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Undergraduate Military Medicine | Pak Armed Forces Med J 2019; 69 (5): 981-85

UNDERGRADUATE MILITARY MEDICINE – AN ESSENTIAL NEED OF THE PRESENT TIME

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ABSTRACT

Objective: To assess the need to induct Military Medicine as under graduate subject at military medical colleges of Pakistan.

Study Design: Mixed method study.

Place and Duration of Study: Armed Forces Post Graduate Medical Institute (AFPGMI) Rawalpindi, from Oct 2013 to Jul 2014.

Methodology: A data collection tool was pretested and structured questionnaire was used. The questionnaire was distributed to 100 male military doctors (n=74) with service limit of <5 years. In Depth Interviews were also conducted from Nineteen Key Informants including faculty and military healthcare administrators.

Results: Only 30 (41%) participants correctly responded to 11-15 responses. Twenty (27%) respondents almost aware of management of patient in field. Twenty two (30%) and 27 (36%) had knowledge of capabilities of forward treatment center and advance dressing station respectively. Seventy (95%) respondents and almost all key informants had acknowledged that newly commissioned medical graduates do not have enough knowledge base to amicably deal health related challenges of military environment. They also supported to include module of military medicine at undergraduate level, and conduct a military medicine cadre to train civil graduates prior to join active military service.

Conclusion: Competency in military medicine needs to be appreciated as the universal core competency of all doctors in military service. It may be recognized as an academic discipline at undergraduate level, and to develop Armed Forces Medical Services as an efficient and professional outfit.

Keywords: Military Medicine, Need Assessment, Undergraduates.

INTRODUCTION

Military Medicine as a branch of occupational medicine pertains to prevention of health related risks and interventional needs of soldiers and other service members. Historically, the specialty evolved for prevention and treatment of disease, and other health effects due specific environmental conditions and operation of military specific machines. Later on ergonomically involved in designing the military machines and equipments[1]. Military Medicine also encompasses the administrative and logistic planning deliberations in planning, sustainable execution and establishment of healthcare facilities management of battlefield casualties in combat zone, and their swift evacuation to the base hospitals. It necessitates the organization of healthcare command and administrative control systems in theaters of war and operations as well, that interacts with and supports all relevant stakeholders in center and war zones[1]. As an academic discipline, military medicine has wide ranging literature and research activities with its applications to all healthcare specialties[1].

Healthcare advisor's good understanding of biological limits of a soldier can greatly extend military leader's intuitive abilities, to assess the status and capabilities of his troops[1]. At international scenario, US, China, Israel, Turkey and Thailand have devised and incorporated peculiar curriculum of undergraduate military medicine at their military medical institutes. However, in

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Received: 05 Aug 2015; revised received: 27 Feb 2019; accepted: 06 Mar 2019

spite of having dedicated military medical institute for undergraduates, Pakistan, India, Bangladesh and Sri Lanka are lagging behind in this regard.

The induction of Military Medicine Module at undergraduate level will close critical gaps in comprehension and application of occupational medicine in military operational context[2]. From the beginning, students will have exposure of military medicine and focused on it throughout their studies, and will not be novice at start of their profession as military medical officers[2].

The competence in practice of military medicine needs to be appreciated and stressed as the universal core competency of all doctors in military service, irrespective of further training as primary healthcare providers, administrators or secondary and tertiary care providers. At undergraduate level, recognition of military medicine as an academic discipline is the way to lead armed forces medical services to develop in an efficient military medical professional outfit.

The study was conducted to assess the need for introduction of undergraduate discipline of Military Medicine at military medical colleges of Pakistan Armed Forces.

METHODOLOGY

A mixed method approach was adopted by using quantitative summary statistics for target population of selected military medical officers (MOs) and qualitative thematic evaluation of key informants. Study was conducted at Armed Forces Post Graduate Medical Institute (AFPGMI) Rawalpindi, from 19th October 2013 to 23rd July 2014. Institutional ethical review board at AFPGMI approved the study. For quantitative survey, sample size was taken 74. Simple random sampling was done by using sampling frame of Military MOs of less than five year of service. Participants' demographic details include name (optional), gender, graduating institute, and total service so far. Data was collected through a set of pretested structured questionnaire by trained data collectors. On basis of importance of Military Medicine, questionnaire was comprised of seven sections. It included health promotion & disease prevention in field, chain of evacuation, triage & casualty management, employment of field medical facilities and responsibilities of military doctors.

