

Effect of the National Health Education Program Among Saudi Patients in Saudi Arabia Primary Health Care Centers, 2019

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Health education (HE) is important in improving public health. Globally, the evaluation HE quality is an important obstacle to better interventions, and wider acknowledgment of As a result, the purpose of this research is to improve the quality of health education services by providing a current perspective on current evidence on the effect of the HE national program in primary health care centres (PHCCs) through the following objectives: To calculate the frequency of receiving HE To measure patient satisfaction with the provided HE service. To assess patient self-control and its determinants in chronic diseases. An analytical cross section study targeted randomly selected 1590 Saudi PHCCs visitors from the main five regions in the Kingdom of Saudi Arabia (KSA). Through exit interview using a pretested, well-structured questionnaire composed of four parts. The majority of participants were females (73.5%) and married (69.1). Of those, 64.9% had chronic diseases. The frequency of receiving HE was 51.1%. The health-educated patients significantly had better self-chronic disease control and an improvement in health status. The HECs shows a significant self-patient control of chronic diseases and patient satisfaction than HE services. HE interventions must be multidimensional to be effective in improving patients' clinical outcomes through the increase and maintenance of healthy behaviours.

Keywords: health education, Saudi patients, primary health care centres, Saudi Arabia

Introduction

Recently, the health education (HE) conceptual basis is regarded to be of the utmost significance (WHO 2012). HE is an integral part of being healthy, both as a process and a product. It is directed towards improving health literacy, has a role in health promotion (HP), and disease prevention, and advocates improvements in the sophistication of healthy behaviors (Glanz et al. 2008). His efforts to affect

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behavior must be multidimensional. Because health-related behaviors are determined by multiple factors (Hahn and Truman 2015).

Nurses, community workers, dietitians, and multidisciplinary teams were the most frequent educators (Loveman et al. 2008). Education by one person may focus more on the patient's ability than on the quality of HE. Nevertheless, there is no clear conclusion on whether having one educator is best due to a lack of information (Steinsbekk et al. 2012).

Various methods can be used to educate the patients, like verbal education, written information (handouts, articles in popular magazines, etc.), group-based learning, audiotapes, videotapes, computer-assisted education, and the internet (Zirwas and Holder 2009). Although face-to-face sessions are the most common and effective delivery format (Fan and Sidani 2009), the telephone or individualized counseling can also be used. Using mixed delivery models produces a moderate effect on knowledge levels (Ricci-Cabello et al. 2014). Today's patients are more educated, computer-well-informed, and much richer, so it is essential to clear all their rightly or wrongly earned doubts with patience and compassion (Marketing Monitor 1998, p. 6).

So far, education programs are designed to meet national or international education standards (Haas et al. 2012, Scarborough et al. 2011). Successful education increases patient satisfaction (Zirwas and Holder 2009). That affects clinical outcomes (improved adherence to treatment), patient retention, medical malpractice claims, and the timely, efficient, and patient-centered delivery of quality health care (Zirwas and Holder 2009, Prakash 2010).

Delivery of patient-focused care: HE requires providing care in a particular way, not just sometimes or usually, but always. It must be every patient, every time (TARP 1986, Tabbish 2001). One's confidence or belief (Bandura 1977) is a strong indicator of future behavior. Self-efficacy is a key internal motivational process that can be affected by environmental and personal variables and that influences the motivational outcomes of choices, effort, persistence, and achievement (Schunk and Di Benedetto 2020). Changes in self-efficacy are part of measures of patient self-management (Ritter and Lorig 2014).

Globally, there is an increasing consideration of the assessment methods for monitoring health services and the quality of health care provision in health institutions (Salam et al. 2014). In the Saudi vision of 2030, the significance of HP is a national priority. In the context of HP, HE provides an important preventive strategy. Indeed, the leading causes of death in KSA are coronary heart disease (25.4%) and diabetes (36%), which lend themselves well to HE interventions (Twinn 2001, Nutbeam 1979). According to Twinn (2001), however, it's still hard to figure out how to measure the effectiveness of HE.

The HE quality evaluation is an important obstacle to better interventions and wider acknowledgment of the importance of HE in improving public health (Nutbeam 1979). If you want to make sure that the local health services are meeting people's needs, you need to know what people think about the care and treatment they get.

This study aimed to improve the quality of the health education services by providing a contemporaneous perspective on current evidence on the effectiveness

of the MOH national program for health education all over KSA primary health care centers (PHCCS) through the following objectives.

