

Effect of Community Based Program on the Knowledge, Treatment Adherence and Quality of Life of Hypertensive Adults Through Precede Proceed Model

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ABSTRACT

Background: Hypertension has consistently been a leading cause of morbidity and mortality in different countries and has continuously increased in prevalence. Although hypertension is manageable with lifestyle modification and anti-hypertensive medications, inadequate knowledge poor adherence to treatment regimens and poor quality of life are issues that have led to poor blood pressure control.

Objectives: To assess the effect of a community-based health programme grounded on the Precede-Proceed model, on the knowledge, treatment adherence and quality of life of adults with hypertension

Study Design: Quasi-experimental, one-group pretest–post-test design.

Methodology: The Precede-Proceed model was used to develop and evaluate the effect of the community-based health programme. A total of 50 community-dwelling adults with hypertension participated in the programme which included blood pressure monitoring targeted health educations, and individualized lifestyle modification plans. Knowledge, treatment adherence and quality of life were assessed at the start and at the end of the 3-month programme. Gathered data were analyzed using descriptive statistics and paired t-test.

Practical Implications: This research suggests that a community-based health program, grounded in the Precede-Proceed model, can effectively improve the knowledge and treatment adherence of hypertensive adults, as well as their overall quality of life. This program can serve as a community approach to managing hypertension, which is a prevalent and leading cause of morbidity and mortality in many countries. However, the study highlights the need for additional interventions to improve the general physical health domain of quality of life in hypertensive adults.

Results: After 3 months, the mean score of knowledge level, treatment adherence and quality of life were significantly improved, attributing more than 45% of the change. Although knowledge scores were significantly higher after the education programme, but it only accounted small change in general physical domain of quality of life.

Conclusion: Although the health education programme made significant and large improvements in the knowledge of hypertension and adherence scores of adult patients with hypertension, it only accounted small increment on the general physical health domain of quality of life among hypertensive adults. The community-based health programme was effective and can be considered as a community approach to improving knowledge, treatment adherence and quality of life of patients with hypertension in the community setting.

Keywords: Knowledge, Treatment Adherence, Quality of Life, Precede-Proceed Model, Health Education, Community, Adults

INTRODUCTION

Chronic non-communicable diseases such as blood pressure are considered among the most important causes of health problems and mortality.¹ Hypertension is also among the important health challenges round the globe. In the twenty-first century, non-communicable diseases (NCDs) represent one of the biggest public health issues.² More than 17.9 million people each year lose their lives due to cardiovascular disease (CVD), making it the top cause of death globally. Around 80% of these deaths occur in low and medium income countries. Where high blood pressure is considered to be the primary cause.³

Hypertension (HTN) is a common condition seen in primary health care centers. Although it could be preventable, it has a significant contribution to morbidity and mortality worldwide. Hypertension is a severe medical illness that greatly raises the risk of heart disease, strokes, renal failure, and other conditions.⁴ However, despite evidence-based approaches in place to manage this chronic condition, the rates for mortality and disability keep rising. Recent guidelines published in 2017 redefined the criteria for hypertension as having a systolic blood pressure of at least 130 mmHg and a diastolic blood pressure of at least 80 mm Hg.⁵

National Health Survey of Pakistan (NHSP) identified a high prevalence of these modifiable risk factors i.e. hypertension 37%, obesity 22% and tobacco smoking 19.7%. Hypertension is a major public health burden and is part of an epidemiological transition from communicable to non-communicable diseases globally.⁶

The aging, urbanization, sedentary lifestyle, obesity, ethanol consumption, and excess salt intake are the contributing factors for epidemiological transition of hypertension in world. A cost-effective

use of health services such as increasing the knowledge and awareness, detection, treatment, and control of hypertension (HT) is needed among public in developing countries, particularly about the risks associated with uncontrolled blood pressure.^{6,7} Literature supports that lifestyle modification i.e. diet control, physical activity, smoking cessation and treatment adherence and hypertension related knowledge substantially reduces the risk of morbidity and mortality thereby, improving health and quality of life in this population.⁸

The need to develop culturally appropriate interventions for decreasing dietary, lack of physical activity and obesity risk factors for hypertension is imperative to reduce morbidity and mortality from cardiovascular disease.⁶ Controlling blood pressure is usually possible by two methods, pharmacological treatment in the form of adherence to anti-hypertensive medications and non-pharmacological methods i.e. lifestyle changes including eating healthy food, regular physical exercise, limiting soft drinks/smoking, enhancing hypertension-related knowledge and monitoring the blood pressure at home.^{7,8} Terms and phrases used in the searches were: „Precede model“ or „Proceed model“ or „Precede-Proceed model“ and „community intervention“ or „educational intervention“ and „knowledge“ and „blood pressure control“ or „blood pressure compliance“ or „medication adherence“ and „hypertension“ or „hypertensive patients“ or „patients with hypertension“ and Pakistan.^{9,10}

Rationale of Study: The present study will bring an effect of on the knowledge level and treatment Adherence and quality of life of Hypertensive Adults

Research Gap: The need for longer-term follow-up to assess the sustainability of the improvements in knowledge, treatment

adherence, and quality of life among hypertensive adults. Additionally, future studies could explore the effectiveness of incorporating other interventions or strategies alongside the community-based health program to further enhance the outcomes.

