

## The effect of an educational program based on the PRECEDE Model on the level of academic consultants' ability and students' satisfaction

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### ABSTRACT

**Background:** Universities have important responsibilities to prevent physical, emotional, social and academic problems during the course of their study. To achieve this goal, it is necessary that universities offer effective academic advising services to the students.

**Purpose:** To investigate the effectiveness of programs offered for developing academic consultants (AC) ability by assessing students' satisfaction with the consultation they receive.

**Methods:** From a total of 90 ACs and 2,500 students in the Hamadan University of Medical Sciences, 72 AC and 445 students from four colleges (Medicine, Health Sciences, Dentistry, Nursing and Midwifery) voluntarily participated in the pretest. 87 ACs were randomly assigned into two groups (Group Bf participated in a workshop designed based on PRECEDE model; Group Cf was offered material relevant to academic consultation). According to the AC groups, the students were divided into groupBs (n=363; their AC have participated in workshop), group Cs (n=408; their AC received Educational Material), and groupDs (n= 190; the student have no active AC). Data collection was conducted by questionnaires, pre-test and post-test (after one academic semester prior to the intervention).

**Results:** Mean scores of knowledge ( $M=14.77$ ,  $SD=3.01$ ) (especially in the College of Medicine and Dentistry) and attitude ( $M=61.79$ ,  $SD=5.78$ ) of AC about offering effective academic advising to the students was improved significantly in both intervention groups, but this effect was more pronounced in group Bf compared with group Cf ( $M= 11.54$ ,  $SD=2.76$ ;  $M=59.23$ ,  $SD=8.6$ ) ( $n=44$ ), and group Af (the pre-test group) ( $M=10.67$ ,  $SD=4.2$ ;  $M=57.2$ ,  $SD=11.6$ ). Students in group Bf significantly were more satisfied with consultation they received and more willing to use consultation services of their ACs.

**Conclusion:** The PRECEDE model's educational workshop program was more effective in modifying the AC ability in offering effective academic advising, guiding, and consultation.

**Keywords:** PRECEDE MODEL, ACADEMIC CONSULTATION, MEDICAL STUDENTS, SATISFACTION

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### Introduction

Provision of support and counselling services for students is an important responsibility of all universities (1). There is a general agreement in that offering academic counselling services to students is an important factor for improving their educational and professional capacities. The lack of effective guidance and counselling services not only results in poor academic outcomes but also in dissatisfaction, insecurity and more stress during academic life of students (2). In addition, it may hinder reaching educational and professional objectives by the students (3,4). Many factors such as good relationship between students and academic

consultants (AC) as well as establishing appropriate environment for consultation and guidance can prevent academic failure (2, 5). According to the faculty member job description, providing guidance and academic counselling for students are part of faculty member's duties and responsibilities (6). However, many faculty members are not aware of this responsibility and those recognized their role as a consultant are not competent enough to play this role (7).

On the other hand students are not aware of the counselling services that the faculty members are to provide as ACs. It is reasonable to suggest that the students' academic achievement may be further enhanced through

provision of effective counselling services. A previous study indicated that the medical students' satisfaction and AC's knowledge, attitude, and skills for provision effective counselling in Hamadan University of Medical Sciences (HUMS) were not within an acceptable range (1). However, the effect of counselling on students' academic achievement has been shown to be positive in another study (8). Therefore, developing educational program for enhancing Acs' capability in their counselling tasks seems to be an essential primary step.

### Conceptual framework

The PRECEDE (Predisposing, Reinforcing, and Enabling Causes in Educational Diagnosis Evaluation) model developed by Green et al. (9) was selected as a theoretical base for studying effectiveness of educational programming for the university's academic consultants' (AC) and students' satisfaction from their AC. The PRECEDE Model as a useful framework of educational planning has been applied by several studies (9). This model systematically considers social, behavioral, educational, and policy and administrative diagnosis for planning, implementing and evaluating all educational factors related to the behavioral modifications which are the objectives or the outcome of the program (10). The PRECEDE framework attempts to identify a type of education which will cause certain changes, and eventually lead to outcomes or improved quality of life (11,12). The PRECEDE model has been used in numerous studies to help systematically define and organize a framework for developing programs.

We used the PRECEDE framework to develop effective educational program for ACs in order to modify their behaviour and their ability for supporting students (5).

Using the PRECEDE Model (9) as the basis for designing the training program, the final outcome was students' satisfaction with academic counselling provided. The factors important to any outcome should be sought before introducing any intervention.

Behavioural causes are faculty members limited time for educational affairs as most of their time is spent in providing clinical services, as well as lack of skills in providing effective counselling for students.

Predisposing factors are knowledge, beliefs, values and perception, which facilitate or hinder a faculty's willingness to identify his/her students needs and provide relevant consultations.

Enabling factors are communication skills and availability of resources.

Reinforcing factors are those factors which promote or discourage faculty's behavioral change, including encouragement by deans of colleges and heads of departments, colleagues' supports.

