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RESEARCH ARTICLE

EVALUATION OF EFFECTIVENESS OF INTERPERSONAL COMMUNICATION OF HEALTH EDUCATION PROVIDERS WORKING AT PRIMARY HEALTH CARE CENTERS

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Abstract

Introduction: Communication skills play a paramount role in clinical practice. In every clinical setting health provider need to interview their patient efficiently. The inter personal communication skill is one of the most complex one because it involves interaction between individual in non-equal position, is often non-voluntary concern issue of vital importance, is therefore emotionally laden and requires close cooperation.

Methodology: A cross-sectional descriptive study was conducted in eighteen primary health care centers in Baghdad, in period from the 2nd of January to the 1st of July 2014. All health providers involved in health education within health promotion unit of the selected PHC centers were eligible to be enrolled in this study.

Results: There was a positive linear correlation between communication skills of health provider and their competency ($r=0.72, P=0.01$), but weak correlation with their information ($r=0.43, P=0.01$). The scores of both of them reflect neutral communication skills and competency while the information was good, although the mean scores of the female 17.6, 5.4 which is higher than that of the male 6.7, 5 in communication skill and competency respectively, while the mean scores of information in male 7 was higher than that of the female (6.8). Although the mean score of doctors regarding communication skill, competency, and information were 18.4, 5.6 and 7 were higher than that of paramedical mean score 16.4, 7 and 6.7 respectively, yet the differences were not significant. The mean scores of both of them were within the scale of neutral for communication skills and competency while it was good for information. It showed that health provider aged ≥ 45 had higher mean scores than younger age groups in communication skills 19.7 ($p=0.01$) and the score of information 7.1 ($p=0.2$).

Conclusion: Most of health providers gained neutral scores in communication skills, information and competency in conducting health promotion sessions at PHC center. The impact of training courses on the communication skills, competency and information of health education providers was evident.

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Introduction:-

Communication is a meaningful exchange of information between two or more living creates ⁽¹⁾. Communication skills play a paramount role in clinical practice. In every clinical setting health provider need to interview their patients efficiently⁽²⁾. Doctor-patient communication is central in clinical practice, it's a core clinical skill and essential component, as they are instrumental in accurate diagnosis ⁽³⁾.

The inter personal communication skill is one of the most complex one because it involves interaction between individual in non-equal position, is often non-voluntary concern issue of vital importance, is therefore emotionally laden and requires close cooperation⁽⁴⁾.

Effective inter personal communication play an important role in delivery of high quality of health care. While ineffective communication can seriously deteriorate the quality of health care⁽⁵⁾.

There was strong evidence showing that, the communication of health providers to clients was a good predictor for acceptance, regimen adherence, patient satisfaction, recall of information, compliance with therapeutic regimens, as well as improvement in bio-psycho- social markers⁽⁶⁾.

Medical education has undergone dramatic changes over the last decades, and it has been recognized that traditional courses is not sufficient to equip the health provider for effective communication skills while competency- based learning and patient -centered depend on knowledge, skill, attitude, is corner stone and equip for effective interpersonal communication skills⁽⁷⁾.

There were important political, historical and social changes over the last twenty years have meant that the teaching and learning of clinical communication has emerged as a core part of the modern undergraduate medical curriculum⁽⁸⁾.

McBride et al has been found that patient considered communication skills to be one of the top three competencies a physician should possess, but till now physician- patient communicate is inadequate and unsatisfactory⁽⁹⁾.

The process of communication consists of two common elements which are the sender and the receiver⁽¹⁰⁾. Those elements of communication process determine the quality of communication. a problem in any one of these elements can reduce communication- effectiveness⁽¹¹⁾.

Communication compose of two main components: The verbal consist of (spoken and written words); Non-verbal include direct (gestures, head nodding, forward lean, uncrossed legs and arms, smiling, site on the same side level of patient, eye to eye contact) and indirect (appearance, place, environment, behavior of provider)^(12,13).

Aim of the study:

This study aimed at assessment of the health provider`s skills, competency and information related to interpersonal communication provided at health education and to determine the effect of certain variables (age, gender, training, profession) on the effectiveness of interpersonal communication.

Patients and Methods:-

A cross-sectional descriptive study was conducted in eighteen primary health care centers of two district; Eldora and Elam of Al-Karch Health Directorate in Baghdad, for the period from the 2nd of January to the 1st of July 2014, with 2 work days a week for each PHC center.