For qualitative description, key informants were selected on basis of their appointments. Nineteen, In Depth Interviews (IDIs) were conducted to achieve saturation as primary method of qualitative data collection tool. Selected participants were contacted on telephone to book a time and location for interview. Interviews were conducted at such places where conversations were not audible to irrelevant people. Interviews were structured and related to capabilities and awareness of young military medicine professionals to deal with health related challenges of military environment, importance and induction of Military Medicine as subject at undergraduate level.

Quantitative data was analyzed to measure competence level among participants. Responses questions were dichotomized into positive or negative responses for analysis, 'not sure' responses were considered as negative. Statistical Package for Social Sciences (SPSS) version 20 was used for statistical analysis.

Qualitative analysis was done; notes were expanded within 48 hours to frame key elements of situation and of informant's responses. Relevant inferences were selected to support description of themes.

RESULTS

Quantitative Analysis

It has been observed that medical graduates learn best during undergraduate level. Those unaware of military medicine practice requirements, when exposed to practical situation are liable to underperform, and compromise on quality and standard of care. In this study, (n=74) male military MOs with <5 years of service were included. Only 30 (41%) of respondents were correctly responded to 11-15 responses (table-II). 70 (95%) respondents were of opinion that

information about military medicine was not imparted prior to joining active service.

None of respondents have ever attended any course on military medicine. Seventy (95%) of respondents acknowledged that, newly commissioned medical graduate do not have optimum professional competence to deal health challenges of military environment. Sixty Three (85%) respondents were in favour to include military medicine module at undergraduate level.

Fourty Three (62%) respondents were

Table-I: Socio demographic characteristics (n=74).

		Frequency	Percentage (%)
Marital Status	Married	35	47.3
	Unmarried	39	52.7
Service Experience	<1 Year	10	13.5
	<2 Years	18	24.3
	<3 Years	19	25.7
	<4 Years	18	24.3
	<5 Years	9	12.2

Table-II: Responses quantitative survey [(n–74 (100)].

Correct Responses	No. of Respondents (%)
0 - 5	6 (8)
6 - 10	38 (51)
11 - 15	30 (41)
>15	-

unaware of mechanism of triage. Similarly 62 (84%) respondents do not have clear understanding about categories in triage (fig-1). Only 20 (27%) respondents were aware of field management of patient presented with chest pain after heavy meal and history of dyspeptic symptoms.

Twenty three (36%) of respondents were aware of most important treatment option in case of Acute Mountain Sickness. For management of frostbite 32 (43%) were aware of treatment strategy.

In management of suspected case of snakebite at field setup, only 12 (16%) respondents have clear understanding of protocol. Similarly in management of backache 26 (35%) responded correctly. While in case of suspected sprain ankle only 29 (39%) were aware of protocol. In response to troops education and observation of anti malarial precautions in a unit, only 14 (19%) were aware of responsible appointment or authority (fig-2).

Twenty two (30%) were aware of capabilities of forward treatment center. Similarly only 27

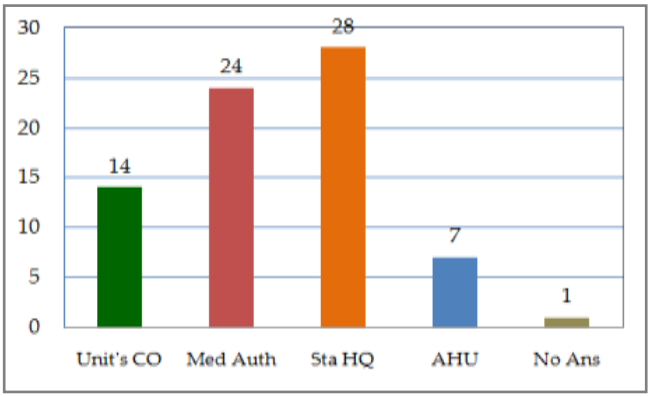

Figure-1: Representation response about knowledge of Triage categories.

(36%) had knowledge about functions and capabilities of advance dressing station. While 19 (26%) had knowledge about concept of forward leaning logistics. Thirty (40%) were aware about distribution of casualties in battle field.

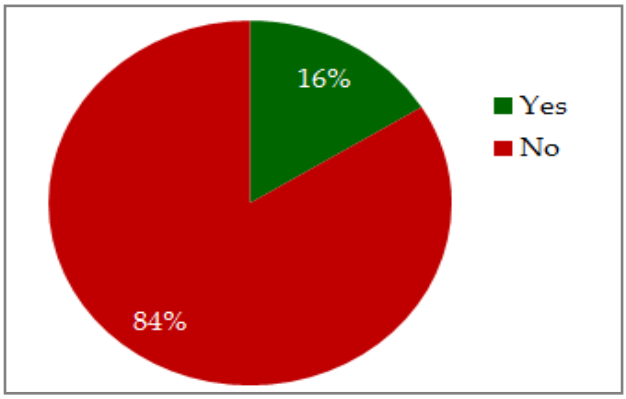

Figure-2: Representation of response about responsible for health promotion, and prevention of diseases.