### Material and Methods

In our study, 72 academic consultants (about 80% of all the university's ACs) who were faculty member of HUMS, Hamadan, Iran, voluntarily participated in the pre-test (group Af), and 87 ACs (97% of all the university's ACs) from four schools of Medicine, Dentistry, Health Sciences, and Nursing and Midwifery participated in the intervention process and post-test. The HUMS, located in West of Iran, had 280 faculty members and more than 2,900 students in four colleges. The 87 ACs were randomly divided in two groups. Group Bf (n=43) allocated to the training program planned based on the PRECEDE model. Group Cf (n=44) only received educational material.

In addition, 445 students of the HUMS participated voluntarily and randomly in the pre-test (group As), and 960 students from the four colleges participated in the post-test evaluation. The students were divided into 2 groups; group Bs (n=363; the ACs providing consultation for this group were in group Bf), group Cs (n=408; the ACs were in group Cf), and group Ds (n=190; no active AC).

### Workshop format

The workshop for AC in group A took about 5 hours and was conducted in two separate occasion; one for ACs of medical and dentistry students, and one for ACs of the students' of the remaining colleges. The workshop was adapted mostly from Bey et al. (13), Winston et al. (14), and Ghazi (3) work and contained five sections as follows:

#### *1. "Introduction" and "why students need academic consultant"*

A brief introduction on students' needs to counselling was presented at the beginning followed by asking each participant to lead his or

her team members who were blind folded out of the room. Following the activity the group were asked to answer the following questions:

How did they feel when they could not see where they go?

Is there any relationship between this situation and freshmen' feelings?

What are the students' problems during the course of their study?

After all team presentations, every body were given the opportunity to express their opinion on the subject.

## 2. "How to provide an effective counselling"

We addressed the goals with a brief didactic presentation of our general principles on how to give effective academic counselling to students and using communication skills. Then, through roll playing, each participant practiced a consulting session with his partner playing a student with educational or family problem according to written scenarios given to him/her.

## 3. "Academic policies and regulations"

In this session, booklets of academic policies and regulations were distributed among ACs. Each team also was given a scenario. They were asked to defend their recommendation as the best possible for the case based on these policies and regulations

## 4. "How to record and monitor students' academic achievement, their needs, and counselling session"

Sample forms designed for this purpose were distributed among the participants and their use were discussed.

## 5. "Recognizing resources and services of the university"

For this session, vice president for student affairs talked about all resources and services available for supporting students in the university, such as financial support, housing, center for students counselling and policies and regulations for the students who need these services.

## Data collection

The data was collected by two different questionnaires to ensure the validity and reliability ( $r=0.79$ ). The first questionnaire, which was completed by ACs, contained 20 questions about educational policies and regulations. Two distinct questionnaires were developed; One for medicine and dentistry ACs and one for ACs of health science faculty and nursing and midwifery faculty because the educational policy and regulations are

rather different. The ACs completed this questionnaire prior to intervention in fall semester as pre-test, and at the end of the semester as post-test. A second questionnaire, which was completed by students, contained 10 questions assessing students' satisfaction with their AC.

Moreover, the students were asked to write why they used the counseling service.

Analysis of variance was used to assess the difference of ACs' knowledge and attitude as the predisposing factors and behavioural causes among the three groups (Af, Bf, Cf) as well as those of students' satisfaction. Also, chi-square test was used to evaluate the difference of frequency of students' meetings with their AC among different groups (Bs, Cs, Ds).

## Results

Unadjusted mean scores and standard deviations of Group A's (N=72) knowledge (on a 20 multiple-choice questions), attitude (on a 5 point Likert-type scale), and practice (on a 3 point Likert-type scale), were 10.67(SD=4.2), 57.2 (SD=1 1.6), 14.17 (SD=8.0), respectively; those of group B were 14.77 (SD=3.01), 61.79 (SD=5.78), 16.98 (SD=8.76); and those of group C were 11.54 (SD=2.76), 59.23 (SD=8.62), 16.14 (SD=7.9) (Tables 1, 2, and 3). An analysis of variance for knowledge of group A, group B and group C indicated a significant difference between the three groups as well as between these three groups in each college ( $p<0.001$ ). It is notable that the mean scores of ACs' knowledge for ACs in College of Medicine and Dentistry increased significantly ( $p<0.001$ ) to an acceptable level when compared to group A and group C. A significant difference was found between mean scores of ACs' attitude of group B and group A ( $p<0.05$ ). However, mean scores of ACs in College of Medicine did not reach an acceptable level.

The majority of ACs in groups A (66.7%); B (58.1%) and C (75%) were male. Also, 51.7% of students' in group A, 28.9% in group B, 39.2% in group C and 56.8% in group D were male.

The Scheffe post-hoc test showed a significant difference between the mean score of knowledge in group B (workshop group) with the other groups (group C and group A) and among the colleges (Table 1). A significant difference was observed between the attitudes of group A and group B (Table 2).

