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Evidence- based Policy and Decision-Making among Health Managers: A Case of Shiraz University of Medical Sciences

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Abstract

Background: According to the importance of evidence-based policy-making in health scope, this study was conducted to investigate the present situation of decision-making among medical managers. **Materials and Methods:** This cross-sectional study carried out on all the managers worked in one of the hospitals, health centers, medical schools and central departments of Shiraz University of Medical Sciences in 2016. A questionnaire containing demographic data and 50 questions was applied to 5 sections: attitude (9), subjective norms (13), perceived controlled behavior (22), intention (3) and behavior (3). Chronbach's α was between 0.73-0.91 emphasizing a good reliability, the questionnaire's content and face validity were 0.83 and 0.67 respectively. Data was analyzed using Independent t-test, ANOVA, and Pearson correlation. **Results:** The greatest frequency of the respondents belongs to the men (77/85.1%), and the majority of the respondents were in an age range from 30 to 40 years. The highest mean score was related to the indirect attitude (8.17), and the lowest was obtained for the indirect perception (1.21). There was a statistical relationship between the mean score of direct and indirect controlled perceived behavior according to the participants' educational level ($P=0.03$ and $P=0.043$, respectively). A significant relationship was also observed between direct behavior and educational major ($P=0.044$). Pearson correlation indicates a significant positive relationship between the manager intention for evidence-based policy-making and all the other variables. **Conclusion:** It seems that the present situation of evidence-based decision-making is not appropriate for the university managers. In this regard, planning for the effective courses in knowledge translation, evidence-based policy-making and advanced searching along with monitoring the managers' decision outcomes through an internal and external audit can have an effective role in improving decisions and enhancing evidence application. [GMJ.2017;6(1):30-38]

Keywords: Evidence-based; Policy-making; Decision-Making; Intention; Behavior

Introduction

The use of global evidence has been increasingly considered as the essential part of the policy-making process and the policies adopted with the research evidence will be more likely to attain the health objectives [1]. The evidence indicates that the lower general public's confidence in the governments during the recent years can be connected to the low quality of the decisions made by the states and this is why the governments have gained increasingly higher interests in taking advantage of the credible evidences in the policy-making process [2].

Evidence-based policy-making is an approach adopted in respect to the political decision-making which aims at assuring the decisions are adopted through acquiring sufficient awareness of the best evidences [3]. Such an approach stands in contrast to the opinion-based policy making which is mostly laid the foundation for the selective use of the evidence for instance, single individual studies disregarding the quality thereof or the untested individual attitudes which are predominantly inspired by the ideological viewpoints, prejudgments or presuppositions [2]. In the meantime, decision-making without sufficient attention to the evidences can lead to the following outcomes: decreasing access to health services, not enhancing health indicators and being incapable of reaching the millennium development goals, lack of effectiveness and injustice in health systems [3].

In this regard, a study in 2005 indicated that few organizations, at a global level, support taking advantage of the evidences gained through doing researches in making decisions related to health programs [4].

Evidence-based policy making, in developing countries, can have more significant effects such as contributing to saving the individuals' lives; mitigating poverty and improving performance [5,6].

Where there are a limited availability and constrained resources, the policy-makers' awareness of the research evidences finds more importance in ensuring the informed application of the limited resources [7].

Countries with low and intermediate income

levels usually have fewer resources at discretion to face the problems arising in the health systems, and they are in need of high-quality evidence to make efficient use of scarce resources [8].

However, evidence-based decision-making is seemingly perpetually confronted with the bottleneck of the highest demand and the lowest capacity; developing countries apparently are discovered to have a lower capacity than the developed, for establishing such an approach [6].

In this regard, the relationship extant between the evidences signified that attitudes, subjective norm and perceived behavioral control could be highly influential on the individual's intentions and behaviors [9-11]. Insofar as the systematic reviews have shown that such variables can account for about 39% of the variations in the individuals' intention and about 27% of their behavior [12]. The other studies exhibit that the behavior and the intention to make practical use of the survey evidences in line with supporting the evidence-based decision-making can be elaborated by the aforementioned variables similar to any other intention and behavior [13].

