OPEN ACCESS
Saudi Journal of Nursing and Health Care
Abbreviated Key Title: Saudi J Nurs Health Care
ISSN 2616-7921 (Print) |ISSN 2616-6186 (Online)
Scholars Middle East Publishers, Dubai, United Arab Emirates
Journal homepage: https://saudijournals.com

Original Research Article

Effect of Self Care Life Style Modification Program on Self Efficacy for Sudanese Hypertensive Patients at Elmek Nimir University Hospital

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DOI: 10.36348/sjnhc.2021.v04i10.006 | **Received:** 26.06.2021 | **Accepted:** 31.07.2021 | **Published:** 21.10.2021

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Abstract

Background: Worldwide hypertension is the third leading risk factor contributing to death, preventive measures and control of high f blood pressure should be of high priority, a healthy lifestyle remains the cornerstone of the management of blood pressure (BP). ***Objectives:*** To evaluate the effect of self - care life style modification program on self-efficacy for hypertensive patients using the Health Belief Model. Sudan, 2018. ***Methods:*** A hospital- based prospective study was performed at shendi town –sudan(March- April 2016 – febrery 2018). A total of 101 adult individuals were interviewed using structured questionnaire**.** That was filled by researcher, trainer nurses and semi-final medical students. BP was measured. The international classification of BMI was used for weight measurment. ***Analysis:*** selection of subjects was done via convenience sampling, they were followed during a 7 month, descriptive and inferential statistical methods were employed to analyze data. ***Results:*** This study reflected that majority 81(80.2%) of study group were ≥ 50 year of age the mean age of them was 57 ± 9.9 (range 30–83) , the study groups knowledge about hypertension improved in post - test phase, and upgraded in follow up- phase with highly significant results , they had improved level of life style modification upgraded in pos-ttest and follow up- test ($P < 0.05$). ***Conclusion:*** This study showed that the educational program was effective in increasing knowledge, improving self-care, and controlling lifestyle habits of hypertensive subjects, and indicated the ability of Health Belief Model in self-regulation and reducing the blood pressure. Thid study reflected that barriers to practice life style presented that more than one third 35(34.7%) of study group reported ineffective of medication to stabilize their blood pressure as a personal barrier, less than one third 30(29.7%) had self-efficacy as a psychological barrier, more, more than half 54(53.5%) reported confidence to implement strategy as a provider barrier, than two third 79(78.2%) reported lack of social support as a Sociocultural barrier, more than two third 68(67.3%) reported complicity of the regimen as a therapy related barrier, majority 88(87.1%) reported lack of transport as barrier to access to care, majority of them84(83.2%) reported lack of office support was a barrier as a feature of practice setting.

Keywords: Hypertension; life style modification, self-efficacy; Shendi locality; Sudan.

1. LITRATURE REVIEW

1.1 Hypertension (HTN) is the main risk factor for cardiovascular diseases and stroke. However, it is not taken seriously and is often deficiently controlled Lowering the Blood Pressure (BP) reduces the associated risks, therefore, an effective strategy for reducing HTN complications is increasing the number of patients who have controled BP.(Vega et al., 2007).

Hypertension is a highly prevalent disease in most countries, 15% to 30% of the adult population and more than 50% of the elderly population suffer from high blood pressure, making it a clear general public health problem as with smoking, diabetes, and Dyslipidemia, Hypertension is an important risk factor for cardiovascular diseases, which are responsible for roughly 30% of deaths worldwide (Hame, 2010).

1.2 Quality of life Quality of life (QOL) is a broad multidimensional concept that usually includes subjective evaluations of both positive and negative aspects of life. Aspects of moral culture, values, and spiritual are also key of overall quality of life that adds to the complexity of measurement (Martinelli et al., 2008).

1.3. health-related quality of life the concept of health-related quality of life (HRQOL) and its determinants have evolved since the 1980s to encompass those aspects of overall quality of life that can be clearly shown to affect health either physical or mental. On the individual level, this includes physical and mental health perceptions and their correlates including health risks and conditions, functional status, social support, and socioeconomic status (Bocalini, 2008).

2. METHODS AND MATRIALS

2.1 Study Desig

This was a hospital based prospective study.

2.2 Study Area

The study was carried out at Shendi city at River Nile State which is 176km north to Khartoum and 110 km south to Elddamer, the capital of River Nile State; it lies on the eastern bank of the River Nile with a total area of about 14596 Km 2, The total population of Shendi 'locality' is estimated to be 197589 of whom 116713 live in rural areas and 80876 in urban area. Most of them are farmers and most of them afroarab.

2.3 Study Population

The target population was the hypertensive individuals males and females aged 20 years and above who attended the refered clinic during the time of the study (June – December 2017).

