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Research Article

### THE CAPABILITY OF THE EMERGENCY MEDICAL STAFF MEMBERS AND DOCTORS TO TAKE PATIENTS' MEDICAL HISTORY

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**Abstract:**

**Objective:** The key point to detect patients' need in pre-hospital emergency is to have high ability to take medical history. All research findings show that this ability is low. The objective of this research is to investigate the ability to take medical history of patients in the Emergency department of Mayo Hospital Lahore.

**Methods:** This research was a descriptive cross-sectional study conducted from April 2019 to April 2020. The population included staff and doctors (N=171). The samples were selected using multi-stage cluster sampling. Data were collected by a researcher-developed questionnaire. The collected data were analyzed by SPSS software version 16 conducting descriptive and inferential statistics. All tests were administered at a significance level of P less than 0.05.

**Results:** One hundred sixty-five (96.5%) participants were male. The mean score of the ability to take medical history was  $58.4 \pm 11.1$ . Therefore, 95 participants (58.3 %) had poor ability and 64 participants (39.3 %) owned moderate ability. The highest score concerning the ability to take medical history was for the aspect of professional knowledge (mean rank=5). The most influential aspect in the ability was respectively for 'professional knowledge' ( $P=0.0001$ ,  $Beta=0.509$ ). Pearson correlation coefficient indicated a relationship ( $r=-0.149$ ,  $P=0.05$ ) between the ability to take medical history and age. **Conclusion:** The results of the current study indicated that the ability to take medical history among the staff and doctors was low. Therefore, a thorough review of trainings promoting personnel's professional knowledge is urgently required.

**Keywords:** Medical history, Emergency, Patient

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**INTRODUCTION:**

Emergency Medical Services (EMS) have been established to provide medical services to patients in front of the hospital. To protect people's lives, because it is necessary for a second or even a minute while serving. As a healthcare professional at the ESM, employees received the necessary training in emergency medicines to investigate and care for patients. Receiving a medical history is one of the most important trainings that healthcare professionals receive to collect and maintain important and comprehensive patient information. The acquisition of medical history is very emphasized in the medical literature. His medical history is an expression of current and previous medical problems that explain the physical and mental state of the patient. It acts as the main point of medical care provided to the patient and as the key to understanding the specific needs of the patient. The patient's medical history helps to diagnose his problems and find his social, mental and physical origins that affect their health. His medical education is important enough to help doctors make accurate diagnoses in more than 80% of cases without a clinical trial or laboratory tests. The content of the medical history shows the amount of information and clinical trials collected so far. Medical history plays an important role in reducing medical errors, monitoring medical procedures, accelerating patient recovery and reducing hospital costs.

When creating a history of the disease, many doctors face problems during medical examination and relationships with patients. Therefore, the medical history created has serious problems. The inability to obtain a complete medical history is due to the lack of medical history of medical providers and the ability to neglect in the patient's conditions. A 2014 study by arora et al. found that poor communication between healthcare professionals and patients admitted to the emergency department was one of the preventable errors in medical examinations that seriously affected the quality of the medical past. The results of a 2013 birks et al study showed that ambulance staff undergoing outpatient treatment had a medical background. In addition, the results of a 2012 Abellsson and Lindwall study confirmed the high potential of nurses in the emergency department before the first study of trauma patients. Lammers et al. In 2012, they argued that children's inability to have a full medical history was the main reason why they were unable to manage medical and clinical communication with young patients in pre-school services.

Communication limitations, limited access to a patient's medical history and lack of time to get medical history are just some of the problems that lead to poor quality medical history in an emergency medical accident. On the other hand, there are different academic degrees and training courses for emergency medical services, which leads to a change in the quality of medical history. The ESM must be assessed for the development of these services. Therefore, it is really important to know the strengths and weaknesses in the process of receiving a medical history performed by pre-security rescue personnel. This allows staff to share their experiences, improve medical quality and better protect patients' lives.

