PATIENTS’ KNOWLEDGE AND ATTITUDES TOWARDS HEALTH EDUCATION: IMPLICATIONS FOR PRIMARY HEALTH CARE SERVICES IN SAUDI ARABIA

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Objectives: To assess health educational activities in primary health care centers in Riyadh City. Methods: The data were collected through a self-administered questionnaire directed at adult patients who attended primary health care centers from February – April 2006, in Riyadh City. Out of the 750 patients who were selected randomly, 569 (75.9%) successfully completed the questionnaire. The data collected were on a set of variables including socio-demographic characteristics, health-related variables, source of health knowledge and patients' attitudes towards a number of health-related aspects. Data were presented and analyzed in a descriptive fashion.

Results: Only 20% of PHC patients had received health education in the past twelve months. The majority of respondents identified TV and friends/relatives as the main sources of their health education. A considerable percentage of the patients with chronic conditions lacked knowledge about their illnesses. The results indicate that the deficiency in knowledge was the result of some of the socio-demographic characteristics of respondents.

Conclusion: There is an urgent need to review and evaluate health education programs conducted in PHC centers. Special emphasis should be placed on health education activities for those living with chronic health conditions.

Key Words: Health education, Primary Health Care, Saudi Arabia.
INTRODUCTION
Health education has been reported as a cornerstone for managing chronic diseases such as diabetes mellitus, hypertension, asthma, obesity and cardiovascular heart diseases. Moreover, it provides individuals with the security and knowledge about their health and the health of those for whom they care, and improves health behaviors that enhance the well being of the general population. Previous research suggests that patients who have more knowledge about their illness and its treatment are more likely to succeed in managing that illness. Health education is a means of providing patients with more knowledge about the condition of their health and the care they need. It has also been reported that satisfaction increases when patients are provided with information about their illnesses and treatments.

If conducted, health education needs to be effective both in terms of content and methods, that is, to deliver the right messages through the right media. This is highly dependent on the relevance of health education activities delivered in primary health care centers and the use of appropriate health education methods and approaches, as well as the selection of suitable and sensitive indicators for the monitoring and evaluation of the program.

Studies on health education in Saudi Arabia are scarce and restricted to specific population groups such as patients with diabetes mellitus, hypertension and obesity. An important starting point for the design of proper health education strategy is to know how much the general public know about health education and what their attitudes are towards this important element of health care. Therefore, the main objectives of this study were (1) to assess the extent of health education activities in primary health care centers, (2) to determine sources of health education in the general public and (3) to assess knowledge and attitudes of the general public on a number of issues related to health education conducted in PHC centers.

METHODS
This study is a cross-sectional survey designed to explore and analyze the extent of health education activities in primary health care centers, determine the sources of health education among the general public and, assess knowledge and attitudes of the participants on a number of issues related to health education conducted in PHC centers. For the study, Riyadh city was divided into five areas, East, West, North, South and Central. From each geographical area, one PHC center was randomly selected. From each of the selected five PHC centers, 150 patients (75 males and 75 females) were selected randomly and asked to participate in the study. Persons who refused to participate and those with severe cognitive impairment or difficulty in communicating were excluded from the study. Accordingly, 750 persons were selected, 569 (75.9%) of whom successfully participated in the study.

The data were collected by self-administered questionnaire of 33 items divided into five sections. Section I included six items on demographic characteristics. Section II consisted of seven items of questions related to health and health education aspects. Section III consisted of questions on the extent of respondents' knowledge and understanding of chronic illnesses (4 items). Section IV had seven items on which respondents were asked the extent to which various sources of health education had contributed to their health education. Finally, Section V, consisting of nine items, had statements on respondents’ attitude towards aspects on health education. The responses for items on the aspects of health-related and health education were in the “yes” and “no” format. Items on respondents’ knowledge and understanding of chronic diseases and items on sources of information were scored on a 5-point Likert scale ranging from “none” to “very much”. The responses for items on attitudes toward health education in PHC centers were scored on a 5-point Likert scale ranging from “strongly disagree” to “strongly agree”. The data for this study were analyzed and presented in a descriptive fashion using the Statistical Package for Social Sciences (SPSS).

