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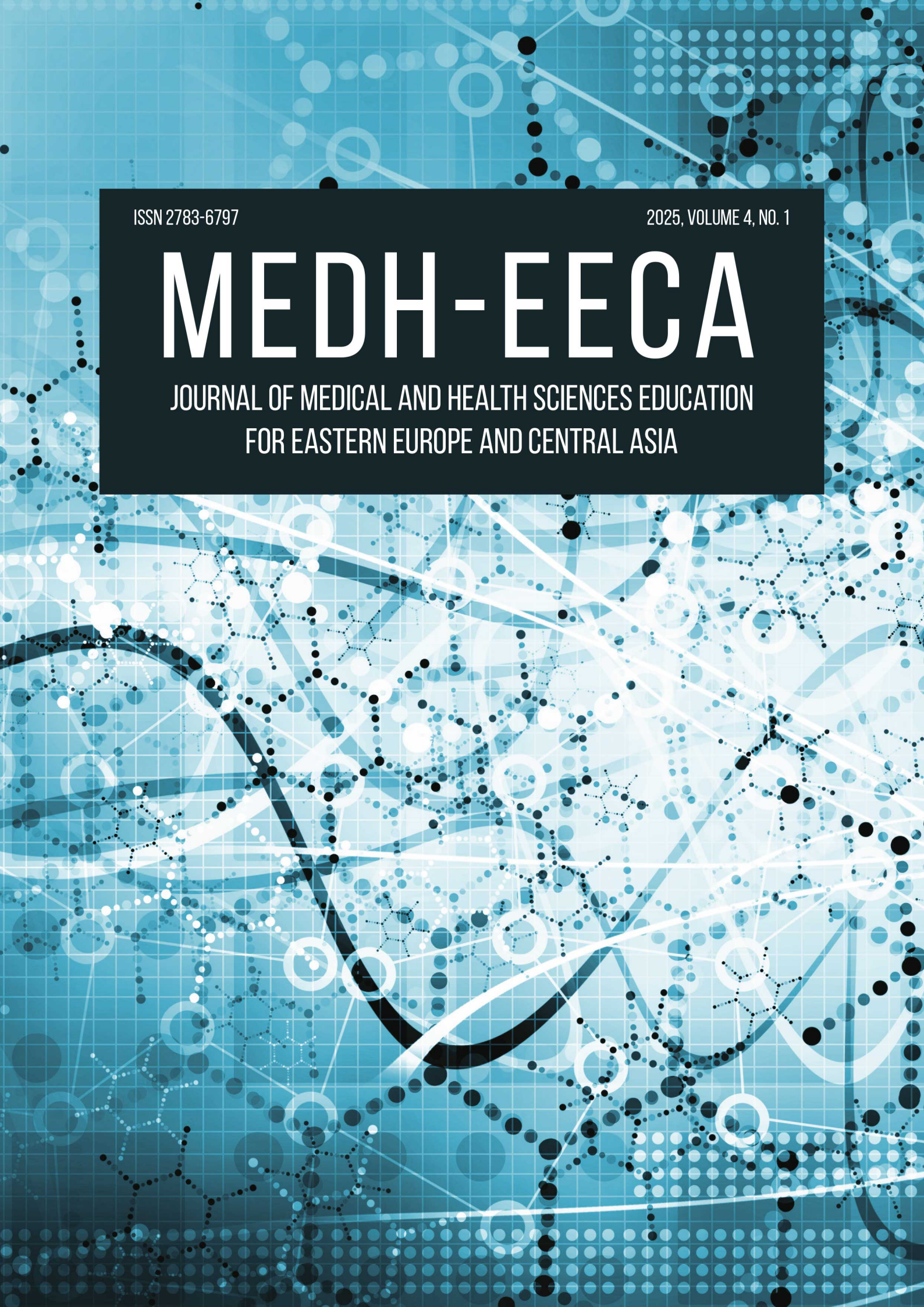

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Aims and Scope

The Journal of Medical and Health Sciences Education for Eastern Europe and Central Asia (MEDH-EECA, ISSN 2783-6797 is an annual, peer-reviewed, international general research and practice journal).

The purpose of the MED-EECA is to advance knowledge and disseminate research findings that are directly relevant to the practice of health science education, including multiple fields of medical, public health, nursing, and pharmaceutical training. The journal publishes scholarly papers on all aspects of health science education including: peer review evaluation and case studies; institutional accreditation and training programme accreditation related materials; the theory, practice and policies relating to management, improvement of quality in medical and other health sciences education; new initiatives and models in learning and teaching that impact on quality and standards; links between quality assurance and employability of healthcare staff; evaluation of the impact of quality procedures at national level; theoretical and practical analyses of quality and quality initiatives in health science training; comparative studies between institutions or countries, etc. In particular, the journal specifically aims to become a platform available for Eastern European and Central Asian countries to share the new ideas and demonstrate rapid and significant advancements in reforming the training of human resourses for healthcare.

Original articles with scientific investigations and systematic literature reviews are welcomed from professionals of other health related fields on issues that have a direct impact on the area of staff training and strengthen evidence-based practice. Letters to the editor with commentaries on published papers or research and clinical issues, as well as short communications, will be taken into consideration and not left unanswered. This journal also provides space for announcements and an international calendar for professional conferences in the area of training of healthcare professionals.

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EDITORIAL

EMPOWERING THE FUTURE: THE ROLE OF LEADERSHIP TRAINING IN PHARMACY

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The role of pharmacists is rapidly evolving – from primarily dispensing medications and providing pharmacotherapy advice to taking on more directive, patient-centered responsibilities. Across various healthcare systems, pharmacists are increasingly recognized as accessible healthcare providers capable of delivering clinical services. For instance, in the United Kingdom, pharmacists now offer consultations and prescribe contraceptives [1], while in Australia, they manage uncomplicated urinary tract infections through structured clinical protocols [2], in Lithuania they vaccinate against certain infectious diseases, such as tick-borne encephalitis and seasonal influenza [3].

These examples highlight a global shift toward integrating pharmacists, with their training and experience, more fully into primary care delivery. However, this transformation does not come without challenges. As pharmacists take on broader clinical and managerial roles, they must also develop new skill sets that extend beyond pharmacological knowledge. One of the most critical of these is leadership – the ability to guide teams, influence health policy, innovate in service delivery, and advocate for the profession.

The complex nature of the medicines supply chain, from manufacturing to dispensing, is a fundamental for pharmacists and therefore by formal and experiential learning pharmacists has strong management (planning, organizing, staffing, directing, controlling) capabilities. Enabling pharmacist leadership provides for strong application of pharmacists to inspire others to achieve goals, through vision, influence and action – critical to change, reform, innovation and sustainability.

Leadership in pharmacy is no longer a luxury or the exclusive domain of senior management in organizations. It is now a vital competency for all pharmacists – across community practice, hospitals, and academia. Providing pharmacists with leadership training not only equips them to deliver advanced services but also empowers them to influence and shape the future of healthcare. Recognizing this, the International Pharmaceutical Federation has prioritized leadership development as Pharmaceutical Workforce Development Goal 6: “Leadership Development”. This goal urges all nations to establish national programs and strategies that foster both clinical and executive leadership skills throughout the entire career trajectory of pharmacists and pharmaceutical scientists [4].

The evolving understanding of the importance of leadership in pharmacy has led to an increased emphasis on leadership training within pharmacy education and practice. A comprehensive review identified seven core leadership competencies essential for preparing future pharmacists: leadership knowledge, self-awareness, collaboration, change management, business skills, systems thinking, and a commitment to lifelong learning [5]. Another literature review identified sixteen leadership competencies for pharmacists, which can be grouped into three domains: 1) knowledge (leadership characteristics, pharmacy profession); 2) skills and abilities (social insight, communication, perseverance, negotiation, persuasion, strategic planning, relationship-building, self-regulation, decision-making, personnel management); and 3) other characteristics (service orientation,

team orientation, learning orientation, ethical orientation) [6].

With strong leadership competencies, pharmacists can champion change both their profession and into health organizations and services. Pathways for pharmacist leadership growth and development have been identified with a multifaceted landscape of pharmacy leadership competencies [7]. Embedding leadership competencies into pharmacy curricula through experiential placements, immersive workshops, mentorship, and reflective exercises is essential for developing well-rounded pharmacy leaders. Leadership training is not merely beneficial – it is necessary. Research shows that interpersonal skills such as emotional intelligence, relationship-building, and effective communication are often overlooked in traditional pharmacy programs, leaving many graduates underprepared for leadership roles. Integrating structured leadership training into pharmacy education helps bridge this gap and empowers professionals to confidently take on leadership responsibilities – whether in formal positions or in everyday influential roles [8]. As a result, leadership learning, experience and courses are being incorporated into pharmacy training programs not only in highly developed countries, particularly the United States [9], but also across regions like Eastern Europe and Central Asia, including countries such as Ukraine [10]. The Lithuanian University of Health Sciences has also integrated leadership learning themes into its pharmacy training programs. Future pharmacists study a variety of topics, including – but not limited to – the concept and evolution of leadership, emotional intelligence, human resource management, teamwork, and communication in pharmaceutical practice [11].

As the scope of pharmacy practice continues to expand, the need for strong, adaptable, and visionary leaders within the profession becomes increasingly clear. Leadership training is no longer optional – it is an essential component of preparing pharmacists to navigate complex healthcare environments, drive innovation, and advocate effectively for their patients and the profession. By embedding leadership competencies into education and professional development, the global pharmacy community can ensure that future pharmacists are not only clinically competent but also capable of shaping the future of healthcare. Empowering pharmacists through leadership development is not just about enhancing individual careers – it's about strengthening healthcare systems and improving patient outcomes worldwide.

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THE IMPACT OF THE PRECLINICAL ONLINE FLIPPED CLASSROOM ON THE CRITICAL THINKING, GROUP WORKING AND INDEPENDENT LEARNING ABILITIES FROM STUDENT'S AND TEACHER'S PERSPECTIVE

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ABSTRACT. Background and Aim. This innovative teaching methodology – Flipped Classroom (FC) – was implemented during COVID-19 pandemic for medical programme students in the Petre Shotadze Tbilisi Medical Academy. The purpose of the study was to find out the impact of the online Flipped Classroom method on critical thinking, group working and independent learning abilities from student's and teacher's perspective. **Methods.** Seven basic teaching courses (anatomy, histology, immunology, microbiology, physiology, pharmacology and pathology) were involved. Special survey was conducted later in order to evaluate opinion of teachers and students about FC classes. Mixed qualitative and quantitative survey was carried out. In the first stage the structured written and oral interviews with the focus groups of students and teachers was carried out. Finally, the quantitative questionnaire survey about FC strength and weaknesses was conducted. 254 students and 22 teachers filled in the questionnaires. **Results.** The majority of teachers and students positively assessed the impact of online FC classes on the development of students' Critical Thinking (71.0% and 65.5%, respectively), Independent Work skills (67.0% and 62.0%) and especially Group Working skills (74.0% and 67.9%). **Conclusion.** The large majority of teachers (95%) reported that the FC is effective in motivating students, increasing their interest in the subject. Results will facilitate the implementation of modern on-line teaching methods in MD Programme Curriculum.

