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Journal of Medical Education and Family Medicine

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Tarık TİHAN
UCSF Department of Neurological SurgeryUniversity of California, San Francisco
e-mail: tarik.tihan@ucsf.edu

Turan SET
Karadeniz Technical University, Department of Family Medicine, Trabzon, Turkey
e-mail: turanset@gmail.com

Yeşim ŞENOL
Department of Medical Education, Akdeniz University, Faculty of Medicine, Antalya, Türkiye
e-mail: yysenol@gmail.com

Zeynep BAYKAN
Department of Medical Education, Erciyes University, Faculty of Medicine, Kayseri, Türkiye
e-mail: zbaykan@erciyes.edu.tr

Journal of Medical Education and Family Medicine

ABOUT

Journal of Medical Education and Family Medicine is a peer reviewed, open access, online-only journal published by the published by Atatürk University.

Journal of Medical Education and Family Medicine is published triannual in English in April, August, and December.

Journal of Medical Education and Family Medicine aims to publish studies of the highest scientific and clinical value in medical education and family medicine.

Journal of Medical Education and Family Medicine publishes research article, review article, rare case reports, and letter to the editor articles that will contribute to the medical education and family medicine. The main purpose of the journal is to disseminate the scientific knowledge produced in the field of medical education and family medicine to a wide platform.

Medical Education: The journal covers a broad spectrum of topics related to medical education, the developments in teaching approach, including innovative teaching methodologies, curriculum development, assessment strategies, and educational technology in medical training. Articles may explore the challenges and advancements in undergraduate and postgraduate medical education, as well as continuing professional development for healthcare practitioners. Although articles related to medical education are our priority, we will also consider studies related to health education and educational science that we believe will contribute to the literature.

Family Medicine: The scope extends to various aspects of family medicine, encompassing primary care, preventive medicine, and the management of common health conditions within the context of family and community settings. Research on patient-centered care, chronic disease management, and interdisciplinary collaboration in family medicine is encouraged.

The target audience of the journal includes academicians, clinical researchers, medical/health professionals, students, and related professional and academic bodies and institutions.

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Contact (Editor in Chief)

Esra Çınar TANRIVERDI (Medical Education)
Department of Medical Education, Atatürk University, Faculty of Medicine, Erzurum, Türkiye
✉ email: jmefm@atauni.edu.tr

Yasemin ÇAYIR (Family Medicine)
Department of Family Medicine, Atatürk University, Faculty of Medicine, Erzurum, Türkiye
✉ e-mail: jmefm@atauni.edu.tr
https://dergipark.org.tr/tr/pub/jmefm
☎ +90 442 344 86 76 / +90 442 344 87 50

Contact (Publisher)

Atatürk University
Atatürk University, Erzurum, Turkey
Atatürk Üniversitesi Rektörlüğü 25240 Erzurum, Türkiye
✉ ataunijournals@atauni.edu.tr
https://bilimseldergiler.atauni.edu.tr
☎ +90 442 231 15 16

Journal of Medical Education and Family Medicine

Editors's Note

Dear Readers,

We are delighted to present the third issue of the Journal of Medical Education and Family Medicine, featuring diverse research and perspectives in family medicine and medical education.

This edition highlights the therapeutic value of informed consent in reducing pre-operative anxiety and addresses the adverse effects of corporal punishment on students in Somaliland. The role of hands-on training in family medicine residency and the development of the Physicians Skills Library underline the significance of practical knowledge in medical education.

Lastly, the foundational principles of assessment in medical education are discussed, emphasizing its critical role in training future healthcare professionals.

We thank our contributors for their dedication and our readers for their continued support. We hope this issue fosters dialogue and innovation in the fields.

Warm regards

Prof. Dr. Yasemin ÇAYIR *Assoc Prof. Esra ÇINAR TANRIVERDİ*

Editor-in-Chief
Journal of Medical Education and Family Medicine

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ATATÜRK ÜNİVERSİTESİ YAYINLARI
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Physicians Skills Library

Fatma SELMAN[1]
[1]Department of Emergency Medicine and Medical Education, Biruni University, Faculty of Medicine, Istanbul, Türkiye

Yıldız KAYALI[2]
[2]Department of Family Medicine, Biruni University, Faculty of Medicine, Istanbul, Türkiye

Sema ARICI[3]
[3]Department of Pathology and Medical Education, Biruni University, Faculty of Medicine, Istanbul, Türkiye

ABSTRACT

Objective: After graduation, physicians must be able to perform basic skills competently from their first year. However, it has been observed that physicians, especially in their first years, feel inadequate when performing some skills and perform them without self-confidence.

The aim of our study is to enable students to develop their basic medical skills by practicing as much as they want and participating in the period they want (from Term 1 to Term 6) with the training program we have created under the name of the Basic Medical Skills Library and to enable them to perform their skills confidently, accurately and stress-free.

Methods: A training program was created for Biruni University Faculty of Medicine students to practice in the basic medical skills section of the national core training program. Applications were received from students through a system, with a maximum of 15 people in a class, according to this curriculum. Students were given practical training after a short theoretical training. After the training, they were asked to complete an online survey.

Results: Thirty-nine percent of the students who participated in the study were term 3 students, and 29% were term 2 students. The most frequently preferred applications by the students participating in the study are "Adult basic life support", "Ability to place and remove superficial sutures" and "Advanced cardiac life support in adults". All of the students said that they were satisfied with the open-door practice in which they participated. Eighty-three percent of the students who participated in the study answered "I strongly agree" to the question "I believe that I can better manage the patients I encounter with the practical training I received in the practice I attended."

Conclusion: The results of the study revealed that the applications we made under the name "Basic medical skills library" increased the students' self-confidence in performing simple procedural skills and that they would be willing to perform these applications easily when necessary in their medical life.

Keywords: Basic medical skills, Simple procedural skills, NCEP, Pregraduate medical education

The study was previously presented as an oral presentation at UTEK23 XIII. National Medical Education Congress, 16.11.2023-18.11.2023, Başkent University, Ankara, Türkiye.

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Corresponding author:
Fatma SELMAN
E-mail: selmanfatma28@gmail.com
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INTRODUCTION

After graduation, medical school students should have some knowledge, skills and attitudes to perform the profession of medicine competently. The skills that a medical student should have after graduation include physical examination skills, simple procedural skills, psychomotor skills, communication skills, and clinical skills.[12] Medical educators have conducted many studies to determine the basic medical skills that medical students should have after graduation. The Association of American Medical Colleges (AAMC) established the Medical School Objectives Project (MSOP), and according to the report of this project, the basic medical skills that each medical school student should acquire at graduation were proposed.[3] With the 2000s in Turkey, a national core education programme (NCEP) was established by medical educators for each medical school graduate to have certain knowledge, skills and attitudes. In the NQEP, which is renewed every six years, the skills that a student should have are referred to as basic medical practices. In the last national MDP, which was updated in 2020, there are a total of 160 basic medical practices that a medical school student should have. Students are expected to perform these practices according to certain levels. Four minimum levels have been determined. These are:

1:Knows how the practice is done and/or explains it to relatives
2:Perform the practice in accordance with the guideline/directive in an emergency situation.
3:Perform the practice in uncomplicated, common situations/events.
4:Performs the practice, including complex situations/events.[1]

Although the basic medical skills determined by medical educators are given in full by medical faculties, it has been revealed that new doctors are inadequate in performing basic skills after graduation. Along with this inadequacy, hesitation not to harm the patient, lack of self-confidence, and inability to meet expectations constitute a serious source of stress for new physicians, especially in their first years.[4–6] The skills training given in clinical internships in traditional education programs is not sufficient as a reason for the inability of medical school students to have basic medical skills after graduation.[7] A study conducted by Remmen et al. revealed that relying only on clinical internships was insufficient for students to have basic medical skills. As a result of this study, it was concluded that additional courses or lectures in addition to traditional education programs could increase basic medicine skills.[8] Another reason for the lack of basic medical skills was that skills training was generally left to the last years of medical education.[9,10] Many studies have revealed that exposure to certain skills at an early age increases student comfort and makes them more stress-free and self-confident.[11] However, in studies conducted in many medical faculties, students reach the last year of medical school without acquiring basic skills.[12] In a study conducted in semester 4 students at the University of North Carolina, it was found that students rarely performed most of the skills and evaluated themselves as unable to perform them without help.[11] The aim of our study is to enable students to improve their basic medical skills by practicing as much as they want and participating in the period they want (from semester 1 to semester 6) with the training program we have created under the name of the medicine skills practice library and to ensure that they can perform the skills in a self-confident, accurate and stress-free manner in their postgraduate medical years.

METHODS

Ethics Committee approval for this study was obtained from the Ethics Committee for Noninterventional Clinical Research of Biruni University (Date: 03.11.2023, Number: 2023/84-06). Informed consent was obtained from the participants.

The study was conducted between March 2023 and June 2023 at the Biruni University Faculty of Medicine. Practices with learning levels 3 and 4 were selected from basic medicine practices in the NQAP. A training programme was created by highlighting the priority ones of these practices. Training content was created together with volunteer faculty members. Common times that were suitable for faculty members and that students could participate intensively were determined. An announcement was made to the students under the name "library of medical skills practice", including the description of the practices, the programme and the faculty member in charge. Students applied for the courses they could attend through a previously created system. A maximum of 15 students were allowed for one lesson of each practice. Trainings were held according to the program created in the system. After the training, the students were asked to fill out a feedback questionnaire consisting of Likert-type questions. Training content: At the beginning of training, short theoretical information about the application to be made is given. The application will be explained by the instructor on duty. Each student is subsequently asked to perform the application one by one. Applications to be performed in training programs include the ability to inject IM, IV, SC, and ID; the ability to perform IM, IV, SC, and ID injections; the ability to suture and remove superficial sutures; the ability to insert urinary catheters; the ability to apply nasogastric catheters; basic life support in children; basic life support in adults; and advanced cardiac life support in adults.

RESULTS

A total of 104 students participated in the study. Eight students were excluded from the study because their feedback questionnaires could not be accessed. When we looked at the years of education of the participants, it was observed that students from semesters 2 and 3 showed the most interest in the practices. Among the students who participated in the application, 39% were from term 3, 29% were from term 2, and 19% were from term 5. The number and percentages of students' participation according to the semesters are given in Table 1.

Table 1. Practices they participated in according to their years of education

Term	Number (n)	Percent (%)
Semester 1	1	1
Semester 2	28	29
Semester 3	37	39
Semester 4	12	12
Semester 5	18	19

Table 2. Percentage of preferred applications

Name of the intervention	Number (n)	Percent (%)
Ability to make IM, IV, SC, ID injection	15	16
To be able to suture and remove superficial sutures	19	20
Urinary catheter insertion	5	5
To be able to apply nasogastric catheter	7	7
Basic life support in children	4	4
Basic life support in adults	29	30
Advanced cardiac life support in adults	17	18

IM:Intramuscular IV:Intravenous SC:Subcutan ID:Intradermal

The most preferred practices of the participants were "Adult basic life support", "Ability to suture and remove superficial sutures" and "Advanced cardiac life support in adults". The percentages are 30%, 20%, and 18%, respectively. The number and percentages of the students who participated in the application are given in Table 2. All of the students stated that they were satisfied with the medical skills they had participated in. Eighty-three percent of the students who participated in the study answered "strongly agree" to the questions "I believe that I can better manage the patients I encounter with the theoretical training I received in the practice I participated in" and "I believe that I can better manage the patients I encounter with the practical training I received in the practice I participated in". (Figure 1, Figure 2). 81% "strongly agree" to the question "In general, I believe that the practices in the library of basic medical skills will help me become a better physician." (Figure 3).