RESULTS
Profile of respondents
Table 1 shows that the majority of respondents were Saudis (83%), males (55%) and married (74%). More than 60% of the respondents had an educational level of secondary school or higher, and about two-thirds of the respondents (66.4%) were in employment. The largest proportion of respondents (62.2%) was less than 45 years old with a mean age of 42.7 years (S.D. = 16.5) ranging from 18 to 87.
Table 2 shows that more than one-third (34.4%) of the respondents (n=196) had such chronic diseases as diabetes mellitus (45.4%), hypertension (21.9%), asthma (11.7%) and obesity (29.6%). Only 20.4% of the respondents had health education in the past twelve months. Of these, about one-third (31.9%) had their health education in PHC centers and the vast majority (57.8%) reported that they had most of their health education in hospitals.

There were no significant differences between respondents according to their nationality, marital status and employment status in receiving health education in PHC centers. However, females were more likely to have had health education in PHC centers than males ($\chi^2 = 14.668, p<0.001$). Older respondents (> 45 years) were more likely to have had health education than younger respondents (45 years or less) ($\chi^2 = 4.306, p<0.05$) and those with less than secondary school education were more likely to have received health education than those with secondary school education or higher ($\chi^2 = 13.241, p<0.001$). Further analysis indicated that those with chronic illness were more likely to have received health education than those without such a disease ($\chi^2 = 7.543, p<0.01$).

### Respondents’ knowledge about chronic diseases

Table 3 shows that about half of the respondents had a lot of knowledge about such chronic diseases as diabetes (56.4%), obesity (50.8%) and asthma (48.0%). However, more than half (58.3%) of respondents reported that they had little knowledge about hypertension.

Respondents did not differ significantly in the amount of knowledge they possessed about any of the chronic diseases included in the study according to their gender, nationality and marital status. However, younger respondents (45 years or less) had a significantly higher mean score (3.55) of the knowledge of diabetes mellitus than older respondents (3.18) (t-test = 3.696, $p<0.001$). Respondents in employment had a significantly higher mean score (3.52) of knowledge of diabetes than older respondents (3.22) (t-test = 3.038, $p<0.01$) and respondents with a higher level of education had a significantly higher mean score (3.63) of knowledge about diabetes than those with a lower level of education (3.28) (t-test = 3.665, $p<0.001$).

### Respondents’ source of information

Table 4 shows that more than half of the respondents indicated that PHC staff, hospital staff, television (TV) and friends/relatives had contributed “much” to their knowledge of health matters while about 60% and 85% of the respondents indicated that printed items and the radio respectively had contributed a “little” to their knowledge of health matters. Respondents indicated that the Internet made “little” or “no” contribution to their knowledge of health matters. Respondents indicated that the Internet made “little” or “no” contribution to their knowledge of health matters. Respondents indicated that the Internet made “little” or “no” contribution to their knowledge of health matters. Respondents indicated that the Internet made “little” or “no” contribution to their knowledge of health matters.

Gender, nationality and marital status of respondents did not differ significantly according to the source of information about health. However, patients with secondary school education or higher had significantly higher mean scores (3.64) than respondents with less than...
secondary school education (3.44) in obtaining information from PHC staff (t-test = -2.356, *p*< 0.05). Similarly, those who had secondary school education or higher had significantly higher mean scores (3.40) in obtaining information from printed items such as newspapers, posters and pamphlets than those with less than secondary school education (3.20) (t-test = -2.446, *p*< 0.05). Young respondents (18-45 years old) had significantly higher mean scores (3.39) than older respondents (> 45 years) (3.29) in obtaining information from such printed items (t-test = 3.322, *p*< 0.01). Similarly, young respondents (18-45 years old) had significantly higher mean scores (2.07) than older respondents (> 45 years) (1.86) in getting health information from the Internet (t-test = 3.288, *p*< 0.01).