Study group:

All health providers involved in health education within health promotion unit of the selected PHC centers were eligible to be enrolled in this study and accordingly 43 of them were included; those who were available at the time of the study and were willing to participate.

Methods:-

Assessment of the effectiveness of interpersonal communication skills of health providers in PHC centers, was carried out by using a structured checklist adopted from communication skills assessment tool(CAT)⁽¹⁴⁾, it was modified by the researcher. Three main domains were evaluated; the skills of communication, competency and information of health provider beside three other domains; the tools used, place and time of conducting the session were also assessed.

The researcher attended both the individual and group sessions of health education carried out by the health providers and a specified check list for everyone was completed through watching them during these sessions.

The questionnaire was administered in English and consist of two parts: part one; Include information related to the demographic characteristics (gender, age, profession) and training course of health providers. And part two consist of six domains: three of them were expressed by several themes.

According to Likert scale a scores of (1-3) was given for each theme reflecting specific skill, competency and information, those not done given the score (1), imperfectly done score(2), and those perfectly done were given the score (3). Then a total score for each main domain was calculated and accordingly the minimum and maximum total scoring was ranged as follows

1. Communication skills consists of 9 themes: the scores range 9-27
2. Health provider competency consists of 3 themes: the scores range 3-9
3. Health provider information consists of 3 themes: the scores range 3-9

The other three domains: time, place and the tools used in conducting the session, each was reflected by one theme so the total score was ranged from (1-3). The time of conducting the session in this study regarded to be perfect when it was not less than five minutes for individual sessions and 15 minutes for group sessions.

Further scale had been used in this study to identify the effectiveness of different domains of interpersonal communication of health providers to be poor, neutral, or good according to the total scores of each domain as following:

1. Communication skills: (9-13) poor, (> 13-19) neutral, (>19- 27) good.
2. Competency: (3-4) poor, (> 4- 6) neutral, (> 6-9) good.
3. Information: (3-4) poor, (> 4-6) neutral, (>6-9) good.
4. Tools, place, time: (1) poor, (>1-2) neutral. (>2-3) good.

Statistical analysis:

The collected data were introduced into micro soft office excel 2010 and were analyzed using SPSS version (20). Descriptive analysis using, frequencies and percentages had been used to describe different variables, while (mean \pm SD) was calculated for the allocated scores of different domains of interpersonal communication. Analytic statistical test (t-test) was used to study the association between different variables and the reported scores, while Pearson linear correlation had been assessed to detect the correlation between different domains of interpersonal communication. P-value \leq 0.05 regarded the level of significance in this study.

Ethical issues:

An approval of the scientific and ethical committee at Al-kidney college of Medicine had been taken initially, then an official request for facilitation of the omission of conducting the study was delivered from Al-kindy college of medicine and administered to all PHC centers that included in the study. Anone verbal consent also had been taken from all the health providers participant in the study.

Results:-

Health providers included in this study were 43 individuals (table-1). (55.8%) were female and 44.2% were male, while 53.5% were doctor and 46.5% paramedical. Only 25.6% of the study sample had training course while 74.5% had no training course. The distribution of age group of health provider found to be 34.9% of the participants were in age group (20-34) years, 32.6% in age group (35-44) years and 32.6% were 45 years and more.

Table 1: Demographic characteristics, profession and training courses of health providers.

Character (n=43)		n	%
Gender	Male	19	44.2
	Female	24	55.8
Degree	Doctor	23	53.5
	Paramedical	20	46.5
Training course	Yes	11	25.6
	No	32	74.4
Age group	20-34	15	34.9
	35-45	14	32.6
	≥ 45	14	32.6

The themes in the check list that reflect the communication skill applied by health provider and the results presented in (table-2). It was found to be perfectly done in 48.8%, 51.1%, in relation to;(the client treated with respect), (talk with the understandable language) respectively. while it found to be not done in 44.2%, 34.9%, 30.2% including;(use of nonverbal communication), (encourage the clients to ask question), (involve the clients with conversation) respectively. The remaining of communication skill of health provider found to be imperfectly done in 65.1%, 67.4%, 65.1%, 67.4% regarding; (enthusiasms in conducting session), (greet the client), (show interest with client subject), (paid attention to the client or session), respectively.

