



Medical Students' Clinical Skills Compared to Educational Standards at Universities of Medical Sciences: A Self-assessment Study

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Abstract

Background: Physicians, as the leading decision-makers of the health system, are affected by various clinical statuses.

Objectives: This study aimed to compare the clinical skills of medical students as future physicians with the educational standards of Zahedan University of Medical Sciences in 2020 - 2021.

Methods: This study was performed on 107 medical students (53 stagers and 54 interns). After obtaining students' consent and recording their demographic and academic information, clinical skills were assessed using the Clinical Medical Skills Questionnaire. The obtained data were analyzed using SPSS software Ver. 20.

Results: The least trained skills in the surgical department were suprapubic puncture and thoracotomy with a needle in compressive pneumothorax. In the pediatric ward, no clinical skill training was in good condition, and only practical measures to monitor growth and development were adequately trained. In the internal ward, the least training skill was related to lumbar puncture and aspiration of knee joint fluid. In the gynecology ward, abortion evacuation with pairs of forceps in cases of life-threatening bleeding and postpartum hemorrhage were considered the least instructed clinical skills. Finally, in the emergency ward, nasal bleeding catheter, suprapubic sampling, and cricothyrotomy were the least instructed clinical skill.

Conclusions: The results showed a low number of encounters of medical students with the minimum expected clinical skills in the investigated medical school, indicating the poor quality of clinical training. The medical programs should be modified so that learners can be equipped with "the must learn" clinical skills.

Keywords: Clinical Skills, Educational Standards, Medical Students

1. Background

Clinical education is a stage in which students, by learning clinical skills, diagnosis, treatment, disease care, and acquiring a variety of professional skills, make connections between the content of basic scientific information and clinical scientific information. To learn clinical skills, students must practice and observe therapeutic processes, perform clinical procedures, and infer and manage patients under the supervision of a proficient trainer (1).

The clinical course plays an essential role in developing the professional skills and abilities of medical students so that it shapes students' practice in the future. Regarding the importance of clinical courses, the International Association of General Practitioners declares that the clinical course in general medical education is the first step in continuing medical education and establishing a suitable

foundation for professional life (2). It has also explicitly emphasized the importance of clinical skills and the need for proficient clinical skills learning (3).

Today, in general medicine education, there are various educational curricula with different structures, one of which is competency-based education. This approach has been followed by many of the world's top universities in their teaching methods (4). Competency-based medical education in general medicine has been proposed as an efficient educational model for training physicians with sufficient competence and capability appropriate to the needs of patients and society (5).

One of the salient features of this type of training is outcome orientation. In this educational approach, the professional competencies required for success must be carefully defined, and the outcomes would be evaluated

based on them (6). It moves from acquiring knowledge to applying knowledge. Outcome-based education and competency acquisition are closely related to community-based medical education, enabling physicians to respond to community health care needs (7, 8).

Despite the many similarities in the competencies required for medical education in different countries, there is no agreement on a standard set of competencies and outcomes. Different countries have tried to define appropriate competencies according to the needs of their society and health care delivery system (9-11).

Following the revision of the outcome-based educational curriculum at the ministry level in Iran in 2009, the Tehran University of Medical Sciences designed a framework of competencies needed by students and society with a participatory approach that can serve as a roadmap for designing medical education curricula for other universities. The required competencies are defined in eight skill areas: (1) clinical skills, (2) communication skills, (3) patient management, (4) health promotion and disease prevention, (5) personal promotion, (6) medical ethics and patient rights, (7) decision-making, reasoning, and problem-solving, and (8) the role of the physician as responsible in the health system. Many of these areas are common to many frameworks in other countries (11).

One of the most important pieces of training students learn in the clinical course is practical learning skills, a necessity of the medical profession in performing clinical procedures (12). Studies on medical education in Iran have shown that medical education programs do not have the necessary coordination with the professional needs of physicians (7), and the theoretical and practical courses offered to students are not commensurate with their future job needs (13). Practicing medicine without acquiring these skills will lead to incomplete treatment, lack of treatment, and even injury to the patient (14).

2. Objectives

This study was conducted to compare medical students' clinical skills with the defined educational standards at Zahedan University of Medical Sciences.

3. Methods

This is a descriptive-analytic study. The sample included all staggers and interns of the Zahedan University of Medical Sciences in the general medicine course who were doing their clinical work in the academic year 2020 - 2021. A convenience sampling method was used based on the following inclusion criteria: Students in the last semester

(semester 11) of their internship course and eligible to participate in the pre-internship exam, and students in the final semester (semester 14) as staggers. The Medical Ethics Committee of Zahedan University of Medical Sciences approved this study (IR.ZAUMS.REC.1400.149).