MATERIALS AND METHODS

Study Design: A quasi-experimental one- group pretest–posttest study was used.

Settings: The study patients were taken from outdoor of Ayesha General Hospital, Faisalabad Punjab, Pakistan.

Study Duration: The research duration was 9 months after approval of IRB.

Sample Size: The calculated sample size is too small to perform the statistical test with good efficacy. So, 50 participants will be taken. After adding 20% dropout rate the sample size will be 50.

Sampling Technique: Sample Random sampling due to randomization. Each member of the population has an equal chance of being selected.

Sample Selection: Inclusion Criteria:

- Both male and female
- Age 18 to 45years
- Patients diagnosed with Hypertension
- Living in designated rural community
- Outdoor patients of Ayesha General Hospital, Faisalabad, Punjab, Pakistan

Exclusion Criteria:

- Hypertensive patient with (visual, hearing problems, severe psychological illness, cardiac problems, kidney problems)
- Pregnant Females (Eclampsia and Pre-Eclampsia)
- Postmenopausal women.
- Participant who already attend a seminars or workshop on Hypertension
- Participants who have 75% or more than 75% knowledge, treatment adherence and Quality of life will be excluded from study

Statistical Analysis: SPSS software version 2018 was used to analyse raw data and P value was considered less than 0.05(p<0.05)

Research Instrument: A total of four instruments consisted of the Socio-demographic and Health Assessment Profile Sheet, Hypertension Knowledge Level Scale, Treatment Adherence Scale and Quality of Life Tool were used for data collection.

Variables: Community Based Education Program and treatment Adherence and Quality of life.

RESULTS

The results of current study showed that total 50 hypertensive adults were included who were given 4-months community based intervention to improve their hypertension related knowledge, treatment adherence and quality of life (QOL). The results section was divided into four parts. The first part shows the demographic characteristics and self-reported clinical history of hypertensive adults. Second part describes the knowledge of patients about hypertension in six dimensions: definition, drug compliance, medical treatment, lifestyle, diet and complications. The third part shows the treatment adherence in three distinct domains: reduced sodium intake, appointment keeping and medication taking. The last section describes the findings of three domains of quality of life in hypertensive adults. Pre and post data was collected and analyzed.

Table-1: Age of Participants Demographic Characteristics of Participants (n=50)

Age (Years)	Frequency	Percentage
19-29 years	10	20.0
30-39 years	23	46.0
40-49 years	17	34.0
Total	50	100

Table 1 depicts the age of the participants. 20% were between 19-29 years of age, 46% were of age 30-39 years and 34 % were above 40 years.

Table-2: Gender of Participants

Gender	Frequency	Percentage
Male	29s	58.0
Female	21	42.0
Total	50	100

Table 2 shows gender of participants, in relation to gender most of 58.0% were males and 42.0% were female.

Table-3: Marital Status of Participants

Marital Status	Frequency	Percentage
Married	36	72.0
Unmarried	14	28.0
Total	50	100

Table 3 reveals the data regarding marital status, it shows that majority sample were married 36(72.0%) and unmarried were 14(28.0%).

Table-4: Education of Participants

Education	Frequency	Percentage
Illiterate	12	24.0
Read/Write	9	18.0
Matriculation	14	28.0
Secondary	8	16.0
Bachelor	5	10.0
Masters	2	4.0
Total	50	100

Table-5: Treatment Adherence (Pre-Post intervention) (n=50)

Treatment Adherence	Pre [n (%)]	Post [n (%)]
Poor Adherence	37 (74.0)	2(4.0)
Fair Adherence	5(10.0)	9(18.0)
Good Adherence	8(16.0)	39(78.0)

Depicted the participants' treatment adherence in the pre interventional and post interventional groups. Results of the study found that before the educational program majority of the participants 37 (74.0%) had poor treatment adherence and 5 (10.0%) of the study participants were having fair adherence about hypertensive treatment regime. There were 8(16.0%) participant with good adherence to treatment in the pre interventional group. After the intervention, the treatment adherence among the participants were enhanced where the results showed that 39(78.0%) hypertensive adults had good level of treatment adherence about antihypertensive medications and 9 (18.0%) were having fair level of treatment adherence at the end of the educational program.