2.4 Sample Size

All hypertensive subjects who attended the refered clinic Sample size was calculated according to thefollowing equation:

$n= Z^2 p q/d^2$

Where by
n = there quired minimum sample size
d = margin of error (5%)
p = estimated proportion of compliance 9%
z = standard normal deviate corresponding to 95% confidence level=1.96
N= (1.96)2 (0.5) (0.5)/0.00873 = 110
q =p-1

Considering a margin of error of 5% and a 95% confidence level, then the minimum required sample size 110.101 patients who agreed to participate were included in the study, and however ten participants refused to participate.

2.5. Sampling Technique

Purposive convenience sample from hypertensive subject who visited the refered clinic from 8:00am through 11:00am on Monday, Tuesday, Thursday in the selected hospitals, who met the inclusion criteria

2.6. DATA COLLECTION AND ANALYSIS

Data was collected using structured data collection instrument, the tool permitted the researcher to ask the same questions to all participants and mark their responses using predetermined response options data was collected within a period of (7) months, data collected in three phases before implementation of education program (pretest phase), in which the structured data collection instrument was distributed for patients and each one of trainees was allowed sufficient time to fill it with patient in (June July August 2017), after collection of pretest data the patients were received the training program, the training was continued, questionnaire was filled after explanation verbally the purpose of the study, verbal consent was taken, then the researcher and trainees filled the structured data collection instrument, after that the trainees implement the program in the outpatient clinic at the hospital and in shendi university, three months later for the identified group the same tools used in pretest was used to collect mid test (post test phase) in September October November 2017) and then after another one month (December 2017) for the same identified group posttest (follow up phase) data was collected, data was entered into the computer using SPSS software program, Data was cleaned before being subjected to analysis, Data analysis was performed using SPSS(vertion11.5) software program, Information was summarized using frequency tables, The chi-square test was used to compare proportions, correlation (Pearson correlation) analysis was done. A P-value of equal or less than 0.05 was considered a statistically significant.

3. RESULTS

Table-1: Demographic characteristics of study group

N=101	Frequency	Percent
Age		
31-40 year	7	6.9%
41-50 year	13	12.9
>50 year	81	80.2%
Sex		
Female	76	75.2%
Male	25	24.8%
Marital Status		
Married	94	93.1%
Divorced	1	1.0%
Widowed	1	1.0%
Single	5	5.0%
Educational Level		
Illiterate	53	52.5%
Khalwa	10	9.9%
primary school	21	20.8%
secondary school	10	9.9%
Graduate	7	6.9%
Occupation		
government employee	5	5.0%
non-government employee	3	3.0%
free worker	19	18.8%
house wife	74	73.3%
Residence		
Shendi	17	16.8%
Rural	53	52.5%
Village	31	30.7%
Health Insurance		
Have	75	74.3%
have not	26	25.7%

Table-2: Historical background of study group

N=101	Frequency	Percent
Duration of disease when discovered		
0-5 years	53	52.5%
6-10 years	33	32.7%
11-15 years	4	4.0%
>15 years	11	10.9%
Blood pressure classification stage		
Stage 1 (140-159 or 90-99 mm/hg)	92	91.1%
Stage 2 (160-179 or100-109 mm/hg)	9	8.9%
Body mass index		
Normal	36	35.6%
Under weight	16	15.8%
Over weight	28	27.7%
Obese	21	20.8%
Health compliant other than high blood pressure		
CVS problems	13	12.9%
Renal problems	5	5.0%
Diabetes mellitus	25	24.8%
Rohmatoid arthritis	9	8.9%
GIT problems	11	10.9%
Vision problem	1	1.0%

N=101	Frequency	Percent
I have not health problems	37	36.6%
Number of medication did you taking for high blood pressure		
One type	73	72.3%
Two types	20	19.8%
Three types	8	7.9%

N=101	Frequency	Percent
Category of antihypertensive did you take		
Ca channel blocker	36	35.6%
Diuretics	1	1.0%
ACE inhibitor	14	13.9%
beta blocker	22	21.8%
ACE+BETA	10	9.9%
BETA+DURETIC	6	5.9%
ACE+CA+DURETIC	8	7.9%
ACE+DURETIC	4	4.0%
Other drugs which respondent used		
Non steroidal anti-inflammatory medications	1	1.0%
Antiarythmicmedications	6	5.9%
Antidiabetic	13	12.9%
Anticoagulant	81	80.2%
Habit (smoke)		
Smoker	2	2.0%
Used before	3	3.0%
Never smoke	96	95.0%
Number of segregate smoking per day		
10 sig/day	2	2.0%
20 sig/day	1	1.0%
None	98	97.0%
Habit (alcohol)		
Never alcoholic	101	100.0%
Causes of high blood pressure related to the respondent		
Unknown	66	65.3%
Family history	1	1.0%
Diabetes mellitus	7	6.9%
Polycystic kidney disease	2	2.0%
Menuposed	4	4.0%
Increased blood lipids	19	18.8%
Side effect of medication	1	1.0%
Lake of physical activity	1	1.0%