**METHODS:**

This study was held in the Emergency department of Mayo Hospital Lahore for one-year duration from April 2019 to April 2020. The research used Quota and multistage sampling designs. The population included staff and doctors of the Mayo Hospital. Applying Cochran formula ( $N=Z^2 \times P(1-P)/d^2$ ), the sample size was 171 people ( $Z=1.96$ ,  $P=0.68$ ,  $d=0.05$ ). The sample size had a level of significance of 95%. The inclusion criteria were age (over 22 years of age), residence in the province, experience (year formal clinical activities), and conscious oral consent. Participants had the freedom to refuse to answer the questionnaire during the work or interview. Those who agreed to participate received the questionnaire (as a method of data collection) in their bases and EMS 115 centers. Prior to the questionnaire distribution, they were informed about research objectives and were guided how to fill out the questionnaire. Questionnaires were filled out individually and privately by technicians. If any part of the questionnaire had an incomplete piece of information, the respondent would be asked to complete it. Then, the questionnaires were collected immediately after they were completed. The first part of the questionnaire contained the demographic information, including variables like age, gender, academic degree (education), marital status, work experience, and type of employment (formal and contract employee means the employee must have a letter of appointment in which 'contract' or 'formal' is mentioned. This means the organization has a 5-year or longer period contract with the employee). The second part included a researcher-developed questionnaire regarding the ability to take medical history from the patient during emergencies. After analyzing the existing literature, scientific texts, and previous researches (6), 25 questions were designed in the questionnaire evaluating the ability to take medical history during emergencies. The rating of each question, according to the Likert-scale, included Always (4), Often (3), Sometimes (2), Hardly (1),

and Never (0). The maximum point in the questionnaire was 100 and the minimum was 0. Therefore, if the sum of the point in a questionnaire was 0-60, the respondent had a low ability to take medical history, if the sum point was 61-80, he/she had an average ability to take medical history, and if the sum point of the questionnaire was 81- 100, he/she had a high (optimal) ability to take medical history. The questionnaire evaluated 5 aspects of the required ability to take medical history. Topics and aspects were made according to the content of each question and their seeming similarity. The level of 'respect for patient' was the aspect which included 3 questions (0-12 points), the level of 'knowledge about how to communicate with patients' had 3 questions (0-12 points), 'skill' was the aspect which had 3 questions (0-12 points), 'professional knowledge' had 12 questions (0-48 points), and 'decision making and performance' was the aspect which included 4 questions (0-16 points). A respondent possessed the ability in each aspect only if he/she achieved half or over half of the points in the related section. The more points the respondent achieved, the higher ability he/she had in the related aspect. A validity review of the content and a formal review of the tool were done quantitatively and qualitatively. In qualitative review of validity, the tool was given to 10 expert professors. They were asked to score each question according to the set objectives in the questionnaire from 4 for 'Entirely Appropriate', to 3 for 'Appropriate', to 2 for 'Fairly Appropriate', to 1 for 'Inappropriate', to 0 for 'Entirely Inappropriate'. Also, they were asked to add their comments on each question under the question. Afterwards, the average score given by expert professors was determined for each question. Eventually, the content and wording of some questions were revised according to their comments. As a result, the qualitative validity of the questionnaire was confirmed. In quantitative review of validity of the content, the findings showed that 19 items possessed CVI scores more than 0.97. The remained items had CVI scores between 0.70- 0.79. The result of McNemar test showed that all items had P values of over 0.05. The kappa coefficients of 20 items were 0.75 or more and the kappa coefficients of the rest of items were from 0.40 to 0.74. In order to review the

reliability, the questionnaires were given to 20 technicians of medical emergency for a pilot study. This was in two steps with a 72-hour interval between the first step and the second step. The total Cronbach's alpha of this review was  $\alpha = 0.78$ . Data were analyzed by SPSS software version 11.5. Descriptive statistics were used for average and standard deviation. The Kolmogorov-Smirnov test was used to check the normality of the data. Although the results of Kolmogorov-Smirnov test- $\alpha > 0.05$ - was not meaningful for variables including age, the score for ability to take medical history, the score for the level of respect for patients' beliefs, professional knowledge, and knowledge of how to communicate with patients and skill, the assumed normality of the research population did exist in this study. This research used parametric tests for the analyses. The relationship between the quantitative variables like age, work experience, and the ability to take medical history was studied by the Pearson correlation coefficient test. The relationship between the related qualitative factors like gender, marital status, and education with the performance of taking medical history of patients was determined by t test and analysis of variance (ANOVA). The effect of each area on the ability to take medical history was analyzed by multiple regression. The level of importance and ranking the domains of the ability to take medical history was evaluated by Friedman test. All analyses were carried out with level of significance equals  $P < 0.05$ .