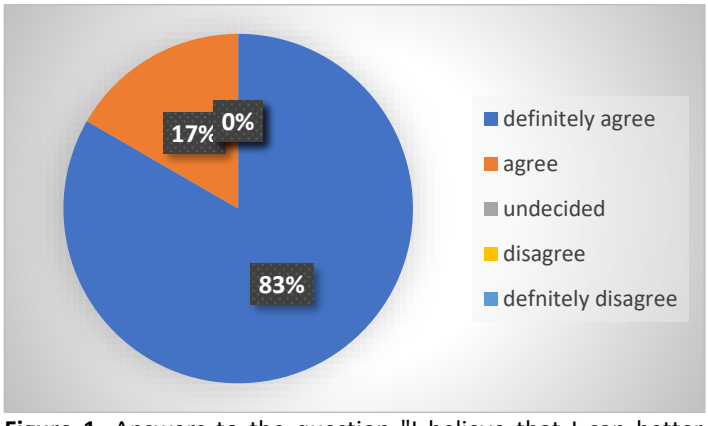

Figure 1. Answers to the question "I believe that I can better manage the patients I encounter with the theoretical training I received in the open-door practice I attended".

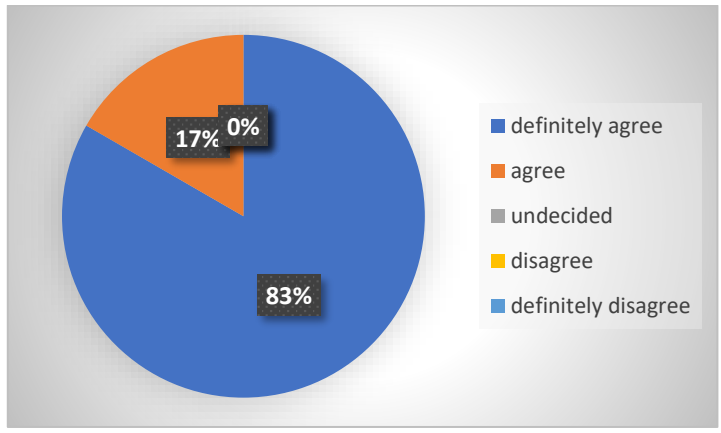

Figure 2. Answers to the question "I believe that I can better manage the patients I encounter with the practical training I received in the open-door practice I attended".

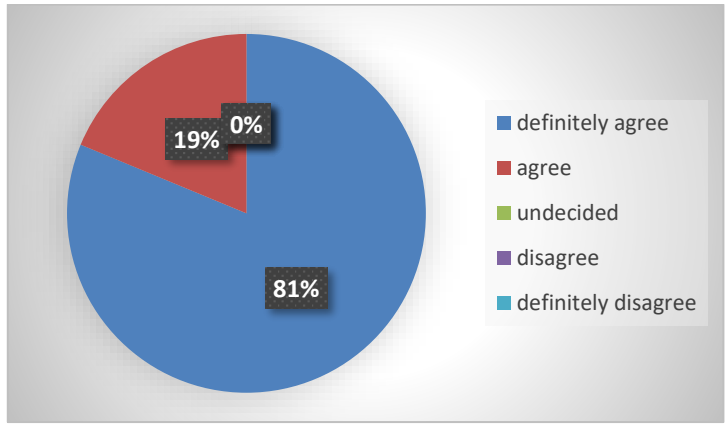

Figure 3. "In general, I believe that open-door practices will make me a better physician." Answers to the question

For the open-ended question in the questionnaire, "Thanks to this practice, I was able to reflect the information we learned in theory into practice." "I would like to have more hours." "I like that we can make as many trials as we want." "It was a more effective training because there were fewer of us." "It was good at improving our basic medical skills." "We saw our deficiencies one-to-one." "I think being able to practice gives us self-confidence." "It encouraged us to improve our medical skills."

DISCUSSION

The results revealed that the students who participated in the study were generally satisfied with the practice and wanted to participate again. Medical students are expected to perform basic skills correctly, quickly and confidently after graduation. However, studies have revealed that many newly graduated physicians are deficient in skills.[7] Therefore, skilled laboratories have been established in many medical faculties around the world to support traditional education.[13,14] A study examining students' expectations and attitudes toward skills training in skills laboratories revealed that students were more confident in basic skills and motivated them to become doctors.[10] Similarly, after the training given in the skills laboratories with the name of the

basic medical skills library, a large proportion of the students thought that they would manage patients better with the training they received. It was observed that students were more willing to participate, especially in the first years, which we call preclinical. In the pregraduation medical faculty education programs of many countries, skills training has generally been left to recent years.[9] This situation causes students to act more inexperienced and insecurely when they move on to clinical training. The application performed in this study ensures that students have certain skills starting from the preclinical years. It causes them to pass to clinical education with self-confidence. At the same time, students have a more comfortable education process because they are exposed to basic skills from an early age. In this study, students participated more frequently in courses such as basic life support and advanced cardiac life support; this finding shows that they experienced deficiencies in subjects such as patient management and patient overview. The answers they gave to open-ended questions such as "Practicing gives us self-confidence" and "I think I will not have difficulties in my medical life with these practices" suggest that this practice makes us think that students will be able to manage patients confidently in their future medical life. This study has several limitations. One of them is that the frequency of training could not reach the desired level because our skills laboratories were not sufficient and we used them together with other faculties. Since it is a new practice, we cannot perform all of the basic medicine skills practices in the NPAP because we cannot obtain enough support from faculty members in different majors. In future studies, all basic medicine skills practices may be distributed to the education year and an application in which the training given is measured by exams such as the OSCE and DOPS after the courses.

CONCLUSION

The results of this study revealed that the practices we carried out under the name "practice library of medical skills" increased the students' self-confidence in performing basic medical skills and that they would be willing to perform these practices comfortably when necessary in their medical life.

Ethics Committee Approval: Ethics Committee approval for this study was obtained from the Ethics Committee for Noninterventional Clinical Research of Biruni University (Date: 03.11.2023, Number: 2023/84-06).

Informed Consent: Informed consent was obtained from the participants.

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Evaluation of Training Family Health Center Practice in Family Medicine Residency Education

Nesibe Derya BAYHAN[1]
[1] Department of Family Medicine, Alaybey Family Health Centre, İzmir,Türkiye

Abdulkadir KAYA[2]
[2] Department of Family Medicine, Düzce University, Faculty of Medicine, Düzce, Türkiye

ABSTRACT

Objective: Tertiary hospitals offer advanced health services, including chronic disease management, whereas primary health care centers focus on services such as pregnancy follow-up, child care, vaccination, and periodic health screenings. These differing roles highlight the need for Education Family Health Centers (EHC), which are increasingly important in family medicine education. This study assesses the perceived necessity of EFHCs among family medicine specialists and residents.

Methods: A descriptive cross-sectional survey was conducted among family physicians via Google Forms between February and April 2022. The survey collected sociodemographic data and assessed knowledge related to primary care. Participants' work status in EFHCs and their performance on knowledge questions were compared.

Results: The study included 263 physicians, 58.2% female and 41.8% male. Among them, 62% were married, 55.1% were full-time family medicine residents, 16.3% were contracted residents, and 28.5% were specialists. EFHC training was part of specialty education for 35% of the participants. Additionally, 18.6% had worked in EFHCs, and 15.6% had a responsible trainer. Those who had a responsible trainer in an EFHC scored significantly higher on knowledge questions (*P*=.049). However, no significant difference was observed in knowledge levels on the basis of the requirements of EFHC or its inclusion in specialty training.

Conclusion: This study highlights the necessity of EFHCs and the crucial role of trainers within these centers. The findings suggest that integrating EFHCs into specialty training could enhance educational outcomes and better prepare family medicine residents. These findings reveal that the EASM has an important role in family medicine speciality education and that training increases the quality of education.

Keywords: Family medicine residency training, Education family health center, Family medicine

This study is derived from Dr. Nesibe Derya Bayhan's Family Medicine Speciality graduation thesis.

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Corresponding author:
Abdulkadir KAYA
E-mail: dra.kadir@hotmail.com

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INTRODUCTION

Family medicine is a primary care specialty that provides services for all disease groups, regardless of age, sex, or acute-chronic disease status, without being tied to a specific period or individual.[1,2] Therefore, it is crucial in the education of this specialty to show family medicine residents both theoretically and practically how to manage the profiles of infants, children, adults, and elderly patients, as well as how to perform periodic health examinations, diagnoses, and follow-ups of diseases.[3]

There are certain differences between patient profiles presenting to tertiary hospitals and those encountered by family physicians at family health centers (FHCs). For example, tertiary hospitals primarily see patients for the management and treatment of chronic diseases and further investigations, whereas primary care centers handle pregnant women, healthy child follow-ups, vaccination services for children, periodic health screenings for various age groups, and patients with undiagnosed or undifferentiated conditions.[4-6] Owing to these differences, the necessity of Education Family Health Centers (EFHC) in residency training has emerged.

In Turkey, there are examples of EFHCs in various departments and clinics involved in family medicine residency training.[7,8] EFHCs are essential in family medicine residency training. Studies have shown that in places with EFHCs, both resident and faculty satisfaction regarding the quality and adequacy of training increases. Similarly, physicians with EFHCs have been found to assess important and necessary topics in family medicine, such as infant evaluation and prenatal care, more comfortably.[9-11]

The duration of family medicine residency training varies from 3--6 years in different countries. In Turkey, this period is limited to 3 years, with approximately 18 months spent on rotations. A portion of the remaining 18 months should be spent in EFHCs, although this is feasible only for a limited number of training research and university hospitals in Turkey.[5,6]

In this context, the purpose of this study is to evaluate the necessity of EFHCs from the perspectives of family medicine specialists and residents.

METHODS

The ethics committee approval of this study was obtained with the decision of Düzce University Non-Interventional Health Research Ethics Committee dated 21.02.2022 and numbered 2022/32. Informed consents were filled by participants.

This study is a descriptive cross-sectional survey. It was conducted by administering a survey to family medicine specialists and residents via Google Forms from February 23, 2022, to April 3, 2022.

A power analysis was performed by reviewing the literature. Considering a similar study, the sample size was calculated on the basis of a Type I error rate of 0.05 and a desired power of 0.80, resulting in a survey being conducted with 263 individuals.

In this study, family medicine residents and specialists working in training, research, and university hospitals in Turkey were reached via Google Forms. The survey comprises 45 multiple-choice questions divided into three sections. The first section included sociodemographic information. The second section consisted of 20 questions related to Education Family Health Centers (EHC) and the patients who received specialty training. The third section contained 25 knowledge questions related to family medicine practices. These questions were created by the study team by reviewing the literature and were finalized by piloting with 10 people from 10 fields. The items were not factor analyzed separately. Total scores were calculated on the basis of the correct answers to the knowledge questions in the third section, with 1 point awarded for correct answers and 0 points awarded for uncertain or incorrect answers.

Statistical analysis:

For statistical analysis, descriptive statistics were used, where numerical data are reported as the means, standard deviations, minimums, and maximums, whereas categorical data are reported as frequencies and percentages. The distribution of the numerical data was examined via histogram charts. For comparing numerical data between two groups, the Mann–Whitney U test was used. To compare numerical data across more than two groups, the Kruskal–Wallis test was applied. Post hoc analyses for multiple comparisons were conducted via the Tamhane test. Categorical data comparisons were performed via the chi-square test and Fisher's exact test. Correlations among numerical data were assessed via the Pearson correlation test. A *P* value of <.05 was considered to indicate statistical significance. SPSS version 23.0 (IBM SPSS Corp., Armonk, NY, USA) was used for the analyses.