Keywords: medical education, online learning, flipped classroom, teaching preclinical subjects, students' perspective, teachers' perspective.

Introduction

The current healthcare system with an approach of patient-centred health care requires highly professional and competent physicians to collaborate in an interdisciplinary team to realize safe, high quality, and cost-effective patient care. These factors underlie the growing trend for medical education reform and make essential the implementation of learner-centred models as well as competency-based curricula in which student progression is achieved by demonstration of "mastery of academic content, regardless of time, place, or pace of learning" [1]. To meet the needs of the 21st century healthcare profession, new ways of teaching and learning in higher education should be developed. Medical schools must ensure "self-directed learning experiences" for their students to foster the development of lifelong learning skills [2]. One possible approach to support a learner-centred model and prepare students for life-long learning, is the Flipped Classroom (FC) methodology [2].

Flipped Classroom is one of the active learning methods which provides a dynamic learning process to facilitate a learner-centred environment. In an FC, active learning is a mechanism for a self-directed, organic, collaborative learning environment, it is the practice of assigning to the students' didactic material, traditionally covered in lectures,

to be learned before class while using face-to-face time for more engaging and active learning strategies. Core elements of an FC include assigned pre-class content, formative assessment, working on learning gaps, developing competency, and the teachers' role as a facilitator (guide on the side) [3].

Advantages of the Flipped Classroom are: 1) Learning is personalized (student-centred approach) with the needs of the student: students can study the resource material provided at their own pace (time can vary), individually, in pairs or in small groups. 2) The classroom process is transformed from a passive into an active experience. 3) In the classroom session teacher provides feedback and remediation for students. 4) Use of face-to-face time enables some instructor control and enables learners to practice higher order skills inside the classroom with tutor guidance. This increases motivation, enables deeper learning, clear up any misunderstandings or reinforces key points, and provides for better information management. 5) Students have opportunities to enhance their digital literacy skills through engagement with Flipped Classroom activities. 6) Students have more time to learn the information in advance of the class.

The FC has been presented in medical education as early as the mid-1990s with the introduction of team-based learning (TBL) methodology [3]. Since then the FC has been adopted by an increasing number of medical schools. According to several meta-analysis FC method showed positive effects regarding engagement, motivation, overall satisfaction and learning outcomes [4, 5]. It is worthy to mention, that many authors suppose, that the outcomes of flipping the classroom may be conditional upon different factors, such as the context of the flipped classroom (including learners, quality of learning resources, and the skill of the teachers) and the mechanism of change in the process of learning (e.g., motivation, effort, and learning strategies [5, 6]. Despite the growing popularity of FC, it may not produce expected outcomes due to a lack of pedagogical integrity [7]. From the teachers' perspective, several challenges were found out – it has been reported, that FC model requires more time (14 %) and workload (7 %) from the teachers. Pre-recording of the video lectures and preparing of other flipped learning materials is time consuming for teachers. Designing appropriate accompanying quiz questions and other out-of-class activities also requires additional time [8, 9, 11, 12].

Many authors concluded that a FC methodology is an effective pedagogical approach, only when appropriately designed and properly implemented. Some studies provided a few general directions to effective design of a FC – sustaining face-to-face time and added quizzes are critical features for a successful implementation of a flipped classroom [9]. So, for the success of the FC approach, it is important to plan the FC carefully in advance and to prepare faculty and students for its implementation.

TMA has one integrated Study Program in Medicine with two tracks – one in Georgian and one in English. Both programs were successfully accredited by expert panel headed by the WFME expert in March 2020; In Georgia CBME – Competency-Based Medical Education concept-based national benchmark document was issued in January, 2018; In April 2018 TMA was granted institutional authorization).

During the COVID-19 pandemic educational institutions had to change quickly the curricula an on- site classes to distance learning. This was a challenging time, but it also provided opportunities to improve the quality of digital teaching and learning if applied appropriately. Many universities offered an approach to face the challenge of digital teaching and to implement a new way of online teaching using an existing concept of FC and to modify it to the special needs of this time and the time after the crisis [11].

The aim of the study. Due to the COVID-19 pandemic in March 2020 Petre Shotadze Tbilisi Medical Academy (TMA) moved to online learning. Student-cantered learning approach has been found to be more difficult

to achieve in online teaching than in face-to-face teaching. To solve this problem, after reviewing related literature and experiences of the colleagues, it has been decided to pilot FC format in preclinical teaching courses. This format gained special interest and became of utmost importance during the last, COVID-19 pandemics year, throughout the world among the medical educators in order to improve online learning opportunities [11].

We have designed the study to find out how online FC format promotes students' active involvement in the learning process and helps students to take responsibility for their own knowledge. This study was designed to find out the benefits the students perceive from FC method during online learning; how online FC format promotes development of transferable skills that build up the three important competencies for future doctors – critical thinking, independent learning and group working from students' and teacher's perspective. We had expectation that this study will help facilitate student-centred learning approach in MD curriculum, and will provide us with reference point for future curriculum development in terms of student-centred approach.

The following main aims of the study was formulated:

- To find out the impact of the preclinical online FC method on the students critical thinking, group working and independent learning abilities from student's and teacher's perspective.
- To determine possibilities for further implementation of FC format in MD curriculum at preclinical level.

Materials and Methods

Prospective, mixed (qualitative and quantitative) study was designed. A special plan was elaborated with the Curriculum Committee of the TMA for the implementation of online FC format in preclinical subjects [13–15].

The list of the components of the plan are presented below:

1. Identification of the courses that will be involved in the project on a pilot basis;
2. Elaborating training materials for teachers;
3. Elaborating information materials for students;
4. Formulation of the recommendations for the teachers;
5. Conducting 'training the trainers' for the subject teachers – clarifying FC concept and providing workshop – how to perform FC format online;
6. Training the teachers, the IT skills – how to make online groups in Google Meet;
7. Identification of the groups of the students, who will be involved in the pilot project;
8. Giving information to students in advance about the importance and purpose of FC approach;
9. Preparation of materials of the FC sessions by the teachers under the guidance of the heads of the Departments;
10. Agree with the schedule and deadlines of FC sessions;
11. Agree on online meetings with teachers to share the experience after they have performed their first FC;
12. Identification of the focus group of the students and teachers for pre-survey interviews to get information regarding their understanding of critical thinking, independent learning and group work;
13. Elaboration of the questionnaire for the students and for the teachers for the evaluation of the impact of the preclinical online FC on the critical thinking, group working and independent learning abilities.
14. Perform survey;
15. Interpretation of the results of survey

In total 350 TMA medical students (the semester I–VI) and 25 teachers were involved in online FC format teaching in 7 preclinical subjects – Anatomy, Histology, Physiology, Pharmacology, Microbiology, Immunology, Pathology. Special 2 session training courses were conducted for the teachers. During the training courses teachers were introduced information about the FC approach – Concept, structure, main components, assessment, advantages and disadvantages of FC and also the special instructions, how to perform FC online. According to the literature, proper

planning, clear pre-packaged instructions for teachers and students is considered to be one of the important prerequisites for the success of FC approach [9]. Instructions-recommendations for the teachers were following:

1. **Pre-Class Activity** – Teacher gives students topic without explanation, only with references to appropriate materials (students can use video-lectures) for independent study and introduces goals of the learning process – Learning Outcomes;
2. **In-Class Activity 1** – When students come back to the seminars, they write Readiness Assurance tests. Each student writes a different test (number of tests may be from 2 to 5 – maximum score 1.0). Teacher discusses uncertain topics with students.
3. **In-Class Activity 2** – Teacher divides students into groups, gives them clinical cases or tasks and a reasonable time for thinking. The most active group member receives 1.0 score during group activity
4. **Post-Class Activity** – Students are given homework (poster, table, infographic etc.), which sums up the topic that was discussed. Without completing Post class activity homework FC Score cannot be received).

During the online FC sessions Google Meet and Zoom breakout room platforms were used, formative individual and group assessments were performed. Mixed qualitative and quantitative approaches were applied.

The survey schedule included the following seven steps: 1) conduct a literature review, 2) carry out interviews and focus groups, 3) synthesize the literature review and interviews/focus groups, 4) develop items, 5) collect feedback on the items through an expert validation, 6) employ cognitive interviews to ensure that respondents understand the items as intended and 7) conduct pilot testing (*Developing questionnaires for educational research: AMEE Guide No. 87*) [16–17].

After the completing of all the planned FC sessions, we have identified the focus group of the students and the focus group of the teachers. Structured written and oral interviews were conducted with both focus groups. The members of the focus groups were asked to provide their understanding on the following:

1. The meaning of the definitions below (by their own words-explain and interpret) on the following concepts:
   - critical thinking
   - student's independent work
   - group work – being a group player.
2. Which skills and competencies they should develop that contribute to the ability of critical thinking? What does it mean for them to think critically?
3. Listing and describing the aspects of independent work/self-learning – which activities they should be able to perform while learning new material at home without teacher's help (explanation);
4. Listing and describing the skills the group member should develop/have and which activities a good group player should perform to promote successful accomplishment of the task by the group.

Results of the interviews with the focus groups were analysed in context of the results of the literature review. Then we performed thematic analysis and elaborated the quantitative questionnaire with a five-point unipolar response. Likert scale was created. In order to get the feedback, the questionnaire was sent for and validation to the experts. Next step was cognitive interviews to ensure that respondents understood the items as intended and after that the survey was performed on Survey Monkey platform. Statistical analysis of the quantitative part of the survey data was performed using IBM SPSS statistics 22.0 program.

Results

Survey was conducted among the TMA students and teachers, who have participated in FC sessions. In the FC sessions have participated 350 students from the both programs. 254 students have participated in the survey (response rate – 72.6 %). Among them 96 (42.8 %) students from the Georgian and 158 (24.6 %) from the English MD program.

Survey of students. The age of the student respondents ranged from 18 to 21 years for Medicine Programme in Georgian language

(gender composition was – 64.5 % females and 35.5 % males). For Medicine Programme in English age of students ranged from 18 to 22 (females constituted 61.4 %, males – 38.6 %).

The analysis of students' responses showed that majority of students (65.5 %) positively assessed the impact of FC on the development of students' Critical Thinking Skills (see Figure 1).

The respondents agreed on the following statements that FC helps them to develop the ability:

- To formulate the question based on analysed information (66.7 %);
- To determine priorities and solve problems successively (76.3 %);
- To search for evidence-based sources of information (72.6 %);
- For rational decision-making (75.0 %);
- To formulate own concepts/ideas and present them to others (76.3 %);
- Applying evidence-based information to practice (73.1 %).

The majority of students (62.0 %) – positively assess the impact of FC on the development of Independent Learning Abilities (see Figure 2).