N=101	Frequency	Percent
Blood pressure measured diary record		
Monthly	2	2.0%
During illness	9	8.9%
Often	6	5.9%
Never	84	83.2%
Time when you start medical treatment from first high reading to gain normal blood pressure		
One month	72	71.3%
6 month	10	9.9%
One year	6	5.9%
> One year	13	12.9%
Know your medication by		
Name	16	15.8%
Color	4	4.0%
Backed	81	80.2%

Table-4: Adherence to life style modification among study group and health believes model

Life style	Patient adherence	Pre test		Post test		Follow up	
		Frequency	Percent	Frequency	Percent	Frequency	Percent
Blood pressure measured diary	During illness	9	8.9%	16	15.8%	21	20.8%
	Often	6	5.9%	44	43.6%	41	40.6%
	Never	84	83.2%	15	14.9%	4	4.0%
		P1=0.000		P2=0.000		P3=0.000	
Regarding medication adherence	Adapt on dose and time	55	54.5%	91	90.1%	98	97.0%
	Doubl dose if forget it	12	11.9%	6	5.9%	1	1.0%
	Neglect use dose	30	29.7%	4	4.0%	1	1.0%
	Forget to take medication	3	3.0%				
	Stop taking medication because believe they are ineffective	1	1.0%				
		P1=0.000		P2=0.000		P3=0.000	
Method of cooking	Cook with little oil and fats	101	100.0%	89	88.1%	76	75.2%
	Broiled cooking			11	10.9%	18	17.8%
	Boiled cooking			1	1.0%	6	5.9%
		P1=0.000		P2=0.000		P3=0.000	

Life style	Patient adherence	Pre test		Post test		Follow up	
		Frequency	Percent	Frequency	Percent	Frequency	Percent
Regarding body weight reduction	No trial to lose weight	40	39.6%	22	21.8%	19	18.8%
	Desire to lose body weight	21	20.8%	19	18.8%	11	10.9%
	No trial to lose body eight	30	29.7%	36	35.6%	35	34.7%
	Lose body weight program	-	-	16	15.8%	28	27.7%
P1=0.000	P2=0.002 P3=0.000						
Regarding physical activity (exercise)	Engaged in physical exercise	10	9.9%	11	10.9%	7	6.9%
	Not engage	35	34.7%	10	9.9%	9	8.9%
	Desire to exercise	32	31.7%	12	11.9%	10	9.9%
	No desire to exercise			33	32.7%	30	29.7%
	Regular exercise program	24	23.8%	35	34.7%	44	43.6%
P1=0.000	P2=0.003 P3=0.000						
Regarding smoking cessation trials	Try to stop	2	2.0%	2	2.0%	3	3.0%
	Desire to stop	1	1.0%	2	2.0%	-	-
	Never smoke	98	97.0%	97	96.0%	97	96.0%
P1=0.006	P2=0.012 P3=0.006						
Regarding alcohol cessation trails	Never alcoholic	101	100.0%	101	100.0%	100	99.0%
P1=0.1	P2=0.1 P3=0.1						

Life style	**Patient adherence**	**Pre test**		**Post test**		**Follow up**	
		Frequency	**Percent**	**Frequency**	**Percent**	**Frequency**	**Percent**
Regarding stress	Being irritable	22	21.8%				
	Being confused	6	5.9%	2	2.0%		
	Cope with stress	62	61.4%	98	97.0%	98	97.0%
P1=0.000		P2=0.000		P3=0.000			
Regarding follow up	Blood pressure measured diary record			58	57.4%	63	62.4%
	On regular follow up	54	53.5%	35	34.7%	29	28.7%
	Follow when you have a symptoms	26	25.7%	7	6.9%	7	6.9%
	Don't follow	21	20.8%	1	1.0%	1	1.0%
P1=0.000		P2=0.000		P3=0.000			
Awareness of benefit to manage life style	Keeping my blood pressure under control	25	24.8%	36	35.6%	29	28.7%
	Increase my quality of life	43	42.6%	11	10.9%	10	9.9%
	Increase my sense of well-being	6	5.9%	2	2.0%	6	5.9%
	Protecting me from complication	14	13.9%	19	18.8%	21	20.8%
	Decrease my chance of dying	1	1.0%	1	1.0%	1	1.0%
	Good choice to life well	1	1.0%	5	5.0%	9	8.9%
	Thing that I will cope	10	9.9%	27	26.7%	24	23.8%
	Dose not effect	1	1.0%				
P1=0.000	P2=0.000	P3=0.000					