After receiving the necessary permits, due to the coronavirus pandemic and the lack of face-to-face access to the students, we provided the electronic version of the Clinical Medical Skills Questionnaire as links in cyberspace to participants who were spending the last semester of their courses. According to the participant's answers to the initial questions in the questionnaire, students meeting the inclusion criteria were included in the study, and others were excluded. In addition, the participants were orally justified with the necessary explanations for completing the questionnaire. It should be noted that the students completed the questionnaires using a self-assessment process. The link address of the questionnaire was survey.porsline.ir/s/VFzphxj. It was designed in the Porsline.ir platform and shared using the participants' WhatsApp groups.

The clinical skills checklist was based on the competency document of general medicine doctoral graduates approved in the 62nd session of the High Council for Medical Science Planning on 2016/1/10, an instruction issued by the Ministry of Health to be implemented in all universities of medical sciences across the country. Therefore, its validity and reliability had already been calculated and applied by experts in the Ministry. In addition, this questionnaire has been used in other studies as a standard questionnaire (14). The checklist consists of clinical skills and the degree of competency (self-assessment) in clinical skills. The clinical skills section has four options: "Observed," "done under the supervision of a trainer," "done independently," and "no training." Five specific clinical skills checklists were applied for the surgery, pediatric, internal, gynecology, and emergency medicine wards.

4. Results

This study aimed to determine and compare the clinical skills of medical students with educational standards at Zahedan University of Medical Sciences. A total of 107 medical students participated and filled out the self-assessment checklists.

In the surgical ward (Table 1), the least training skills were suprapubic puncture, needle thoracostomy in compressive pneumothorax, thoracentesis, and drainage of superficial skin abscesses. On the other hand, sterile hand washing, gastric tube placement, simple dressing, wound care, including washing and dressing, and inserting and

removing the urinary catheter were the most instructed skills.

The lowest score in the students' self-assessment in the pediatric ward was related to pediatric blood sampling and endotracheal intubation (Table 2). However, the highest score was for practical measures to monitor growth and development and routine pediatric vaccinations.

Based on the students' self-assessment (Table 3), the lowest score in the internal ward was related to knee joint fluid and lumbar puncture aspiration. Moreover, gastric tube lavage and inhaler/puffer received the highest score.

The lowest score in students' self-assessment in the gynecology ward was related to the management of incomplete abortion with pair of forceps in cases of life-threatening bleeding and postpartum hemorrhage (Table 4). On the other hand, the highest scores belonged to fetal heart rate (FHR) control, simple dependent dressing, and Pap smear.

Nosebleed cautery performing, suprapubic sampling, cricothyrotomy, thoracentesis, superficial skin abscess drainage, suturing and suturing, and arterial blood sampling took the lowest scores based on the students' self-assessment in the emergency ward (Table 5). On the other hand, the highest scores were assigned to local anesthesia, suturing and suturing, splinting and bandaging, wound care, including washing and dressing, and inserting and removing a urinary catheter.

5. Discussion

This study aimed to compare the clinical skills of medical students with educational standards at Zahedan University of Medical Sciences. This study was conducted with the participation of 107 medical students. Overall, they reported the least and most instructed clinical skills in five wards, including surgery, pediatric, internal, gynecology, and emergency medicine wards, through a self-assessment procedure.

Moattari and Fallahzadeh (15) conducted a study to assess the general abilities of final-year medical students from their perspective at Shiraz University of Medical Sciences. In this descriptive study, 71 students who graduated from Shiraz University of Medical Sciences were assessed in 17 general medical qualifications based on a form with 101 items on a Likert scale. The results showed that the highest mean ranks were assigned to patient referral competencies, basic procedures, interpretation of tests, and diagnostic decisions, and the lowest mean ranks were assigned to geriatrics, nutrition, care management, and advanced procedures. Although the questionnaire used in these studies differs, it was found that the basic procedures in each ward had appropriate training, and students' self-assessment

high scores corresponded with it. However, concerning other specialized procedures, training dropped sharply, and we saw a decrease in students' self-assessment scores.