In detail, students responded, that FC helps them to develop/increase the following:

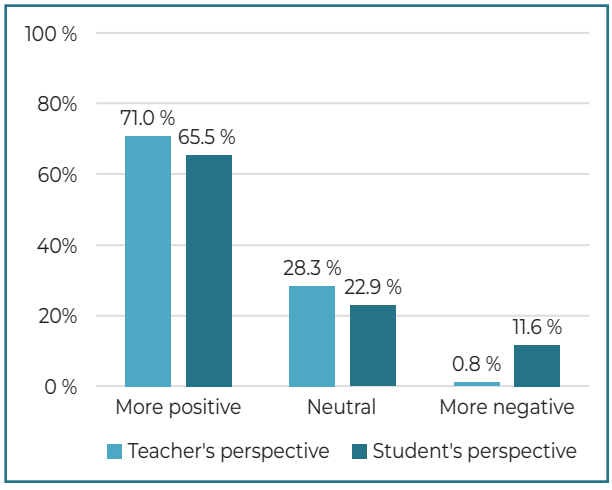

Figure 1. Opinion of teachers and students on the impact of preclinical on-line Flipped Classroom Teaching on the Critical Thinking skills (%)

p>0.05 for teachers' and students' answers

- Motivation for learning/engagement in active learning process (70.8 %);
- Effectiveness of learning process (time management, creativeness, deep learning) (71.6 %);
- Self-reflection – identifying the strength and weaknesses of self (76.3 %);
- Self-confidence (73.51 %);
- Self-monitoring – management of time and resources (73.7 %);
- The drive for intellectual curiosity/desire to search for new information (76.0 %).

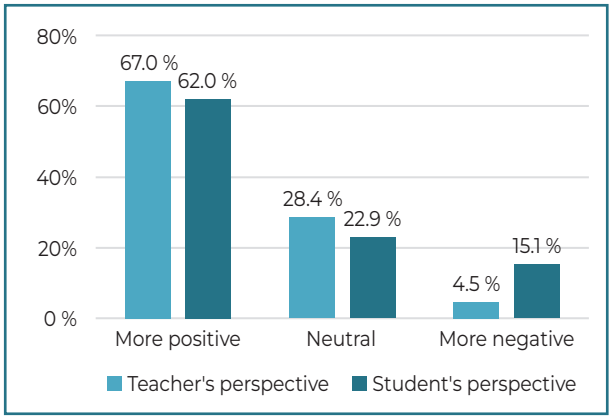

Figure 2. Opinion of teachers and students on the impact of preclinical on-line Flipped Classroom teaching on the Independent Learning Abilities (%)

p>0.05 for teachers' and students' answers

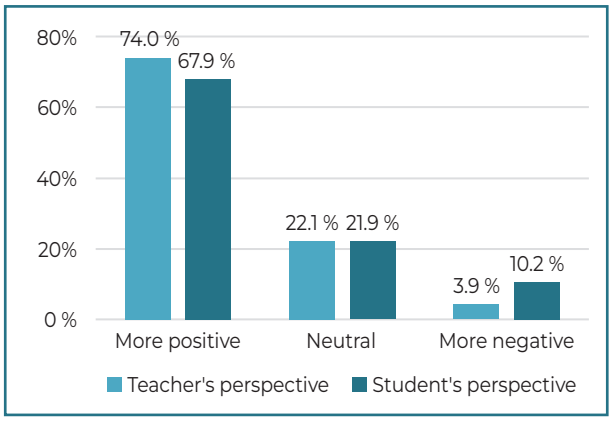

Figure 3. Opinion of teachers and students on the impact of preclinical on-line Flipped Classroom teaching on the Group Work Abilities (%)

p>0.05 for teachers' and students' answers

The majority of students – 67.9%- positively assess the impact of FC on the development of Group Work Abilities (see Figure 3).

In conclusion, students responded that the FC helps them to realize and develop the following roles and skills of the Group Player:

- To realize the advantage of group decision over individual one (77.3 %);
- To be aware of group responsibilities (fare distribution of workload and responsibilities among group members) (76.6 %);
- Communication with group members (respect others opinion and values, present own ideas with proper argumentations) (78.1 %);
- To accept others' advantages and make them useful for promotion of group interests (80.4 %);
- To teach, encourage and motivate group members (71.2 %);
- To summate group work – to formulate common ideas and present them to others (75.8 %).

Survey of teachers. 22 teachers from the eligible group of 25 have participated in the survey (response rate – 88 %). The majority of teachers (71.0 %) positively assessed the impact of FC on the development of students' critical thinking and other abilities (see Figure 1–3). It could be concluded (opinion of teachers), that the FC helps for the student to develop the following ability:

- To analyse facts and define the problem (77.3 %);
- To formulate question (54.6 %);
- To search and evaluate evidence-based information (72.7 %);
- To determine priorities (interpreting which information is key and which nonessential) (72.7 %);
- To integrate new information with existing knowledge (81.8 %);
- To interpret how to apply new information to practice, solve problem and formulate new question (71.0 %).

The majority of teachers (67.0 %) positively assessed the impact of FC on the development of students' independent learning skills. Teachers think, that online FC helps students to develop/increase the ability:

- To work independently on assigned material (pick up most high yield, valuable information correctly) (77.3 %);
- To locate and find new reliable resources - working on textbook, uses e-technologies, e-resources (68.2 %);
- Of self-management (self-monitoring by the use of self-assessment tools, time management) (50.0 %);
- To present material (59.0 %);
- To increase deep learning (77,3 %);
- To increase motivation (72.7 %);
- To learn from mistakes (68.2 %).

The respondent teachers (74.0 %) positively assessed the impact of FC on the development of students' Group Work skills. Teachers think that the online FC helps students to realize and develop the following roles/skills of the Group Member:

- Good interpersonal communication skills (to listen others, to be respectful, to present own ideas) (77.3 %);
- Be aware of advantages of group work over individual one (72.7 %);
- To share responsibilities and workload with group members (72.7 %);
- To identify knowledge gaps among group members and to teach peers (86.4 %);
- To formulate and present common answers (86.4 %);
- To share the information with colleagues and participate in discussion with them (86.4 %).

The significant majority of teachers (95 %) think that the FC is effective in motivating students and increasing their interest to the subject. 54.5 % of the teachers prefer to use 2 sessions of the FC in one semester per one subject, 36.4 % think that 3–4 sessions in one semester per one subject is enough, only 4.6 % of the teachers think that the total course can be performed in FC format. All the teachers agreed to use the FC approach in the MD curriculum of TMA during online teaching as well as in an off-line setting for the future.

Discussion

TMA has one integrated Study Program in Medicine with two tracks – one in Georgian and one in English. Both programs were suc-

cessfully accredited by expert panel headed by the WFME expert in March 2020; In Georgia CBME – Competency-Based Medical Education concept-based national benchmark document was issued in January, 2018; In April 2018 TMA was granted institutional authorization).

Both the teachers and students positively assessed the impact of online FC on the development of students' Critical Thinking (71.0 %, 65.5 %), Independent Work skills (67.0 %, 62.0 %) and especially Group Work skills (74.0 %, 67.9 %) (Figures 1–3). Only statistically non-significant difference ($p>0.05$) between evaluation scores from students' and teachers' perspectives per one competence was observed. We have noticed slightly higher positive evaluation of all the competences by teachers. This can be explained by teachers' higher perception of the importance of the development of the transferable skills for the medical doctors. Also, this can be related with not sufficient justification about the meaning, importance and purpose of FC approach during introductory classes.

The last one really was an issue. Despite the efforts of the Continuous Professional Development Department, which prepared the special introductory material about FC some students and teachers have commented that introductory classes were not sufficient and some students had no clear understanding about the purpose and importance of the FC approach. This imply that in the future we plan to organize the special meeting with the students to give them deeper understanding of the ways to reach the outcomes of the competency-based study curriculum, the meaning of the learner-centred models, directed self-learning and active learning methods.

It is worthy to underline that the highest evaluation scores from the three competencies was given to group work skills, both by students and teachers. This indicates that active learning formats that include group activities especially during online teaching are very attractive for either. As was showed by survey, only 4.6 % of the teachers think that the whole course can be performed in the FC approach and the majority think that 1–2 or 3–4 sessions in the semester are sufficient. Such an attitude can be explained by two major factors which were mentioned in teachers' comments: First, the FC model requires more time and workload from the teachers – preparing materials for the FC sessions is time consuming for the teachers. Second, the FC format of learning also increases the students' workload – students have to prepare raw material from the different biomedical subjects without preliminary explanation by the teacher. It could result from students' perspective that the increased independent work could cause some fewer positive perceptions.

Conclusions

- From Students' and Teacher's perspective, the online Flipped Classroom format has an important contribution to development of the students critical thinking, independent learning and group working abilities in preclinical online teaching;
- From Students' and Teacher's perspective the most developed ability by online Flipped Classroom is group working/team player;
- There is no significant difference in student's perceptions according to semesters, gender, or the language of instruction;
- From the Teachers perspective the FC is effective in motivating students and increasing their interest in the subject;
- Flipped Classroom format may be implemented in MD curriculum at preclinical level in online (during pandemics) and offline (post-pandemic period) setting;
- The results of the research will initiate further investigation of the FC method.

Take-home Messages

- From the preclinical students' and teachers' perspective, the online FC format has an important contribution to the development of transferable skills that build up the three important competencies for future doctors: critical thinking, independent learning and especially group working/collaborative abilities;
- Faculty should further promote FC and other active learning formats that include

group/collaborative activities especially during online teaching at preclinical level in the MD curriculum.

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IMPLEMENTING ACCREDITATION STANDARDS FOR EDUCATION QUALITY ASSURANCE AT THE GRODNO STATE MEDICAL UNIVERSITY: EVALUATION OF SPRING PROJECT OUTCOMES

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ABSTRACT. The effectiveness of the accreditation standards developed as part of SPRING project activities has been tested during instructional accreditation missions at the project partner universities. The Grodno State Medical University (GrSMU) underwent the accreditation procedure performed by the international team of peer experts. **The aim of the study** was to evaluate SPRING project outcomes based on the improvements made by GrSMU according to the SPRING multinational accreditation team recommendations provided as part of post-accreditation mission in April 2022. The set of improvements some of which being still in progress provide evidence that the elaborated quality assessment criteria are really instrumental and motivate GrSMU staff for developing strategies aimed at revealing weaknesses, adopting best practices, and providing high quality medical education.

Keywords: higher medical education, quality assurance, accreditation standards, post-accreditation mission, suggestions and recommendations, project outcomes.

Introduction

An increasing number of medical schools worldwide provides a rationale for establishing certain standards to comply with to ensure high quality of medical education. In this regard, the World Federation for Medical Education (WFME) and the World Health Organization advocate accreditation as an effective instrument for the assurance of medical education quality.

Today accreditation for a higher education institution (HEI) is a prerequisite for its legitimacy – it guarantees the quality of educational programs, ensures the openness of a university and gives HEI the opportunity to rank high in the global market of educational services. International accreditation makes it possible to assess the compliance of educational programs implemented at a university with the European and world quality standards, and to receive expert recommendations for further improvement. Furthermore, accreditation is not a final goal in itself, it is a risk reduction strategy aimed to reveal weaknesses and improve the educational systems [1]. Accreditation contributes to the dissemination of best practices, both regionally and globally [2]. It can enhance health care outcomes as well due to its ability to influence and standardize the quality of training programs aligned with population needs [3].

