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

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**ABSTRACT**

Background: the health education (HE) is important in improving public health. Globally, the evaluation HE quality is an important obstacle to better interventions, and wider acknowledgment. So this study aimed to improve the quality of the health education services through providing a contemporaneous perspective on current evidence on the effect of HE national program in primary health care centers (PHCCs), through the following objectives: to calculate the frequency of receiving to HE, to measure patient satisfaction about the provided HE service and to measure patient self-control for chronic diseases, and its determinants. Methodology: an analytical cross section study, targeted 1,590 randomly selected Saudi PHCCs visitors from the main five regions in KSA, through exit interview using a pretested, well-structured questionnaire composed of four parts. Results: the majority of participants were females (73.5%), married (69.1), 64.9% had chronic diseases. The frequency of receiving HE (51.1%). The health educated patients significantly had a better self-chronic disease control and improvement in health status. The HECs shows a significant self-patient control of chronic diseases and patient satisfaction than HE services. Conclusions: HE interventions must be multidimensional to be effective in improving patients' clinical outcomes through the increase and maintenance of healthy behaviors.

**Keywords:** health education, Saudi, Patients, primary health care centres, Saudi Arabia

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## **Introduction**

Over the past 30 years, the health education (HE) conceptual base and practice had a significant enhancement (1), its directed towards improving health literacy, and has a role of in health promotion (HP) and disease prevention, and advocates improvements in the sophistication of contemporary HE strategies (2). HE interventions are comprehensive programme delivered to patients aimed to improve patients' clinical outcomes through the increase and maintenance of healthy behaviors (3). Because health and health behavior are determined by multiple factors, HE efforts to affect behavior must be multidimensional (4).

Nurses, community workers, dieticians and multidisciplinary teams were the most frequent educators (5). Education by one-person may focus more on the patient's ability than the quality of the HE, but no clear conclusion whether having one educator is best due to few information (6). 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 (7). Although face-to-face sessions were the most common and effective delivery format (8), the telephone or individualized counselling can also be used, by using mixed delivery models produce a moderate effect for knowledge levels (9).

Today's patients are more educated, computer savvy, and much richer so it is essential to clear all their rightly or wrongly earned doubts with much patience and compassion (10). So recently, education programs designed to meet national or international education standards (11, 12). Successful education increases patient satisfaction (7). That is affects clinical outcomes (improved adherence to treatment), patient retention, medical malpractice claims, and the timely, efficient, and patient-centered delivery of quality health care (7, 13). 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 (14, 15).

A strong indicator of future behavior is the one's confidence or belief (16). The theory of Self-efficacy states that; (1) the strength of belief in one's capacity is a good predictor of motivation and behavior; (2) one's self-efficacy beliefs enhanced through performance mastery, modeling, reinterpretation of physiological symptoms, and social persuasion; (3) enhanced self-efficacy leads to improved behaviors, motivation, thinking patterns, and emotional well-being (17). Changes in self-efficacy are part of measures of patient self-management (18).

Globally, there are an increasing consideration to the assessment methods for monitoring the health services and the quality of health care provision in the health institutions (19). In Saudi vision 2030, the significance of HP is a national priority. In the context of HP, HE provide an important preventive strategy. Indeed, the leading causes of death in KSA are coronary heart disease (25.4%) and diabetes (36.0%) lend themselves well to HE interventions (20, 21). However, the evaluation of the effectiveness of HE remains complex and raises some important methodological issues (20).

The HE quality evaluation is an important obstacle to better interventions, and wider acknowledgment of the importance of HE in improving public health (22).

For improving the quality of care patient view as regards the care and treatment is very important, to ensure whether the local health services are meeting patients' needs and identify possible barriers for the delivery of the services (23).

This study aimed to improve the quality of the health education services through providing a contemporaneous perspective on current evidence on the effectiveness of MOH national program for health education all over KSA primary health care centers (PHCCS), through the following objectives; to describe the primary health care centers patients/visitors (demographic, cause and frequency of visit, and expectations), To assess the structured national planned HE services, To calculate the health education service coverage rate or service utilization (per PCCCS) or frequency of exposure to HE, Measure patient satisfaction about the provided HE service, and Measuring chronic patient self-control.