RESULTS

A total of 263 physicians participated in the study. Among the participants, 58.2% (n=153) were female, and 62% (n=163) were married. The majority of the physicians who participated in the study, 55.1% (n=145), were full-time family medicine assistants. A total of 35% (n=92) of the participating physicians worked in institutions with an Education Family Health Center (EFHC). However, only 18.6% (n=49) of the physicians had worked in an EFHC. Additionally, 15.6% (n=41) of the physicians who worked in an EFHC had a supervising trainer (Table 1).

Table 1: Sociodemographic characteristics of the physicians participating in the study and their employment status in the EFHC

		n	%
Gender	Woman	153	58.2
	Man	10	41.8
Marital Status	Married	163	62.0
	Single	100	38.0
Title	FMR	142	55.1
	CFMR	43	16.3
	FMS	75	28.5
Was EFHC in existence when you received your specialty training?	Yes	92	35.0
	No	171	65.0
Did you work at EFHC during your residency training?	Yes	49	18.6
	No	214	81.4
When you worked at EFHC during your residency training, did you have a responsible trainer?	Yes	41	15.6
	No	25	9.5

EFHC: Education Family Health Centre

The year of residency training for physicians was also investigated. The highest number of respondents, 38.80% (n=71),

were in their third year of residency. The average age of the physicians was 31.30±5.45 years. The duration of work experience in family medicine is presented in Table 2.

Table 2. Physicians' age, years in practice, years working in family medicine and years working in EFHC

	n	Minimum	Maximum	Mean	Standard Deviation
Age	263	24	53	31.30	5.45
Total years in the profession	263	1	31	6.56	5.21
Time worked in family medicine (Years)	263	1	26	4.27	3.56
Time worked at EFHC (Month)	46	1	24	6.33	4.31

EFHC: Education Family Health Centre

The participants were asked 15 questions regarding the Education Family Health Center (EFHC), with responses categorized as "Yes," "No," or "Not Sure." The responses are detailed in Table 3. When asked, "Do you think field training (EFHC) is necessary in family medicine residency training outside of hospital rotations?" A total of 93.5% (n=246) of the participants answered "yes." With respect to this question, "Do you find the content of residency training sufficient?" A total of 48.3% (n=127) of the participants answered "No." In questions about the adequacy of monitoring in commonly performed activities at Family Health Centers (FHCs), such as immunization, prenatal care, infant–child follow-up, and periodic health examinations, the majority of the physicians answered "No," indicating insufficient monitoring. However, for issues commonly encountered in tertiary health institutions such as hypertension, diabetes, and hyperlipidemia, the majority of participants answered "yes," indicating that they had seen a sufficient number of patients in these areas (Table 3).

Table 3. Participants' opinions on the adequate number of follow-ups in specialty training, the necessity of EFHC and the adequacy of specialty training

	Yes	No	Not sure
	n/%	n/%	n/%
Do you think field training (EFHC) other than hospital rotations is necessary in family medicine specialty training?	246/93.5	8/3	9/3.4
Do you find family medicine specialty training sufficient in terms of content?	74/28.1	127/48.3	62/23.6
Did you provide enough immunization services during your family medicine residency training?	73/27.8	162/61.6	28/10.6
Did you perform sufficient number of pregnancy follow-ups in your family medicine specialty training?	77/29.3	162/61.6	24/9.1
Have you performed sufficient number of infant-child follow-ups in your family medicine specialty training?	85/32.3	149/56.7	27/10.3
Did you follow up a sufficient number of geriatric patients in your family medicine specialty training?	68/25.9	151/57.4	44/16.7
Do you think you performed periodic health examinations sufficiently in your family medicine specialty training?	67/25.5	154/58.6	42/16
Do you think you have performed enough fecal occult blood evaluation within the scope of periodic health examinations in your family medicine specialty training?	56/21.3	167/63.5	40/15.2
Do you think you have performed enough mammography recommendations within the scope of periodic health examinations in your family medicine specialty training?	75/28.5	149/56.7	39/14.8
Do you think you have performed enough papsmear recommendations within the scope of periodic health examinations in your family medicine specialty training?	71/27.0	153/58.2	39/14.8
Do you think you provide enough premarital evaluation and counseling services in your family medicine residency training?	72/27.4	156/59.3	35/13.3
Do you think that you perform cancer screenings in sufficient number and quality in your family medicine specialty training?	51/19.4	166/63.1	46/17.5
Did you perform sufficient number of diabetes screenings in your family medicine specialty training?	121/46	107/40.7	35/13.3
Did you perform a sufficient number of hypertension patient evaluations in your family medicine specialty training?	128/48.7	102/38.8	33/12.5
Have you performed an adequate number of hyperlipidemia screenings in your family medicine residency training?	125/47.5	106/40.3	32/12.2
Have you performed adequate number of depression screenings in your family medicine residency training?	43/16.3	175/66.5	45/17.1

EFHC: Education Family Health Centre

The knowledge questions and responses regarding periodic health examinations and family medicine practices were evaluated. Among the total 25 questions asked, the majority of correct answers were given for 22 questions (Table 4).

Table 4. Knowledge questions and answers about periodic health examinations and family medicine

	Right	Wrong	No idea
	n/%	n/%	n/%
During pregnancy, 3 follow-ups are performed at the family health center.	72/27.4	**156/59.3**	35/13.3
According to Nagele formula, the estimated date of birth is SAT+3 months -7 days.	154/58.6	**90/34.2**	19/7.2
Iron prophylaxis of 40-60 mg/day is started at 16 weeks of gestation in pregnant women without signs of anemia.	**202/76.8**	32/12.2	29/11.0
Vitamin D prophylaxis in pregnant women starts from the 12th gestational week and continues until the 6th month after delivery.	**206/78.3**	32/12.2	25/9.5
People with a history of gestational diabetes should undergo OGTT between 6-12 weeks postpartum.	**139/52.9**	86/32.7	38/14.4
For the first 6 months, the baby should be breastfed at least 8 times a day whenever the baby asks for it, without limitation of the number of times.	**230/87.5**	20/7.6	13/4.9
Newborns without signs of anemia should be started on iron supplementation of 1 mg/kg/day after birth.	70/26.6	**169/64.3**	24/9.1
All cases of developmental hip dislocation other than type I should be referred to an orthopedic specialist.	**164/62.4**	43/16.3	56/21.3
Screening for arterial hypertension in children should be performed once a year after the age of 4 years.	77/29.3	**150/57.0**	36/13.7
According to the current vaccination schedule, the first dose of hepatitis A vaccine is given at 12 months and the second dose at 24 months.	100/38.0	**133/50.6**	30/11.4
Follow-up of women aged 5-49 years should be performed once a year.	142/54.0	**91/34.6**	30/11.4
Mastitis is a contraindication for breastfeeding.	26/9.9	**228/86.7**	9/3.4
Lifestyle change is recommended for patients with obesity.	**256/97.3**	4/1.5	3/1.1
Breastfeeding is contraindicated in the presence of active maternal tuberculosis, HIV and HSV infection in the nipple.	**234/89.0**	21/8.0	8/3.0
Patients who are advised to change their lifestyle should be referred for follow-up once a month.	**152/57.8**	72/27.4	39/14.8
Serum lipid profile screening should be performed every 5 years in adults over 35 years of age without other risk factors.	**201/76.4**	39/14.8	23/8.7
Prophylactic low-dose (81 mg) aspirin is recommended in women aged 40 years and older.	67/25.5	**153/58.2**	43/16.3
If fasting and postprandial blood sugars are normal in a 52-year-old woman without risk factors, they should be checked again every year.	137/52.1	**88/33.5**	38/14.4
TSH is requested for thyroid evaluation for screening purposes.	**218/82.9**	39/14.8	6/2.3
For colorectal cancer screening in adults without risk factors, colonoscopy is performed every 10 years over the age of 50.	**206/78.3**	49/18.6	8/3.0
PAP smear or HPV test screening for cervical cancer should be done every year between the ages of 30-65.	85/32.3	**160/60.8**	18/6.8
Hemogram control should be performed in infants at the 3rd month.	87/33.1	**147/55.9**	29/11.0
Beck depression scale is used for depression screening in primary care.	203/77.2	**17/6.5**	43/16.3
Rotavirus vaccine has no place in adult vaccination.	**219/83.3**	28/10.6	16/6.1
Tuberculosis screening should be performed in patients with chronic renal failure.	**108/41.1**	78/29.7	77/29.3

The bolded parts are the correct answers.

OGTT: Oral glucose tolerance test, HIV: Human immunodeficiency virus, HSV: Herpes simplex virus, PAP: Papanicolaou test, HPV: Human papillomavirus

There was no significant difference in the number of correct answers given based on sex (P =.433). Compared with single physicians, married physicians provided a significantly greater number of correct answers (P <.001). Significant differences were observed in the number of correct answers among Family Medicine Specialists (FMS), Contracted Family Medicine Residents (CFMR), and Family Medicine Residents (FMR) (P <.001). FMRs provided the highest number of correct answers, followed by CFMRs and FMRs. As the year of residency increased, the number of correct answers also increased (Table 5). There were significant differences in the number of correct answers based on the institution where the physicians worked (P <.001). Compared with those who did not have a supervising trainer, those who had a supervising trainer while working in EFHCs provided significantly more correct answers (P =.049) (Table 5).

Table 5. Statistical analysis of correct answers according to various variables

		Number of correct answers to be given		
		Mean	Standard Deviation	*p*
Gender	Woman	15.86	3.63	.433
	Man	15.37	4.03	
Marital Status	Married	16.33	3.65	**<.001**
	Single	14.56	3.81	
Title	FMR	14.26	3.93	**<.001**
	CFMR	16.91	3.63	
	FMS	17.64	2.20	
Year in residency	1st year assistant	13.67	3.92	**.010**
	2nd year assistant	14.43	3.25	
	3rd year assistant	15.52	4.51	
	4th year assistant	15.00	.	
	5th year assistant	19.67	4.16	
	6th year assistant	20.00	.	
institutions	University hospital	14.46	3.77	**<.001**
	Education and research hospital	14.15	4.55	
	Family health center	17.46	2.39	
	Other	17.60	2.58	
Did EFHC exist at the time of your specialty training?	Yes	16.00	3.61	.299
	No	15.47	3.90	
Did you work at EFHC during your specialty training?	Yes	16.18	3.78	.127
	No	15.53	3.80	
When you worked in EFHC during your residency training, did you have a responsible trainer? (Only those who worked in EFHC will answer.)	Yes	16.63	3.61	.049
	No	15.08	3.52	
Do you think field training (EFHC) other than hospital rotations is necessary in family medicine specialty training?	Yes	15.75	3.83	.091
	No	14.38	4.41	
	Not sure	14.22	1.92	
Do you find family medicine specialty training adequate in terms of content?	Yes	16.26	3.61	.166
	No	15.56	3.99	
	Not sure	15.13	3.59	

EFHC: Education Family Health Centre

In the post hoc analyses, CFMR and FMS provided a significantly greater number of correct answers than did FMR (*P* <.001 for both comparisons). Compared with those working in universities and training research hospitals, physicians working in family health centers provided a significantly greater number of correct answers (*P* <.001 for both comparisons).

DISCUSSION

In our study, we evaluated the necessity of Education Family Health Centers (EHC) in family medicine residency training and their impact on the knowledge and opinions of current residents and specialists. Our findings indicate that EFHCs significantly contribute to residency training. The majority of the physicians in the study reported that they did not find the content of their residency training sufficient. This aligns with studies by Yıldırım and Sancaktar, who also reported that more than half of physicians felt that their residency training was inadequate.[9,10] This highlights the need for residency programs to be tailored to the needs of family medicine practitioners.