Accreditation is a process by which HEI is evaluated through a set of definite criteria to ensure the quality of medical education and promote improvements. Such criteria have been elaborated as standards for a medical HEI to be complied with. The standards are divided into basic areas and further subdivided providing guidance and key questions to be answered.

Nonetheless, the WFME standards cannot be universal for all HEIs and be relevant

in every setting. They are to foster social, economic, and cultural diversity and serve as a framework to define institutional, national, and regional standards for medical training quality improvement [4].

It is very important that accreditation now is not simply aimed at quality assurance but tends to quality maintenance of the achieved results, which not only encourages HEI active participation in the improvement practices but promotes high quality educational experience as well [5].

In this paper we intend to evaluate SPRING project outcomes based on the improvements made by the Grodno State Medial University (GrSMU) according to the SPRING multinational accreditation team recommendations provided as a part of post-accreditation mission in April 2022.

Methods

The study included both qualitative and quantitative methods and was focussed on the analysis of some important improvements and achievements of GrSMU that have been made since April 2022 (the date of post-accreditation mission by the SPRING multinational accreditation team) based on the recommendations and suggestions of the SPRING Peer Review Expert Group.

Results and discussion

For the purpose of designing the best working standards and elaborating relevant guidelines for accrediting medical schools in the Eastern Europe and Central Asia, Erasmus+ project SPRING (Setting peer review instruments and goals for medical (health) education, 609528-EPP-1-2019-1-GE-EPPKA2-CB-HE-JP (2019-1937/001-001) was launched and successfully implemented. The accreditation standards and guidelines were developed by the SPRING project participants (representatives of 14 medical schools from 7 countries of the Eastern Europe and Central Asia) and approved by the SPRING Multinational Peer Review Board (MPRB) in 2021 [6, 7].

There have been developed 12 standards (areas of assessment) covering various domains of an HEI activities (Vision, Mission and Strategic Objectives, Governance and Management, Human Resources, Educational Program, Community Engagement, etc.). Each standard is supplied with a checklist to evaluate the compliance with.

As a part of the project implementation the SPRING partner universities underwent institutional accreditation by the assigned accrediting teams including self-evaluation, on-site and follow-up missions. Eventually each participating university gained necessary experience in the international accreditation procedure and contributed to the development of the most appropriate instruments for quality assessment of medical schools when evaluating peers from different countries but still sharing some common background and context.

In June 2021 GrSMU underwent the first stage of the accreditation process succeeded by the follow-up mission in April 2022. The Peer Review Expert Group Report which was made following the first mission to the University appeared to be very professional and objective. The Expert Panel Members made careful analysis of GrSMU activities. All the achievements of the University were highly appraised. Nevertheless, there was still a lot to be improved. Some of the suggestions and recommendations could be implemented in a short period of time, some of them required more time and efforts.

Within a 3-year post-accreditation period (2022–2024) the University has done a lot for its improvement and development. Aligned with the introduction of the new Code of the Republic of Belarus on Education and the General State Classifier of the Republic of Belarus OKRB 011-2022, several new local documents aimed to improve the quality of medical education have been developed and introduced. During this period the curricula have been efficiently refined, more effective technologies have been used in class, more diversified evaluation methods have been introduced, communication skills emphasized and improved. Within a 3-year period over 500 syllabi have been developed, approved and introduced into the educational process; 145 electronic educational-methodical com-

plexes have been created and certified, and 18 ones updated. A total of 267 educational manuals and textbooks have been published, of these 106 have been nationally approved by the Ministry of Education of the Republic of Belarus or by the Academic Methodological Association on Medical and Pharmaceutical Education of the Republic of Belarus.

Based on Peer Review Expert Group recommendation GrSMU promotes using active teaching methods in the educational process. Annually the number of newly adopted methods increases (in 2022 – 27, in 2023 – 53, in 2024 – 45). Thus, since 2021 as many as 158 active teaching methods have been introduced into training medical professionals (debates, case study, role play, associative thinking, etc.).

Aligned with another suggestion "Evidence-based medicine" was added to the curricula of General Medicine and Pediatrics specialties as an elective discipline and for the specialties of Medical Diagnostics and Mental Health Medicine as an optional discipline.

According to the recommendations provided by the project peer reviewers the University has continued the established practices of governance and management and increased the direct participation of students, academic staff and non-academic professionals in quality assurance. The Quality Management System (QMS) of the University is constantly evolving. Several relevant quality indicators have been introduced and monitored by each structural unit and GrSMU QMS service.

The recommendations and suggestions were made to improve the English version of the University website. Now it provides more vivid information about the University for the potential foreign consumers of educational services. New website sections have been created to offer the required information about the University: Admission and Aid, Research and Innovation, Campus and City, International Cooperation, Press-center etc. Students and various stakeholders can learn about GrSMU facilities and affiliated institutions, students' support services, research areas and achievements, international activities, library stocks, sports facilities etc. GrSMU has official accounts in 6 social networks: "Vkontakte", "Facebook", "Instagram", "YouTube", "Linkedin", "TikTok" and 1 messenger "Telegram". Social media are actively used not only to post news and information about events and activities of the faculty and University, but also to provide interviews with teachers and students of the University, advice to students, information about leisure activities of the city and other useful things.

In order to provide more support for alumni organizations of GrSMU graduates, following the establishing of the Association of International Graduates of the Medical Faculty for International Students in 2021 the University has created a database of GrSMU graduates who continue their activities abroad. Since 2021 the project «Alumni» launched for Belarusian University graduates has been developed greatly. The goal of this project is to popularize higher medical education, encourage talented youth, and raise awareness among a wide audience about the most ambitious and outstanding GrSMU graduates, who have achieved high results in academic, social, scientific, sports, and cultural activities during their studies. Social media are widely used for the project implementation. In 2024, the Telegram channel "Association of Graduates of GrSMU" appeared.

The role of the University as a cultural institution and its service to the society has increased by providing expertise on public health and helping to improve population health. The University Clinical Hospital was established with the purpose to organize medical care for the population based on modern achievements of medical science, technology and best practices, and to form a practice-oriented educational process. The Professorial Advisory Centre established in 2011 has enhanced its clinical facilities and currently includes a Registry, a Clinical Diagnostic Laboratory, functional and ultrasound diagnostic rooms equipped with the latest technology. Consultative reception is conducted by experienced professors, associate professors and assistants of the clinical departments of the University in 22 specialties.

Within a 3-year period GrSMU clinical staff provided over 300 000 medical consultations, 60 000 case conferences, about 30 000 surgeries (of these 3000 are complex ones, and 6000 are high-technology ones).

The employees of GrSMU clinical departments take part in providing on-site organizational, methodological, medical and advisory assistance to the population on a planned and emergency basis (including through air ambulance services), in carrying out preventive examinations and medical check-ups of the population of the Grodno and Brest regions.

Great contribution to the society is made by the educational activities of the teachers and students in promoting healthy lifestyle among the population of the city. Within a 3-year period the University teaching staff provided 927 lectures for the population of Grodno and Grodno region, and appeared over 550 times in mass media (television, radio, periodicals). Several students' projects have been launched to provide medical education and service to the Grodno-city population. The LightMed project familiarizes the students of secondary schools, gymnasiums and lyceums with the principles of providing emergency medical care in in the format of interactive lectures, master classes, quest games and round tables. The "DezhurHub" project was carried out, which was aiming to provide senior students' participation in real medical duties and rounds in clinical hospitals in order to develop professional skills and clinical reasoning and to provide medical assistance to the population.

The "3D Anatomy" project is implemented to develop knowledge of human anatomy among students of medical classes in schools of Grodno by means of students' lecturing using virtual reality glasses for better understanding the material. The project "Fashion for Health" is a set of activities aimed at promoting a healthy lifestyle among the population, disease prevention, developing in students the need for a healthy lifestyle, understanding the need for health, teaching how to maintain and strengthen it. It is implemented on the basis of schools, gymnasiums, lyceums in Grodno. Several social projects ("Kalya Lyulki", "Pobach" and "Ldinka" together with the volunteer center "CARDIS", "Peace for All", "Breathe Life") are actively functioning to name just a few.

To stablish better communication with academic staff and students on unsolved problems and conflicts and implement clear procedures of dealing with complaints and appeals special tab was developed on the GrSMU website. The tab provides schedule of personal reception of citizens, including individual entrepreneurs, their representatives, representatives of legal entities by the University management, schedule of "direct telephone lines" by the Rector and Vice-rectors, hotlines with GrSMU services on the commonly addressed issues (admission, career guidance and support for young specialists and medical interns, etc.), requirements for the preparation of requests, appeals and complaints, procedure for consideration of electronic applications, regulatory documents and other relevant information.

The suggested by the experts extended student academic mobility and summer educational practice has been improved within a post-pandemic period. Students' academic mobility has been implemented mainly in medical schools of Russia and Kazakhstan. Other forms of student mobility included industrial placement in hospitals abroad (year 2022 – 13 students, 2023 – 19, 2024 – 21, respectively), participation in international students' festivals and students' labour teams, participation in international Olympiads and conferences abroad, participation in winter and summer subject-oriented schools.

Expanding the volume of incoming visiting professors or/and use in larger extent online teaching, lecturing by visiting professors was another recommendation by the Peer Review Expert Group. As part of the network interaction between partner universities in 2024, 33 lectures were given to students and teachers of our University (22 lectures offline and 11 lectures online) by teachers from the Russian Federation, the Republic of Uzbekistan and the United Kingdom. GrSMU faculty delivered 23 lectures (8 offline and 15 online) for students of partner universities from the

Russian Federation and the Republic of Uzbekistan.

Research and Innovation area of the University is also evolving. The team of peer-experts suggested to improve the opportunities for better scientific and publication results of the academic staff by enhancing the international scientific cooperation and increasing the number of international scientific projects of the University. At present GrSMU cooperates with scientific and educational institutions from 22 countries. As many as 122 partnership agreements are in operation, 20 of them were concluded within a 2022–2024-year period. Still the University takes efforts to motivate the staff for participating in international scientific projects and to increase the quality of scientific publication regarding citation index.

The project "School for Young Scientists" launched in 2021–2022 academic year has been successfully functioning since then engaging more and more young teachers with academic degrees and titles in working with gifted students who are interested in research career. Students' scientific activities has also increased since then by means of participation in national and international conferences and involving GrSMU international students into research activities. The implementation of the project "Young scientists and Budding researchers" is ongoing. Participants – more than 300 students of 1-6 years of Medical Faculty for International Students. The project is aimed to support English speaking students in preparing scientific publications in journals included in well-known knowledge-intensive databases.

One of the SPRING experts' recommendations was to expand the application of the Objective Structured Clinical Examination (OSCE) method for the evaluation of the skills and knowledge in the modules and teaching subjects where is it relevant. OSCE is being gradually introduced into the assessment process, in 2023–2024 academic year 5 clinical departments organized students' assessment using OSCE. For this purpose, the facilities of GrSMU Simulation and Attestation Center have been widely used. The Center is equipped with modern simulation and medical equipment in the amount of more than 500 units of simulators from 1 to 6 levels of realism:15 units (5–6 levels of realism), 52 units (3–4 levels of realism), 450 units (1–2 levels of realism). Just in 2024, the Centre was equipped with virtual auscultation simulators for adults and children, virtual simulator for restoring airway patency, simulators for practicing cardiopulmonary resuscitation and intubation skills, an artificial lung ventilation apparatus for equipping the intensive care unit and a portable ultrasound diagnostic apparatus for practicing practical skills, including injection and puncture skills under ultrasound control.