According to what has been expressed, the status quo of the evidence-based decision-making is going to be surveyed in the present study among all of the managers working in the area of health in the southern section of the country based on the predictor variables.

Material and Methods

Participants

This cross-sectional study was undertaken in 2016. The study population includes all of the lines and headquarter managers working in any of the hospitals, treatment and health networks, colleges and headquarters in central departments of Shiraz Medical Sciences University. All these 141 managers were taken as the study participants through the census.

Among the studied participants, 47 individuals were working as hygiene managers, 45 were headquartered managers, 18 were working as treatment managers, and 31 individuals were working in instructional and educational areas.

Data Collection

A two-part questionnaire was applied to obtained data. The first part of which was pertained to the study sample demographic specifications and the second part was comprised of 50 questions inquiring about five constructs of attitude (9), subjective norms (13), perceived behavior control (22), intention (3) and behavior (3). Within the attitude, the subjective norms and the perceived behavior control constructs, the questions were evaluated based on adopting a direct and indirect approach. The questions were scored based on Likert's 5-point scale within two sets, and the scores ranged from 1 to 5 for the following questions; 50-49-47-45-43-41-39-37-35-34-32-30-28-27-26-25-24-23-21-19-17-15-13-12-11-9-7-5-4-3-2-1 and the scores ranged from -2 to +2 for the rest. The responses to the questions were scored based on Likert's 5-point scale from "completely agree" to "completely disagree," and the questions with negative concepts enjoyed an inverse method of scoring.

The content validity rate of the questionnaire was calculated 0.83, and the face validity was measured as equal to 0.67, and it was improved with holding an elites panel session. Moreover, the internal consistency method was used along with Cronbach's alpha method to assess the direct questions' reliability and the external consistency tests along with test-retest method were applied to evaluate the indirect questions' reliability through taking advantage of intra-class correlation calculations. Indirect questions reliability test indicated that the total questionnaire's intra-class correlation, 0.894, is at an acceptable level. The Cronbach's alpha rate for the direct questions' internal consistency ranged from 0.733 to 0.912, and it was also confirmed. The construct validity was approved in Imani Nasab *et al.* study [13]. The questionnaire was administered to the survey sample just after taking the voluntary verbal consent.

Ethical Issue

It is worth mentioning that the participants were asked to provide beforehand a well-informed oral consent for participation in the study plan. Also, the researchers never lost

track of observing the ethical principles in any of the study stages and also it is noteworthy that all of the study stages were conducted by acquiring a permit from Shiraz medical sciences university.

Statistical Analysis

Data was inserted to SPSS22, and the descriptive statistics along with Independent t-test, one-way variance analysis, and Pierson correlation tests were also taken at the significant level of 0.05. Post hoc analysis (LSD and Tokey) are also used to show that the differences exactly occur between which groups.

Results

The study findings indicated that the greatest frequency (77/85.1%) of the respondents belongs to the men. Moreover, the majority of the respondents were in an age range from 30 to 40 years. As regarding the work history, the highest frequency (44%) belonged to the 5-15-years. Regarding the education level, the highest frequency (30.5%) went to specialized and professional Ph.D. degrees, and concerning the field of study, the highest frequency (39.7%) pertained to clinical field of studies (Table-1).

Table-2 is illustrative of the mean and the standard deviation scores about the variables investigated in the current study. As it is observed, the highest mean score was related to the indirect attitude (8.17), and the lowest mean score was obtained for the indirect perception (1.21).