Our study revealed that most participants were female and that the presence of EFHCs during training positively impacted residency education. Most participants agreed that field training (EFHC) is necessary, which is consistent with Yıldırım's study, where 74% of participants supported the inclusion of EFHCs in training.[9] Similarly, Adıyaman et al. emphasized the need for primary care services in residency training[11], a view supported by numerous studies in Turkey advocating the necessity of field training.[10,12-14]

In Turkey, the family medicine residency system is similar to that in many countries and comprises a three-year program. The training plan includes 18 months of rotation and 18 months in a primary care setting. However, because some institutions do not meet the necessary conditions for field training, there is no mandatory implementation. As a result, residency students in Turkey work more in hospital settings than in primary care settings and encounter patient populations different from those they face in primary care settings.[15] This is evident from our study, where most physicians lacked EFHC experience and did not follow up with patients in primary care settings.

The participants reported insufficient monitoring in areas commonly performed at family health centers (FHCs), such as immunization, prenatal care, and periodic health examinations. Conversely, they indicated sufficient patient exposure in tertiary

institutions for conditions such as hypertension, hyperlipidemia, and diabetes. This discrepancy highlights the difference in patient profiles between tertiary hospitals and FHCs. Maç's study also revealed significant differences in patient characteristics and diagnoses between EFHC centers and hospital settings.[16] This may be the main reason why physicians who receive speciality training only in tertiary hospitals do not consider themselves competent to work in primary care.

Egici et al. noted that involvement in EFHCs strengthened their clinical experience and provided opportunities to see primary care management.[17] In Turkey, residents spend less time in EFHCs than in hospital settings, resulting in exposure to different patient profiles. The lack of standardized field training across institutions also reflects a significant gap.[18] Similarly, European countries such as Greece, Austria, Switzerland, Moldova, and Romania face similar issues. Furthermore, having clinical training exclusively in hospital settings does not adequately address the quality of training for family medicine.[19]

Our study revealed that physicians with supervising trainers in EFHCs had significantly higher knowledge levels than those without such trainers. This underscores the importance of the educator factor in enhancing training quality. However, no significant impact of working in EFHCs alone on knowledge level was found, although the presence of a trainer was a key factor in improving knowledge.

However, Yişir's study also revealed that EFHCs positively contributed to residency training in terms of periodic monitoring, and a higher rate of correct answers was observed in the group working in EFHCs.[20] Similarly, a study by Yağız in Ankara revealed that most specialists believe that residents should receive training alongside specialists, supporting the need for EFHCs in field training.[21]

As Ünalan et al. noted, clinical practices in family medicine units differ from those in hospital settings, necessitating different knowledge and practices. Therefore, field training should be tailored to primary care rather than just replicating hospital-based practices.[22] Our study supports this finding by showing that participants felt insufficiently prepared in primary care areas.

In our study, when examining the number of correct answers given, FMS had the highest number of correct responses. This was followed by CFMR and then FMR. The reason that the FMSs were in the lead could be attributed to their completion of residency training, which provided them with more clinical experience and knowledge. The fact that CFMRs had more correct answers than FMRs can be explained by their involvement in patient follow-up in primary care clinics, working more frequently on topics relevant to family medicine, and therefore having greater knowledge in these areas.

In this study, because the questionnaire was not conducted face-to-face, the answers given to the questions may be cursory, and the fact that the questions were not verified by factor analysis can be considered limitations of our study.

CONCLUSION

In conclusion, our study highlights the significant role of EFHCs in family medicine residency training and highlights the importance of the educator factor in improving training quality. It is essential to ensure the availability of EFHCs and integrate both clinic- and hospital-based training into residency programs to increase overall training effectiveness. In addition, departments and clinics where family medicine education is given should be accredited, and EFHCs should be made widespread throughout the country or education should be provided with the condition of being an EFHC. There is a need for more studies on this subject at the national level with more participants.

Ethics Committee Approval: The ethics committee approval of this study was obtained with the decision of Düzce University Non-Interventional Health Research Ethics Committee dated 21.02.2022 and numbered 2022/32.
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Psychological, Behavioral and Performance Impact of Corporal Punishment in Somaliland Students

Abdiwahab Mohamed SAED[1]
[1]Department of Education, Hargeisa University, Hargeisa, Somaliland, Somalia

Sakarie Mustafe HIDIG [2]
[2] Department of Surgery, Zhejiang University School of Medicine, The Fourth Affiliated Hospital Zhejiang Province, China

ABSTRACT

Objective: This study examines the use of CP in Somaliland schools and the psychological and behavioral impact of this practice on students as well as the impact of the practice on the performance of the student.

Methods: This study used a qualitative study design in which a structured questionnaire was used to collect the necessary data regarding the study subject matter, and the data were analyzed via SPSS version 20 (IBM SPSS Corp., Armonk, NY, USA)

Results: This study revealed a shocking prevalence of corporal punishment among Somaliland students. The study also demonstrated a strong link and statistical significance between corporal punishment and the psychological state of the students, as well as a positive relationship between corporal punishment and the behavior of the student. However, regarding the performance of the student, the study failed to find a reasonable statistical significance between this parameter and corporal punishment.

Conclusion: There is a strong correlation between corporal punishment and the adverse psychological effects discussed in this study. The study also revealed a strong relationship between corporal punishment and the possible behavior issues of the pupils. The study highlighted a drawback of corporal punishment and a shift to alternatives among schools in Somaliland. Such alternatives may include positive reinforcement, rewarding good behavior, guidance and counseling, involving parents, time-outs, detentions, suspensions, motivations, recognition and praise tactics, revoking or taking away privileges, use of assignments and additional tasks such as punishment, and many other known methods as alternatives to corporal punishment.

Keywords: Corporal punishment, Children's rights, Somaliland schools.

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Corresponding author:
Sakarie Mustafe HIDIG
E-mail: hidig2015@icloud.com

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INTRODUCTION

Physical punishment used to inflict pain on an individual with the intention of modifying their behavior is referred to as corporal punishment (CP). Examples of this type of punishment include spanking, smacking, and paddling. Adult carers frequently employ corporal punishment to intentionally harm a child who is acting inappropriately. Corporal punishment is the most prevalent form of child maltreatment worldwide. It is difficult to recognize and usually camouflaged since it happens in homes and other locations where children live, learn, and play. The physical discipline of an estimated one billion children worldwide is administered by their parents, guardians, teachers, or other trusted adults; these adults bear the responsibility of providing for, raising, and teaching these children. These actions consist of physical abuse, such as pinching, slapping, spanking, and hitting.[1] In both families and schools, corporal punishment is widely used throughout the world. Approximately 60% of children between the ages of 2 and 14 years' experience physical punishment on a regular basis.[2] With more than 86% of children worldwide not having legal protection from corporal punishment, this type of abuse is the most prevalent type of violence against children worldwide (UNICEF 2023). According to a different survey, only 15% of children globally—320 million children—are completely shielded from corporal punishment in all circumstances by the law. A further 27 nations have pledged to amend their legal frameworks, which, if implemented, shield an extra 288 million children from this type of abuse (Save the Children 2024).[3] No scientific study has ever demonstrated that corporal punishment has a positive impact on children's behavior or health. Indeed, most child development experts seem to concur that cerebral palsy stunts a child's development. Corporal punishment has several detrimental repercussions, including low self-esteem, misbehavior, anger, and mental health difficulties.[4] Corporal punishment is prohibited in many African nations, including Kenya, South Africa, and Swaziland. Although most of the evidence in Africa is anecdotal, a number of intriguing studies about its status and influence have emerged. Studies carried out in Kenya have shown that teachers often apply punishment to pupils for offences, such as giving a wrong answer to a question, arriving late, talking to a friend in class, or wearing an unclean uniform. The punishment was often too harsh, resulting in injuries, fractures, tooth loss, and even fatalities.[5] According to a Populations Communication Africa poll, 60% of children in Kenyan schools received corporal punishment.[6] Despite the fact that corporal punishment was illegal in Kenya in 2001, there are numerous records of instructors implementing it in the classroom, indicating that measures such as advice and counseling have not improved school discipline as intended. According to a 2012 study that examined these situations, head teachers and school administrators are unprepared to handle indiscipline when corporal punishment is not an option.[7] This research focuses on exploring the impact of corporal punishment on the psychological well-being, behavior and academic performance of students in Somaliland. According to a 2017 report by Save Children that surveyed 60 primary schools in the country, approximately 85% of the children reported that they had witnessed a child being beaten by a teacher in the previous month, which signifies that the level of corporal punishment in Somaliland is very high.[8]

Efficiency of Corporal Punishment as a Disciplinary Tool

For millennia, parents have employed corporal punishment to alter their children's behavior. The first known instances occurred in the ancient Greek cities of Sparta, Athens, and Troy, where it was applied to degrade and humiliate those who disobeyed social norms. This penalty acted as a clear warning to anyone who would think about doing the same crime.[9] In the majority of nations, corporal punishment is still often applied in both homes and schools. Nonetheless, it is nearly unanimously denounced, with innumerable studies concurring on its inadequacy, incapacity, and extent of harm and abuse—both physical and psychological—that it causes kids. Elizabeth Gershoff, a psychologist, conducted a comprehensive meta-analysis of 88 papers to examine the correlation between the use of corporal punishment and 11 child behaviors and experiences. The study, which examined 62 years of data, revealed a strong correlation between corporal punishment and each of the 11 experiences and behaviors. Ten of the correlations were negative, including an increase in antisocial behavior and child violence. While the child's instant cooperation with corporal punishment was the sole positive correlation,[10,11] it is therefore useless in that it threatens young people's obedience. Corporal punishment is not supported by any strong evidence, nor has it been shown to be a very effective deterrent. Children are also people, and they should be treated with decency, integrity, and respect.[12,13]

A study conducted by Swan, Laura and Hyojin in 2022 examined the mental health of Somali refugees in relation to the childhood trauma they experienced. This study took a deep look at the effect of trauma related to corporal punishment on the mental health of children. The study concluded that childhood trauma resulting from factors such as corporal punishment or other forms of abuse had a direct impact on the mental health of the children.[14]

Idiris, in his study conducted in 2023, investigated the impact of corporal punishment on the academic performance of Somali students, concluding that corporal punishment has an impact on

performance and does not sustain discipline.[15]

Corporal Punishment in Somaliland

There is growing opposition to physical punishment in Somaliland due to the establishment of international schools. Nonetheless, it cannot be disputed that physical punishment is often used in Somaliland. It is still the most common kind of discipline that parents and teachers employ to change student behavior. In Somaliland, corporal punishment is commonplace, and children are beaten as early as two or three years of age.[16] Preschool-aged children, usually aged between 4 and 5 years, are enrolled in Madarasa or Qor'an learning institutions. These Qur'an learning institutions employ exclusively traditional methods of education.[17] Madarasa teachers are notorious for overreliance on corporal punishment and for coming up with cruel and unusual ways to punish children for misbehaving or failing in their lessons. These punishments include slapping, hitting with canes, tying children with ropes or belts and even putting ants inside their shirts to bite them.[18] In elementary schools, in comparison with private schools, CP is typically more common in public schools. In Somaliland, children who are already marginalized, those from poorer socioeconomic backgrounds, those who have experienced violence at home, and those with special educational requirements are the ones most likely to be subjected to corporal punishment.[19] The Somaliland government said in 2022 that corporal punishment would no longer be used in classrooms; nevertheless, the rule is mostly ignored, and the majority of schools continue to use CP. The use of corporal punishment is encouraged by cultural and religious beliefs that frequently increase children's submissiveness to adults and teachers. Because of the conservative, authoritative, and hierarchical traditions, it is more probable that force will be employed frequently to enforce proper behavior in young people.[20]