Thus, we covered just a few improvements that have been made within a 3-year post-project period. The suggestions and recommendation made by the experts from the SPRING partner universities were really instrumental and helped GrSMU administration and staff to critically evaluate own activities and evolve a plan for further improvements.

Conclusion

The analysis of the GrSMU activities aimed to satisfy the standards developed for a medical HEI proved the relevance of the collegially elaborated instruments of a comprehensive evaluation of medical schools aligned with the modern requirements for higher medical education providers.

In general, the elaborated accreditation system has shown to have positive impact on medical schools. The changes in the areas of teaching performance, curriculum design, students' performance, research and innovation are relevant and beneficial for every HEI. These improvements encourage medical schools to enhance the quality and performance of their employees, provide better academic results, ensure better quality of medical care in the long run.

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CHALANGES OF LINGUISTIC AND INTERCULTURAL COMMUNICATION IN STUDENTS STUDYING IN ENGLISH TEACHING PROGRAMMES: THE CASE OF VILNIAUS KOLEGIJA / HIGHER EDUCATION INSTITUTION

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ABSTRACT. Background and aim. Due to the constant increase in the number of international students, both students and lecturers are exposed to a variety of cultural backgrounds and social aspects in the academic environment. This study aims to reveal linguistic and intercultural communication difficulties students from Vilniaus Kolegija / Higher Education Institution (hereinafter referred to as VIKO), who study in English in a non-English academic setting, encounter. **Methods.** An online questionnaire was conducted in the spring of 2024. Questionnaire was filled in by 34 Professional Bachelor's programme students enrolled in English-taught programmes. **Results.** Though, in overall today's international students feel more prepared and more confident to study in a foreign country, the results of the research revealed that some linguistic and cross-cultural communication problems exist. Misinterpretation of different communication styles and body language, adaptation, and even biased lecturers were also indicated among the problems existing in intercultural communication. However, students' linguistic and intercultural awareness allows them not only to identify the barriers but also propose possible solutions for the issues they encounter in an academic setting. **Conclusions.** The survey results indicate that only a set of factors – harmonious coexistence, a friendlier and more welcoming environment, cooperation and collaboration with peers from diverse cultures, languages – would contribute to mental, physical, and emotional well-being and, in turn, improve the learning environment.

Keywords: International students, professional higher education institution, linguistic and intercultural challenges, intercultural communication.

Introduction

The trend of international student mobility is growing, as more students pursue global educational opportunities to improve their skills, expand their knowledge and perspectives that can help them successfully compete in the labour market. Having skills in international mobility provides the opportunity to interact and work in new countries and with different cultures in a seamless manner. The number of international students studying at the higher education level around the world has grown significantly over the last two decades, rising from 2 million in 2000 to 6.4 million out of 254 million students worldwide [1]. The growing number of international students also means a growing number of different cultures.

Challenges faced by students with different cultural backgrounds have been of interest to researchers. Academic issues of foreign students in Lithuanian universities were analysed and discussed on a broader scale, while a moderate amount of research was carried out in professional higher education institutions (non-university higher education sector) regarding the linguistic and intercultural communication challenges students, studying in English in non-English environment, encounter. How foreign students manage to communicate successfully in Vilniaus Kolegija (VIKO) was of primary concern for the researchers of

this case study. The objectives of the research were to find out how students see the potential advantages of studying in English, what factors influence the selection of studies in English, what challenges, if any, they encounter and what assistance, if any, they need from VIKO to overcome those challenges.

The current process of globalization leads to the internationalisation of education. The Bologna Process "established the European Higher Education Area (EHEA) to facilitate student and staff mobility, to make higher education more inclusive and accessible, and to make higher education in Europe more attractive and competitive worldwide" [2]. The creation of EHEA boosted internationalisation, and mobility was set as a primary goal of the Bologna Process. Additionally, the lifetime of the Bologna Process has seen a huge rise in the number of English-taught programmes offered by higher education institutions in EHEA countries where English is not one of the native languages. This rise is mirrored by the share of the number of EMI programmes of all programmes and, to a lesser extent, by the number of students enrolled in such programmes. EMI is often regarded as a linguistic issue, since the language of instruction is different from the language(s) of the country where the programmes are offered [3].

Lithuania is also actively participating in the Bologna Process. Since the process began more than two decades ago, one of the strategic goals has been Lithuania's integration into the European Higher Education Area. The Bologna Declaration (Joint Declaration of the European Ministers of Education, 1999) was signed on June 19, 1999, by ministers from 29 nations, including the Minister of Education and Science of the Republic of Lithuania. A process of significant adjustments began, addressing the concept and purpose of higher education as well [4].

Though the number of students in Lithuanian higher education is constantly decreasing, due to the rapid process of globalisation and attractiveness of higher education, the number of EMI programmes offered is rising, and the number of foreign nationals choosing to study in higher education institutions is growing. According to the Official Statistics Portal (2021), the number of foreign nationals studying the full study programme at the universities is constantly growing (in the year 2018–2019 – 7592, in the year 2022–2023 – 9467) and for example, in the year 2020–2021, accounted for 9.6 % of all university students. A similar tendency is noticed in the college sector: in the year 2019–2020, the number of foreign nationals studying in the college studies sector was 481, in the year 2020–2021 – 639, in the year 2021–2022 – 954, in the year 2022–2023 – 1112, in the year 2023–2024 – 833 [5].

Colleges of higher education (*kolegijos* in Lithuanian language) and their study programmes – in total 74 – taught in English are presented in Table 1 [6–17]. This study was designed to analyse the internationalisation of education within VIKO, which is one of the twelve college-level HEI of Lithuania providing Professional Bachelor's Degree and offering 8 English-taught study programmes.

In fact, one of the goals of VIKO Strategy 2021–2025 [18] is the internationalisation of studies. In agreement with this goal, the most relevant in the context of internationalisation are the following: further develop internationalisation of the study process via ensuring the contemporary curricular content and innovative methods of learning and teaching; encourage the creation of multidisciplinary programmes in English and attract significant numbers of foreign students; further develop foreign language and intercultural competences.

VIKO, being a leading and the largest accredited public higher professional education institution in Lithuania, accepted 70 international students to study in the year 2023, and the number of students who chose to study in English has reached 189. The following data is presented in the Annual Activity Report of VIKO for 2023 [19]: in the year 2023–2024, 267 foreign nationals studied full-time. It accounted for 4.99 % of the total number of students, while in 2022–2023 – 3.89 %, 2021–2022 – 3.04 %.

Table 1. College-level higher education institutions (HEI) in Lithuania offering study programmes in English

College-level HEI of Lithuania	Study programmes in English
Vilniaus kolegija / Higher Education Institution	Popular Music, Software Engineering, Business Economics, Banking, Tourism Management, Hotel and Restaurant Business, Creativity and Business Innovations, International Business
Alytaus kolegija / University of Applied Sciences	Transport and Logistics Business, Nursing, Multimedia and Visual Communication, Technologies of Information Systems, Business Management
Kauno kolegija Higher Bachelor's studies Education Institution	General Practice Nursing, Software Systems, Photography, English for Public Relations, International Business, Tourism and Hotel Management
Kaunas Forestry and Environmental Engineering University of Applied Sciences	Landscape design, Horticulture, Hydrotechnical Engineering, Land Management, Cadastral Measurements and Real Estate Valuation, Forestry
Klaipėdos valstybinė kolegija / Higher Education Institution	Administration of Institutions and Companies, Social Work, Informatics, Tourism Business, Finance, Dental Hygiene, General Practice Nursing, Physiotherapy
Kolpingo kolegija / Kolping Higher Education Institution	Child Welfare and Social Security; Social Work Management, Transport Logistics
Panevėžio kolegija / State Higher Education Institution	Development and Maintenance of Information Systems, Construction, International Business, Logistics, Beauty Therapy, Physiotherapy, General Practice Nursing
Šiaulių valstybinė kolegija / Higher Education Institution	Automation of Electrical Engineering, Construction, General Practice Nursing, Information Systems Technology, International Business
SMK College of Applied Sciences	Design, Aesthetic Cosmetology, General Practice Nursing, Video Production and Media, Programming and Multimedia, Digital Communication
Utenos kolegija / University of Applied Sciences	Tourism and Hotel Administration, Social Work, Transport Business, Business Management, Hospitality Management, Accounting, Law, Beauty Therapy, General Practice Nursing, Physiotherapy, Odonatological Care, Dental Hygiene
Vilnius Business College / University of Applied Sciences	Digital Business, Academic Business Preparatory Programme, Game Development, Programming and Internet Technologies, Business Management and Marketing
Vilnius College of Technology and Business	Automotive Electronics Systems, Information Systems Engineering, Transport Logistics, Civil Engineering

The growing number of foreign nationals in tertiary education in Lithuania brings cultural diversity. Nevertheless, foreign students need to understand a different educational system and environment, adapt to a different culture, understand and acquire intercultural competences. A review of the literature reveals that there are numerous ways to define, interpret, and use intercultural competences. In general terms, "Intercultural competences refer to the set of knowledge and skills necessary for people and organisations to act in an intercultural way in diverse societies." [20].

In a multicultural environment, both students and teachers have not only to adapt to different teaching/learning and assessment systems, but they also need to address issues determined by different cultural experiences, different communication styles and behaviours. Cultural difficulties together with language barriers may cause students' stress, harm their well-being and add to unwillingness to assimilate into a new society.

According to Grebliauskiene [21], who carried out a study on communication challenges among Vilnius University students, adaptation to cultural differences and diversity is identified as a challenge. The cultural diversity in an academic group is high, and students find themselves in a situation where they must overcome barriers to intercultural communication when interacting within an academic group. Students mention isolation as a negative experience. They do not feel involved in the student life of the university. Foreigners study in English and do not know the local language spoken by Lithuanians. On the other hand, students do not find the knowledge of English as a barrier to successful studies in a non-English academic environment, as both teachers and students realize that the language of instruction is their non-native language, therefore, teachers tend to be compassionate and assist students.

The researcher Simiene [22] conducted research among international students of Mykolas Romeris University in Vilnius, Lithuania and the results of the study demonstrated that the key to foreign students' successful adaptation is their level of English language proficiency. According to Simiene, the poor English proficiency led to several misunderstandings in interactions with other Lithuanian students. Because of this, they usually opted to engage with other international students instead of pursuing closer relationships with Lithuanian students.

Material and Methods

To provide as complete and accurate picture as possible, a research method - case study was selected. For the survey and data collection, official Microsoft Forms were applied. Closed-ended questions of the questionnaire focused on collecting quantitative data. Qualitative data about the case under the study was obtained by adding open-ended questions. We used both qualitative and quantitative approaches to analyse the current situation of interest to the researchers.