### RESULTS:

One hundred and sixty-five participants (96.5%) were men. The average age of two years ranged from 31.8 to 6.01 years. Most (68.4%) have been officially employed. Participants with professional experience between 2 and 25 years of age have average work experience between 7.5 and 5.4 (Table 1).

The highest score in the history of medicine was 41-50 years (62.3 x 7.7). Participants had an average capacity score (52.1-24.7) lower than male participants (56.09-10.3). The highest score in medical history was for participants with 21-25 years of professional experience (Table 1).

**Table 1. Relative and absolute frequency table along with the average of the ability to take medical history of patients in medical emergency**

Variations	Range	Distribution	Percent	Mean ± SD	P value
Age	20-30	79	46.5	59.6±11.1	$P = 0.05, r = -0.149$
	31-40	80	47.1	55.8±11.3	
	41-50	11	6.4	62.3±7.7	
Gender	Female	6	3.5	52.1±24.7	0.3
	Male	165	96.5	58.2±10.9	
Marital Status	Single	149	29.2	58.3±12.2	0.9
	Married	121	70.8	58.07±10.6	
Education	Diploma	33	19.3	56.09±10.3	0.14
	A.S.	65	38	58.01±13.3	
	B.Sc.	70	40.9	58.3±10.7	
	M.Sc.	3	1.8	64.04±1	
Employment	Training	2	1.2	55.6±19.06	0.6
	Contract	52	30.4	57.04±10.4	
	Official	117	68.4	58.3±11.4	
Work Experience	1-5	74	43.3	60.02±12.6	$P = 0.8, r=0.014$
	6-10	56	32.7	55.7±8.8	
	11-15	27	15.8	55.3±10.3	
	16-20	10	5.8	59.2±11.8	
	21-25	4	2.3	68.5±4.1	

Table 2 shows the average score on how high participants have the ability to obtain a medical history, indicating that the aspect with the highest score is professional knowledge (average distribution 5), and the lowest point is the estimate for patient beliefs (average range 1.7).

**Table 2. The average distribution of the ability to take medical history of patients**

Aspect of ability to take medical ability	Mean ± SD	Mean rank	Lower bound of point	Upper bound of point
Respect to Patient's Beliefs	4.6±2.1	1.7	0	12
Professional Knowledge	27.5±6.2	5	0	48
How to Communicate with patient	6.6±2.2	2.7	0	12
Decision-making and Performance	7.6±2.5	3.2	0	16
Skill	5.6±2.3	2.2	0	12

The Pearson correlation factor test showed a significant link between participants' age variable and the ability to achieve an average medical history (0.05 - -0.149) from P, while this significant ratio was not found in participants' professional experience ( $P > 0.8$  r to 0.014) (Table 1).

The T-test result revealed a slight difference between the gender variable ( $P = 0.3$ ) and the ability to obtain a medical history with regard to marital status ( $P = 0.9$ ) (Table 1).

According to the ANOVA test results, there was no significant difference between the ability to obtain a medical history, the level of training of

participants ( $P = 0.14$ ) and the type of employment ( $P = 0.6$ ). Although the ability to obtain medical history is better as education develops (Table 1).

In all aspects of addressing medical history, medical history shows that predicting medical history with multiple linear regressions and the ability to have a medical history is effective in terms of ability to take medical history. The most effective aspects of the ability to receive medical history, respectively: patient beliefs ( $P = 0.0001, \bullet 0.239$ ), communication with the patient ( $P = 0.0001, 0.246$ ), decision-making and execution ( $P = 0.08, 0.145$ ) and knowledge of skills ( $P = 0.08, 0.1$ ) (Table 3).

**Table 3. Results of anticipating each aspect of taking medical history on the ability to take medical history of patients**

Aspect of Ability to take Medical History	P	t	Beta	SE	B
Respect to Patients' Beliefs	0.0001	4.958	0.239	0.12	0.061
Professional Knowledge	0.0001	9.1	0.509	0.005	0.045
How to Communicate with Patient	0.0001	5.325	0.246	0.011	0.058
Decision-making and Performance	0.008	2.705	0.145	0.011	0.031
Skill	0.08	2.192	0.1	0.011	0.025