### Materials and Methods

A descriptive (comparative cross section) study to compare between the effect of the health education in PHCCS; the 1st patch 100 health education clinics that started on 2017 and continued up till now, the 2nd patch 60 health education clinics that started on 2018, and the 2nd patch 200 health education service (in which the infrastructure wasn't suitable for available health education clinics), target 36 patient/w targeted randomly selected 1564 of adults more than 18y, without mental or major psychological disorders, excluding who cannot communicate, refuse and unconscious from the randomly selected PHCCS visitors in which health education program were applied during (2017, 2018) during the period time of the data collection (one month).

**Table 1.** *The Implementation Phases of the National Health Education Program*

	<b>Trained Health Providers</b>	<b>Activate (Implement) PHCC</b>	<b>2017</b>	<b>2018</b>	<b>Total</b>
The first patch clinics	200	100 health education clinics (HECs)	72000	172800	244800
The second patch Clinics Services	450	60 health education clinics (HECs) 200 health education services (HES)	----- -----	43200 144000	187200
Total	650	360	72000	360000	432000

**Table 2.** *The Distribution of the National Health Education Program Services (2017 and 2018)*

	The 1st Patch (2017) HECs	The 2nd Patch HECs (2018)	The 2nd Patch (HES) (2018)	Total
The east				
➤ El-Ehsa	5	5	10	20
➤ Hafr-el baten	5	4	10	19
➤ El-Sharkia	5	3	10	18
total	15	12	35	57
The western region				
➤ Makkah	5	3	11	18
➤ Jeddah	5	3	12	20
➤ Taif	5	3	10	18
➤ Qunfoza	5	3	11	18
➤ Maddinah	5	3	10	18
Total	25	15	54	92
The norther region				
➤ Jouf	5	3	10	19
➤ Quarryyat	5	3	10	18
➤ Tabuk	5	2	12	17
➤ Hail	5	3	10	21
➤ Hodod el-shamalia	5	3	11	18
Total	25	14	53	93
The south region				
➤ Asser	5	3	10	18
➤ Jazan	5	3	9	17
➤ Najran	5	4	11	20
➤ Baha	5	4	15	24
➤ Besha	5	3	12	20
Total	25	17	57	99
The central region				
➤ Qassim	5	3	10	18
➤ Riyadh	5	6	10	21
Total	10	9	20	39

### *Study Setting*

A randomly selected 6-10 PHCCS including (1st patch HECs 770 (49.2%), 2nd patch HECs 314 (20.7%), HES 480 (30.2%) from the randomly selected two countries from the main five regions all over KSA; the number of total population nearly weighted according to the total number of population, and the attendance rate during data collection to the PHCCs (a week per region).

### *Study Population (Sampling)*

Simple random, or accessibility sampling may be used because the sample collected in the crowded places (PHCCS) and, the visitors/patients may be diseased, or occupied, or refuse.

**Table 3.** *The Sampling Population Across the Main Regions in KSA*

The Region (Country)	F (Total Number of Population)	%
Central (Riyadh)	474	30.3
West (Madinah-Makkah)	318	20.3
East(EL-Shakira)	254	16.2
South (Gazan-Asser)	184	11.7
North (Tabbuk-AL-Jouf)	68	4.3
Total	1298	100.0

### *The Study Instrument*

A comprehensive, pre coded, well-structured, Arabic questionnaire on a google forms was the data collect collection tool after pretested by piloting on 74 patients, and validated by six experts as regards its content, and reliability was estimated 0.94, and clarity of different items, which included four main parts;

- 1) Addresses the socio-demographic, cause and frequency of visit, and expectations of the PHCCs patients.
- 2) Assess the structured national planned HE services
- 3) Measure patient satisfaction about the provided HE service complains.
- 4) Measuring chronic patient self-control by Using Self-Efficacy for Managing Chronic Disease 6-item Scale.

