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Evaluation of Physicians' Knowledge, Attitude, and Practice on Pharmacoeconomics

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Abstract

The current study aimed at evaluating physicians' knowledge, attitude, and practice (KAP) regarding pharmacoeconomics in Iran. Thus, the KAP level of physicians regarding pharmacoeconomics was measured by the KAP survey and the influencing factors were evaluated. Participants were the physicians (general practitioners and oncologists) attending medical conferences in Tehran, Iran in 2015. The data were collected using an anonymous self-administered questionnaire. The questionnaire comprised demographic professional background, knowledge, attitude, and practice sections. Findings did not show significant differences between specialists and general practitioners in terms of knowledge, attitude and practice in favor of specialists. In addition, there was no significant difference between the groups in terms of demographic characteristics and background knowledge. The only difference was observed between male and female physicians, since the males gained higher scores. Conversely, significant differences were observed in attitude and practice, familiarity with pharmacoeconomics, and institution of practice between specialists and general practitioners. Finally, the result of regression analysis confirmed a significant relationship between pharmacoeconomics awareness and attitude ($P = 0.004$, $r = 0.25$) as well as between speciality and practice ($P = 0001$, $r = 0.33$).

Keywords: Pharmacoeconomics, KAP Study, General Practitioners, Oncologist, Iran

1. Background

Pharmaceutical costs are the fastest-rising part of health system costs in most countries. In view of this rising expenditure, the need for priority setting increases (1).

Pharmacoeconomics as a scientific supportive tool can help decision-makers and care-providers including physicians to choose the most cost-effective alternative for patients. Pharmacoeconomics identifies measures, and compares the costs of consumed resources and outcomes to enable decision-makers to identify the prior choice among the existing alternatives (2). Furthermore, it helps physicians to appropriately prescribe medications with maximum efficacy and minimum cost.

The literature showed that high costs can negatively affect patient outcomes. Therefore, it is important for physicians to consider pharmacoeconomics in their daily practice. Although awareness of drug costs positively affects prescription behavior (3), unfortunately, doctors have a poor understanding or awareness of pharmaceutical costs (4-6). In addition, discussion on medication cost rarely occurs between physicians and patients, and when it occurs, it is usually initiated by patients (7).

Similar to many other countries, pharmaceutical cost in Iran is growing and it is more pronounced in oncology due to high-priced medicines and in cases involving family physicians (general practitioners) due to the high volume of medicine prescribed by them. Thus, applying pharmacoeconomics as a supportive tool for evidence-based decision-making is highly recommended.

To the authors' best knowledge, there is no similar study on the knowledge, attitude, and practice (KAP) of physicians regarding pharmacoeconomics in Iran. Accordingly, the current KAP study aimed at investigating this concept.

Knowledge gained through understanding does not necessarily lead to the desired behavior. As attitude can only be observed indirectly at best, it is, therefore, a manner of being, which can finally lead to observable practice (8).

2. Methods

The current study aimed at investigating the KAP level of oncologists and general practitioners with regard to

pharmacoeconomics in Iran and evaluating their correlations with demographic characteristics and professional background.

The current KAP study was conducted as a common method to evaluate the knowledge, attitude, and practice. Since the KAP survey is usually applied to individuals, it may be well affected by socioeconomic factors, especially in the health context.

The current study was a cross sectional KAP survey and its data were collected in Iran in 2015.

The data were collected from general practitioners and oncologist as their prescribing behavior could have noticeable impact on pharmaceutical expenditures. Although less expensive medicines are prescribed by general practitioners, they have a significant impact on health budget thanks to the sheer amount of their utilization (9).

Data were gathered using an anonymous self-administered questionnaire. Non-probability sampling was conducted in medical seminars in Tehran and the questionnaires were completed on-site by physicians. To begin with, participants received general information on the study and were informed that they were free to withdraw from the study at any time. In addition, they were assured of the confidentiality of information they would provide.

The questionnaire was based on the literature (6, 10, 11) and consisted of four sections including knowledge, attitude, practice, and demographic characteristics. It was validated in terms of face and content by 14 pharmacoeconomics experts; then, its reliability was investigated using statistical methods. Cronbach's alpha and ICC (interclass correlation coefficient) were 0.7 and 0.8, respectively, showing high overall reliability of the questionnaire.

According to Cochran formula, 200 participants could be considered as the sample of physicians participating in a medical seminar annually. It should also be noted that regular participation in continuous medical education is mandatory for every physician every four years.

The demographic section included gender, place of practice, university of graduation, and prior familiarity with pharmacoeconomics and the next section of the questionnaire investigated the physicians' knowledge of pharmacoeconomics by asking 10 general questions on pharmacoeconomics concepts. Furthermore, to find out about their attitudes toward pharmacoeconomics, the physicians were asked 31 questions about beliefs and attitudes on a five-option Likert scale.

Although the best method to figure out practice is observation, based on the literature (12), the study selected the more convenient self-report method by asking respondents to rate themselves in terms of doing seven common activities on a five-option Likert scale.

3. Results

All of the 236 questionnaires were completed and used for analysis. The SPSS version 19 was used for descriptive and inferential analyses.