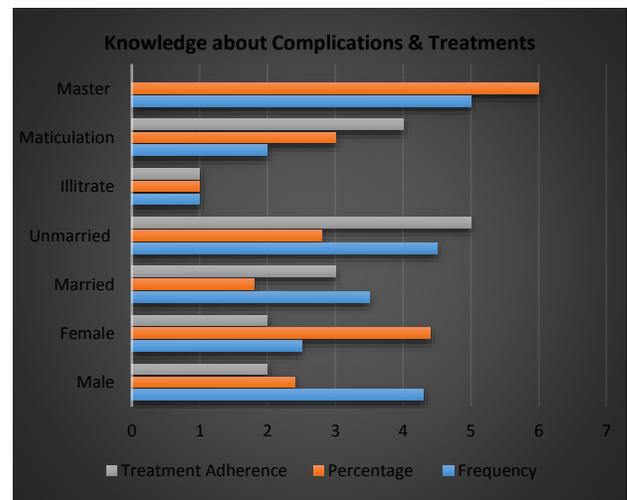


Fig-1: Knowledge about Complications & Treatments

Fig-1 showed the participants' knowledge about hypertension complications namely stroke, heart attack, premature death, kidney failure and visual disturbances (pre and post intervention). Majority participants have fair knowledge that

hypertension lead to heart attack (72%), visual disturbances (76%) and complication of stroke (60%) while other participants have poor knowledge about premature death (38%) and kidney failure (14%) caused by high blood pressure in the pre-intervention phase.

DISCUSSION

This study implemented a community-based health programme grounded from the PRECEDE- PROCEED model. Results showed that after the 3-month programme, there were substantial improvements in the hypertension knowledge and treatment adherence of adult with hypertension. In contrast, the programme caused only a small improvement on the quality of life especially general physical health and quality of life domain of respondents.^{11,12} Additionally, nurses play vital role in providing care to the patients therefore this study was conducted to find out the effect of community based program on the knowledge, treatment adherence and quality of life of hypertensive adults through precede proceed model.^{13,14} The results of current study reveals that this community based program had significant impact on increasing the hypertension knowledge and treatment adherence and quality of life domains of hypertensive patients.¹⁵ The mean age of patients was 31.44±9.31. The patient's Self-Reported Clinical History showed that Nearly 16 (32.0%) reported personal history of hypertension. Of the total, 58.0% had family history of hypertension while 62.0% had no family history of cardiovascular disease, whereas 54.0% had high cholesterol in blood. A study conducted by Jiao et al., reveal the demographic information of hypertensive patients which shows that 77.0% had family history of hypertension while 30.0% had no family history of cardiovascular disease, whereas 61.0% had high cholesterol in blood.^{15,16}

When comparing both pre and post intervention score of hypertensive participants, hypertensive participants after intervention showed a more satisfying level of knowledge regarding hypertension definition and medical treatment.^{7,13} Moreover, there was a significant difference between the two groups when asked about knowledge related to hypertension definition and medical treatment. Furthermore, when asked about lifestyle, there was a vast difference in the responses of participants before and after intervention. Majority answered correctly indicating a good level of knowledge regarding lifestyle changes in post intervention phase. Our results were consistent with the Jordanian study.^{17,18}

In general, only 57.8% of the participants knew that white meat is the healthier option and majority gave responses in the favor of red meat to be good for hypertensive patients in the pre-intervention phase.¹⁷ This tells us that although there was an appropriate response to that question, there needs to be an improvement in the knowledge of red meats negative relation to hypertension. The participants had fair knowledge regarding the complications of hypertension.¹⁹

Both groups had a similar response when asked about strokes, heart disease and visual disturbances. Hypertensive participants after taking health education acknowledged kidney failure and premature death as a complication more often than before education session. Our findings showed that our participants displayed slightly lower knowledge than Sanne et al. which found that the participants who believe hypertension can cause heart attacks, strokes and kidney problems were 94.9%, 98% and 76.4%, respectively.²⁰

This doesn't correspond with the results of FAMILONI et al. who found that 53.2% recognize heart failure, kidney failure and strokes as a complication of hypertension. Nonetheless, more hypertensive participants in post intervention phase realized that premature death and visual disturbances are complications of hypertension.^{21,22} The study of researchers²³ even noted that conducting a community- based intervention with exercise and counseling sessions for 6 months significantly enhanced the physical fitness scores and self-care behaviors of patients with

hypertension.^{23,24} It should be noted, however, that lifestyle modifications should be tailor-fit and should be devised in consultation with the patient. By making these modifications fit to the patient, they can adhere to such changes based on their daily activities, and the factors that may lead to non-adherence can be mitigated.^{22,23,25}

CONCLUSION

Although the health education programme made significant and large improvements in the knowledge of hypertension and adherence scores of adult patients with hypertension, it only accounted small increment on the general physical health domain of quality of life among hypertensive adults. The community-based health programme was effective and can be considered as a community approach to improving knowledge, treatment adherence and quality of life of patients with hypertension in the community setting.

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