**Respondents’ attitudes**

Table 5 revealed that the majority of respondents agreed that their doctors told them how to manage their health problems (64.3%); they spend enough time on health education with the treating doctors (70.7%); the methods used in health education suited them (65.9%); and health staff in PHC center were courteous in answering their health-related questions. However, respondents were negative towards a number of issues related to health education. For example, only 4.2% of the respondents said that they had health education whenever they visited the PHC center; 8.3% accepted that the topics presented in health education sessions were relevant to their health problems; 12.8% indicated that the health education sessions were long enough and 16.2% of the respondents affirmed that the waiting time was utilized for health education. Only 5% of the respondents were satisfied with the activities on health education conducted in PHC centers.

There were no significant differences between respondents according to their gender, nationality and employment status in all statements about attitudes towards health education activities in PHC centers. However, younger respondents had a significantly lower mean score (1.20) than older respondents (1.41) for the statement that they had

**Table 3: Respondents’ knowledge and understanding about chronic diseases**

| Chronic diseases | None No. (%) | Little (or very little) No. (%) | Some (or a lot) No. (%) | Mean (SD) |
|------------------|--------------|-------------------------------|------------------------|-----------|
| Diabetes         | 55 (9.7)     | 193 (33.9)                    | 321 (56.4)             | 3.41 (1.18) |
| Hypertension     | 41 (7.2)     | 332 (58.3)                    | 196 (34.4)             | 2.93 (1.11) |
| Obesity          | 64 (11.2)    | 216 (38.0)                    | 289 (50.8)             | 3.24 (1.23) |
| Asthma           | 77 (13.5)    | 219 (38.5)                    | 273 (48.0)             | 3.20 (1.26) |

**Table 4: Respondents’ source of health education**

| Source of health education | None No. (%) | Little (or very little) No. (%) | Some (or a lot) No. (%) | Mean (SD) |
|----------------------------|--------------|-------------------------------|------------------------|-----------|
| PHC staff                  | 24 (4.2)     | 232 (40.8)                    | 313 (55.0)             | 3.52 (0.99) |
| Hospital staff             | 7 (1.2)      | 239 (42.0)                    | 323 (56.8)             | 3.50 (1.18) |
| Television                 | -            | 98 (17.2)                     | 471 (82.8)             | 4.07 (0.97) |
| Radio                      | 3 (0.5)      | 478 (84.0)                    | 88 (15.5)              | 2.94 (0.62) |
| Printed items              | 13 (2.3)     | 350 (61.5)                    | 206 (36.2)             | 3.32 (0.66) |
| Friends/relatives          | 15 (2.6)     | 235 (41.3)                    | 319 (56.1)             | 3.49 (0.73) |
| Internet                   | 125 (22.0)   | 409 (71.9)                    | 35 (6.2)               | 1.99 (0.87) |

**Table 5: Respondents’ attitudes to health education**

| Statements                                           | Mean (SD) | % agree* |
|------------------------------------------------------|-----------|----------|
| I receive health education whenever I visit the PHC center | 1.28 (0.81) | 4.2      |
| My doctor tells me how to manage my health problem(s) | 3.35 (1.11) | 64.3     |
| The time I spend with my doctor for health education is enough | 3.77 (1.08) | 70.7     |
| Health staff in PHC center are courteous in answering my health-related questions | 3.89 (0.69) | 87.5     |
| The methods used in health education suit me         | 3.47 (0.84) | 65.9     |
| Topics presented in health education sessions are relevant to my health problem | 2.06 (1.03) | 8.3      |
| The length of health education sessions is adequate  | 2.07 (1.14) | 12.8     |
| Waiting times are utilized for health education       | 2.59 (1.14) | 16.2     |
| I am satisfied with health education delivered at PHC centers | 2.56 (0.69) | 5.1      |

Note: Statements scored on a 5-point Likert scale ranging from 1=strongly disagree to 5=strongly agree

*Percent agreed was calculated by points 4 and 5 of the Likert scale
health education whenever they attended at the PHC center (t-test = -2.715, p<0.01). Moreover, younger respondents had a significantly lower mean score (1.98) than older respondents (2.19) on the statement that asserted that topics presented in health education sessions were relevant to their health problems (t-test = -2.412, p<0.05). However, younger respondents had a significantly higher mean score (2.73) than older respondents (2.36) to the statement that waiting times were utilized for health education (t-test = 3.804, p<0.001).