Pakniat *et al.* (16) conducted a study to determine the effect of clinical skills training on the quality of education of female interns at Qazvin University of Medical Sciences. This quasi-experimental study was performed by a checklist of 10 skills, and its validity was confirmed by the faculty members of the gynecology department. The results showed that the skills of Pap smear preparation, IUD placement, and gynecological examination by speculum had the highest score before training, and Leopold maneuvering skills, two-handed examination, and administration of the third stage of labor had the lowest scores before training. Also, in none of the skills, the scores before the training were satisfactory, and clinical skills training should be seriously considered. The findings of this study are pretty similar to ours, although the type of skills evaluated differed from ours. However, our study found that in the gynecology ward, students had low skills in specialized cases and the need for proper training is essential for all students, especially male students.

In their study, Konje *et al.* (17) identified the basic clinical skills that third-year medical students should acquire and the extent to which students encounter these skills at CUHAS. This study was performed by a researcher-made checklist and student logbooks. The results showed that a significant number of students (25%) did not perform any procedures during the rotations, and most underwent vein perforation. They performed the LP independently and under the supervision of a trainer. This study also showed that less than 25% of students had the minimum number of encounters. The students stated that they had not been appropriately trained in the procedure. Therefore, due to low exposure and low training, educational measures should be examined more carefully so that students acquire the necessary skills for medical procedures.

In the same line of studies, Yaghini *et al.* (14) conducted a study to determine the level of exposure of medical interns to the expected clinical skills and compare them with the minimum requirements set at the Isfahan University of Medical Sciences. In this descriptive cross-sectional study, an ordinary skills checklist was applied. They failed to achieve the minimum number of expected encounters set by the Clinical Education Board. The findings of this study are entirely consistent with the findings of our study. In our study, skills such as laying a gastric tube or urinary catheterization and CPR were well trained in all wards, and students had appropriate skills. However, skills expressed in the study, including venipuncture and serum attachment, routine pediatric vaccination, suprapubic sampling, simple casting and opening of casts, and drainage of super-

Table 1. Students' Self-assessment of Clinical Skills Acquired in the Surgery Ward ^a

Skill	F	Mean ± SD	Observed	Done Under the Supervision of a Trainer	Done Independently	No Training
Laying the endotracheal tube	107	2.58 ± 2.517	96 (89.7)	15 (14)	7 (6.5)	9 (8.4)
External bleeding control	107	4.41 ± 3.1111	95 (88.8)	21 (19.6)	29 (27.1)	10 (9.3)
Laying the stomach tube	107	7.46 ± 2.450	101 (94.4)	79 (73.8)	95 (88.8)	4 (3.7)
Inserting and removing a urinary catheter	107	0.46 ± 3.283	97 (90.7)	72 (67.3)	72 (67.3)	8 (7.5%)
Doing a simple dressing	107	7.15 ± 2.871	95 (88.8)	87 (81.3)	86 (80.4)	10 (9.3)
Suturing and pulling stitches	107	6.42 ± 3.123	95 (88.8)	80 (74.8)	77 (72)	10 (9.3)
Wound care, including washing and dressing	107	6.77 ± 3.184	93 (86.9)	82 (76.6)	81 (75.7)	8 (7.5)
Suprapubic puncture	107	0.14 ± 0.641	6 (5.6)	3 (2.8)	2 (1.9)	94 (87.9)
Draining the superficial skin abscess	107	2.44 ± 2.614	31 (29)	8 (7.5)	5 (4.7)	74 (69.2)
Burn wound management	107	5.98 ± 3.643	49 (45.8)	41 (38.3)	44 (24.1)	11 (10.3)
Performing local anesthesia	107	6.41 ± 3.150	94 (87.9)	79 (73.8)	77 (72)	26 (24.3)
Needle thoracostomy in compressive pneumothorax	107	0.28 ± 1.205	8 (7.5)	5 (4.7)	4 (3.7)	92 (86)
Thoracentesis	107	0.36 ± 1.3831	14 (13.1)	7 (6.5)	4 (3.7)	88 (82.2)
Sterile hand washing	107	7.61 ± 2.255	103 (96.3)	80 (74.8)	96 (89.7)	2 (1.9)

^a Values are expressed as No. (%) unless otherwise indicated.