The results obtained from the ANOVA test demonstrated that there was a statistically significant relationship between the total scores acquired for direct perceived behavior control ($P=0.003$) and the indirect perceived behavior control ($P=0.043$) with respect to the participants' education level. The LSD follow-up test indicated that there was a significant relationship between the MSc and Ph.D. degrees ($P=0.001$) and also between the MSc education level and the specialized Ph.D. degree ($P=0.02$) in direct perceived behavior control. Furthermore, a significant relationship was also observed between the BSc degree and specialized Ph.D. degree ($P=0.015$) and be-

Table 1. Distribution of Participants According to Their Demographic Characteristics

Variables	Items	Number	%
Sex	Male	120	85.1
	Female	21	14.9
Age group	20-30	12	8.5
	31-40	62	44
	41-50	60	42.6
	51-60	7	5
	Under 5 years	14	9.9
	5-15	62	44
Work experience	16-25	54	38
	26-30	11	7.8
	BSc	21	14.9
	MSc	34	24.1
Level of education	PhD/MD PhD	43	30.5
	GP/PharmD	43	30.5
	Clinical	56	39.7
	Paraclinical	19	13.5
Educational major	Health Sciences	20	14.2
	Pharmaceutical Sciences	7	5
	Others	39	27.7

Table 2. Mean and Standard Deviation Score for the Studied Constructs

Constructs	Number	Minimum	Maximum	Mean $\pm$ SD
Indirect attitude	140	2.33	12.67	8.17 $\pm$ 1.96
Direct attitude	133	2.33	5	3.57 $\pm$ 0.40
Direct norms	139	1	5	3.44 $\pm$ 0.67
Indirect Norms	133	-6	10	4.13 $\pm$ 3.31
Direct perception	128	1.5	5	3.33 $\pm$ 0.68
Indirect perception	130	-2.22	6.78	1.66 $\pm$ 1.21
Intention	114	1	5	3.76 $\pm$ 0.85
Behavior	140	1	5	4.31 $\pm$ 0.72

tween the professional Ph.D. degree with the specialized Ph.D. degree ($P=0.029$) in indirect perceived behavior control.

The remaining findings showed that there exists a significant relationship between the field of education and the mean score obtained for the direct perceived behavior control ($P=0.044$). Also, it was discovered based on LSD follow-up test that the difference resides between the clinical and paramedics

fields of study ($P=0.049$) and also between health sciences ($P=0.03$) and medicinal sciences ($P=0.028$). Moreover, there was a significant relationship observed between the age and the mean score acquired for the indirect subjective norm ($P=0.023$), and also there was a significant relationship between the age and the behavior ($P=0.021$). In this regard, the Tokey follow-up test results showed that there was a significant relationship between the

50-60 years age group and 20-30 years age group in indirect subjective norm ($P=0.010$). Furthermore, there was a significant relationship observed between 30-40 years age group and 40-50 years age group ($P=0.003$). Also, there was observed a significant relationship between the 20-30 years age group and 30-40 years age group in the behavior variable ($P=0.007$, Table-3).

Moreover, a significant relationship was also seen between the various managers' ranks and indirect perception. Tokey follow-up test showed that there exists a significant difference between the indirect perception mean

score obtained for the health managers and the same score calculated for the instructional and headquarters' managers ($P<0.05$, Table-3).

Results of Pearson correlation indicates that there was a direct and positive significant relationship between the managers' intentions for making evidence-based decisions with the other variables ($P<0.01$). There was seen a direct and positive significant relationship between the managers' behavior in respect to evidence-based decision-making with the four variables of direct attitude, direct perception, indirect perception, and intention ($P<0.05$).