Psychological Impact of Corporal Punishment

Studies have indicated that having children with cerebral palsy in schools can have an adverse effect on their mental well-being and scholastic achievement.[21] When children are subjected to harsh or excessive punishment in unskilled ways, it can have very negative, dangerous, and long-lasting effects on them. They may imitate their parents' and teachers' methods of discipline, develop strong fears and anxieties, experience learning obstacles, and learn to avoid people, places, and things associated with harsh punishments, which can lead to aggression.[22] In regard to a student's social performance, corporal punishment has been connected to antisocial behaviors such as violence, aggression, and hostility toward adults and peers. Youngsters pick up knowledge through behavior modeling and social learning. Thus, by employing corporal punishment, parents and teachers paradoxically encourage the very behaviors they are attempting to break out of their children. Furthermore, corporal punishment has been linked to several detrimental mental health consequences, including alcoholism, depression, anxiety, and suicide.[23] The term synonyms for psychological aggression in family violence studies include emotional abuse, psychological abuse, and verbal/symbolic aggression.[24]

Impact of Corporal Punishment on Student Performance

Although some studies have shown a correlation between the use of corporal punishment in schools and enhanced instant compliance,[25] there is no evidence linking the use of physical punishment to improved social or self-control abilities over time.[26]The fact that the same students are repeatedly struck serves as evidence of this. The most significant avoidable cause of psychopathology is abuse during childhood, which accounts for approximately 45% of the population's risk of developing psychiatric illnesses at a young age.[27] Social interactions, such as early attachment to educators and caregivers as well as early friendships, contribute to children's cognitive development and growth. Numerous studies have shown that children benefit from verbal discipline techniques such as reasoning and explanation because they foster cognitive growth, whereas physical punishment stunts children's ability to learn and develop cognitively.[28] Additionally, there is little evidence to support the claims that corporal punishment enhances classroom behavior, promotes moral character development in kids, or increases pupils' ability to teach teachers or other authority figures [29] Some teachers in Africa who employ physical punishment claim that by doing so, parents and teachers lose control over their students, which has led to the continent's high failure rate since there is a relationship between student accomplishments and discipline.[30]

Effects of Corporal Punishment on the Behavior of Students

While physical injuries can be treated, emotional and psychological effects can have a large influence on how an individual behaves.[31] There is strong evidence connecting corporal punishment to a number of harmful emotional and psychological impacts that have a negative impact on children's behavior.[32] The negative emotional and psychological effects include deteriorated parent–child trust, aggression toward siblings, sadness and anger, crying, fear, embarrassment, withdrawal, and compliance; bullying and disobedience; poor mental health; a weaker internalization of moral values; antisocial behavior; poor adult adjustment; depression; withdrawal; sleep disturbances; avoidance of school; learning difficulties; loss of self-esteem; and delinquency[33]. Furthermore, research indicates that physical punishment is an unproductive form of discipline because it does not teach kids how to behave differently.[34] After receiving physical punishment, children

usually experience resentment, humiliation, and helplessness; nonetheless, they continue to misbehave because they have learned how to avoid being caught.[35] A WHO report claimed that CP eventually worsens children's behavior. According to the literature, it also results in aggression, emotional instability, low self-esteem, self-harm, suicide and suicidal thoughts, anxiety disorders, damage to education, and school dropout.[36]

Research Questions

What is the impact of corporal punishment on the mental health of students in Somaliland?

What is the impact of corporal punishment on the behavior of students in Somaliland?

What is the impact of corporal punishment on the performance of students in Somaliland?

METHODS

Ethics Committee Approval was obtained from local schools. Jiil al Jadiid Primary School, Al Manaar Secondary School, Daar Al Najaah Madarasa (Date: 2024.06.30. No: 2024010199RY). All concent forms were filled by participants.

Within the framework of this extensive study project, a sample dataset of academic records from 32 participants was selected to help make sense of the case in study. The sample was calculated via Slovin's formula (n= N/N e2) from a population of 35 students. Owing to the complex structure of the data and the considerable size of the dataset, using SPSS made it possible to carry out a detailed and perceptive analysis. This part presents the background information of the respondents who participated in the study. The purpose of presenting the background information was to determine the demographic characteristics of the respondents. This section analyses three main characteristics of the respondents: gender, educational level and the number of parents who care for the young student. The questions in the data collection were leading questions; for example, "I have experienced being slapped by a teacher", to which the respondent will select the level to which he or she agrees with the question from strongly agree all the way to strongly disagree.

RESULTS

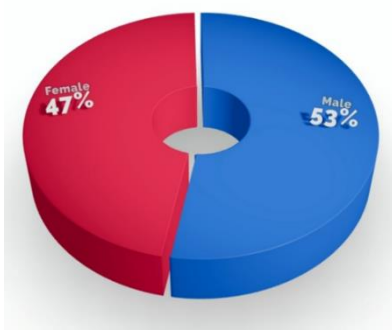

Figure 1. Gender of the respondents

As indicated in Figure 1, the most prevalent gender of the respondents was males, with 17 of the respondents, accounting for 53% of the total sample, being males, whereas 15 respondents, accounting for 47% of the total sample, were females.

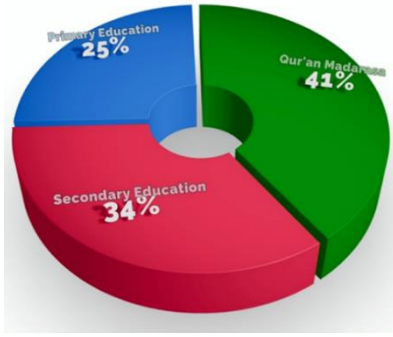

Figure 2. Education level of the respondent

Figure 3 shows the level of education of the respondents from whom the researchers gathered the information; only 8 of them, representing 25% of the total sample, were primary school students, whereas 11 of them, representing 34.4% of the sample, reached the secondary level of education. Finally, only 13 of the respondents, representing 40.6% of the total sample, were students of the Qur'an Madarasa. This implies that most of the respondents (40.6%) were students of the Madarasa, where they study the holy Qur'an.

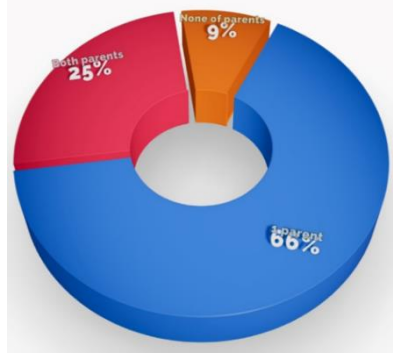

Figure 3. Respondents currently living with their parents

With respect to the number of parents living with and taking care of the students who responded to this research, Figure 3 indicates that 21 students, representing 65.6% of the total sample, were living with one parent. Eight of the students, accounting for 25% of the respondents, were living with both parents. However, only 3 of the students or 9.4% of the total sample did not live with any of their parents. Most of the respondents, 65.6, were living with only one of their parents.

Prevalence of Corporal Punishment among the Students

To explore the prevalence of corporal punishment in Somaliland schools, this extensive study posed a set of statements for the students to respond to in a structured questionnaire. The following statements were posed to the students regarding their level of experience with corporal punishment:

As indicated in Table 1, a combined 30 respondents, who represented an astonishing 93.8%, agreed that having experienced corporal punishments included being hit with objects and instruments to inflict pain or bodily harm to the students. In contrast, 2 combined students, representing 6.2% of the total population, disagreed with the statement, which indicates that they had not experienced corporal punishment in school. This indicates alarming rates of child abuse and excessive punishment in the Somaliland education system. According to the table, a combined 20 students, which corresponds to 62.5% of the respondents, agreed that they had been slapped by a teacher. A combined of 11 students, representing 34.4% of the respondents, declared that they had not been slapped by a teacher. Whereas 7 students, representing 3.1% of the total sample, responded neutrally, which indicates doubt or uncertainty in Table 1, 50% of the respondents, representing 16 individuals, agreed that they had been locked in a room by teachers as a form of corporal punishment, whereas 43.8%, representing 14 respondents, testified that they had not been locked in a room. Two students, or 6.3% of the respondents, indicated uncertainty in their response. As shown in the table, 26 students, representing 81.3 of the total sample, indicated that they were ordered to perform excessive exercise as a form of punishment. However, 5 students, accounting for 15.6% of the sample, disagreed, indicating that they had not experienced being punished with excessive exercise. Finally, as shown in Table 1, 68.8% of the respondents, which corresponds to 22 students, agreed that they were forced to perform manual labor by teachers as a form of punishment. In contrast, 18.7% of the respondents, representing 6 of the students, disagreed, indicating that they had not been forced to perform manual labor by teachers. Four students, representing 12.5% of the total sample, responded neutrally, indicating uncertainty.

Table 1: Respondents' experience with corporal punishment

Statement	Strongly agree	%	Agree	%	Neutral	%	Disagree	%	Strongly disagree	%
I have experienced being hit by a teacher with a belt, cane or other instrument	22	68.8	8	25	0	0	1	3.1	1	3.1
I have experienced being slapped by a teacher	10	31.2	10	31.2	1	3.1	7	21.9	4	12.5
I have experienced getting locked in a room by a teacher	10	31.2	6	18.8	2	6.2	7	21.9	7	21.9
I have been ordered to do an excessive exercise for a long period of time by a teacher	15	46.9	11	34.4	1	.3.1	4	12.5	1	3.1
I have been ordered by a teacher to do manual labor	16	50	6	18.8	4	12.5	5	15.6	1	3.1

Table 2: The impact of corporal punishment on the psychological condition of Students

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	13.779	4.922		2.799	.009
	CP	.710	.442	.282	1.608	.118

a. Dependent Variable: Psychological state

Table 3: The impact of corporal punishment on the Behavior of Students

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	8.828	3.825		2.308	.028
	CP	.825	.343	.402	2.402	.023

a. Dependent Variable: Behavior

Table 4: The impact of corporal punishment on the Performance of Students

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	11.065	2.566		4.312	.000
	CP	.272	.230	.211	1.182	.246

a. Dependent Variable: Performance

DISCUSSION

According to this study, there is a discernible effect of corporal punishment on children's mental health. Students often have negative psychological consequences as a result of how they experience and understand the effects of corporal punishment. While there was a clear correlation between corporal punishment and mental stability, it was not as strong as was initially thought. This result was consistent with a Harvard study that demonstrated the negative effects of corporal punishment on anxiety, depression, and other mental health conditions.[37]

Additionally, the study revealed that physical punishment has a large effect on students' behavior. According to the data, it frequently encourages the very behavior that educators are trying to stop. This result was consistent with that of the American Academy of Pediatrics, who reported that children who receive corporal punishment exhibit more troublesome behavior.[38]

This study contrasts with numerous other studies concerning the degree to which corporal punishment affects a student's academic performance. However, this study revealed that there was a moderate effect of corporal punishment on pupils' performance. Although it has an impact on academic performance, it has less of an impact than does students' behavior and psychological health. Some research appears to indicate that the impact of physical punishment on pupils' performance is more pronounced and could impede their progress.[39]

This research offers a unique perspective on the impact of corporal punishment and makes a marked contribution by emphasizing the variability of the students' experiences and perceptions of corporal punishment, highlighting that not all students are affected in the same way. This nuanced approach is less common in broader studies that often generalize the effect across larger populations.

1. The impact of corporal punishment on the psychological well-being of students

The first objective of the study was to study the impact of corporal punishment on the psychological well-being of students. This was important to study, as it represented one of the dependent variables of the study. The analysis of the data suggests that there was tremendous variation in the experiences and the perceived impacts of corporal punishment on their mental stability and psychological wellbeing.

The model includes an intercept (constant) and one predictor variable, "CP." The dependent coefficients: The unstandardized coefficients represent the change in the dependent variable (PS) associated with a one-unit change in the predictor variable (CP).