The statements in the checklist that demonstrate the competency of health provider found to be not done in (39.5%, 37.2%, 37.2%) including (check if the client or session understandable),(Health provider well competent and well trained), (Make demonstration about the subject).

Regarding the statements that reflect the domain of health provider information found to be perfectly done in 58.1% (depend on specific guideline) while not done in regard to (Gave much information about the subject), (the content is relevant) in 39.5%, 16.3% respectively. The remaining domain which reflect the effectiveness of interpersonal communication of health provider during health education session found to be imperfectly done in regard to time in 79.1% of the sessions, while perfect place and tools was applied in 51.2%, 53.5% of the sessions respectively.

Table 2:- Domains assessment of interpersonal communication of health care provider.

Domain	Not done		Imperfectly done		Perfectly done	
	n	%	n	%	n	%
Communication Skill						
1. enthusiasm in conducting the session.	9	20.9	28	65.1	6	14
2. The client treat with respect.	0	0	22	51.2	21	48.8
3. Greet the client and made him comfortable	8	18.6	29	67.4	6	14
4. Show interest with client concerns.	9	20.9	28	65.1	6	14
5. Paid attention to the clients.	9	20.9	29	67.4	5	11.6
6. Talk with the understandable language.	2	4.7	19	44.2	22	51.1
7. Encourage the clients to ask question.	15	34.9	23	53.5	5	11.6
8. Involve the clients with conversation.	13	30.2	25	58.1	5	11.6
9. Used nonverbal communication (tone, attitude, gestures, eye to eye contact, nodding)	19	44.2	18	41.8	6	14
Health provider competency						
1. Health provider well competent and well trained.	16	37.2	22	51.2	5	11.6
2. Make demonstration about the subject.	16	37.2	22	51.2	5	11.6
3. Check if the client or session is understandable.	17	39.5	22	51.2	4	9.3
Health provider information						
1. The information given were adequate	17	39.5	22	51.2	4	9.3
2. The content of the message is beneficial	7	16.3	26	60.5	10	23.3
3. Depend on specific guidelines	5	11.6	13	30.2	25	58.1
Health provider Time						

1. Gave Enough time	7	16.3	34	79.1	2	4.7
Place						
1. Place is calm, suitable of session	2	4.7	19	44.2	22	51.2
Tools						
1. Use tools or aid for session, (picture, video, chart, folder).	2	4.7	18	41.9	23	53.5

Table-3 showed a positive linear correlation between communication skills of health provider and their competency ($r=0.72$, $P=0.01$), but weak correlation with their information ($r=0.43$, $P=0.01$) on one hand, and between health provider competency and their information ($r=0.52$, $P=0.01$) on the other hand.

Table 3:- Correlation between health provider's communication skills, competency and information.

Correlation between variables	R	P-value
Communication Skill and Health provider competency	0.72	0.01
Communication Skill and Health provider information	0.43	0.01
Health provider competency and Health provider information	0.52	0.01

Table-4 revealed that there was no significant association between the mean scores of the male and mean score of female health providers in regard to the themes of communication skills, competency and information. The scores of both of them reflect neutral communication skills and competency while the information was good, although the mean scores of the female (17.6, 5.4) which is higher than that of the male (16.7, 5) in communication skill and competency respectively, while the mean scores of information in male (7) was higher than that of the female (6.8).

Another domain of effective interpersonal communication related to health provider (place, tools) shows no significant differences between male and female and their mean scores reflect these aspects to be good in place, tool (> 2-3) while neutral in time.

Table 4:- Distribution of the domain scores of interpersonal communication of health provider according to gender

Domain	The domain score		p-value
	Score of males (n=19) Mean±SD	Score of Female (n=24) Mean±SD	
Communication skill	16.7±5	17.6±5.2	0.5
Health provider competency	5±1.7	5.4±2	0.5
Health provider information	7±1	6.8±1.6	0.5
Health provider time	2±0.2	1.9±0.6	0.4
Place	2.5±0.5	2.4±0.7	0.6
Tools	2.5±0.5	2.5±0.7	0.7

Table-5 represent a comparison between doctors and paramedical staff. Although the mean score of doctors regarding communication skill, competency, and information were (18.4), (5.6) and (7) were higher than that of paramedical mean score (16), (4.7) and (6.7) respectively, yet the differences were not significant (p -value=0.1, 0.1, 0.4) respectively. The mean scores of both of them were within the scale of neutral for communication skills and competency while it was good for information.