Table 3. Pos-Hoc Analysis of the Studied Variables According to Demographic Characteristics

	Education Level (I)	Education Level (J)	Mean Difference (I-J)	P-value
Indirect perception	BSc	MSc	-0.378	0.433
		GP	-0.327	0.482
		PhD	-1.13	0.015
	GP	BSc	0.327	0.482
		MSc	-0.050	0.896
		PhD	-0.807	0.029
	Manager type (I)	Educational managers (J)	Mean difference (I-J)	P-value
	Educational managers	Health managers	1.24	0.002
		Instructional	0.78	0.047
		Headquarters	0.65	0.185
MSc	BSc	0.295	0.121	
	GP	0.615	0.001	
	PhD	0.327	0.020	
Direct perception	Education Major(I)	Education Major(j)	Mean difference (I-J)	P-value
	Clinical sciences	Paraclinic	-0.383	0.049
		Health Sciences	-0.389	0.030
		Pharmacologic Sciences	-0.643	0.028
	Age (I)	Age (J)	Mean difference (I-J)	P-value
Indirect Norms	50-60	20-30	-3.99	0.01
		30-40	-2.95	0.024
		40-50	-3.87	0.003
Behavior	20-30	30-40	-0.786	0.007
		40-50	-0.487	0.092
		50-60	-0.133	0.769

Discussion

The current findings show that the highest and lowest means belong to the indirect attitude and indirect perception, respectively that means the managers' decision-making behavior can be a function of their indirect attitudes, and it is highly dependent on the way the managers conceive the outcomes arising from a decision.

Besides, various studies have shown the evidence-based decision-making effort attempted by the managers can lead to the managers' positive attitude due to its playing a counter-active role in preventing from resources wastage. Also, as a result of causing development in the knowledge and bringing about the conditions for creativity and enhancing the quality of decision-making [13]. Based on this, the current findings have also been found confirming of the assumption, and it appears that the managers' positive understanding of the use of evidences can cause their acquisition of a higher level of mean scores in their indirect attitude. In the meantime, since the perceived behavior control depends on the existence or the lack of a facilitating or deterring factor for exhibiting a perceived behavior, such a finding can be explained through the idea that the present managers feel that they do not have a complete control over the evidence-based decision-making behavior as a result of certain internal or external barriers [14]. For instance, having no access to the evidences and stakeholders' perspectives, the influence of various pressure groups discretions on managers' decisions, the governing coalition sources, lobbying along with the weakness in performance measurement system and the faint relationship between service compensation and performance, the instability of the managers and the policy-makers can be envisaged as the important external factors [13].

In this regard, the results of Co'te *et al.* suggest that the highest mean score belongs to the nurses' attitudes regarding the use of the research evidences, the perceived behavior control and subjective norms and ethical standards mean scores were found in an intermediate level [15]. Imani Nasab *et al.* also found that evidences can be taken advantage in all of

the policy-making stages to provide the others with information and all of the participants highlighted the weakness of the performance measurement system and the faint relationship between service compensation and the performance in perceived behavior control [13].

The other findings of the current study indicated that the increase in the manager's education could be deemed as an effective factor in demonstrating the evidence-based behavior. While the various studies indicate different relationships between decision-making method and the education level. Bahrami *et al.* report no any significant statistical relationship between the education level and the decision-making method adopted by the faculty members [16]. However, it appears that managerial instructional courses can exert a considerable effect on the managers' decision-making method improvement. In this regard, the present study indicates that the managers with MSc degrees enjoy a lot of necessary skills in evidence-based decision-making in comparison to their counterparts with lower education and physician managers. Also, they have been found to have better access to the research evidences, organizational data, and shareholders, as well, due to their higher competencies and qualifications. The other current findings are suggestive of a significant relationship between the field of study and the managers' direct perception based on which a significant difference was observed between the clinical, paramedical, health sciences and medicinal sciences areas of study. It means these managers' direct perception regarding the evidence-based decision-making area has been discovered to be at a higher level than the clinical managers. Such a finding can be suggestive of the fact that the clinical managers enjoy a lower ability and skill for making evidenced-based decisions. Based on this, various studies have mentioned that the physicians make their decisions based on different sources. For instance, Karimian *et al.* considered that a substantial fraction of the decisions was made based on the reference books followed by personal judgments, and then relying on the peers' experiences or at last based on what was routinely carried out in clinics [17]. Sadeghi *et al.* indicated that the

physicians preferred to make use of the methods based on theories and the laws such as the reference books, the norms and the routines of the departments and in cases that there were ambiguities and dilemmas in problem-solving, they turned to mental judgments through taking advantage of their experiences or those of the others [18]. Zare *et al.* showed that the clinical faculty members have a very small level of familiarity with the evidence-based medicine [19]. Additionally, according to the complicity, emergency and the vague conditions that the individuals are usually faced with clinical environments they are constantly confronted with a state of uncertainty and they are potentially more likely to be inclined towards making decisions based on subjective judgments more than evidences [20,21].