Table 2. Students' Self-assessment of Clinical Skills Acquired in the Pediatric Ward ^a

Skill	F	Mean ± SD	Observed	Done Under the Supervision of a Trainer	Done Independently	No Training
Laying the endotracheal tube	107	0.66 ± 1.678	20 (18.7)	9 (8.4)	5 (4.7)	76 (71)
Laying the gastric tube and rinse	107	1.22 ± 2.147	29 (27.1)	13 (12.1)	9 (8.4)	65 (60.7)
Inserting a urinary catheter	107	1.13 ± 2.060	25 (23.4)	14 (13.1)	9 (8.4)	68 (63.6)
Performing CPR	107	1.97 ± 2.534	27 (25.2)	19 (17.8)	5 (4.7)	40 (37.7)
Removing a foreign object from the airway	107	1.57 ± 2.105	36 (33.6)	2 (1.9)	2 (1.9)	13 (12.1)
Performing lumbar puncture	107	1.73 ± 2.603	63 (58.9)	23 (21.5)	1 (0.9)	19 (17.8)
Practical measures to monitor growth and development	107	6.71 ± 2.594	98 (91.6)	96 (89.7)	95 (88.8)	6 (5.6)
Routine pediatric vaccinations	107	4.52 ± 3.432	63 (58.9)	7 (6.5)	4 (3.7)	6 (5.6)
Pediatric blood sampling	107	0.19 ± 1.022	93 (86.9)	2 (1.9)	1 (0.9)	92 (86)
Laying the endotracheal tube	107	0.66 ± 1.687	20 (18.7)	9 (8.4)	5 (4.7)	76 (71)
Laying the gastric tube and rinse	107	1.22 ± 2.147	29 (27.1)	13 (12.1)	9 (8.4)	65 (60.7)

^a Values are expressed as No. (%) unless otherwise indicated.

facial skin abscesses, had a low score regarding the participants' self-assessment. However, contrary to the Yaghini et al. (14) study, it was found that dressing received a high score. However, a more detailed study is required to compare different groups of students from different universities based on the obtained scores and demographic characteristics.

Not all interns and stagers achieved the expected score in more than half of the clinical skills. It is believed that

the lack of confidence of professional assistants and professors in the ability of students has caused skills such as blood sampling and drainage of superficial skin abscesses in terms of the number of supervised exposure and independent performance to be far from the minimum number expected by the clinical council. However, this uncertainty is not the only reason for the mismatch in the number of times the skills are observed, and students' lack of interest in these skills can also be an important reason.

Table 3. Students' Self-assessment of Clinical Skills Acquired in the Internal Ward ^a

Skill	F	Mean ± SD	Observed	Done Under the Supervision of a Trainer	Done Independently	No Training
Blood sampling for blood culture	107	2.06 ± 3.219	87 (81.3)	12 (11.2)	7 (6.5)	64 (59.8)
Arterial blood sampling	107	5.1 ± 2.66	95 (88.8)	12 (11.2)	4 (3.7)	62 (57.9)
Capillary blood sampling and use of a glucometer	107	3.41 ± 3.347	79 (73.8)	25 (23.4)	14 (13.1)	13 (12.1)
Insulin injection	107	3.06 ± 3.340	72 (67.3)	32 (29.9)	4 (3.7)	26 (24.3)
Performing lumbar puncture	107	1.58 ± 2.483	26 (24.3)	16 (15)	2 (1.9)	49 (45.8)
Knee joint fluid aspiration	107	1.42 ± 2.514	58 (54.2)	17 (15.9)	3 (2.8)	42 (39.3)
Using an inhaler/puffer	107	6.94 ± 3.137	101 (94.4)	88 (82.2)	80 (84.8)	7 (6.5)
Laying the gastric tube and rinse	107	7.36 ± 2.229	98 (91.6)	82 (76.6)	98 (91.6)	4 (3.7)
Blood sampling for culture	107	2.06 ± 3.219	87 (81.3)	12 (11.2)	7 (6.5)	64 (59.8)
Arterial blood sampling	107	5.1 ± 2.66	95 (88.8)	12 (11.2)	4 (3.7)	62 (57.9)

^a Values are expressed as No. (%) unless otherwise indicated.