Life style	Patient adherence	Pre test		Post test		Follow up	
		Frequency	Percent	Frequency	Percent	Frequency	Percent
Awareness of complication develop	Satisfied knowledge	45	44.6%	71	70.3%	86	85.1%
	Poor knowledge	56	55.4%	24	23.8%	5	5.0%
P1=0.000	P2=0.000	P3=0.000					
Awareness of severity of hypertension	My blood pressure condition is serious	48	47.5%	6	5.9%	1	1.0%
	I am worried about my blood pressure condition	10	9.9%				
	Getting hypertension would be so serious	36	35.6%	5	5.0%	3	3.0%
	Getting hypertension complication would be so dangerous	7	6.9%	1	1.0%		
	You ever experience trouble with anxiety, irritability, being			9	8.9%	5	5.0%
	You ever been abused			80	79.2	91	90.1%
P1=0.000		P2=0.000		P3=0.000			

Key:
P1: comparison of knowledge between pretest phase and post test phase
P2: comparison of knowledge between posttest phase and follow up phase
P3: comparison of knowledge between pretest phase and follow up phase

4. DISCUSSION

This study was conducted to evaluate the effect of implementing education program on self-efficacy for hypertensive subjects, it was designed using the health belief model, and total number of (101) hypertensive patients who were attended the refered clinic in Elmek Nimir university hospital.

The study showed that regarding life style modification study group were adapted on dose and time regarding medication adherence in the pretest phase, post-test, and follow up -phase with significant results, so the finding indicate that patient responded to the program and indicated that subjects had self-efficacy to comply with their medications and should not develop complication and they may been well controlled blood pressure, one them had blood pressure measured diary record monthly in follow up- phase, also these evidence had been changed in post- test phase and represented fortunately increased in follow up- phase, also few of them used better method of

cooking and this indicate that some of study group were respond .

The study represented that the knowledge about importance of adherence to life style modification had been improved throughout three phases of test and reflected that the study group had lose body weight program, regular exercise program in the pretest phase, and follow up phase with significant results ,other of them reported that they engaged in little or no activity at all, and some of them enough engaged in occasional activity only, the most common reason was inactive and not being familiar with exercise and reported they perceived the house hold think as enough exercise, and this same to study conducted in south Africa by rakumakoe (rakumakoe, 2011) also patient knowledge about importance to prevent smoking and alcohol consumption had been improved through all phases of test.

The study reflected that Regarding stress the study group were cope with stress during the pre-test phase, post- test phase, and follow up- phase with highly significant results, regarding follow up they had blood pressure measured diary in post test phase, and follow up phase with highly significant results. These findings showed that, there was great variation in study group adhered and practiced of life style modification and reflected an increased in their self-efficacy through excellent behavior change and they can reduce the risk of hypertension complication and this goes with Hamet (Hamet, 2008).

The study clarified that barriers to practice lifestyle presented that there were more than one third 35(34.7%) reported ineffective of medications to stabilize their blood pressure as a personal barrier, less than one third 30(29.7%) had self-efficacy as a psychological barrier, more than two third 79(78.2%) reported lack of social support as a Sociocultural barrier, more than half 54(53.5%) reported confidence to implement strategy as a provider barrier, more than two third 68(67.3%) reported complicity of the regimen as a therapy related Perrier, majority 88(87.1%) reported lack of transport as barrier to access to care,(and this was reported for the cause that they were just sent their health insurance medical prescription record without their attendance by themselves),majority of them 84(83.2%) reported lack of office support was barrier as a feature of practice setting, and most of them 100(99.0%)reported provide educational hand book as cues to action to practice life style, the present result corresponds closely with study angalina Alphonce (angalina Alphonce, 2012) in some barriers.

We believe that the medical practitioners and nurses at hospital emphasized the importance of life style modification in the control of hypertension. It may also be that the doctors were equipped to provide more information regarding life style modification as it form part of their medical training.

5. CONCLUSION

The study group had improved level of life style modification upgraded in post-test and follow up-phases, Barriers to practice life style reported as ineffective of medicine to stabilize their blood pressure as a personal barrier, self-efficacy as a psychological barrier, lack of social support as a Sociocultural barrier, confidence to implement strategy as a provider barrier, complicity of the regimen as a therapy related barrier, lack of transport as barrier to access to care, lack of office support was barrier as a feature of practice setting.

The current study indicated that the educational programs were effective in increasing knowledge, improving self-management, and controlling lifestyle habits of the patients with hypertension.

ACKNOWLEDGEMENT

I would like to thank Prof. Hind Mamoun Behairy from the, Associate Professor of human physiology Faculty of Medicine, International University of Africa, Sudan. Who reviewed the article.

Competing interests

Authors have declared that no competing interests exist.

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