### *The Data Collection Methods*

The data were collected by two methods:

- **The first method** record base for the calculation of the average HE service coverage per PHCCS in general. The total number of visitors per 3 months selected randomly (September and November 2018, and January 2019) and the number of educated patients during the same three months.
- **The second method;** an eleven trained qualified data collectors did exit face to face interviewing or self-administrated under the supervision of the data collection team.

### *Statistical Analysis*

The collected data was analyzed by coded and analyzed using SPSS (version 22). Mean, standard deviation (SD), and range for quantitative data summarization, while t test and ANOVA for their analysis. Frequency (F) and percentage (%) for qualitative data summarization, and chi -square test (x2) for their analysis. correlation co efficient ® was used to test association between the patient self at a level of significance P-value  $\leq 0.05$

*Ethical Considerations*

Ethical approval for the study was granted from the Institutional Review Board at King Fahad Medical City, Riyadh, Saudi Arabia through the relevant MOH health authorities. Consent was obtained from each participating HCP after explaining the nature and benefit of participation.

**Results**

The majority of participants were females (73.5%), married (69.1), aged 30- <45y old, 64.9% had chronic diseases, 60.0% reviews the PHCCs sometimes (when necessary), for an Emergency disease (40.9%), and expected high level of services (48.9%).

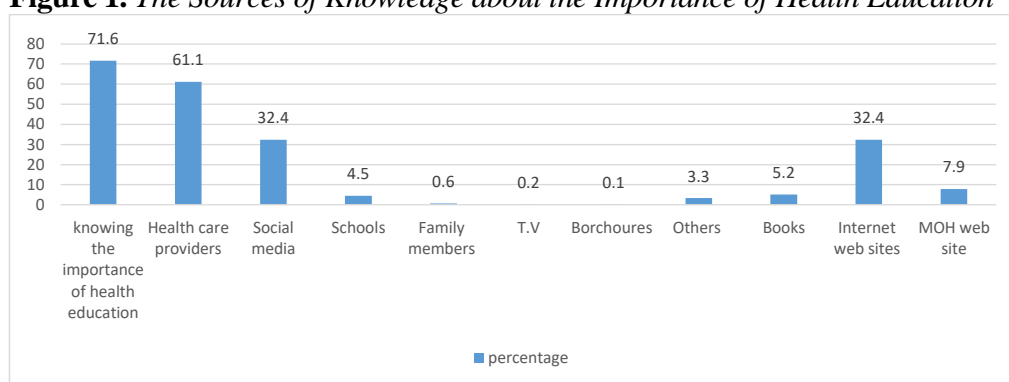
**Table 4.** *The Sociodemographic Characteristics of the PHCCs Patients/Visitors*

	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
✓ Secondary –above	1090	69.8
Working status		
✓ Working	415	26.5
✓ Not working	1149	73.5
The history of chronic diseases		
✓ No		
✓ Dyslipidemia		
✓ CVD	552	<b>35.2</b>
✓ Hypothyroidism	168	16.6
✓ Obesity	20	1.9
✓ D.M	60	5.9
✓ Hypertension	206	20.3
✓ Asthma	374	36.9
✓ Liver-kidney disorders	256	25.2
✓ Others	80	7.9
	2	0.1
	314	31.0

Only 71.6% knowing 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%). About 10% of the PHCCs patients receive HE.



