4	19.1	*0.00
5-Antenatal care help in early detection of PIH?	13	61.9	8	38.1	0	0	14	66.7	5	23.8	2	9.5	*0.02

*Wilcoxon signed ranks test.

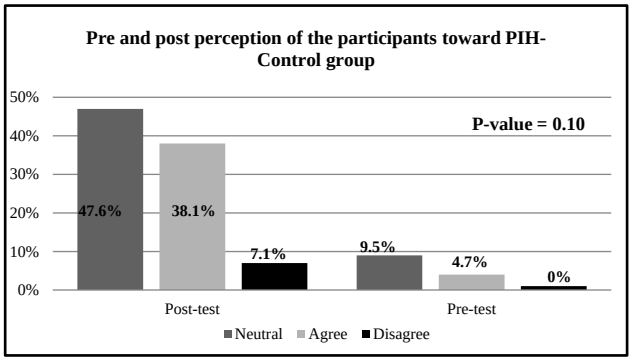

Figure 2: Pre-post perception about pregnancy-induced hypertension (PIH)- control group.

*McNemar test.

Table 3 shows that there was a statistically significant difference between pre and post-test for the control group regarding all questions except two questions which were a healthy lifestyle important to prevent PIH and antenatal care help to detect PIH by (p value= 0.3 and 0.9). Figure 2 shows, the good total perception was not a statistically significant difference between the pre and post-test of the control group. Table 4 shows that there was a statistically significant difference between pre and post-test for the intervention group regarding all questions. Figure 3 demonstrates good total perception between pre and post-test in the intervention group was a statistically significant difference by p value =0.00.

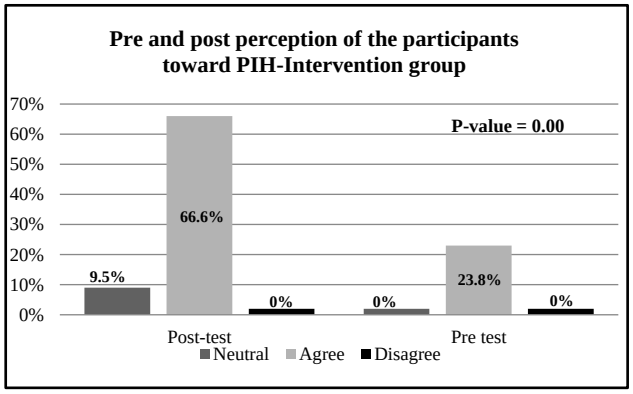

Figure 2: Pre-post perception about pregnancy-induced hypertension (PIH)- intervention group.

*McNemar test.

DISCUSSION

The results show that there was no statistically significant difference between both groups intervention and control group regarding pre-test questionnaire, since the participants were from the same field, this result was supported by another study which stated that if the participant from the same area would give similar outcome. In post-test the total knowledge was significantly improved which determine that health education intervention was effective, a collage of health sciences in Nigeria found out that health awareness campaign have positive influence on females.[14] The types of pregnancy induced hypertension question in pre-test was low then it was significantly raised in the post-test for intervention group, the majority of the participant were young and single which may explain they need more knowledge, previous study conducted in Tanzania showed that people who are young and not married need further education of hypertension during pregnancy types.[15] On the other hand, there was significant improvement in the knowledge of control group.

The participants stated that the topic was interesting to them, and they stated that they are going to search and read about it. More than half of the control group know about the sign of pre-eclampsia and complication of PIH. This may be explained that the majority of the participants were in the age of marriage which make them interest and more aware on women health.

Perception

The total perception for intervention and control groups shows that there was no statistically significant different in pre-test questionnaire, since the intervention group was comparable to control group. The total perception for both groups in post-test shows that there was a highly statistically significant difference. There is a link between knowledge and perception, so the perception was improved after health education. Furthermore, there was a highly statistically significant difference between pre and post-test questions of perception of intervention group, which confirm that our health education was successful. This interpreted by that health education campaign considered as an effective strategy to improve the perception about the disease that related to women health.[16]

The convenient non probability sampling and non-randomization of the educational interventions limit the generalizability of the study.

CONCLUSION

In conclusion, there was a significant improvement in the intervention and control group in the post-test to regarding their knowledge. There was also a significant improvement in the perception of the intervention group. This means that health education has been effective. Therefore, it is recommended at the research level, to assess the knowledge and perception in other population. For society, establishing health education campaigns in schools and universities is needed for a young female who are considered as mothers in the future.

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