Subjects and Methods

The National Health Education Program is a national program provided by the General Directorate of Clinical Health Education, the Assisted Agency of Primary Care, the Public Health Agency, and the Ministry of Health in Riyadh, Saudi Arabia. The program started in 2017 by providing HE to 432,000 patients through HE clinics at PHCCs, with the target of educating 36 patients per week at each HE clinic. The HE program had two phases: the first phase (100 health education clinics), where the total number of patients who received HE was 244,800; the first phase (72,000) (from June to December 2017); and the second phase (from January to December 2018). The second phase began in 2018 with;

60 health education clinics and educated 43,200 patients.

200-health education service (in which the infrastructure was not suitable for unavailable clinics). 144,000 patients were educated.

Study Setting

The randomly selected six PHCCS include the following: from the randomly selected countries from the main five regions of KSA; the number of total population nearly weighted according to the total population, and the attendance rate during data collection to the PHCCs (a week per region).

Study Design and Participants

A descriptive (comparative cross-section) study targeted the visitors/clients of the Primary Health Center in KSA. The target population was adults between the ages of 18 and 70 years old, both Saudi and non-Saudi, living in Saudi Arabia (SA) and visiting the PHC during the time of data collection (May and June 2019). The exclusion criteria were as follows; refusal to participate in the study, aged less than 18 years or more than 70 years. Excluding those who cannot communicate, refuse, or are unconscious, those with complicated medical or mental health conditions such as psychosis were excluded.

Sample Size

The sample size was estimated according to the following equation:

$$n = Z^2 P (1 - P) / d^2,$$

with a 95% confidence level and an 80% power of the study. The calculated sample size was 522 participants. In this study, we tripled this figure to 15664. The

total population is nearly weighted based on the total population and the attendance rate at the PHCCs during data collection (one month per region).

Sampling Technique

A multi-stage sampling method was used. The sample was collected from all the administrative regions: Weighted according to the number of populations that received first phase HECs 770 (49.2%), second phase [HECs 314 (20.7%), HES 480 (30.2%)]. per proportion of population density, and the % of urban to rural in KSA, to be {474 (30.3%). 318 (20.3%) West (Makkah Al-Mokaramah), 254 (16.2%) East (Eastern Region), 39 (4.5%) 125 (14.6%), Eastern Region, 184 (11.7%), Asser, 68 (4.3%), and then 90% from within the city and 10% from outside the city (Ministry of Health Statistical Year Book 2018). Simple random sampling is used in crowded places (PHCCS) and the visitors/patients may be diseased, or occupied, or refuse.

The data collection tool was a comprehensive, pre-coded, well-structured, Arabic questionnaire on Google Forms. It was the data collection tool after being pretested by piloting on 74 patients, and validated by six experts as regards its content. Reliability was estimated at 0.94, and the clarity of different items, which included four main parts: 1) addresses the PHCC patients' socio-demographics, reasons for and frequency of visits, and expectations. 2) Assess the national structured planned higher education services. 3) In terms of insufficient time for HE sessions, discussing problems with educators, trusting health educators, and satisfaction from HE sessions themselves, patient satisfaction was measured using a four-item likert scale (dissatisfied = 1, border line = 2, satisfied = 3, and strongly satisfied = 4). 4) Chronic patient self-control was measured using the Self-Efficacy for Managing Chronic Disease 5-Item Scale (SES5G), which is a reliable and valid instrument to assess patients' self-efficacy for managing chronic diseases (Ritter and Lorig 2014).

Eleven trained and qualified data collectors conducted face-to-face interviews or self-administered questionnaires under the supervision of the data collection team.

Statistical Analysis

SPSS version 25 was used to analyze the data, and a level of significance ($p < 0.05$) was used. The qualitative data were presented as frequency and percent, while the quantitative data were presented as mean, standard deviation, median, and range. test was used to test the association between categorical variables. The T-test, ANOVA (Analysis of Variance), and Kruskal-Wallis tests were used to test the association between quantitative variables. Pearson's correlation coefficient (r) was used to test the association between two continuous variables.

Ethical Issues

Ethical approval for the study was granted by the Institutional Review Board at King Fahad Medical City, Riyadh, Saudi Arabia through the relevant MOH health authorities. Written informed consent was obtained from each participant.

Results

The majority of participants were females (73.5%), married (69.1%), aged 30–45 years old (64.9%), had chronic diseases (60%), reviewed the PHCCs sometimes (when necessary) and for emergency situations (40.9%), and expected a high level of services (48.9%) (Table 1).