**Figure 1.** *The Sources of Knowledge about the Importance of Health Education*



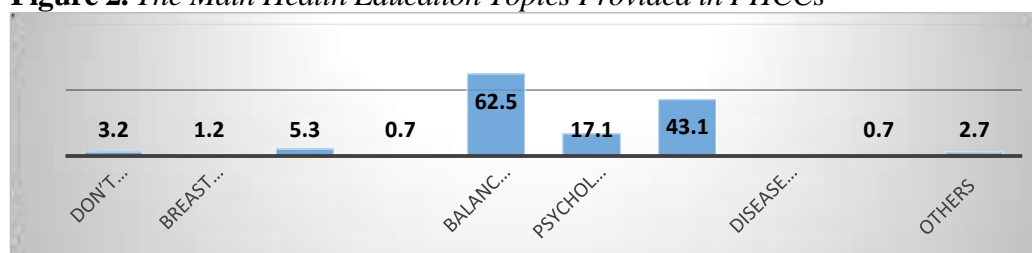
904 (54.9%) of the PHCCs Saudi patients knowing about the presence of HE services, 806 (51.1%) guided to the services, mainly by HCPs (92.1%), to the patients 706 (87.6), through face to face 692 (85.9%), provided by one HCPs 566 (70.1).

The main HE topics provided in the HE sessions were balanced dietary intake (62.5%), Physical activity (43.1%), and psychological support (17.1%). The majority of them were satisfied with the health education process with the least satisfaction scores were at (discussing problems, then sufficient time). There was a statistical significant improvement in the all domains of patient self-control of chronic diseases

**Table 5.** *The Frequency Rate, Cause, and Expected Level of Services at the PHCCs*

	<b>F</b>	<b>%</b>
<b>frequency rate of visits</b>		
✓ Sometimes-when need	938	60.0
✓ 1 <sup>st</sup> time	136	8.7
✓ Frequent(always)	490	31.3
<b>Cause of visit</b>		
✓ Chronic disease	378	24.2
✓ New, emerging disease	640	40.9
✓ Follow up -screening	546	34.9
<b>Expected level of service</b>		
✓ Moderate level	673	42.9
✓ High level	760	48.6
✓ Low level	96	6.1

**Figure 2.** The Main Health Education Topics Provided in PHCCs



**Table 6.** 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 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
Who providing the HE (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
The number of health education times (no= 806)		
▪ Once	300	37.2
▪ 2-5 times	202	25.1
▪ >5 times	304	37.7
Patients were involved in the health education plan/decision making (no= 806)		
• Yes	327	40.6
• No	208	25.8
• To some what	271	33.6

**Table 7.** The Patient Satisfaction from the Health Education Process

	Total score	Deeply agree	Agree	Borderline	Disagree
Sufficient time	3.06+ <sub>-0.7</sub> 1-4	190(23.0)	508(61.5)	96(11.6)	20(2.4)
Discussing problems	3.1+ <sub>-0.6</sub> 1-4	218(26.4)	498(60.3)	80(9.7)	18(22.7)
Trusted health educator	3.18+ <sub>-0.63</sub> 1-4	236(28.6)	514(62.2)	48(5.8)	14(1.7)
Satisfied from health educator	3.28+ <sub>-0.61</sub> 1-4	326(37.0)	440(53.3)	44(5.3)	6(0.7)

itself				
<b>Total satisfaction score</b>	12.66+ <sub>2.27</sub> 4-16			

**Table 8.** *The Relationship between the Received Health Education and the Patient Self-Patient Control for Chronic Diseases Domains*

No matter how confident you are----- resulting from your illness	Total 1-10	Not educated	Educated No=	P
You can control your pain or fatigue	6.76+ <sub>2.2</sub>	6 6.3+ <sub>2.3</sub>	7 7.2+ <sub>2.04</sub>	0.04*
You can control the emotional and psychological stress	6.73+ <sub>2.49</sub>	7 6.4+ <sub>2.7</sub>	7 7.1+ <sub>2.1</sub>	0.03*
You can control any other symptoms or health problems	6.67+ <sub>2.3</sub>	6 6.2+ <sub>2.5</sub>	7 7.1+ <sub>2</sub>	0.02*
You can do the different tasks required to manage your life so that you reduce your need to go for the patient	7.10+ <sub>2.35</sub>	7 6.7+ <sub>2.5</sub>	8 7.5+ <sub>2.0</sub>	0.01*
You can reduce the effect of the disease on your daily life by using other non - medication methods	7.02+ <sub>2.58</sub>	7 6.5+ <sub>2.8</sub>	8 7.5+ <sub>2.2</sub>	0.03*
Self-patient chronic control	34.24+ <sub>9.8</sub> 5-50	32.1+ <sub>10.1</sub> 5-50	36.5+ <sub>8.9</sub> 11-50	0.00*

\*p <0.05 there was a statistical significant difference.