Again, there were no significant differences had been found in other themes reflecting the effectiveness of interpersonal communication of health provider whether they were doctors or paramedical in regard to (place, tools) since the mean scores of both of them were within the range of good (>2-3) while neutral in time.

Table 5:- Distribution of the domain scores of interpersonal communication of health provider according to profession.

Domain	The domain score		p-value
	Doctors (n=23)	Paramedical (n=20)	
	Mean±SD	Mean±SD	
Communication skill	18.4±5.7	16±4	0.1
Health provider competency	5.6±2.1	4.7±1.4	0.1

Health provider information	7±1.2	6.7±1.5	0.4
Health provider time	2±0.5	1.8±0.4	0.3
Place	2.5±0.5	2.4±0.7	0.5
Tools	2.5±0.5	2.5±0.7	0.7

Table-6 showed that the mean score of health providers who had participated in training course were (19.7±5.7, 6.3±2, 7.1±1) in communication skills, competency and information respectively which were higher than that of those without training courses (16.5±4.7, 4.8±1.7, 6.8±1.4) respectively. The difference was only significant (p-value = 0.02) in competency. The mean scores of both of them were within the scale of good for communication skills, information and competency in those with training, while neutral in communication, competency and good in information in those without training.

No significant differences had been found in other themes reflecting the effectiveness of interpersonal communication of health provider whether they were trained or not regarding place and tools since the mean scores of both of them were within the range of good (>2-3) while neutral in time.

Table 6:- Distribution of the scores of interpersonal communication of health provider according to their participation in training courses.

Domain	The domain score		p-value
	Trained (n=19)	Not trained (n=24)	
	Mean±SD	Mean±SD	
Communication skill	19.7±5.7	16.5±4.7	0.06
Health provider competency	6.3±2	4.8±1.7	0.02
Health provider information	7.1±1	6.8±1.4	0.5
Health provider time	1.9±0.5	1.9±0.4	0.8
Place	2.6±0.5	2.4±0.6	0.6
Tools	2.6±0.5	2.4±0.6	0.3

Table-7 showed that health provider aged ≥ 45 had higher mean scores than younger age groups in communication skills (19.7±4.2) (p= 0.01). Also, the score of information (7.1±0.9) (p=0.2), while health providers aged (35-44) years found to have higher mean scores in competency (5.9±1.8) (p =0.01). Younger age health providers (20-43) years found to have the lowest mean scores (14.3±4.9, 4±1.4, 6.3±1.8) in communication skill, competency and information respectively. The mean scores were within the scale of good for communication skills and information and neutral in competency in age group more than 45 year, while neutral in communication skills, competency and good in information in age 20-34 year. The mean scores of place and tools were within the range of good (>2-3) while neutral in time.

Table 7:- The distribution of the scores of interpersonal communication of health providers according to age group

Domain	The domain score			p-value
	20-34 years (n=15)	35-44 years (n=14)	>45 (n=14)	
	Mean±SD	Mean±SD	Mean±SD	
Communication skill	14.3±4.9	18.1±4.9	19.7±4.2	0.01
Health provider competency	4±1.4	5.9±1.8	5.8±1.9	0.01
Health provider information	6.3±1.8	7.1±1.1	7.1±0.9	0.2
Health provider time	1.8±0.4	1.9±0.5	1.9±0.5	0.7
Place	2.2±0.7	2.6±0.5	2.6±0.5	0.3
Tools	2.2±0.7	2.6±0.5	2.7±0.5	0.2

Discussion:-

Physician patient communication is a basic skill and is considered as a permanent factor in presenting health services⁽¹⁵⁾.

This study showed that about half of the health providers have good communication skills in relation to (talking using understandable language) this mean that health providers participating in health education at PHC center had the ability to use simple language that could easily reach the clients that could help in effective communication⁽¹⁶⁾.

While more than half of health provider in conducting the sessions of health education at the studied PHC centers, which considered a good reference for them to cover different topics related to health promotion and health protection since it had been adapted by expertise at the level of ministry of health to be consistent with the problems in our community.