Only 71.6% knew the importance of HE. The main sources of knowledge about HE were health care providers (61.1%), social media, and internet web sites (32.4%). Approximately 10% of PHCC patients receive HE. Nine hundred and four (54.9%) of the PHCCs Saudi patients knew about the presence of HE services. Of those, 806 (51.1%) were guided to the services, mainly by HCPs (92.1%), to the patients 706 (87.6%), through face-to-face 692 (85.9%), provided by one HCP, and 566 (70.1%). The main HE topics provided in the HE sessions were balanced dietary intake (62.5%), physical activity (43.1%), and psychological support (17.1%) (Table 2).

The majority of them were satisfied with the health education process, with the least satisfied scores being at (discussing problems, then sufficient time) (Table 3).

The mean of all the five domains of patient self-control for managing chronic diseases was significantly higher among educated patients (36.58.9 (11-50)) than among non-educated patients (32.1±10.1 (5-50)). There was statistically significant improvement in the patient self-control of chronic disease score among educated CVD, DM, and obese patients ($p < 0.05$). There was a statistically significant improvement in all domains of patient self-control of chronic diseases (Tables 4-5).

The mean of all the five domains of patient self-control for managing chronic diseases, and the total patient satisfaction score were significantly ($p < 0.05$) higher among the patients from the 1st phase of HECs, and 2nd phase of HECs (2018) compared to the 2nd phase of HESs (2018) (Table 6).

The mean patient self-control of chronic disease score and the patient total satisfaction score were significantly different ($p < 0.0001$). The mean total score of the patient self-control of chronic disease was significantly higher among patients who received more than five health education sessions (41.88.8 (16-50)) compared to patients who received a single session 34.3±8.1 (11-50) (Table 7). There was a direct and significant relationship between patient self-control and satisfaction ($r=0.41$, $p=0.00^*$).

Table 1. Sociodemographic Characteristics of the PHCCs Patients/Visitors

	F	%
Sex		
Male	415	26.5
Female	1149	73.5
Age		
<30y	542	34.7
30-<45y	595	38.1
>45y	427	27.3
Marital status		
Widow	75	4.8
Single	351	22.4
Married	1080	69.1
Divorced	58	3.7
Level of education		
Illiterate	141	9.0
Primary-preparatory	332	21.2
High school or above	1090	69.8
Working status		
Working	415	26.5
Not working	1149	73.5
History of chronic diseases		
No	552	35.2
Dyslipidemia	168	16.6
CVD	20	1.9
Hypothyroidism	60	5.9
Obesity	206	20.3
D.M	374	36.9
Hypertension	256	25.2
Asthma	80	7.9
Liver-kidney disorders	2	0.1
Others	314	31.0
Frequency rate, cause, and expected level of services at the PHCCs		
Frequency rate of visits		
Sometimes-when need	938	24.2
1st time	136	40.9
Frequent (always)	490	34.9
Cause of visit		
Chronic disease	378	24.2
New, emerging disease	640	40.9
Follow up -screening	546	34.9
Expected level of service		
Good Service	673	42.9
Excellent Service	760	48.6
Poor service	96	6.1

Table 2. *The Health Education Services Among Saudi PHCCs Patients/Visitors*

	F	%
Knowing the presence of HE services at the PHCCs	904	54.9
Guided to the HECs /HESs	806	51.1
Referral to the HECs /HESs by (no=806)		
HCPs	742	92.1
Family/friend	60	7.4
Others	4	0.49
The HE received by (no= 806)		
The patient	706	87.6
Family member	96	11.4
Other (care givers)	4	0.49
The main Health Education Topics provided in PHCCs		
Don't know	26	3.2
Breast feeding (importance , and techniques)	10	1.2
Vaccinations	43	5.3
Infectious diseases (influenza-----	6	0.7
Balanced nutrition	503	62.5
Psychological ,and Mental health	137	17.1
Physical activity	347	43.1
Diseases (symptoms, treatment)	6	0.7
Dental health	23	2.7
Sources of information about the importance of health education		
Knowing importance of health education	580	71.6
Health care providers	492	61.1
Social media	261	32.4
Schools	36	4.5
Family members	5	0.6
T.V	2	0.2
Brochures	1	0.1
Others	27	3.3
Books	42	5.2
Internet web sites	261	32.4
MOH web site	64	7.9
The used methods for HE; (no=806)		
Face to face	692	85.9
Group education	104	12.9
Through the phone	40	4.9
Brochures	176	21.9
The HE provided by (no=806)		
Different specialties (health education-physiatrist-nutrition)	72	8.9
Different HCPs of the same specialty	168	20.8
One HCP	566	70.1
Number of HE sessions (no=806)		
Once	300	37.2
2-5 times	202	25.1
>5 times	304	37.7
Patients were involved in the HE plan/decision making (no=806)		
Yes	327	40.6
No	208	25.8
To some what	271	33.6