Table 4. Students' Self-assessment of Clinical Skills Acquired in the Gynecology Ward ^a

Skill	F	Mean ± SD	Observed	Done Under the Supervision of a Trainer	Done Independently	No Training
Performing a simple dependent dressing	107	3.70 ± 3.311	75 (70.1)	32 (29.9)	35 (32.7)	24 (22.4)
Suturing and pulling stitches	107	2.96 ± 3.092	66 (61.7)	20 (18.7)	23 (21.5)	35 (32.7)
Fetal heart rate control (FHR)	107	0.07 ± 2.808	107 (100)	85 (79.4)	80 (74.8)	2 (1.9)
Natural childbirth managing	107	2.99 ± 3.481	61 (57)	38 (35.5)	35 (32.7)	28 (26.2)
Incomplete abortion discharge managing with pair of forceps in cases of life-threatening bleeding	107	0.36 ± 1.383	23 (21.5)	4 (3.7)	1 (0.9)	91 (85)
Postpartum bleeding managing	107	0.38 ± 1.411	26 (24.3)	5 (4.7)	1 (0.9)	91 (85)
Performing a Pap smear	107	3.48 ± 3.740	64 (59.8)	40 (37.4)	20 (18.7)	(37.4) 40

^a Values are expressed as No. (%) unless otherwise indicated.

The non-prevalence of several procedures, such as baseline cardiopulmonary resuscitation and suprapubic sampling, has contributed to the low frequency of student exposure. In most cases, surgical assistants choose more practical and useful ways to treat patients instead of catheterization procedures. Basic cardiopulmonary resuscitation, by definition, is performed in an environment away from medical and hospital facilities. However, in hospitals and clinics where students are present, advanced CPR is performed if there is a need for cardiopulmonary resuscitation for the disease.

In the skills of catheterization and gastric tube placement, the average number of times trainees performed independently was more than the number of times they performed under supervision. This finding is consistent with the results of Amini et al. in which the number of students who performed the procedure independently was higher than the number of students who performed the skill un-

der previous supervision and practice (18). Therefore, it seems that many students, after they observed these procedures on patients and without performing those techniques under the supervision of assistants or professors, have performed the mentioned skills on the patient independently, which has problems such as loss of patients' rights and learning wrong and incorrect performance that may cause complications for the patient. Among all the procedures, the number of observations in anterior nasal tampon skills, gastric tube insertion, urinary catheter insertion/removal, wound care including washing and dressing, CPR (ACLS, BCLS), and local anesthesia was assessed as satisfactory. In addition, more than half of the students achieved the expected minimum number of times under supervision, performing CPR (ACLS, BCLS), observing fetal heart rate control, and performing independent gastric tube placement skills. One of the main reasons for these findings is the high prevalence of these skills in hospitals

Table 5. Students' Self-assessment of Clinical Skills Acquired in the Emergency Ward ^a

Skill	F	Mean ± SD	Observed	Done Under the Supervision of a Trainer	Done Independently	No Training
Laying the endotracheal tube	54	3.44 ± 2.696	54 (100)	18 (33.3)	11 (20.4)	2 (3.7)
Cardiac defibrillation	54	3.09 ± 2.728	41 (75.9)	10 (18.5)	6 (11.1)	6 (11.1)
Airway administration	54	3.31 ± 2.676	54 (100)	22 (40.7)	14 (25.9)	2 (3.7)
Performing anterior nasal tampons	54	6.83 ± 3.306	54 (100)	40 (74.1)	38 (70.4)	0
Arterial blood sampling	54	2.62 ± 3.28	52 (96.3)	11 (20.4)	4 (7.4)	23 (42.6)
Venipuncture and serum connection	54	3.61 ± 3.651	54 (100)	16 (29.6)	8 (14.8)	24 (44.4)
Laying the stomach tube	54	7.90 ± 1.896	54 (100)	46 (85.2)	54 (100)	0
Inserting and removing a urinary catheter	54	8.12 ± 1.637	54 (100)	48 (88.9)	54 (100)	0
Wound care, including washing and dressing	54	8.25 ± 1.661	54 (100)	49 (90.7)	54 (100)	0
Intravenous sampling	54	3.72 ± 3.631	54 (100)	20 (37)	11 (20.6)	21 (38.9)
Suturing and pulling stitches	54	8.51 ± 1.059	54 (100)	49 (90.7)	54 (100)	0
Splinting and bandaging	54	8.37 ± 1.23	54 (100)	49 (90.7)	56 (90.3)	0
Performing CPR (ACLS, BCLS)	54	4.44 ± 2.892	54 (100)	48 (88.9)	21 (38.9)	0
Removing the foreign body from the ear, throat, and nose	54	2.51 ± 2.982	33 (30.8)	19 (35.2)	11 (20.4)	11 (20.4)
Performing nasal bleeding catheter	54	0.12 ± 0.515	2 (3.7)	0	0	53 (98.1)
Performing Basic CPR	54	2.83 ± 2.905	29 (53.7)	27 (50)	2 (3.7)	22 (40.7)
Suprapubic sampling	54	0.20 ± 0.761	4 (7.4)	3 (2.8)	2 (3.7)	49 (90.7)
Simple plastering and opening the plaster	54	1.05 ± 1.664	49 (90.7)	17 (31.5)	7 (13)	30 (55.6)
Draining the superficial skin abscess	54	0.87 ± 1.770	8 (14.8)	1 (1.9)	0	44 (81.5)
Performing local anesthesia	54	8.31 ± 0.987	54 (100)	54 (100)	54 (100)	0
Needle thoracostomy in compressive pneumothorax	54	0.48 ± 1.610	6 (11.1)	5 (9.3)	4 (7.4)	22 (40.7)
Thoracentesis	54	0.62 ± 1.856	10 (18.5)	7 (13)	4 (7.4)	43 (79.6)
Abdominal paracentesis	54	2.14 ± 3.080	25 (46.3)	16 (29.6)	7 (13)	22 (40.7)
External bleeding control	54	4.75 ± 3.501	49 (90.7)	32 (59.3)	23 (42.6)	5 (9.3)
Cricothyrotomy	54	0.22 ± 0.984	2 (3.7)	1 (1.9)	0	46 (85.2)
Chest tube installation	54	1.16 ± 2.152	42 (77.8)	13 (24.1)	2 (3.7)	28 (51.9)