The mean scores related to place where the health education sessions had been conducted and the tools used during these sessions (flipchart, datashow, computers, video, posters, demonstrations) found to be good which could be related to the successive improvement in the infrastructures of PHC centers in Baghdad among the general strategy of MOH to improve their requirements of health promotion unit. The time spent by health provider for health education sessions found to be insufficient in 79.1% of them, this could be explained by the shortage of workers and work overload since most of them were engaged in more than one duty. A research done by Twardella and Brenner in Germany revealed that lack of time is perceived as a barrier to effective communication by health providers, such perception may prevent the transfer of learnt skills to the clinical practice⁽¹⁷⁾. According to Booker, good communication is not necessarily more time-consuming, the belief that a good consultation is time-consuming is erroneous. Patient satisfaction with a consultation is not related to the amount of time spent⁽¹⁸⁾.

The overall assessment of the three main domain of interpersonal communication were neutral in conducting individual or group sessions of health promotion which could be due to lack in communication skills (verbal and nonverbal), information of health provider could be related to the defect in the teaching and learning process reflected in the shortage of the curriculum in primary or secondary school or in medical colleague and nursing school that concentrate on the importance of interpersonal communication that could be managed by further training of the medical, paramedical students, graduated and residency doctors, paramedical staff to improve their communication skills, knowledge and competency. Other studies, found also that physicians and medical staff have few information and knowledge about general communication skills^(19, 20).

This study showed a linear positive correlation between communication skills of health provider with their competency and information on one hand and between their competency and information on the other hand, this mean that health provider who had more information about enquired topic of health education were more successful in communication beside increasing information have also an effect on improving the communication competency, also, physicians who had more knowledge about communication skills, were more successful in communication⁽²¹⁾. while Sharifirad et al and Soltani Arabshahiet al found in their studies that increasing the knowledge and information have some effects on improving the communication competency^(22,23).

The female health provider found to have higher mean scores in communication skills, competency and information than male which could be related to the fact that female are more familiar with the problems of the clients since most of them were female and according to Iraqi traditions it is more convenient for female health provider to discuss different health issues with their client in a comfortable environment, this agreed with a study in Saudi Arabia⁽²⁴⁾, and a study conducted by Sandhu et al and Houle C who also found that satisfaction with physicians' communication was higher when the physician is a female and showed that consulting a women's doctor seems to diminish women's reserve about mentioning health problems in general; more women presented additional problems in consultations with women doctors than with men doctors⁽²⁵⁾. Another study showed that the patients were more trusted in female physician which could be ultimately reflected on their satisfaction⁽²⁶⁾.

A meta-analysis done by Roter et al indicated that female physicians are more likely to perform patient-centered communication behavior⁽²⁷⁾. while Wright et al found that male was slower at learning communication skills than females⁽²⁸⁾, while other study contradict these findings and revealed no clear gender differences related to the effectiveness of health provider⁽²⁹⁾.

This study showed that doctor health providers reported higher mean scores in different domains of interpersonal communication; skills, competency and information than paramedical staffs, this might be explained by the fact that Iraqi doctors had more chance to be involved in training courses whether related to communication skills or other common topics associated with their job at primary health care level than paramedical, whether during their formal learning at colleges or informal learning after graduation. While a study done in Tehran by Almoradi and colleagues for assessing communication skills among paramedical and doctor health providers in health care centers showed no meaningful difference in health provider communication whether physician or nursing⁽³⁰⁾.

There was a significant association between the effectiveness of interpersonal communication of health provider with their participation in training courses whether these courses were specified for enhancements of communication skills or other common topics and according to Silverman et al communication skills are mostly an acquirable and learnable skills that exhibited by training courses rather than clinical experience only⁽³¹⁾. A study done by Baker et al showed that when communication training is limited to a single session without follow-up reinforcement training, learned skills tend to fade over time⁽³²⁾, this might recommend a continuous and in job training programs to be applied for all health providers concerned with health education at primary health care level to maximize their performance. On the other hand, training clients in communication skills could be considered as a new concept in improving client- health provider relationship since it seems to be potentially effective for facilitating health outcomes that were important for physician and patients⁽³³⁾.

Interpersonal communication skills of health provider with older age >45 year found to be more effective than those of younger age group 20-30 year this might be due to the fact that skills were acquired during daily work, experience, training, the finding of this study contradicted other study conducted at 2012 in Iran by Parviz et al showed that graduated person motivated to reach job stability so do better communication, but among older age because of lack of motivation, confidence and job stability they showed weaker communication performance⁽²⁹⁾.

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