In sum, a physician takes advantage of a collection of factors such as signs and symptoms of the diseases, medicine content knowledge, prior experiences, patterns learned from the professors and reckoning and guessing, feelings and instantaneous emotions in his or her process of performing the job of a physician or prognostication [22].

Based on this, it seems that the physician managers do not possess the sufficient ability and skill in making evidence-based decisions. In this regard, Barati *et al.* suggest that to encourage the hospital managers and physicians to make use of scientific evidences, instructional courses and appropriate workshops are necessary to enhance their knowledge and skills in the process of evidence-based decision-making [23].

The mean score between the current younger participants was found to be higher in respect to the 50-60 years age groups in the indirect subjective norm. It means the individual's evaluation of the others thoughts play a significant role in determining the dose and dose not of behavior in subjective norm construct. There is this possibility that, in such an age group, the policy-making sources expectations, supports and the programs, policies executives and the superordinates and peers are of importance for the individual on the other age groups. The remaining present research findings are suggestive of a statistically significant relationship between the age

and behavior. Based on this finding, the evidence-based decision-making behavior is at a higher level in 30-40 years in contrast to the 20-30 years age group. The reason for such a phenomenon can be the sophistication and higher experience levels in such managers in contrast to their younger counterparts.

The other findings of the current study indicated a significant difference between indirect perceptions of the health care managers and the instructional and headquarter managers. It has to be taken as meaning that the instructional managers exhibit a higher level of the perceived behavior control in contrast to the other managers. One reason is that a great majority of the instructional managers are among the university faculty members and besides their managerial positions are also in charge of teaching and distributing knowledge and science in the university.

Thus, it seems that such individuals enjoy a better situation in comparison with the health care and headquarter managers regarding having access to the evidences, statistics, and organizational information. Based on this, in the study performed by Imani Nasab *et al.*, only the policy-makers appointment among the university faculty members was identified as a facilitating factor regarding the controlling beliefs which is per suggestive of the idea that the faculty members enjoy a better understanding of the evidence-based decision-making than the others [13]. Another study was also suggestive that the individual's experience in making use of the evidences in policy-making should be considered as a standard for appointing the policy-makers [24].

The other findings imply that the more positive the attitude, subjective norms and the perceived behavior control, the managers are more likely to have intentions to make evidence-based decisions. In this regard, Milne *et al.* showed in cases that the relationship between the intention and the behavior are stronger, we will be significantly bearing witness to the exhibition of the behaviors of concern [25]. Also, the results of the studies indicated that the perceived behavior control could influence the behavior both directly and indirectly through intentions [26]. On the other hand, the present study findings demonstrated

that the more positive the managers' attitudes the likelihood for the intention to perform certain behavior would be higher and the higher the managers are found intending to conduct certain behavior the more they are likely to exhibit the behavior. The other evidence of the current study, also imply that the more the attitude, subjective norms and the perceived behavior control are found in a higher level, the behavioral tendencies will also be increased to the same extent and the higher the behavioral propensities, the more likely the behavior to be exhibited [27].

Conclusion

It seems that the present situation of evidence-based decision-making is not appropriate for the university managers. This problem is more serious among those physicians that act as managers. In this regard, planning the

practical courses in knowledge translation, evidence-based policy-making and advanced searching along with monitoring the managers' decision outcomes can have an effective role in improving decisions and application of evidences.

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Conflict of Interest

There was no conflict of interest.

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