There was statistical significant improvement in the patient self-control of chronic diseases score among educated CVD, DM, and obese patients (p<0.05). There was direct significant relationship between patient Self-control and satisfaction (r=0.41, p=0.00\*).

**Table 9.** *The Relationship between Patient Self-Control of Chronic Diseases Score at Different Diseases and the Patient Education*

	Cardiovascular diseases (CVD)	asthma	Diabetes Mellitus	Obesity	hypothyroidism	others	Multiple
Total	34.9+ <sub>10.6</sub>	31.8+ <sub>9.1</sub> 20-47	37.0+ <sub>8.4</sub> 22-50	31.9+ <sub>9.6</sub> 5-50	35.2+ <sub>10.7</sub> 18-50	35.5+ <sub>8.1</sub> 5-50	33.2+ <sub>6.5</sub>
Not educated	33.9+ <sub>11.1</sub> 10-50	36.6+ <sub>9.8</sub>	33.7+ <sub>9.1</sub> 10-50	29.1+ <sub>12.4</sub> 5-40	34.7+ <sub>10.9</sub>	35.4+ <sub>9.4</sub> 5-50	32.9+ <sub>7.7</sub>
Educated	35.6+ <sub>10.2</sub> 9-50	35.9+ <sub>2.4</sub>	36.6+ <sub>9.1</sub> 10-50	35.6+ <sub>10.2</sub> 9-50	35.5+ <sub>9.9</sub> 19-50	35.7+ <sub>6.4</sub> 26-50	33.1+ <sub>7.9</sub>
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 20.** *The Relationship Between the Patient Self-Control of Chronic Disease and the Type of Health Education Service in PHCCS*

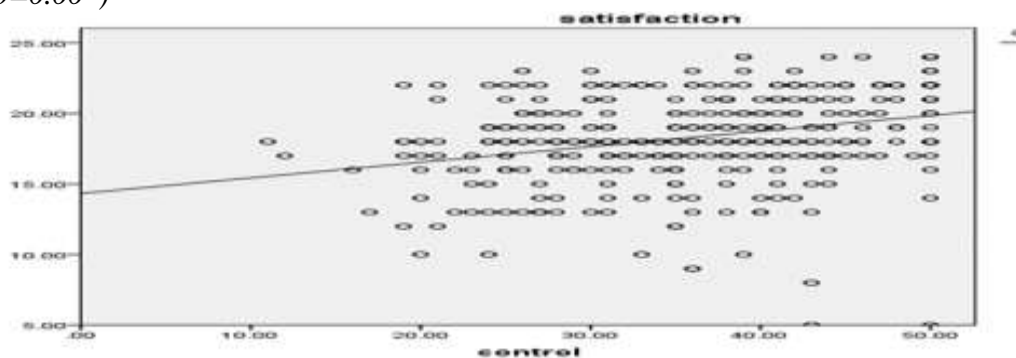
	1 <sup>st</sup> HECs(2017)	2 <sup>nd</sup> HECs (2018)	2 <sup>nd</sup> HE service	P
Patient self-control of chronic disease	34.9+ <sub>9.2</sub> 20-50	33.03+ <sub>10.1</sub> 5-50	30.4+ <sub>9.9</sub> 5-45	0.03*
Patients satisfaction	12.9+ <sub>3.3</sub> 6-14	11.1+ <sub>2.4</sub> 5-14	6.01+ <sub>1.1</sub> 4-8	0.00*

**Table 31.** *The Relationship between the Patient Self-Control of Chronic Disease and the Number of Health Education Cessions in PHCCS*

	Once	2-5 times	More than 5 times	P
Patient Self-control of chronic diseases	34.3+ <sub>8.1</sub> 11-50	53.2+ <sub>8.1</sub> 5-50	41.8+ <sub>8.8</sub> 16-50	0.03*

\*

**Figure 3.** *The Correlation between Patient Self-Control and Satisfaction (r=0.41, p=0.00\*)*



## Discussion

Assessing patients thinking about the care and treatment is an important process towards improvement of the quality of care, to ensure whether the local health services are meeting patients' needs and identify possible barriers for the services delivery (24).