**DISCUSSION:**

The results of the study showed that doctors and staff members have very few opportunities to obtain a medical history. Only 2.4% of those involved in this study have the ability to obtain a medical date. Calls to get medical history to explore your ability to find any results. Some studies have also studied the ability to obtain medical history in other areas and groups. The results of these studies were not related to SMEs because their clinical environment is very diverse. However, because people working in EMS are paramedical, nursing and medical graduates, previous research results can be compared to current research results. A 2014 study by Will et al found that participants had little rescue skills requiring professional knowledge. A 2015 study by Oostendorp and his colleagues found that the acquisition of history was excellent (98.3%) somatic, very unsuitable for cognition (43.1%) behavior (38.3%), weak for emotions (27.8%) and low social dimension (18.2%). A 2012 study by Abellsson et al showed that nurses working in pre-emergency departments in Sweden had a high quality of trauma testing. Clinical technicians should know what information should be collected, how to interpret information, and ultimately evaluate it. One of the reasons for the poor ability to obtain this medical history seems to be that EMS 115 technicians are not aware of legal and judicial issues. They also feel that patients are not required to have a full medical history. On the other hand, there is another reason why technicians are inadequate and different levels of training. This significantly reduces the history of the disease and the clinical quality of the precautions. Indeed, the above causes are devoted to the problem that exists in Iran. In Iran, only one unique category of profession for paramedics has been defined. This definition does not include education and workspace. Organisational problems (such as lack of human resources and inadequate education) and Motivation is also one of the main reasons for the increasingly poor history of the disease.

In current research, professional knowledge was among the most important among other factors, including the ability to obtain medical history. In addition, multiple regression test results showed that professional knowledge is the most effective factor in obtaining medical history (or 0.509). Lord et al. A 2014 study highlighted the lack of information to examine patients' health as one of the main reasons not to examine patients' health. Other studies show that delays in primary care, inadequate care during patient transfer and frequent errors in cases of poor preventable communication are the most common. The most important task of paramedics is to properly examine and communicate with the patient in order to plan and determine the appropriate medical measures. Lack of professional knowledge can affect research, research, treatment and various clinical interventions in all areas. Furthermore, the lack of professional knowledge may be based on a lack of adequate and inadequate training, a difference between theory and practice or training and treatment, a lack of experts and competent instructors and a lack of motivation among staff.

In this study, although the lowest point is related to patient respect, it showed that patient respect as a result of multiple regressions is one of the effective aspects of the ability to obtain medical history in SMEs in the province of Golestan (No. 0239). The nature of treatment of patients is of great importance for medical ethics. Low patient evaluation means neglecting patients' requests during examination and treatment. However, the demand of patients leads to positive psychological reactions and increased satisfaction. This effect was created by the patients themselves and their peers when their characteristics and personal wishes were heard. As a result, staff can communicate better, and the quality of the patient's examination increases. Communication restrictions, short time, emergency medical emergency in front of the hospital, patient condition, patient beliefs justify low respect.

While there is no significant difference, these studies show that between gender and medical history- taking, female staff scores lower than men. However, as male staff used more in emergency medical clinical services, it was not beyond anticipation that they would get higher scores for their ability to obtain medical history. However, female workers work in EMS 115 communicator centres and are in first contact with the public, so they should have the appropriate ability and ability to provide appropriate advice, as well as obtain a medical history of callers to collect basic clinical knowledge and diagnostics. A low clinical date score can increase the number of errors by accepting non-emergency patients and resulting in huge costs associated with moving clinical services to 115 non-urgent EMS centers.

Another controversial finding of this research is that older workers or work experience achieve a higher score. However, this relationship with the age variable had a weak correlation coefficient, so there was no significant link with professional experience. In fact, higher age is more about work experience, so it brings more talent to deal with these problems; service providers are interested in patients calmly and patiently. On the other hand, more work experience helps employees make realistic decisions. It improves the ability to get your disease history. Many research results show that doctors use their previous experience in making clinical decisions. It is the right combination and experience of the past and is done by comparing the information available on the stage and making the right decision. This happens from time to time in an emergency, because in a short time special tests and a large amount of information should be used. In fact, the number of instances is another reason that affects the final results.

### CONCLUSION:

Extensive knowledge and experience in various situations and events are one of the most important factors in emergency decision-making in front of the hospital. The results of this study showed that dynamic and modified conditions in the emergency department, as well as uncertain and changing patient conditions, require staff to be responsible for making decisions so that they can combine their technical skills and professional knowledge and make accurate and appropriate clinical decisions regarding patients' health conditions. Therefore, adequate and appropriate training is of paramount importance for the study of patients.

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