The coefficient for the constant (intercept) is 13.779. The coefficient for "CP" is 0.710. Standardized Coefficients (Beta): The standardized coefficient (Beta) indicates the relative importance of each predictor variable. For "CP," the beta value is 0.282, suggesting a moderate positive effect on the dependent variable. Statistical Significance: The t values and associated p values (Sig.) indicate whether the coefficients are statistically significant. The constant (intercept) is significant (p = 0.009), whereas "CP" is not (p = 0.118). Overall, this analysis suggests that there is a strong relationship between corporal punishment and the adverse psychological state of students and that coefficient analysis based on these variables can be useful in predicting the adverse psychological effects experienced by students who experience corporal punishment.

2. The impact of corporal punishment on the behavior of students

The second objective of the study was to study the impact of corporal punishment on the behavior of students. This was important to study, as it represented one of the dependent variables of the study. This vital importance is often linked with the behavior of the student by their teachers, parents and carers. In addition to poor behavior usually being the major cause of corporal punishment against students, this variable is one of the most sensitive and important variables in the study.

The dependent variable for this model is BH. The B values represent the estimated coefficients for the intercept and CP variables, with their respective standard errors indicating the variability of these estimates. The t values are used to test the null hypothesis that the coefficient is equal to zero (no effect). The significance values (Sig.) indicate the probability of observing such a t value if the null hypothesis is true. In this case, both the intercept and CP have p values less than .05, suggesting that they are statistically significant predictors of BH. The standardized coefficient (Beta) for CP shows the relative importance of this predictor in the model. In summary, this analysis indicates that there is a clear and strong relationship between corporal punishment and the behavior of students. The results support the idea that corporal punishment adversely affects the behavior of students and reinforces undesirable behaviors and actions, which are often the same behaviors that teachers are trying to eradicate first.

3. The impact of corporal punishment on the performance of students

The second objective of the study was to study the impact of corporal punishment on the behavior of students. This was important to study, as it represented one of the dependent variables of the study.

The model includes a constant (intercept) and one independent variable (CP). The dependent variable is labeled "PP." Coefficients: Constant (B): The estimated intercept value is 11.065. CP (B): The coefficient for the independent variable "CP" is 0. 272. Standardized Coefficients: The standardized coefficient (Beta) for "CP" is 0.211. This indicates the strength and direction of the relationship between "CP" and the dependent variable "PP." Hypothesis testing: the t value for "CP" is 1.182, and the associated p value is 0.246. Since the p value is greater than the common significance level (such as 0.05), we fail to reject the null hypothesis. In other words, there is insufficient evidence to conclude that "CP" significantly predicts "PP." In summary, the analysis suggests that there is no strong relationship or statistical significance between corporal punishment and students' academic performance. The analysis suggests that corporal punishment does not succeed in predicting the performance of the student.

Recommendation

The study suggests that Somaliland implements the Child Rights Protection Act, which forbids all forms of abuse, including corporal punishment, as well as public awareness campaigns to inform parents, educators, and the community about the harmful effects of corporal punishment and the benefits of positive discipline methods.

The study also suggests that educational and training programs be implemented nationwide for educators to teach them nonviolent, alternative forms of discipline. Additionally, workshops should be held for parents to teach them positive parenting techniques and the value of creating a safe, nurturing environment for their children.

To address any psychological effects and support the well-being of students who have experienced corporal punishment, school-based interventions should be implemented to support positive behavior programs that reward and recognize good behavior instead of punishing it. The report suggests that long-term research should be conducted to monitor modifications to disciplinary procedures and their outcomes. This can aid in comprehending the effects of treatments over the long run. This study suggests that future research should focus on cultural sensitivity, acknowledging and honoring the cultural context in which corporal punishment is used. Recognizing the social and historical context of its application and how Somaliland children are impacted by it.

A great deal of exploration is owed to alternative disciplinary methods, especially how well an alternate method of discipline could fit into the social and cultural environment of Somaliland and which methods can be culturally acceptable and effective in improving the behavior and performance of Somaliland students

without having any side effects on their mental and physical wellbeing.

CONCLUSION

Corporal punishment is excessively prevalent in Somaliland, as indicated by the data in this study; the reliance of teachers on this form of child abuse to conduct their lessons and to keep their students in line is staggering. According to the data, there is a strong correlation between corporal punishment and the adverse psychological effects discussed in the study. The study also revealed a strong relationship between corporal punishment and the possible behavior issues of the pupils. A reliance on corporal punishment and reliance on alternatives will produce a more nurturing and safe learning environment, which will be indicative of the psychological health of the students as well as producing noticeably fewer attitude problems in the students and reducing misbehavior indicators such as fighting in school and experiencing classroom disruption. Finally, the study explored the relationship between corporal punishment and the performance of the student. The study failed to prove a strong and statistically significant relationship. These findings indicate possible limitations to the study due to the sample size.

Abbreviations

CP Corporal Punishment
UNICEF United Nations International Children's Emergency Fund
WHO World Health Organization

Ethics Committee Approval: Approval was obtained from local schools. Jiil al Jadiid Primary School, Al Manaar Secondary School, Daar Al Najaah Madarasa (Date: 2024.06.30. No: 2024010199RY)
Informed Consent: All concent forms were filled by participants
Peer-review: Externally peer-reviewed.
Author Contributions: Concept - AMS;SMH Design - AMS;SMH; Supervision - AMS;SMH; Resources - AMS;SMH; Materials - AMS;SMH; Data Collection and/or Processing - AMS;SMH; Analysis and/or Interpretation - AMS;SMH; Literature Search - AMS;SMH; Writing Manuscript - AMS;SMH; Critical Review - AMS;SMH; Other – AMS;SMH
Conflict of Interest: The authors have no conflicts of interest to declare.
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Evaluation of The Effect of Pre-Operative Informed Consent Form On Pre-Operative Anxiety

Sultan ZORTUL[1]
[1]Tortum State Hospital, Erzurum, Türkiye

ABSTRACT

Objective: This study aimed to evaluate the effect of a detailed pre-operative informed consent form on pre-operative anxiety.

Methods: The research was designed as a quasi-experimental study. The participants were 66 patients, aged 18-70, who were randomly selected based on their order of registration from those admitted to the General Surgery Service of Atatürk University Faculty of Medicine between March and June 2013. The same method was applied to patients staying in the same room: odd-numbered room numbers were assigned to Group 1, and even-numbered room numbers to Group 2. The standard informed consent form was read to Group 1 using a face-to-face interview technique, while the Beck Anxiety Scale was applied to Group 2 after they received a detailed informed consent form that included photographs of the surgical technique, procedures, and potential complications. Statistical significance was determined with Student's t-test, Mann-Whitney U test, and Pearson's chi-square test.

Results: The mean age of participants was 45.5±14.66 years, with 31 (47%) female and 35 (53%) male participants. It was found that 31.8% of the participants did not experience anxiety (n=24), 36.4% had mild anxiety (n=13), 19.7% had moderate anxiety (n=8), and 12.1% had severe anxiety. In Group 1, 15.2% (n=5) did not have anxiety, 36.4% (n=12) had mild anxiety, 36.4% (n=12) had moderate anxiety, and 12.1% (n=4) had severe anxiety. In Group 2, 48.5% (n=16) did not have anxiety, 36.4% (n=12) had mild anxiety, 3% (n=1) had moderate anxiety, and 12.1% (n=4) had severe anxiety. The difference between the two groups regarding the presence of anxiety was statistically significant (*P* = .04). Group 2 showed a lower anxiety level compared to Group 1. Furthermore, a positive correlation was found between lower education levels, presence of chronic disease, smoking, and higher anxiety levels.

Conclusion: The study results emphasize that providing a detailed informed consent form, which includes images of the surgical procedure, significantly reduced pre-operative anxiety levels in patients. Moreover, factors such as male gender, marital status, smoking, and the presence of chronic diseases were associated with higher anxiety levels prior to surgery.

Keywords: Anxiety, informed consent, surgery

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Corresponding author:
Sultan ZORTUL
E-mail: sultan.oksuz11@gmail.com
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INTRODUCTION

Informed consent is a collaboration process between physicians and patients to reach a mutual treatment decision. By obtaining this consent, not only does the physician protect himself from situations that could be considered fault before the law, but it also increases the success of the treatment while improving patient compliance. Informed consent is one of the leading requirements of good medical practice. Within the context of good medical practices, it is important and necessary for the physician to involve the patient in decisions about treatment and to mobilize for the implementation of individual health-related decisions. The information to be provided for this purpose must be clear and understandable.[1]

The consent of individuals is obtained through informed consent after they are informed. Informed consent has broader meaning than information does and means that the patient authorizes the physician to intervene in his/her own body.[2]

While the patient's consent is obtained, before any medical intervention, verbal information is given to the patient in accordance with the patient's culture and education level on issues such as possible causes, complications, course and treatment stages of the current disease, and whether the information is understandable is checked.[3]

In China, the content and implementation methods of informed consent are regulated by national legislation and international agreements. Patient rights, which are guaranteed by the declarations of Lisbon and Amsterdam, the Council of Europe Convention on Human Rights and Biomedicine and the European Convention on Patient Rights, are also protected by national legislation.[4]

Through informed consent, the patient is given the right to know in detail any intervention that will be performed on his or her body and to delegate the necessary authority to the physician to intervene in his or her body. It is a legal obligation to obtain informed consent from patients before medical intervention. In addition, the Turkish Medical Association also has decisions regarding the necessity of obtaining informed consent. In accordance with the Turkish Medical Association Disciplinary Regulation and Turkish Medical Association Medical Professional Ethics Rules, informed consent must be obtained before any medical intervention can be performed on the patient's body.[5]

Completing the informed consent form not only strengthens patient–physician communication in the joint decision-making process but also reduces fears and anxiety by informing the patient. In addition, it is highly important for physicians, and in this way, the physician can protect himself against situations that may occur during and after the medical intervention he provides to the patient should inform the patient accordingly. Therefore, what is required in an ideal informed consent form will include the correct description of the procedure or treatment to be applied to the patient, the risks that may occur and the benefits to the patient after the procedure, the probability of the benefit he or she will receive, its benefits, possible positive or negative consequences that may occur if the procedure or treatment is not performed, alternative methods to the current procedure and the risks of these methods.

This study was planned because there are not enough studies in the national and international literature on the effects of informed consent, including visual information on patient anxiety. This study aimed to evaluate the effect of a preoperative informed consent form on preoperative anxiety levels.

METHODS

The Atatürk University nonpharmaceutical clinical research ethics committee received approval from the decision number B.30.2.ATA.0.01.00/64, and the study was conducted in accordance with the principles of the Declaration of Helsinki. Informed consent was obtained from the participants.

This study was planned as quasiexperimental research. The participants were 66 people between the ages of 18 and 70 years who were randomly selected according to the order of registration among the patients who were admitted to the General Surgery Service of Atatürk University Faculty of Medicine between March and June 2013. The same method was applied to patients staying in the same room; odd-numbered room numbers were considered group 1, and even-numbered room numbers were considered group 2.

The Atatürk University nonpharmaceutical clinical research ethics committee received approval from the decision number B.30.2.ATA.0.01.00/64, and the study was conducted in accordance with the principles of the Declaration of Helsinki.

The informed consent form was read to group 1 via face–to–face interviews. Before the informed consent form was read, group 2 consisted of photographs showing the surgical technique, its application and possible complications, and the Beck Anxiety Scale was subsequently applied to both groups.

When the Beck Anxiety Scale was evaluated, 0–8 points indicated no anxiety, 8–15 points indicated mild anxiety, 16–25 points indicated moderate anxiety, and 26–63 points indicated severe anxiety. The population of the study consisted of 66 volunteer patients who were hospitalized for surgery at the General Surgery Service for four months.