**TABLE 1.** Comparison between mean and standard deviation of AC's knowledge in two groups about offering academic advising to students

College	Pre-Test Group A		Experimental Group B		Experimental Group C		ANOVA p Value
	N(%)	M(SD)	N(%)	M(SD)	N(%)	M(SD)	
Medicine	26(36.1)	9.23(4.1)	22(51)	13.41(3.13)	23(52)	10.04(2.46)	<0.000
Dentistry	18(25)	8.11(3.2)	4(9)	15(1.63)	4(0.9)	11.5(1)	<0.000
Health Sciences	22(16.7)	14.25(3)	6(14)	17.67(1.37)	4(0.9)	12.25(2.75)	<0.007
Nursing & Midwifery	16(22.2)	13.19(3)	11(26)	15.82(2.36)	13(30)	14.00(1.78)	<0.033
Total	70(100)	10.67(4.2)	43(100)	14.77(3.01)	44(100)	11.54(2.76)	<0.000

(>10 is acceptable mean score)

AC; significant difference with the other groups

**TABLE 2.** Comparison between mean and standard deviation of AC's attitude in two groups about offering academic advising to students

College	Pre-Test Group A		Experimental Group B		Experimental Group C		ANOVA p Value
	N(%)	M(SD)	N(%)	M(SD)	N(%)	M(SD)	
Medicine	26(36.1)	55.61(12.3)	22(51)	60.45(5.36)	23(52)	56.05(7.83)	<0.172
Dentistry	18(25)	51.5(12.5)	4(9)	56(3.62)	4(0.9)	50.75(7.54)	<0.744
Health Sciences	22(16.7)	60.58(9.1)	6(14)	65.33 (7.23)	4(0.9)	67.5(1.73)	<0.280
Nursing & Midwifery	16(22.2)	63.69(7.2)	11(26)	64.54(3.93)	13(30)	64.00(7.34)	<0.946
Total	72(100)	57.2(11.6)	43(100)	61.79(5.78)	44(100)	59.23(8.62)	<0.045

(>45 is acceptable mean score)

A; significant difference with the pre-test group

**TABLE 3.** Comparison between mean and standard deviation of AC's practice in two groups about offering academic advising to students

College	Pre-Test Group A		Experimental Group B		Experimental Group C		ANOVA p Value
	N(%)	M(SD)	N(%)	M(SD)	N(%)	M(SD)	
Medicine	26(36.1)	11.5 (7.8)	22(51)	12.68(9.56)	23(52)	11.78(7.34)	<0.878
Dentistry	18(25)	11.11(8.5)	4(9)	16.25(5.91)	4(0.9)	12.25(2.5)	<0.488
Health Sciences	22(16.7)	19.5(5)	6(14)	23.83(3.37)	4(0.9)	21.75(5.12)	<0.198
Nursing & Midwife	16(22.2)	17.87(6.5)	11(26)	22.10(4.01)	13(30)	23.31(1.19)	<0.013
Total	72(100)	14.17(8.0)	43(100)	16.98(8.76)	44(100)	16.14(7.9)	<0.170

(>15 is acceptable mean score)

A; significant difference with the pre-test group

The majority of the group B and C indicated that they were well aware of AC's duties for provision quality consultation when compared to group A. A significant difference was found between the students' satisfaction (on a 5 point Likert-type scale) of their AC in group B and the other three

groups. The students' response to each question related to satisfaction of their AC indicated a significant difference between all items of questionnaires of group B and the other three groups (group A, group C, and group D).

## Discussion

A number of studies indicated that students need to be informed about school policy, program, services, etc. as well as the opportunity to gain their skills in order to feel secure and optimistic in making the right decisions (15,17). The AC has an important role in this regard (8). So it is quite clear that assessing academic consultant needs to provide a good consultation for student and planning due programs to meet these needs is a critical responsibility of higher educational institutions.

Our study suggests that educational programs based on PRECEDE Model framework were beneficial and effective for AC's ability to satisfy students' expectations. Our results showed that planned workshops did a better work in terms of improving consulting skills of academic advisors than simple provision of information, since ACs had opportunity to exercise their skills in workshop.

Although, the effect of administrative policy regulating ACs' activities, as well as the university educational committee's support as one of the reinforcing factors have not been evaluated in this study, all these factors has been shown to affect ACs' decisions in other studies (15,16); and further studies to investigate their role seems to be justified.

Considering the medical students who had no active AC during their internship (Group D) as controls deprived of any consultation, we observed that they were more dissatisfied when compared with any other group of students participated in the study.

The study also showed when students realized that their AC could help them with their academic as well as personal problems they were more willing to use consultation services and they were more likely to trust their AC.

It is recommended that the medical and dentistry students get more advising than other disciplines, because of their field characteristics and longer duration of study program (2, 14).

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