Table 3. *The Patient Satisfaction from the Health Education Process*

	Total score Mean±SD	Strongly satisfied F (%)	Satisfied F (%)	Borderline F (%)	Dissatisfied F (%)
Sufficient time	3.06±0.7	190(23.0)	508(61.5)	96(11.6)	20(2.4)
Discussing problems	3.1±0.6	218(26.4)	498(60.3)	80(9.7)	18(22.7)
Trusted health educator	3.18±0.63	236(28.6)	514(62.2)	48(5.8)	14(1.7)
Satisfied from health educator itself	3.28±0.61	326(37.0)	440(53.3)	44(5.3)	6(0.7)
Total satisfaction score	Mean± SD 12.66±2.27 Range 4-16				

Table 4. *The Relationship between the Received Health Education and the Domains of Patient Self-control for Managing Chronic Diseases*

The domains of patient self- control for managing chronic diseases	Total Median Mean±SD	Not educated T=758 Median Mean±SD	Educated T= 806 Median Mean±SD	P
Control pain or fatigue	6 6.76±2.2	6 6.3±2.3	7 7.2±2.04	0.04*
Control the emotional and psychological stress	7 6.73±2.49	7 6.4±2.7	7 7.1±2.1	0.03*
Control any other symptoms or health problems	6.5 6.67±2.3	6 6.2±2.5	7 7.1±2	0.02*
Manage his daily lifes' different tasks required	7 7.10±2.35	7 6.7±2.5	8 7.5±2.0	0.01*
Reduce the effect of the disease on your daily life by using other non - medication methods	7 7.02±2.58	7 6.5±2.8	8 7.5±2.2	0.03*
Self-patient chronic control Mean±SD Range	34.24±9.8 5-50	32.1±10.1 5-50	36.5±8.9 11-50	0.00*

*p<0.05 there was a statistical significant difference.

Table 5. *Relationship Between Patient Self-control of Chronic Diseases Score at Different Diseases and the Patient Education*

	Cardiovascular diseases (CVD) Mean±SD	Asthma Mean±SD	Diabetes Mellitus Mean±SD	Obesity Mean±SD	Hypothyroidism Mean±SD	Others Mean±SD	Multiple Mean±SD
Total	34.9±10.6	31.8±9.1	37.0±8.4	31.9±9.6	35.2±10.7	35.5±8.1	33.2±6.5
Not educated	33.9±11.1	36.6±9.8	33.7±9.1	29.1±12.4	34.7±10.9	35.4±9.4	32.9±7.7
Educated	35.6±10.2	35.9±2.4	36.6±9.1	35.6±10.2	35.5±9.9	35.7±6.4	33.1±7.9
P	0.04*	0.79	0.04*	0.00*	0.88	0.12	0.61

*p<0.05 there was a statistical significant difference.

Table 6. *Relationship between the Patient Self-control of Chronic Disease and the Type of Health Education Service in PHCCS*

The total score of	1 st phase of HECs(2017) Mean±SD Range	2 nd phase of HECs(2018) Mean±SD Range	2 nd phase of HESs(2018) Mean±SD Range	P
patient self- control for managing chronic diseases scale	34.9±9.2 20-50	33.03±10.1 5-50	30.4±9.9 5-45	0.03*
Patients satisfaction	12.9±3.3 6-14	11.1±2.4 5-14	6.01±1.1 4-8	0.00*

*p<0.05 there was a statistical significant difference.

Table 7. Relationship between the Patient Self-control of Chronic Disease and the Number of Health Education Sessions in PHCCS

	Once Mean±SD Range	2-5 times Mean±SD Range	More than 5 times Mean±SD Range	P
Patient Self-control of chronic diseases	34.3±8.1 11-50	53.2±8.1 5-50	41.8±8.8 16-50	0.03*

*p<0.05 there was a statistical significant difference.

Discussion

Assessing patients' thoughts about care and treatment is an important step towards improvement of the quality of care, to ensure whether the local health services are meeting patients' needs and identify possible barriers to service delivery (Riegel et al. 2009).