Respondents with less than secondary school education had a significantly lower mean score (3.38) than those with secondary school or higher (3.61) for the statement that health educational methods were suitable (t-test = -3.273, p<0.01). However, respondents with lower educational level had a significantly higher mean score (2.17) than older respondents (1.88) for the statement that topics presented in health education sessions were relevant (t-test = 3.262, p<0.01).

DISCUSSION
The results of this study provide evidence that the provision of health education to the general population in primary health care centers is below expectation even for patients with chronic diseases. The results indicate that only one-fifth of the respondents had had any health education in the past twelve months. This finding raises questions about the educational activities provided at primary health care centers. The Alma Ata declaration in 1978, proclaimed health education a vital part of primary health care and one of the main basic elements of primary health care.

Although the majority of respondents who had some sort of chronic illness claimed that they were knowledgeable about their illnesses, a considerable percentage of respondents did not have this knowledge. Health education interventions have been reported as cost effective for certain conditions, such as diabetes, hypertension and asthma. Similarly, studies conducted in Saudi Arabia have shown the importance of health education in changing health seeking behavior and the inappropriate utilization of the health services. Therefore, there is an urgent need for effective implementation of health education programs in primary health care centers, particularly for those with chronic health conditions.

The results indicate that the flaws in knowledge and understanding of health issues among patients was associated with some socio-demographic characteristics such as gender, level of education, age and nationality. These results are consistent with other studies that found direct relation between the health education and socio-demographical characteristics of individuals. It has been reported that there should be no difference among individuals in their knowledge about diseases, regardless of race, color or gender. Therefore, efforts should be made to remove disparities existing in the knowledge of different sections of the population on various diseases.

In this study, the respondents’ principal source of information about health was TV. This was followed by friends/relatives and hospital staff. It was expected that respondents would have received most of their health education in PHC centers, but the data in the present study invalidated this assumption. This may indicate that primary health care centers focus on curative services rather than such preventive services as activities in health education. This finding agrees with previous studies conducted in Saudi Arabia which reported that most of the services provided in primary health care centers in Saudi Arabia were curative.

While the results of this study indicate that the majority of respondents agreed that they were advised by their doctors on how to manage their health problems, this was usually done in the doctor’s clinic rather than in groups or during the waiting period. However, a considerable percentage of the respondents indicated that the time they spent with their doctors on health education was insufficient.

The results revealed that respondents were unhappy with certain aspects of health education activities in primary health care centers such as the frequency of the sessions, topics presented, the duration of the sessions and the methods of delivery. Moreover, respondents indicated that waiting times in primary health care centers were not utilized in educating patients. These findings suggest the need for an urgent review of how, when and what health education activities should be carried out in primary health care centers.

One disappointing result of the current study is that only 5% of the respondents were satisfied with the health education activities conducted in primary health care centers. This also implies that the current health education activities need to be urgently evaluated and new measures taken to improve them. However, the effectiveness of
health education programs in primary health care centers is multi-factorial and depends on many variables, such as the level of accessibility and availability of the services to the population, and the compliance of both health care providers and health users with health education programs.  

With the improvement of health education of the people through such channels as health care settings and the media, public awareness would improve and health care services would be used more appropriately. Previous research in Saudi Arabia revealed that many patients use health care facilities, such PHC centers and emergency departments improperly because of the lack of knowledge and health education. Therefore, health education should be a priority in health care facilities, especially in the face of increasing cost of health services.

This study has its limitations. First, the study design, the available data and the few variables included in the study may have influenced the results. Secondly, the study took place in Riyadh city only, therefore, the results cannot be generalized to cover other areas in the Kingdom. Thirdly, the results reported here were based on data reported by patients and are subject to the usual problems of bias and recall in reporting health care events. Fourth, the results may have been influenced by the refusal or inability of some patients to participate. Despite these limitations, the results are very informative and provide a valuable insight into activities in health education in primary health care centers in Saudi Arabia. Further research is required to address some of the concerns raised in the limitations of this study.

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