The criteria for inclusion in the study were to be hospitalized for surgery at the General Surgery Service of Atatürk University Faculty of Medicine, to be between the ages of 18–70, and to be a volunteer. The exclusion criteria were the presence of coronary artery disease (CAD); the presence of respiratory disease, such as asthma and *chronic obstructive pulmonary disease (*COPD*)*; the

presence of acute cerebrovascular accident (CVA); the presence of nervous system diseases that affect mental status; the presence of a disease caused by exposure to hypoxia; the presence of a psychiatric disease; the presence of hemiplegia and hemiparesis in the upper extremities; the presence of aphasia; the presence of vision and hearing problems during the postoperative period; and the use of sedative, anticholinergic, sedative-acting anticonvulsant, tricyclic antidepressant, antipsychotic, or narcotic analgesic medication.

Independent variables examined in the evaluation of groups obtained via systematic sampling. While the Beck Anxiety Scale score was the main outcome measure, anxiety levels were determined according to the sociodemographic characteristics of the participants in the 1st and 2nd groups.

The data obtained were analyzed with SPSS Statistics 26 (IBM SPSS Corp., Armonk, NY, USA). The number and percentage were used as descriptive statistics; the arithmetic mean and standard deviation were used. Student's t test, the Mann–Whitney U test, the Pearson chi-square test, and the Fisher–Freeman–Halton exact test were performed to determine the level of statistical significance, and the significance value was accepted as P <.05.

RESULTS

In our study, while our mean age was 45.5 ± 14.66 years, 31 (47%) female participants and 35 (53%) male participants were included. A total of 13.6% (n=9) of the participants were single, 86.4% (n=57) were married, 16.7% (n=11) had no children, and 83.3% (n=55) had children. A total of 66.7% (n=44) of the participants smoked, 33.3% (n=22) did not smoke, 7.6% (n=5) used alcohol, and 92.4% (n=61) did not use alcohol. While (n=24) 36.4% of the participants had a chronic disease, (n=42) 63.6% did not have a chronic disease. A total of 28.8% (n=19) of the participants used medication regularly, and 71.2% (n=47) did not use medication regularly.

The mean age of group 1 was 44.5±15.3 years, and for group 1, 42.4% (n= 14) of the participants were women, 57.6% (n=19) were men, 15.2% (n=5) were single, 84.8% (n=28) were married, 78.8% (n=21) smoked, 3% (n=19) drank alcohol, 39.4% (n=13) had a chronic disease, and 33.3% (n=11) used medication regularly. A total of 54.5% (n=18) of the participants in group 1 were primary school graduates. Three percent master's degrees were detected. Comparisons of the group features are presented in Table 2. There was no significant difference in the health history or sociodemographic characteristics of the participants in either group, and the distribution within the groups was homogeneous. (Table 1 and Table 2)

Table 1. Characteristics of the participants

		Group 1 n (%)	Group 2 n(%)	*P*
Alcohol	Yes	1 (3)	4 (12.1)	
	No	32 (97)	29 (87.9)	>.05
Smoking	Yes	21 (63.6)	23 (69.7)	
	No	12 (36.4)	10 (30.3)	>.05
Chronic disease	Yes	13 (39.4)	11 (33.3)	
	No	20 (60.6)	22 (66.7)	>.05
Drug use	Yes	11 (33.3)	8 (24.2)	
	No	22 (66.7)	25 (75.8)	>.05

The data are presented as frequencies (%). Pearson chi-square test, Fisher-Freeman-Halton exact test (P<.05)

Table 2. Sociodemographic characteristics of the participants

Marital status	Group 1 n (%)	Group 2 n (%)	*P*
Married	28 (84.8)	29 (87.9)	>.05
Single	5 (15.2.)	4 (12.1)	>.05
Children			>.05
Presence	26 (78.8)	29 (87.9)	>.05
Absence	7 (21.2)	4 (12.1)	>.05
Education level			>.05
Illiterate	1 (3)	5 (15.2)	>.05
Primary school	18 (54.5)	14 (42.4)	>.05
High school	10 (30.3)	7 (21.2)	>.05
University	3 (9.1)	7 (21.2)	>.05
Master's degree	1 (3)		>.05

The data are presented as frequencies (%). Pearson chi-square test, Fisher-Freeman-Halton exact test (P<0.05)

The number of participants who did not have anxiety in group 1 was n=5 (15.2%), and the number of participants who did not have anxiety level in group 2 was n=16 (48.5%) (Table 3). The difference observed between the groups in terms of the presence of anxiety was significant (P = .04).

Table 3. Anxiety levels of the groups

Anxiety levels	group 1 n (%)	group 2 n (%)	*P*
Absent	5 (15.2)	16 (48.5).	*.04*
Mild	12 (36.4)	12 (36.4)	>.05
Moderate	12 (36.4)	1 (3)	>.05
Severe	4 (12.1)	4 (12.1)	>.05
Total	33 (100)	33 (100)	

The data are presented as frequencies (%). Pearson chi-square test, Fisher-Freeman-Halton exact test (P<.05)

When the factors affecting anxiety level were evaluated, there was a significant difference in the anxiety level of the participants with chronic diseases according to education level in Group 1 (P = .02, Table 4).

Table 4. Anxiety Levels of Participants with Chronic Diseases According to Education Level

		Group1	Group 2	*P*
Primary school	Absent	1 (7.7)	2 (18.2)	
	Mild	4 (30.8)	3 (27.3)	*.02*
	Moderate	4 (30.8)	00	
	Severe	2 (15.4)	00	
High school	Absent	1 (7.7)	1 (9.1)	
	Mild	00	00	
	Moderate	00	00	>.05
	Severe	00	2 (18.2)	
University	Absent	00	1 (9.1)	
	Mild	00	1 (9.1)	
	Moderate	00	00	>.05
	Severe	00	1 (9.1)	
Master's degree	Absent	00	00	
	Mild	00	00	>.05
	Moderate	1 (7.7)	00	
	Severe	00	00	
Total		13 (100)	11 (100)	

The data are presented as frequencies (%). Pearson chi-square test, Fisher-Freeman-Halton exact test (p<0.05)

All of the participants with chronic disease and severe anxiety levels in group 1 and 80% of the participants with moderate anxiety levels were primary school graduates (Table 4).

In group 1, the difference in anxiety level according to sex was not significant (*P*>0.05). However, while the proportion of male participants with moderate anxiety among all male participants was 42.1%, the proportion of female participants with moderate anxiety in the same group was 28.6% among all female participants. In group 1, the percentage of male participants without anxiety was 21.1%, and the percentage of female participants was 7.1%. In the same group, the percentage of male participants with severe anxiety was 5.3%, and the percentage of female participants was 21.4%. In Group 1, the differences in the presence of chronic disease, marital status and anxiety level were significant (*P* = .04, Table 5).

Table 5. Anxiety Levels of Participants with Chronic Diseases According to Marital Status

		Group 1	Group 2	*P*
		n (%)	n (%)	
Married	Absent	2 (15.4)	3 (27.3)	
	Mild	4 (30.8)	3 (27.3)	*0.04*
	Moderate	5 (38.5)	0	
	Severe	2 (15.4)	1 (9.1.)	
Single	Absent	00	1 (9.1)	
	Mild	00	1 (9.1)	0.05
	Moderate	00	00	
	Severe	00	2 (18.2)	
Total		13 (100)	11 (100)	

The data are presented as frequencies (%). Pearson chi-square test, Fisher-Freeman-Halton exact test (P<0.05)

All of those with chronic diseases and moderate to severe anxiety were married, and 85.7% of those who were married were men.

When the factors affecting anxiety level were evaluated in the second group, there was no significant difference between the sexes, but the rate of moderate and severe anxiety in men was 60%, whereas this rate was 40% in women.

When the relationship between smoking and anxiety was evaluated, there were no participants with moderate or severe anxiety among nonsmokers. In the second group, the difference between the presence and levels of anxiety and education levels was not significant, but when all education levels were evaluated, the rate of severe anxiety in high school graduates was 50%. When those with severe anxiety were evaluated in the second group, the percentage of those with chronic diseases was 75%, whereas 60% of the participants with severe anxiety in the same group were married.

DISCUSSION

In our study, the percentage of participants who did not have anxiety or minimal anxiety among the participants who signed a detailed informed consent form was higher than the percentage who did not have anxiety among the participants who signed a standard informed consent form. The rates of moderate and severe anxiety in group 2 were lower than those in group 1. In contrast, Erten et al. reported that excessive information could cause stress and increase the level of anxiety. Additionally, in Kiriş S.'s study, detailed informed consent forms increased the anxiety levels of patients.[6] Similar to our study, in a study conducted by Demir et al., anxiety levels decreased with increasing preoperative information. In Beder's study, when adequate and clear information was given with informed consent, the patients' anxiety scores decreased significantly.

In the study conducted by Şavk et al., a positive relationship was found between the perception of the disease and the level of preoperative anxiety, and as the perception of the disease increased, the level of anxiety also increased. In line with the literature, it was determined that preoperative information reduces the level of anxiety.[7]

According to the literature, providing clear answers to patients' questions and providing clear, reliable, necessary and sufficient information to patients who are given by taking enough time without being bogged down in detail has positive effects on preoperative patients, and even displaying this information and presenting it to patients in concrete form leads to a decrease in anxiety levels.

When the difference between anxiety levels in our study was examined, it was determined that the anxiety level of the participants who signed a standard informed consent increased with the presence of a chronic disease and that the patients with high anxiety levels had low education levels and were also married. When the majority of the participants in this group were male, the percentage of male participants was higher than the percentage of female participants. There was no significant difference between the anxiety level and gender of the participants who signed a detailed informed consent form, but the rates of moderate and severe anxiety were higher in men than in women. In this group, there were no smokers among the participants who did not have severe anxiety. In this group, 75% of those with severe anxiety had a chronic disease, and 60% of these participants were married. Similar to our study, Altınbaş et al. reported that the rate of preoperative anxiety was high in married participants. In studies conducted by Dursun A. and Arslan et al., male participants had greater preoperative anxiety. In a study conducted by Gok et al., the presence of a chronic disease caused an increase in anxiety levels.[8]

In our study, no significant relationship was found between marital status and preoperative anxiety, but anxiety scores in single and female patients were lower than those in married and male patients. Women may have low anxiety scores because they have had experiences such as birth and cesarean section, and married people have high anxiety scores because of their responsibilities for their spouses and children.

In the present study, the relationship between education level and the presence of anxiety was not significant. In a study conducted by Demir et al., high levels of anxiety were found in patients with low education levels.[9]

Considering the anxiety-inducing effect of a lack of information and uncertainty in patients, it seems that high anxiety in patients with low education levels is a natural result. To prevent this barrier, educating and informing the patient before the surgery, with realistic information about the procedure and after the procedure, can strengthen the patient's ability to cope with anxiety and can be an important step for postoperative success. The limitation of this study is that incomplete information on chronic disease type was provided by patients, and the type of chronic disease information could not be determined.

CONCLUSION

In this study, it was determined that obtaining informed consent from preoperative patients with a consent form containing images of the procedure to be performed reduces the anxiety level of surgical patients in general. The creation of visual and auditory consent forms may be planned on the basis of the results of studies with larger patient groups.

Ethics Committee Approval: The Atatürk University nonpharmaceutical clinical research ethics committee received approval from the decision number B.30.2.ATA.0.01.00/64, and the study was conducted in accordance with the principles of the Declaration of Helsinki.
Informed Consent: Informed consent was obtained from the participants.
Peer-review: Externally peer-reviewed.
Author Contributions: Design- SZ; Data collection- SZ; Analysis and/or interpretation- SZ; Literature review- SZ; Writing- SZ.
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Introduction to Assessment in Medical Education
(First of the Series)

ABSTRACT

This paper includes an operating definition of the assessment and further explanations of each unit of the definition. Some assessment principles and practical examples for undergraduate medical education are provided.