^a Values are expressed as No. (%) unless otherwise indicated.

and clinical settings. Students' lack of interest in practical activities seems to be an important reason for reducing the number of students exposure to clinical skills.

In a study by Dehghani et al. (19), students' irresponsibility in the clinical professional environment was considered a factor in not achieving national standards of medical education. Residents and clinical professors pointed out that trainees perform three levels of these skills. Many duties of faculty members in areas such as research, scientific development, health care delivery, and organizational responsibilities have reduced the time devoted to educating students. In this regard, we can refer to Johns Hopkins University, where professors must pay special attention to

education and research and devote particular time to student education (20).

Studies conducted in medical schools in other countries have also shown the lack of proper coverage of some procedures in clinical education, which then were able to implement appropriate strategies so that more than 85% of the schools studied in the field of clinical skills training met the basic standards (21-23). Due to the stager or pre-internship exams, students are more inclined to devote their time to study and therefore do not take the necessary opportunity to practice clinical skills. In addition, holding practical exams in the internship course is so that the students' practical skills are not mainly evaluated and

can cause the students not to emphasize and focus on these skills. Therefore, it is suggested that more portion of practical exam scores in intern and stager levels be allocated to students' ability in clinical skills. On the other hand, it seems that the presence of many students in educational rounds reduces its quality. Therefore, it is better to admit the number of medical students based on the existing capacities of universities so that it does not affect the quality of clinical education.

This study faced some limitations, such as in filling out checklists. Some students could not select the exact checklists items against some typical clinical skill levels such as gastric tube insertion observation or other skills. In this study, only two entries of medical students were examined, and due to the specific conditions of each entry, the results may be different from the entries of other medical students. Therefore, it is better to do similar studies on other entrances and medical schools.

5.1. Conclusions

According to the obtained results, there is a distance between the number of encounters of medical students with the expected minimum clinical skills at Zahedan Medical School, which can indicate the poor quality of clinical education. Due to the non-repetition of many of these procedures throughout the medical course, simply observing these procedures by the medical students is not enough; but the help of clinical assistants and professors is needed to achieve the desired compliance for each of the clinical skills.

Footnotes

Authors' Contribution: L.S. and N. M. conceived and designed the survey and drafted the manuscript. E. A. performed parts of the statistical analysis. A. R. A. re-evaluated the clinical data, designed tables, drafted the initial manuscript, and reviewed and revised the final version. Z. C. collected the clinical data. All authors read and approved the final manuscript.

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that one of our authors Erfan Ayubi is a reviewer of the Zahedan Journal of Medical Science. The journal confirmed that the mentioned author was completely excluded from all review processes. We also introduced this author during the submission as an opposed reviewer.

Data Reproducibility: The dataset presented in the study is available on request from the corresponding author during submission or after its publication. The data are not publicly available due to data privacy.

Ethical Approval: The Medical Ethics Committee of Zahedan University of Medical Sciences approved this study (IR.ZAUMS.REC.1400.149). Link: ethics.research.ac.ir/EthicsProposalView.php?id=211787

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Informed Consent: All study participants were assured that their data were stored and analyzed without revealing their identities. Furthermore, voluntarily filling out the checklists implied the participants' consent.

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