Results showed that adherence to HE intervention activities contributed to enhancement of self-control of chronic disease. Furthermore, the deterioration of scores was minimal in the compliant group and in weight, physical activity, and self-rated health status. Similar results can be found as regards adherence to health promotion activities (Freund et al. 2013). So far, Dickson and his colleagues (2013) have recommended a certain level of physical activity, and Ausili and his colleagues (2016) say that people should do a lot of physical activity and swim a lot.

Selfcare is defined as a naturalistic decisionmaking process addressing both the prevention and management of chronic illness, with core elements of selfcare maintenance, selfcare monitoring, and selfcare management. In this scientific statement (Soundarya et al. 2004).

The main HE topics provided in the HE sessions were balanced dietary intake (62.5%), physical activity (43.1%), and psychological support (17.1%). The evidence supporting specific self-care behaviors such as diet and exercise is effective in improving self-care and outcomes (Riegel et al. 2009). This is consistent with another study in Saudi Arabia that found that increasing physical activity, quitting smoking, and controlling glycemic and blood pressure levels can reduce or delay the prevalence of NCD complications (Kapour R 2020).

These results showed that health education is effective for improving patient self-control for obesity, DM, and CVD as chronic diseases, so self-care is fundamental to the prevention and management of chronic illnesses. (Riegel et al. 2009, WHO 1983). According to previous research, self-efficacy is a key influencer of enhanced selfcare in cardiac patients and their comorbid conditions (including concomitant HF and diabetes mellitus) (Prakash 2010).

There was a direct and significant relationship between patient self-control and satisfaction ($r = 0.41$, $p = 0.00^*$). This can be attributed to how successful education increases patient satisfaction as it affects clinical outcomes (WHO 2013) through improved adherence to treatment and patient retention. Medical malpractice claims concern the timely, efficient, and patient-centered provision of high-quality health care.

The majority were satisfied with the health education process, with the lowest satisfaction scores being in the following domains (discussing problems with the educator, then adequate time of the HE sessions), as health education programmes are based on the needs of patients that were identified, allowing for open discussion about health concerns and the identification of various educational areas that might be relevant to the patients (WHO 2013).

We reported that the educated patient significantly had a higher mean of the total self-control of chronic diseases scores in all its five domains, in agreement with the WHO's Global Action Plan (2013–2020) for prevention and control, which recommends “empowering patients with NCDs to seek early detection and manage their own condition better, and providing education, incentives, and tools for self-care and self-management” (Prakash 2010). Patient education is important to help them manage their conditions, help them with daily care, and help them build the skills they need to deal with everyday problems, such as choosing food or getting enough exercise (Wagner 1998).

Health education is an effective therapeutic tool in controlling NCDs, especially CVD and DM in agreement with (Al-Esawi and Amer 2021) as it decreases the frequency of their related complications and improves the overall quality of life.

The mean total score of the patient's self-control of chronic diseases was significantly higher among patients who received more than five health education sessions 41.8 ± 8.8 compared to patients who received a single session (34.3 ± 8.1) because the more sessions act on the patient's reorientation and motivation regarding chronic diseases to create awareness, delay the complications, improve nutrition, reduce cost, and increase the ability to adapt, and cope with the illness (Soundarya et al. 2004).

Asiri et al. (2021): From 2010 to the present, NCDs, such as CVDs, obesity, and diabetes, have been the main causes of death in Saudi Arabia. Education through well-structured health education sessions (content, duration, and setting) by a well-trained team is an effective national project. It's easy to use tools that measure patient satisfaction and help people with long-term illnesses control their own health.

The first study was done to find out how the National Health Education Program had an effect on Saudi patients from all over the kingdom's Saudi Arabia Primary Health Care Centers. It had a large sample and data was collected by a qualified team of health workers.

Conclusions

Obesity, diabetes mellitus, and cardiovascular disease are chronic conditions that can be managed with health education. Effective health education necessitates the use of qualified, educated healthcare providers as well as a proper, well-prepared environment. Patient satisfaction and patient self-control of chronic disease scores are important indicators of successful health education programs. Patient education is essential.

Recommendations

We recommend distributing the results and using them to guide policymakers in increasing the effectiveness of the HE program. HEC should be provided in all healthcare settings. Community and patient education on preventive measures remains the best, affordable control measure to improve the quality of life and reduce the burden of diseases, especially NCDs. Capacity building of chronic disease health centers, strengthening patients' associations, and more research to study the effect of health education on patients with chronic diseases were needed. In the future, more quality studies will be done to make sure that the local health services meet the needs of patients and find out what might be blocking them from getting the services.

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