Keywords: Assessment, Definition, Principles, Medical education

Mustafa Kemal ALİMOĞLU[1]

[1] Department of Medical Education, Akdeniz University Faculty of Medicine, Antalya, Türkiye

INTRODUCTION

The dictionary definition of "assessment" is "the action or an instance of making a judgment about something".[1] However, this definition never serves enough when we intend to use the term "assessment" as an educational concept. One of the best definitions of what the assessment is in medical education can be found in the booklet of the World Federation for Medical Education Global Standards for Quality Improvement 2020. The assessment in this booklet starts with the following statement: "*Assessment assures, drives, guides, creates, and optimizes learning while providing feedback. In the context of a medical school, a system of assessment must exist, which incorporates multiple assessments that achieve the purposes of the school and its stakeholders*".[2] This statement explains well what is expected from the assessment and what medical schools should do to meet this expectation. The current paper is structured around the abovementioned definition.

Assessment to assure learning?

All training programs are organized on the basis of previously defined aims and objectives. The objectives of the programs/program units can be defined as outcomes/competencies or pure learning objectives. Independent of what we call them, the objectives are the statements explaining the characteristics that students are expected to gain at the end of the program. If we define these characteristics in terms of observable behaviors (such as taking a medical history of a patient or counseling a patient about a certain health issue), then our expected characteristics will be "competencies". Today, medical schools generally define the characteristics expected from students at the graduation point as graduate competencies. If we define the expected characteristics in terms of knowledge, skills and attitudes, they may be called "learning objectives". Medical schools define the learning objectives to design programs that guide their students to gain the knowledge, skills and attitudes required for achieving graduate competencies at the end.

All competencies or learning objectives are defined under the assumption that they are attainable by all students. If assessment is expected to assure learning, all objectives must be tested to confirm that our assumption is met. This requirement is related to the concept of validity, which refers to one of the basic principles of assessment: "Assessment procedures must be valid". Validity is a term used to determine whether an assessment instrument truly tests what it is supposed to test. The concept of validity may be further expanded into the following:[3]

Content validity: Representativeness of learning objectives in the assessment.

Construct validity: Congruence of the assessment instrument with the purpose. For example, if we intend to test the procedural skill of a student, then we need to use a test in which we directly observe the student while he/she is performing that skill to ensure construct validity. If we prefer a paper and pencil test for the same purpose, the construct validity of the test would be low.

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Corresponding author:
Mustafa Kemal ALİMOĞLU

E-mail: kalimoglu@akdeniz.edu.tr
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Predictive validity: Ability of the assessment instrument to predict the future performance of examinees. For example, the relationship between the performance of a student in the final examination of any academic year and performance during training in the internship period.

Face validity: Acceptability of the instrument to the users (students, teachers) in determining its usefulness to measure what it is supposed to measure.

The content and construct validity need to be regarded as a "must" by medical schools to confirm that assessment ensures learning. Blueprints are used to check whether all defined objectives are tested (content validity) via proper assessment methods (construct validity). Blueprints are a table in which objectives (not subject headings) of the assessed program unit are matched with the assessment methods and test content. Blueprints should be used for every level of program units and their objectives. A proper blueprint is the first crucial step in developing a valid examination and must not be overlooked. Some examples are provided below:

Table 1. Blueprint for graduate competencies

Graduate Competencies	Assessment Methods
Learning objective 1: ……	Multiple Choice Questions test, assay, oral exam, OSCE, bedside assessment, portfolio
Learning objective 2: ……	Multiple Choice Questions test
Learning objective 3: ……	Bedside assessment
Learning objective 4: ……	Logbook etc.
Learning objective 5: ……	……
Learning objective 6: ……	……
Learning objective 7: ……	……
…….	……

OSCE Objective Structured Clinical Examination

This table provides an opportunity for the medical school to check whether every graduate competency is assessed (content validity) via at least one proper assessment method (construct validity) throughout the medical education program (Table 1).

Table 2. Blueprint for the learning objectives of any program unit

Learning objectives of an academic semester/ year/block/module etc.	Cognitive domain	Assessment Methods
Learning objective 1: ……	Knowledge (theoretical)	Multiple Choice Question test, assay, oral exam
Learning objective 2: ……	Knowledge (theoretical)	Multiple Choice Question test
Learning objective 3: ……	Skill (motor)	OSCE
Learning objective 4: ……	Skill (motor)	OSPE
Learning objective 5: ……	Knowledge (self learning)	Homework
Learning objective 6: ……	Knowledge (critical thinking)	Student project etc.
Learning objective 7: ……	Attitude	360 degree evaluation
…….	…….	……

OSCE Objective Structured Clinical Examination; OSPE Objective Structured Practical Examination

This table provides an opportunity for the medical school to check whether every learning objective is assessed (content validity) via at least one proper assessment method (construct validity) throughout the academic semester/year/block/module, etc. The table demonstrates that one type of exam would never be enough to test all the objectives of any program unit (Table 2). Multiple assessment methods should be applied to ensure the content and construct validity of the entire assessment process of any program unit.

Table 3. Blueprint for an individual test

Learning objectives that must be assessed by the test	Test content (questions, stations etc.)						
	1st	2nd	3rd	4th	5th	6th	….
Learning objective 1: ……	x			x			
Learning objective 2: ……		x					
Learning objective 3: ……			x				
Learning objective 4: ……					X		
Learning objective 5: ……						x	
Learning objective 6: ……							x
…….	…	…	…	…	…	…	…

This table provides an opportunity for the medical school to check whether every learning objective is assessed in the properly selected exam (content validity) using at least one question/station/observation, etc. In this kind of blueprint table, there must be no empty line or column to ensure that every learning objective related to this exam is tested (Table 3). The first column of the table should include the learning objectives of the period for which the exam is being performed. For example, if the test is a final exam, learning objectives of the academic

year, or if the test is a block exam, then the learning objectives of that block, committee, etc., should take part in the first (learning objectives) column of the table.

It is also possible to plan any assessment process in detail by using blueprints. In integrated curricula, detailed planning is important to ensure the validity of the assessment. If the medical school conducts a system-based integrated curriculum, different body systems should be represented in the assessment of any period, for example, in the final exam. In such a case, multiple blueprints arranged from general to specific can be used, as shown below (Table 4a, 4b, 4c):

Table 4a. Selection of student tasks and body systems to be held in the assessment process

System/Task	Cardiovascular	Respiratory	Gastrointestinal	……..
History taking	x			
Physical examination		x		
Clinical reasoning			x	
…….				x

Table 4.b. Selection of student tasks and clinical presentations to be held in the assessment process

System/Task	Cardiovascular	Respiratory	Gastrointestinal	……..
History taking	Chest pain			
Physical examination		Breathlessness		
Clinical reasoning			Epigastric pain	
…….				….

Table 4.c. Selection of student tasks and assessment methods to be held in the assessment process

System/Task	Cardiovascular	Respiratory	Gastrointestinal	……..
History taking	OSCE (simulated patient)			
Physical examination		Bedside assessment (real patient)		
Clinical reasoning			Structured oral exam	
…….				….

OSCE Objective Structured Clinical Examination

Assessment to create and guide learning?

One of the most referred statements in the assessment literature is “assessment drives learning,” which was stated by George E. Miller.[4] For assessment to drive student learning, some requirements are needed, as outlined below:

First, clearly defined learning objectives that describe the expectations of the learners as a whole or in any part of the medical education curriculum must be publicized by the school and known by the students. This will help the students design their learning journeys with respect to the strict aims and objectives to be achieved. Although it seems that this approach will produce standard types of students, this is not true. A type of flexibility is still available for students since they may adopt different paths in their learning experiences while considering their own preferred learning styles and interests to achieve the learning objectives.

Another requirement for assessment to create and guide learning is the existence of a robust system in which students can obtain help and counseling services in their learning journey. This would only be possible by using formative assessment methods and constructive feedback mechanisms. Formative assessment methods are applied with the aim of determining the learning deficiencies of the students throughout the learning process. Therefore, such assessment methods must be performed during the process, not at the end of any educational period. Frequent formative assessments may encourage students to distribute learning over time and review small amounts of information regularly rather than studying massive amounts of content at the last minute.[5] These assessments also help students stay engaged with the course content, resulting in better performance than single testing.[6] The use of formative assessments also allows students to self-assess their knowledge, identify gaps, and test their understanding.[7-9] Frequent formative testing also facilitates retrieval practices to strengthen retention over time so that the information learned serves as essential building blocks for new concepts and knowledge.[6] Additionally, retrieval practices can enhance students' ability to access stored information more readily.[10]

When feedback is provided on student performance in formative assessment processes, the student will be informed about his/her strengths and weaknesses. Throughout the rest of the educational program, the student will try to overcome the learning deficiencies regarding the provided feedback. Then, feedback must include not only strengths and learning deficiencies but also information on how the student can improve his/her performance or theoretical knowledge to achieve the learning objectives properly.[11]

Feedback is not specific to formative assessment only and must be provided subsequent to summative assessment as well. The aim of the summative assessment is to determine the extent to which learning objectives have been achieved by the students and to decide on students’ academic success. Therefore, such assessment procedures are applied at the end of each curriculum unit, not throughout the process. Students need to be informed about their exam performance (positive and negative aspects) after summative assessment procedures to gain insight into their

strengths and weaknesses. Medical education is a long journey, and feedback on a student's performance after a special unit of curriculum has been completed will have a guiding effect on the journey of the student throughout the whole curriculum.

Assessment to optimize learning?

If the expectation from assessment is to optimize the learning of the students, then medical schools and medical teachers should first decide what kind of learners they prefer. If the school or teaching staff desires a learner profile that memorizes the facts in the last few days prior to summative tests without any effort to understand the content deeply, then the assessment formats just testing the recall of facts (memorization skills of the students) are acceptable. On the other hand, if the school and teachers would like to walk with deep learners who understand and explain the underlying reasoning and mechanisms of the theoretical facts and/or who can perform close to real-life performance, then assessment approaches that urge the students to be such learners are needed. As a matter of major paradox, all medical schools and teachers desire to have deep learning students; however, they generally reward surface learners with the assessment methods they use. [12,13] In this manner, the expectation of creating deep learners by assessing their surface learning, such as memorization skills, can be realized only with the good will of the students, not with any intervention from the school.

Assessment is the most valuable power in our hands to direct the learning and studying habits of our students and cultivate a deep learning approach. Therefore, we should carefully select the assessment methods to direct our students to the learning style we desire. For this purpose, the literature suggests that assessment approaches requiring higher cognitive levels, such as reasoning and problem solving, and focusing on the application of information promote the use of effective learning strategies and permanent learning.[4,8,14-16] If we adopt assessment approaches and methods that require students to prepare for exams by learning the underlying logic and mechanics or by developing skills that simulate real-life performance, we can be sure that students will try their best to meet these requirements for academic success.

Assessment System

Competency-based medical education is the most common strategy used to design medical education programs. A programmatic assessment approach may be considered when trying to establish assessment systems for competency-based medical education curricula. Although assessment is a part of educational programs, the programmatic assessment approach considers the assessment system as if it is an independent program. Assessment is necessary for progress and award decisions; however, it may also be considered a learning program for students. Therefore, assessments deserve planning and continuous review and renewal, such as educational programs. In the programmatic assessment approach, the data derived from assessment should display the progress and development of students throughout their program. For this purpose, no one assessment point should determine progress or award; instead, such decisions should be based on an aggregation of data from multiple assessment points. Individual methods of assessment, purposefully chosen for their alignment with the curriculum outcomes and their information value for the learner, the teacher and the school, are seen as individual data points. The information value of these individual data points is maximized by giving feedback to the learner. Self-regulation of learning, through analysis of the assessment information and the achievement of the learning objectives, needs to be supported by a mentoring system.[17,18] An assessment should inform curriculum planners since the assessment results are the most reliable data for evaluating the effectiveness of a program.

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