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 activities, and self-rated health status. Similar results can be found as regards adherence to health promotion activities (25). Such studies have included a recommended level of physical activity (26), dietary habits, physical activity and regular swimming (27).

Self-care is defined as a naturalistic decision-making process addressing both the prevention and management of chronic illness, with core elements of self-care maintenance, self-care monitoring, and self-care management in this scientific statement (32).

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, are effectiveness improving self-care and outcomes (32).

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 prevent, and management of chronic illnesses (24, 25) In consistent with studies which reported that self-efficacy is a key influencer of enhanced self-care in cardiac patients, its comorbid conditions (26), concomitant HF and diabetes mellitus (27).

There was There was direct significant relationship between patient Self-control and satisfaction ( $r=0.41$ ,  $p=0.00^*$ ). This can be attributed to that successful education increases patient satisfaction as it affects clinical outcomes (32) through; improved adherence to treatment, patient retention, medical malpractice claims, The timely, efficient, and patient-centered delivery of quality health care (28).

The majority of them were satisfied with the health education process with the least satisfaction scores were at (discussing problems, then sufficient time) as the Patient education programmers are based upon the patients needs of patients that identified through the assessment meetings that allow for open discussion about health concerns and the identification of various educational areas that might be relevant to the patients (29).

We reported that the educated patient significantly had a more self-control of chronic diseases scores in all its six domains, in agreement with the WHO's Global Action Plan (2103-2020) for the Prevention and Control which recommends "empower[ing] patients with NCDs to seek early detection and manage their own condition better, and provide education, incentives and tools, for self-care and self-management," (30). Patient education to support them in managing their conditions, help them in dealing with daily care, providing capacity-building to face daily management challenges e.g. Choice of food or implementing enough physical activity (31).

### *Strength*

The first study conducted to study the effect of the National Health Education Program among Saudi Patients from all over the Saudi Arabia Primary Health Care Centers, the large sample size, and the data collection done by a qualified trained health staff team and evaluating the patient expectations from the services in PHCCs.

### *Limitations*

One of the limitations is that some of the patients were not responding to the questionnaire, second limitation is connected with the illiteracy of some of the participants (9.0%). Therapeutic patient education strategies are frequent and basic health service includes patient education, counseling the evaluation of psycho-

educational approaches, no publications among Arabic world. Finally, the time and duration of the data collection may affect the results

## **Conclusions**

Health education is a therapeutic tool for managing some chronic diseases e.g., obesity, diabetes mellitus (DM), and CVD. Effective health education requires qualified trained health care providers, and suitable adequately prepared setting. Patient self-control of chronic diseases score, and patient satisfaction are good indicators for successful health education programs patient education is an efficient, complex, comprehensive, continuous and essential interdisciplinary multiple interventions provided in PHCCs to Promote Health.

## **Recommendations**

1) Redistribute and considering the results be the cornerstone in directing policy-makers to increase the effectiveness of HE program. 2) HEC should be available at all health care settings. 3) 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. 4) Further continuous quality evaluation studies to ensure whether the local health services are meeting patients' needs and identify possible barriers for the delivery of the services

## **Abbreviations**

Health promotion (HP)  
Health education (HE)  
Health Education clinics (HECS)  
Health education services (HES)  
Ministry of Health (MOH)  
Standard deviation (SD)  
Primary health care centers (PHCCs)  
Kingdom Saudi Arabia (KSA)  
Non Communicable Diseases (NCD)  
Diabetes Mellitus (DM)  
Cardiovascular diseases (CVD)

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