The online survey was carried out in March of 2024 at the Faculty of Business Management and the Faculty of Electronics and Informatics as they have the largest number of EMI programmes. A request to answer the anonymous questionnaire with the survey link and QR code was sent to official VIKO Microsoft Outlook students' emails. Our targeted respondents were all first, second and third-year VIKO students pursuing a degree in English (Erasmus students were excluded) at the above-mentioned Faculties. The questionnaire was sent to 160 students. In fact, not all students are from foreign countries. This number also includes Lithuanian citizens who chose study programmes taught in English. The access was active for two weeks and 34 responses were received: 20 respondents from the first-year, 7 respondents – second-year, and 7 students – of the third year filled in the questionnaire. There were 25 respondents from the Faculty of Business Management (19.7 %) and 9 from the Faculty of Electronics and Informatics (27.3 %). 15 students were Lithuanians, and 19 students were from foreign countries such as Nigeria (2 respondents), Georgia (n=1), India (n=2), Morocco (n=3), Kosovo (n=2) and Ukraine (n=9). Their native languages/mother tongues are Arabic, Ukrainian, Ukrainian and Russian, Indian, Eng-

lish and Igbo, Igbo and English, Albanian, Malayalam. The total response rate in this questionnaire survey was not high – 21.3 %.

Results and Discussion

According to the Common European Framework of Reference for Languages (CEFR), the respondents rated their level of English language proficiency as follows: 3 students reported speaking English at B1 level; 16 students – B2, 13 students – C1 and 2 students – C2 level. Language proficiency level is essential in academic achievements and adapting to an academic environment. The language areas that lead to challenges in achieving academic success are shown in Table 2.

Table 2. Responses of students about causes of learning difficulties related with language proficiency (%)

Language areas that cause difficulties in succeeding academically	Number of respondents (N)	Total percentage (%)
Specific terminology	15	44.1
Speaking	10	29.4
Grammar	7	20.6
Pronunciation	6	17.6
General vocabulary	3	8.8
Listening	2	5.9
Writing	2	5.9
Reading	1	2.9
No difficulties	11	32.4

In the questionnaire, the respondents were asked to specify the difficulties they identified. Specific terminology was indicated as the language area that causes most difficulties in succeeding academically, and the reasons sounded very alike:

- *"Those words rarely appear anywhere in life which makes it more difficult to figure out what those words mean."*
- *"Business vocabulary, most of the time I do understand what the lecturers mean but I do struggle to memorise or reexplain using specific terms."*
- "*Also, academically there are some terms which are hard to learn or pronounce."*
- *"To remember, understand new, technical definitions, find the equivalent in Lithuanian."*

Speaking was considered the second largest problem:

- *"I always found it hard to make presentations and give out clear facts."*
- *"I guess that I don't speak frequently, or I am tense when I have to."*
- *"English is my 4th language, usually, I think in other languages, and I usually forget the English words that I know, and I am translating everything in my head from other languages. Lack of practice."*
- *"When lecturer doesn't know the same terminology in Lithuanian, so you have no idea what it means and how to understand it and translator doesn't help."*

Additionally, the respondents found grammar difficult because they lack basic grammar knowledge:

- *"Whether my grammatical knowledge is sufficient to formulate sentences correctly."*
- *"I don't really know the rules of grammar. I don't remember difficult terminology."*

Another challenge was pronunciation, since students from various cultural backgrounds have varied pronunciations of the same word:

- "*I don't understand the question well*."
- "*As there are different accents sometimes pronouncing the same word can be different and not understandable to the other person*."

One respondent mentioned writing as a hindrance in succeeding academically:

- *"I have trouble creating a framework for a paragraph or even the whole article."*

The data analysed revealed that a third of respondents (N=11) think that they have no difficulties in English. However, the majority experience challenges. The conclusion that can be drawn from these facts is that the majority

experiences language difficulties. Almost half of those who responded indicated that the language area that causes major difficulty is specific terminology (N=15). Not surprisingly, students struggle with specific terminology, as mastering new terms is difficult even in their mother tongue. The inability to use terms correctly can impact students' expressive language abilities, which may prevent them from achieving desired academic performance.

The second largest issue was speaking (N=10). It is unfortunate that students lack speaking practice. We believe that larger engagements in interactive in-class oral activities or discussions would help students overcome this challenge.

Grammar (N=7) and pronunciation (N=6) were mentioned as serious problems as well. Academic performance greatly depends on students' ability to use the language correctly, where grammatical accuracy and correct pronunciation play a great role. These problems occur since neither students nor lecturers are native English speakers. Students from different countries have different accents and ways of pronouncing the same word, which interferes with understanding of each other and the lecturers. Consequently, students find it difficult to understand the content of the lecture.

Writing (N=2), reading (N=1) and listening (N=2) were the least problematic. Three respondents with English levels B2 and C1 indicated the general vocabulary as a difficulty.

As English language proficiency is a compulsory component of EMI programmes, the respondents were asked to give their views on the level of English they consider sufficient to study successfully. Most of the respondents (N=17) indicated that B2 level is sufficient for successful studies. A significant number (N=11) said that level C1 is required for academic success. 2 students indicated C2 level, and 4 respondents considered B1 level to be sufficient for studying in EMI programmes. Students seem to be conscious enough of the level required for academic success.

Learners were also asked if they had a Professional or Business English language course offered by VIKO since not all study programmes have these courses in their curriculum. The responses showed that more than half of the respondents (N=18) had an English for Specific Purposes (ESP) course. Out of the 16 students who did not have such a course, 9 respondents thought that it would be useful to have it, and 7 respondents were not fully convinced, but suggested that a Professional or Business English course could be beneficial. 12 respondents found these courses extremely and very useful, 4 - somewhat useful. Nevertheless, two respondents indicated that the Business course was not very useful:

- *"I don't think it provided the right information or useful insights, since all we did was learn how to write emails."*
- *"Maybe it is useful for students who have no background in business operations or students who are not very fluent but still chose to study in English. Everything that we were studying I was already familiar with due to my work experience, however there were some useful lectures. For example, at one point we were analysing different types of businesses (LLC, PLC.) which helped me in the courses that followed."*

The numbers suggest that all respondents to some extent find the ESP course helpful and none of the students consider the ESP course unhelpful, which gives us the reason to think that the Professional and/or Business English course is necessary for students to succeed academically.

Emotional and psychological factors may also affect successful communication during studies. The data analysed revealed that most respondents (N=13) experience emotional and/or psychological problems due to fear of making mistakes. The second important factor is fear of judgement (N=11) and lack of confidence (N=11). Anxiety (N=8), lack of motivation (N=7) and shyness (N=5) are also mentioned as influencing factors. Respondents who chose 'Other' factors, named their introverted personality and lack of need to communicate with groupmates and teacher if lectures were organized remotely. These facts indicate that students do experience emotional and psychological factors, which impact effective communication.

Furthermore, in the survey, the respondents were asked what kind of help they would expect from VIKO if they were experiencing difficulties due to a lack of English language skills, or if they were facing psychological or emotional communication problems. Almost half of the respondents stated that it is a personal problem, and that they can deal with it on their own; it just takes more time. High motivation can also help. A few respondents (N=2) mentioned that teachers are always helpful. Yet, 6 respondents expressed their expectations. Three of them mentioned possible ways of assistance:

- *"Support and understanding from the lecturers, since for me personally the main difficulty was public speaking during my presentations. I was afraid to make mistakes in front of my groupmates. However, I was more confident when I was speaking with the lecturer one by one."*
- *"I would just prefer lectures that focuses on the terms, but I think I just need a bit more time to adjust, and I will be fine."*
- *"Maybe some kind of mandatory English vocabulary courses or something like that, because over time you forget some basic words especially when you're communicating with others in English."*
- *"Maybe some courses on C2."*

Overall, most teachers are supportive. However, the answers imply that some students would benefit from more support from their teachers encouraging them and paying more attention to individual students' needs and fears, as well as compulsory general English courses at higher levels or even C2 level.

In this survey, we also wanted to clarify whether international students enrolled in the EMI programmes have problems with the Lithuanian language. The respondents were asked to list communicative situations in which they needed Lithuanian in a Lithuanian-speaking VIKO environment. The cases indicated by the respondents are shown in Table 3.

Table 3. Responses of students about communicative situations when Lithuanian language skills are essential (%)

Communicative situations where students needed the Lithuanian language	Number of respondents (N)	Total percentage (%)
Administrative staff	12	35.2
In clubs, societies, leisure activities	11	32.4
Communicating with groupmates	10	29.4
Finding necessary information about the course	10	29.4
In the canteen	8	23.5
Study Department staff	6	17.6
In the gym	5	14.7
In the library	4	11.8
At the psychologist	4	11.8
In a lab	1	2.9
Other	3	8.8
Never	5	14.7

Since Lithuanian is the official language in the Lithuanian-speaking environment. The majority of students need at least basic Lithuanian both in their academic environment and personal life.

To the question of how much Lithuanian students know, 14 out of 34 respondents said that Lithuanian is their native language. Nobody from the international students speaks fluent Lithuanian. 3 respondents indicated that they speak basic Lithuanian, 8 respondents know and use common everyday phrases, 9 students speak just a few words. However, only 5 students attended the Lith-

uanian Language and Culture course offered by VIKO. Most of the respondents confirmed that this course was not offered, and one student does not need Lithuanian because they are doing the course at a distance from their own country. Out of 14 respondents who are not citizens of Lithuania and were not offered the Lithuanian Language and Culture course, 13 stated that they would like to attend such a course.

A very high percentage of the respondents (93 %) indicated that Lithuanian Language and Culture course is of high demand, therefore, VIKO should offer such a course as mandatory or at least as elective. Thus, it would be fair to suggest a Lithuanian Language course as mandatory or at least elective at VIKO for all foreign students.

Even if there is no language barrier, cross-cultural communication can be difficult. For that reason, students were asked how comfortable they feel when interacting with people from different cultural backgrounds. The answers are presented in Table 4.

26 out of the 34 students surveyed claimed that they feel comfortable, whereas a small proportion (N=4) said they feel uncomfortable interacting with groupmates from different cultures. As the facts show, today's international students are more prepared and more confident to study in a foreign country.

Barriers in intercultural communication that VIKO students experience were another issue that interested the researchers. Half (N=17), out of 34 respondents, stated that nothing interferes with effective communication. 17 respondents indicated that they experience intercultural communication barriers:

- *"Lithuanian lecturers go for Lithuanian students and same goes for other ethnicity lecturers and students. It seems like everybody goes for their own blood and it really shows in marks and how they are evaluating us".*
- *"Most lecturers don't speak English that well".*
- *"Sometimes when I meet a person from another culture and we have a conversation they reply to a question by making a gesture and if it is one of the first times I am talking with them – I am not sure what the gesture means".*
- *"In general, different cultures have different ways of communicating, so having a big group with people from various ethnicities we have to learn and observe how they talk or use their body language. So that things might not be taken in a negative way."*
- *"Student wanting to do group work given by lecturer with only local students. Not wanting to work with international student due to them not having good understanding of communicating in English and some are just racist."*
- *"Group mate chose to have group works with themselves as local than have international student among them cos they don't all feel comfy to express themselves in English, so they prefer themselves in group work."*
- *"Some of the students sometimes are stereotyping about other people, or for example sometimes it is harder to understand what students from other countries are saying because they speak really fast".*

Table 4. Opinion of respondents about the perceived level of comfort when communicating with groupmates from different cultural backgrounds (%)

How comfortable do you feel communicating with groupmates from different cultural backgrounds?	Number of respondents (N)	Total percentage (%)
Comfortable	16	47.0
Very comfortable	10	29.4
Neither comfortable nor uncomfortable	4	11.8
Somewhat uncomfortable	2	5.9
Very uncomfortable	2	5.9

The answers show that a great number of problems exist in intercultural communication. According to the respondents, some lecturers are biased, they write better grades and communicate more with the local students. In our increasingly globalised world, where lecturers interact with students from other cultures and nations, who have been influenced by different values, beliefs, and experiences, intercultural competence is a great asset. We assume that lecturers would benefit from training in international competence development.