Qualitative Analysis

Commanding officers of field medical units were of opinion of that newly commissioned medical graduates do not have enough knowledge base to deal amicably with health related challenges of military environment. Almost all key informants were in support to include a module of military medicine at

undergraduate level, and conduct a military medicine cadre to train civil graduates prior to join active military service. They were also in support to include Military Medicine Module for undergraduate students at medical colleges of Armed Forces.

DISCUSSION

Military Medicine was evolved in persuasion of promotion of health, prevention of health related risks, interventional health needs and treatment infectious diseases and injuries of military personnel due to specific environmental conditions and operation of military specific machines. Specific military battlefield environment demands special training of healthcare providers. Deep sea diving medicine and aerospace medicine are considered as subspecialties of military medicine[3].

In this need assessment study, a large number of young military doctors and almost all key informants had acknowledged that at the time of graduation, military doctors do not have optimum professional competence to deal health challenges of military environment. Furthermore, they were in favor to include military medicine module at under graduate level.

World's advanced and professional armies like United States[4], Israel[2,5,6], China[7], Thailand[8] and Turkey[9] have designed special programs at undergraduate and post graduate training modules for their potential healthcare providers. Due to felt need for well trained military doctors for Armed Forces, these countries have designed a comprehensive system based curriculum, incorporating all aspects of military medicine, including military healthcare management programs as an integral part, to have competent military healthcare professionals[4]. In United States, F. Edward Hebert School of Medicine of Uniformed Services University of Health Sciences (USUHS), has designed a comprehensive system based curriculum. Leadership, military training, and military medical programs are integral part of the curriculum[4]. Curriculum focuses on theme of "Molecules to Military Medicine"[10]. It establishes a basic foundation in the skills, knowledge, and attitudes required for the graduate to establish a successful military medical practice. The topics include professionalism, combat medical skills, military unique medicine, medical intelligence, health service support, medical planning and logistics, military decision making process, and operations. There are two field exercises and a battlefield staff experience are part of module[11]. School's primary objective is to produce dedicated military medical officers. State of Israel has started, "Tzameret", Military Medicine track program in 2009 at undergraduate level. It is a collaborative effort between Hebrew University's Faculty of Medicine, Israel Defense Forces (IDF) and Israeli Ministry of Defense[12]. The curriculum designed for the six-year military-medicine track[13]. China has number of military medical universities with a specific national key discipline of military medicine curriculum for undergraduates[7]. Pharmongkutklao College of Medicine, Thailand has introduced military medicine as an integral part of curriculum for graduating military doctors for Armed Forces[8].

There are many other models are also in practice in world to achieve similar objectives. UK and Australia do not have dedicated undergraduate medical institutes. The Armed Forces continued need for medical professionals, are met through partly by UG scheme and partly by graduate scheme. In undergraduate scheme, medical students are sponsored as medical cadets at civil medical institutes, while the graduate scheme allows qualified med graduates to join armed forces[14]. Like Pakistan, India[15], Bangladesh[16] and Sri Lanka[17] have dedicated undergraduate military medical colleges / faculties. They act as nursery for their military medical officers, and offer graduate degree to their Medical Cadets. The curriculum of MBBS conforms to the standard of their respective medical council, without incorporating the military medicine module.

Pakistan Armed Forces have entered into a new era of hybrid warfare in addition to potential threat of full fledge war to any extent. Military's

modernization strategies to meet these challenges, includes developing more agile protection of health and performance of soldier. New technological complexities, the lethality of weapon systems, and rapid response capabilities have made the performance of an individual soldier more critical to mission success than ever before. It is imperative that the undergraduates should go through a well designed curriculum of military medicine with proper assessment and evaluation program. In this regard a study was conducted at AFPGMI, Rawalpindi to propose a structured military medicine module for undergraduates at Pakistan Armed forces medical institutes[18,19].

It was reiterated that in addition to professional competence military healthcare professional must have additional competence in military medicine. For successful military healthcare professional, it is essential to well verse and comprehend about military organizations, military operations and military logistics along with their environmental factors, as these are corner stone of military leadership and management[1].

CONCLUSION

Results of this study indicated the significance and the necessity of introduction of military medicine as a subject at undergraduate level. On one hand this will increase the competency of young graduates, and on the other hand it will strengthen the foundation of professional knowledge of potential military doctors.

CONFLICT OF INTEREST

This study has no conflict of interest to be declared by any author.

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