The mean age was 43.08 $\pm$ 9.63 for specialists and 39.74 $\pm$ 8.55 for general practitioners. Furthermore, the average experience was 13.93 $\pm$ 9.62 and 11.51 $\pm$ 8.10 years for specialists and general practitioners, respectively.

According to the Mann-Whitney analysis, although there was not a significant difference between specialists and general practitioners in terms of their knowledge, their attitudes as well as practice were significantly different in favor of specialists.

The pharmacoeconomics knowledge in both groups was poor (1.84 $\pm$ 1.38 out of 10 in specialists and 1.78 $\pm$ 1.70 out of 10 in general practitioners); hence, it affected neither physicians' attitude nor their practice. Therefore, the correlation analysis did not show any significant relationship between the three components of the KAP in the targeted population.

To evaluate the correlation between participants' demographic characteristics and professional background and three components of KAP, the Kruskal-Wallis test was used as a common test of non-parametric analysis for nominal variables.

According to Table 2, there was no significant difference between the groups in terms of different demographic characteristics and background knowledge. The only difference was between different the male and female physicians with the males getting higher scores.

Conversely, variables of practice and attitude showed a significant difference in pharmacoeconomics familiarity and institution of practice as well as education level; therefore, the specialists had a superior attitude and better prac-

Table 1. Participants' Demographic Characteristics and Background

Variable	No. (%)
Gender	
Male	140 (59.3)
Female	96 (40.7)
Education level	
General practitioner	111 (47)
Oncologist	125 (53)
Institution of practice	
Governmental	136 (57.6)
Private	100 (42.4)
Familiarity with pharmacoeconomics concepts	
Participation in short training courses	20 (8.5)
No familiarity	216 (91.5)

Table 2. Participants' Characteristics Correlation with KAP Components

Grouping Variable		Test Variables Mean Rank		
		Knowledge	Attitude	Practice
Gender	Sig. (2-tailed)	0.04[a]	0.88	0.82
Age	Sig. (2-tailed)	0.55	0.47	0.46
Experience, y	Sig. (2-tailed)	0.23	0.54	0.96
Education level	Sig. (2-tailed)	0.45	0.002[a]	0.01[a]
University type	Sig. (2-tailed)	0.24	0.26	0.24
Institution of practice	Sig. (2-tailed)	0.21	0.02[a]	0.03[a]
Familiarity with pharmacoeconomics concepts	Sig. (2-tailed)	0.61	0.03[a]	0.06

[a] Significant correlation at the 0.05 level (2-tailed).

tice regarding pharmacoeconomics than the general practitioners. However, considering other demographic and professional background variables, the study did not show any significant difference either in physicians' attitude or in their practice.

In addition, the regression equation model confirmed a significant relationship between pharmacoeconomics awareness and attitude (P = 0.004, r = 0.25) as well as between speciality and practice (P = 0001, r = 0.33).

4. Discussion

In recent years, utilization and cost of pharmaceutical products has increased rapidly (13) due to increase of the number of elderly residents, the incidence and duration of chronic diseases, development of new and expensive technologies in health, and social health expectations. As health budget is limited, the evidence-based budget allocation on a variety of alternatives should be necessarily (14) conducted using a scientific tool called pharmacoeconomics (15). Pharmacoeconomics is the branch of economics used by different players in the health system, including prescribers to reach better outcomes in order to find more cost-effective medicines (16).

The current study data showed that pharmacoeconomics knowledge in physicians was poor (1.84 $\pm$ 1.38 out of 10 in specialists and 1.78 $\pm$ 1.70 out of 10 in general practitioners). However, there was not a significant difference between general practitioners and specialists in this regard. In addition, doctors usually ignore the costs of treatment (4) and pay more attention to are more interested in efficacy than in efficiency. As males are generally more aware of economic issues than females, they got higher knowledge scores than their females counterparts.

Similarly, as oncologists usually prescribe expensive medicines, they are more aware of economic issues. Thus, it is no wonder they got higher scores in attitude and practice.

In addition, prescribing style is influenced by many other factors (17, 18). For example, some studies indicated that the practice setting was an important factor in prescribing behavior (19) ; for example, public sector employees are significantly more receptive to the introduction and use of pharmacoeconomics analyses than private sector employees.

In keeping with the available literature, the current study showed a significant difference within different institutions of practice in attitude and practice; this can be clearly borne out in government employees' getting much significantly gained higher scores.

Moreover, in agreement with other studies showing that informed physicians had more interest in using pharmacoeconomic approaches (20), in the current study, physicians' familiarity with pharmacoeconomics concepts made a significant difference in their attitude and practice. Accordingly, introducing pharmacoeconomics concepts in continuous medical education courses can be an effective way to improve physicians' attitude as well as their practice regarding pharmacoeconomics.

Eventually, it was noted that the self-evaluation questionnaire with non-weighted questions can be an important limiting factor in the current study. In addition, generalizability of the study may be questioned due to its use of a limited non-random sample.

Furthermore, as the physicians' attitude and practice are affected by miscellaneous factors, further studies are recommended to explore more underlying factors.

Footnotes

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