Another problem is English language proficiency among lecturers. When teaching international students, lectures should be more realistic about their own level of the English language and be aware of the intercultural communication problems that might occur in this context. Otherwise, this may lead to misunderstanding, bias and even racism.

Further answers indicated difficulties in communication with lecturers (N=6), adaptation (N=6), different communication styles (N=8), misinterpretation of body language (N=5), different behaviours (N=3), stereotyping (N=4), ethnocentrism – belief that a particular race or culture is better than others (N=5), racial discrimination (N=3), cultural differences (N=5) as obstacles to cross-cultural communication between the two parties – lecturer and student. Not only do lecturers need intercultural competence. Students, both locals and foreigners, should also try to be friendlier and more welcoming, cooperate and collaborate more with peers from diversity of cultures, languages and skin colour. All this would contribute to well-being – mental, physical and emotional, and add to a better learning environment.

In addition, the respondents suggested several ways how VIKO could help students facing barriers to intercultural communication:

- *"By providing a buddy or translator maybe!"*
- *"Sure, could provide courses related to intercultural subject"*
- *"I am not facing a challenge yet, but it can be better if the emails written on outlook which is usually in Lithuanian can also be written in English (it can be written below the Lithuanian text) so that we don't have to translate it ourselves all the time."*
- *"Bridge the gap between local and foreign students letting the locals know they have to be accommodating coexist between themselves."*
- *"Maybe VIKO could interview students who wish to study in English before accepting them."*
- *"Educate local student that VIKO is an* international school *and not just for the locals only, by this they should coexist among other tribes and culture."*
- *"I'd be happy to take Lithuanian language courses A2+ if there were such in VIKO."*

The answers above demonstrate that students do recognize and even suggest the following ways to solve intercultural communication issues they encounter in academic environment: by providing intercultural communication course, A2 Lithuanian Language course, mentors who could guide them in the study process; educate local students about the need to show tolerance to fellow students from different backgrounds, cultures and religions; test all enrolled students into EMI programmes their English language skills, since VIKO hosts international students. The suggested measures might help remove obstacles to communication and enhance better understanding and harmonious coexistence.

Furthermore, regarding the overall experience and expectations of studying in English, majority of the respondents stated that they feel satisfied (N=27). Student satisfaction is an important indicator of the quality of educational institutions.

To improve the student experience, it is reasonable to know what makes students feel dissatisfied. Those students (N=4), who indicated dissatisfaction, were asked to clarify their answers:

- *"Too much new vocabulary. Lecturers imagine that we know every single weird and hard word there is and the cultural differences and students from abroad often are ruining sometime of lectures by not listening."*

Table 5. Opinion of respondents about the advantages of studying in English (%)

Perceived advantage	1st choice (%)	2nd choice (%)	3rd choice (%)	4th choice (%)	5th choice (%)	6th choice (%)
Enhance English language skills	47.1	14.7	14.7	14.7	5.9	2.9
Improve employment opportunities	11.8	35.3	26.5	11.8	8.8	5.9
Help succeed in business world	20.6	17.6	20.6	8.8	20.8	8.8
Improve confidence in speaking English	11.8	20.6	8.8	23.5	23.5	11.8
Help start a life in an English-speaking country	5.9	5.9	11.8	29.4	17.8	23.5
Increase the salary and income	–	2.9	17.6	11.8	20.6	44.1

- *"For the most part, some lecturers tend to lack some of the most basic English vocabulary. Other times as a Lithuanian I had to attempt to translate words from Lithuanian to English for the whole classroom – which was not much of a hassle, but I believe international students were incredibly frustrated with this."*
- *"The level of English of the lecturers."*
- *"Some teachers have lack experience in teaching students in English. Sometimes it seems they don't have required and satisfying level for teaching."*

As for the reasons of dissatisfaction, inadequate command of the English language when teaching international students was mentioned again in the context of overall experience and expectations of studying in English. Though the level of English language hinders only a small proportion of students (N=3), the lecturers should concentrate more on clarifying new terminology because the pace of work and knowledge acquisition varies in different individuals as they come from diverse cultures and educational settings and possess unique learning styles.

At the end of the survey the respondents were asked to rate possible benefits that studying in English offers. As a first choice, 47.1 % of the respondents indicated that studying in English enhances English language skills. 20.6 % said that it helps succeed in the business world. The same percentage of the respondents – 11.8 % – claimed that such studies improve employment opportunities and improve confidence in speaking English. 5.9 % thought that studying in English helps start a life in an English-speaking country. The answers of respondents are presented in Table 5.

Among other benefits, the respondents mentioned:

- *"Being able to express myself better"*; *"Making contacts and diverse experiences: you get to learn from lecturers who come from different countries, and you get to learn different perspectives.*
- *"Meet international students and learn skills that are useful in your career such as open-mindedness, cultural awareness, and communication. It is a great opportunity to meet people and make friends from all over the world."*
- *"It makes you free and build confidence knowing you can coexist and relate with everyone in any organisation as English is most spoken language in today's world."*

- *"The more you know the better. And I find studying in English far more interesting than in Lithuanian."*
- *"Just have fun with the language, for example making puns and wordplay."*

There seems to be a tendency to emphasize the significance of the English language. Local students prioritize it over their native language because it is the most spoken language in the modern world and the language of business. EMI programmes provide opportunities to enhance English language proficiency which will eventually increase employment opportunities, help succeed in the business world and boost self-esteem. The data indicates that students are preparing for job offers in the international labour market or considering a life in a foreign country.

Though the findings of the research have direct practical implications, the limitation of the study is the number of respondents. More students studying in English should be encouraged to share their points of view regarding their studies, challenges and possible solutions. In addition, even though the same study programmes are also available in Lithuanian, it would be of future interest to the researchers to clarify what motivates Lithuanians to select studies in English. Furthermore, as 325 foreign students are enrolled in VIKO in the academic year of 2024, and even more are predicted in the subsequent years, a constant investigation and analysis concerning linguistic and intercultural communication issues can be of further research interest.

Conclusions

As the present study case focuses on identification of the linguistic and intercultural communication challenges faced by VIKO students from different cultural backgrounds who choose to study in English, as well as understand what assistance can be provided for students experiencing those difficulties, it would be fair to conclude that the researchers succeeded to clarify some of basic challenges based on the analysis of students' answers. The findings of this study cannot be compared to already existing real results yet, so the research subject of this article might be one of the first analysed more extensively in college level studies.

Based on the survey results, it might be concluded that EMI programmes are selected by Lithuanian nationals and foreign students predominantly to enhance English language skills and succeed in the business world. Nevertheless, the survey findings reflect students' needs to learn the state language, which is obvious as Lithuanian is the predominant language in the Lithuanian-speaking environment.

Evidently, the knowledge of the English language proficiency is of primary importance in EMI programmes. Students seem to be conscious enough of the level required for academic success. However, majority of students experience English language difficulties, which prevents them from achieving intended academic performance. Continuous institutional support is necessary by providing ESP courses for all students as part of their studies. ESP courses would facilitate students' learning of the chosen academic disciplines. Even though teachers are supportive, yet more interactive activities including discussions delivered by specialist teachers would improve students' language fluency.

Language knowledge is not the only criterion for harmonious communication and students' well-being. Emotional and psychological factors do affect successful communication during studies. The respondents' answers show that students are aware that these factors address language and communication challenges.

Even though the academic environment exposes students and lecturers to various cultural and social aspects, on the basis of the survey results, it can be concluded that only a set of factors – harmonious coexistence, friendlier and more welcoming setting, cooperation and collaboration with peers from diversity of cultures, languages, and skin colour – would contribute to mental, physical and emotional well-being and, consequently, add to a better learning environment.

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STUDY ON THE EXPERIENCE OF INTERNATIONAL NURSING STUDENTS DURING THEIR CLINICAL PLACEMENTS

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ABSTRACT. Aim of the study. To describe international nursing students' experience with mentors during their clinical practice. **Material and Methods.** A qualitative research method was used to understand and describe the experience of international nursing students performing clinical procedures in clinical practice, a semi-structured interview was carried out to collect data from participants with an original self-questionnaire formulated, the interview was conducted with 10 international nursing students from 3rd year and 4th year, the interview was carried out in a classroom at the Faculty of Nursing department. **Results.** The study reveals important elements regarding the experiences of international nursing students doing clinical procedures. Participants highlighted challenges such as language barriers, performing clinical procedures with patients, and anxiety when performing clinical procedures in a new clinical environment. Despite these difficulties, students lament that practical experience with clinical teacher mentors helped them gain clinical skills, competence, and confidence over time. **Conclusion.** Supportive learning environments, including clear guidance from nurse mentors, concise and direct feedback, and structured clinical training are crucial for students to gain clinical nursing skills for their professional development.

Key words: international nursing students, nursing education, clinical placements.

Introduction

International nursing students contribute remarkably to the academic, cultural and professional landscape of universities and health care sectors. These students enhance the diversity of university campuses, bringing unique perspective, rich cultural experiences that enrich the learning for all students. Their presence promotes cultural exchange and mutual understanding and inclusivity in academic and clinical settings. Moreover, they encounter unique challenges in their clinical placements, these difficulties are brought on by linguistic, cultural limitations and the complexities of adapting to new healthcare system. International nursing students studying abroad for an undergraduate or baccalaureate degree are the focus of review. New educational systems, healthcare methods and cultural differences and language environments present problems for these students [1].

Clinical placements are essential components of nursing education and a key course curriculum that help nursing students to integrate theoretical knowledge into practice. Understanding the experience of international nursing students' engagements in clinical practice is essential not only for their professional development but also for the safety of patient care. The development of nursing students' professional identities and competence is greatly aided by the clinical learning environment. Well-planned and structured clinical placements are crucial to guaranteeing that students receive the proper support and learning opportunities necessary to develop their competencies, knowledge, skills and attitudes needed for their future career. In clinical settings, nursing students are in-

structed by their mentors to carry out varieties of procedures to improve their clinical skills, they interact with patients by providing care such as treatments, education, and collaborate with other healthcare teams [2].

Nursing students frequently experience stress and anxiety due to the clinical environment intrinsic complexity, the rapid pace and practicum experiences in performing clinical procedures are also some of the greatest fears experienced by nursing students. There are multiples reasons for challenges; the need to balance the demands of patients care in real time, the need to prove one's competency in front of clinical instructors and seasoned nurses and the fear of making mistakes [3]. It is important for nurse educators to understand and manage the stress and anxiety of these students, by cultivating a clinical learning environment that is safe, supportive and well structured and void of negative criticism. Additionally, they can boost student's confidence, reduce stress, help them to improve a coping mechanism of burnout and maximize the overall education experience of the students [4].

Roles of nurse mentors in clinical practice

As instructors and role models in practice settings, mentors are essential in forming nursing students' clinical learning experiences. Qualified and experience mentors play a pivotal role in helping students develop professional habits, critical thinking abilities and problem-solving skills-key competencies for transitioning successfully into professional nursing practice. To create a constructive and stimulating environment, a mentor must be able to build an involve and encouraging relationship with students. Building relationships is essential to making students feel appreciated, accepted and motivated to engage fully in their clinical education which ultimately help students in cultivating professional habits, critical thinking skills, and problem-solving abilities [5].

Establishing a supportive and engaging clinical learning environment depends heavily on effective communication and interaction between mentors and students. Through clear and active communication, along with constructive feedback, nurse mentors help students build confidence, clinical competence and overcome clinical obstacles in hospital practice settings. A positive mentor-student relationship creates a sense of psychological safety, thereby enabling students to ask questions, share concerns, and actively learn without judgment. This positive dynamic enhances student's clinical decision-making, strengthens professional developments, and facilitates a smoother transition into nursing practice [6].

Lack of mentor engagement can diminish student's drive and confidence, making their transition into professional nursing practice more challenging. To be effective in their mentorship roles, clinical mentors require ongoing training and institutional support, and these mentors training typically cover a range of essential topics; including the roles and responsibilities of mentors, principles of adult learning, and evidence-based methods of clinical instruction. These training equips mentors to effectively assess the performance of nursing students, and help them provide concise and constructive feedback, communicate clearly, and mange challenging situation in patient care [7].

Nursing students learning practical skills with mentors in clinical placements

Clinical placement education is an essential component of bachelor nursing program in which student nurses gain practical skills in hospital settings. In addition, these placements bridge the gap between academic knowledge and real-world nursing practice, students are introduced to the complexities of clinical decision-making, direct patient care and collaboration within multidisciplinary healthcare teams. The primary objective of clinical placement is to empower nursing students with practical skills and professional competencies require for their future roles. [8].

For nursing students to learn meaningful clinical skills that will sharpen their knowledge and prepare them for their nursing roles, it is imperative for the nurse mentors

to create a transparent and secure learning environment where students feel free to ask question, be enthusiastic of engaging into clinical procedure without fear, and confidently advance their clinical abilities. Strong pedagogical competency is necessary for effective mentoring, and this involves the capacity to use a variety of acceptable teaching strategies that meet the demands of various learning styles. Furthermore, a competent nurse mentor helps students close the gap between classroom instruction and practical clinical application by skillfully fusing theory and practice [9].

Patient safety is the central focus in clinical settings. While it is important for nursing students to develop practical skills and clinical knowledge, patient safety should be a core value consistently upheld in all aspect of care. Nurse educators play a critical role in ensuring that students gain a thorough understanding of safety protocols, evidence-based practices, and current medical technologies. By providing students with structured and well-organized instruction, nurse educators help reduce the risk of unsafe nursing care in clinical settings by teaching them how to recognize, avoid, and address possible hazards. This education includes teaching students about standardized safety measures like infection control protocols, drugs administration guidelines and patient monitoring techniques, all of which are paramount for reducing errors and improving safe patients' outcomes [10].

Effective clinical education extends beyond traditional one-way instruction and is rooted in collaboration, where students actively participate in the learning process while mentors provide guidance, support, and constructive feedback. When students and tutors are actively involved in the learning process, the clinical learning environment fosters autonomy and self-directed learning, both of which are crucial for nursing career progression. This participatory method improves clinical competence and trains students to master clinical skills to become independent, lifelong learners capable of adapting to evolving challenges of healthcare practice [11].

Some students have performance anxiety or fear of making mistakes which can hamper their learning process. However, nursing students who develop good coping techniques and receive enough support from their nurse educators' mentors, are more likely to master clinical skills. It is important for students to overcome these challenges to be able to gain the skills and confidence needed for safe and successful patient care, ultimately moving into professional nursing seamlessly [8].

Feedback from mentors to nursing students

Feedback is vital in molding students learning experiences, especially in clinical practice. It enhances their confidence, motivation, and self-esteem, ultimately contributing to their overall development. When students receive timely, constructive, and specific feedback, they gain a clearer understanding of their strengths and areas for refinement. Consequently, this cultivates a feeling of proficiency and confidence, enabling individuals to tackle clinical assignment with increased assurance. A constructive feedback process fosters open communication between students and their mentors, creating a learning environment built on trust and mutual respect. When mentors provide meaningful feedback, students feel valued and supported, which can increase their willingness to engage, ask questions, and actively participate in their clinical learning. Additionally, mentor's feedback assists students in honing their clinical skills, reinforces best practices, and rectify any deficiencies in knowledge or performance [12]. Students completing clinical placements frequently worry about receiving clear, concise, and actionable feedback. Feedback that is too general or ambiguous might make it difficult for students to identify their areas of strength and growth, which can cause doubt in their clinical practice [13].

Mentors play a vital role in supporting nursing students during their clinical practicum by assessing their performance, providing guidance and promoting independent learning. In order to make sure that the learning objectives are being fulfilled, clinical nurse ed-

ucators must continuously evaluate whether students are acquiring the necessary skills throughout their clinical placements.

This means regularly watching, recording, and checking students' practical skills level to make sure they meet the necessary practice standards. With mentors consistent and active assessment and observation of students, it thus enables them to provide tailored, concise and constructive feedback to students on their performance and skills.

On the other hand, when students receive specific, clear and understandable feedback from mentors, they gain clarity on their performance level which enable them to identify arears for improvement and apply appropriates strategies to enhance their skills. Providing feedback to students does not only benefit the mentees, but it also provides valuable insight to mentors regarding the effectiveness of their teaching approaches, allowing for continuous refinement of instructional methods [14].

Peer mentoring among nursing students

Peer mentoring is a supportive framework in which a more experienced individual guides a less experienced peer to foster their professional and personal development. This relationship has a double win: it boosts the confidence and competence of the mentee and helps the mentor hone their own leadership and communication abilities. An excellent peer mentor exudes confidence, provides clear and practical guidance and willingly shares their knowledge, skills, and time to support their mentee growth and success [15].

In nursing education, peer mentorship promotes students' active participation in the learning process and creates a sense of ownership over their education. When students help and coach one another through peer mentoring, the result is transformative like creating a cooperative learning atmosphere that encourages confidence and skills development. This method not only improves academic understanding but also fortifies critical professional skills including effective communication, cooperation, collaboration, and reflection, all of which are paramount for nursing practice. A peer group clinical mentoring program is a crucial approach in facilitating effective learning during clinical practice. Through peer-mentoring approach, students can receive immediate feedback that help them identify their strength and weaknesses and formulate strategies to improve their skills and better prepare them into the entry of their career. Mentoring has several benefits; however, research shows that clinical mentoring programs face various obstacles like time constraints, heavy workloads, and lack of institutional support which serve as significant barriers to successful mentoring.

The ability of mentors to effectively support their mentees may be adversely affected by stress and burnout, for mentorship to be successful and sustainable in clinical setting- and to ensure the nursing students are fully prepared for their professional roles- these challenges must be appropriately addressed and managed [16].

Challenges nursing students experience in clinical practice

Clinical practice is a crucial element of nursing education, enabling students to cultivate vital skills such as communication, patient's education, clinical assessment, treatments, healthcare management, collaboration, professional conduct and the nursing process. Students acquire practical experience enabling them to apply theoretical knowledge in real-world context. It enhances their technical abilities and cultivates confidence in providing patient-centered care. Nonetheless, despite its importance, nursing students frequently encounter numerous obstacles in developing these competencies during practical training [17].

In clinical settings, students often encounter unanticipated patient-related situations and interaction with medical personnel in clinical sites, which can interfere with their planned learning activities. As they attempt to adjust and react in real time, these unforeseen circumstances frequently cause students' stress level to rise. Negative clinical practice experiences can significantly impact student's emotional well-being, self-confi-

dence, and learning outcomes, ultimately reducing their readiness for professional nursing career. As a result, students experience burnout, frustration, or even the thoughts of leaving the nursing profession. To overcome these obstacles, healthcare institutions should cultivate a collaborative environment where students are respected, supported and valued as integral members of the healthcare team [18].

According to international nursing literature, many nursing students face substantial challenges when adjusting to learning in clinical settings. These challenges originate from a variety of causes; including the lack of prior clinical experience, fear of making mistakes, which can leave students feeling unprepared and uncomfortable when confronted with real world patient care scenarios. Furthermore, limited opportunities to put theoretical knowledge into practice impede their capacity to build critical clinical skills and confidence.

These challenges can have a significant impact on their overall learning experience, confidence, and ability to effectively integrate into clinical teams, ultimately affecting their professional development and competence as future nurses [19].

In addition, nursing students also experience anxiety and stress in clinical practice, nursing students are more stressed than other professional degree students due to their intense academic and clinical training. They are stressed by the demand to gain clinical competence, manage patients care, and adjust to high-stakes healthcare conditions. According to research, clinical nursing training is a significant cause of stress for nursing students, frequently having an even greater effect than typical academic pressure. Stress in the clinical setting exposes students to real-world difficulties, such as patient suffering, emergency situations, and requirement to carry out clinical procedures with confidence and accuracy in contrast to academic stressors like exams and assignments [20].

Furthermore, anxiety can have detrimental effects on a person's physical and mental health, ultimately impairing one's capacity for focused thought, decision-making, and concentration, due to the huge demand of academic and clinical performance that should be void of mistake also heighten nursing students stress and anxiety [21]. The shift from classroom education to clinical practice can be daunting for nursing students, frequently eliciting anxiety and uncertainty. Although theoretical courses provide nursing students with vital knowledge, the application of this knowledge in practical healthcare environments introduces additional challenges, including patient care management, adherence to safe clinical protocols, and collaboration with experienced healthcare providers.

The pressure to accurately perform clinical procedures, effectively communicate with patients and healthcare teams, and make critical decisions in complex situations can intensify stress and anxiety among students, adversely affecting their clinical performance and undermining their confidence [4]. Implementing successful intervention and support strategies require a thorough understanding of the sources of stress and anxiety experienced by nursing students during their clinical practice, as well as how these stressors evolve throughout their educational journey. Nursing institutions can significantly improve the health and wellbeing of their students by determining the main cause of stress and anxiety. Having adequate knowledge of the challenges nursing students experience in clinical nursing can help institutions take proper stance and use the right tools and approach to help students manage stress and anxiety, ultimately improving their general wellbeing and academic performance [22].

The aim of the study – to describe international nursing students' experience with mentors during their clinical practice.

Material and Methods

Organization of the study. A descriptive qualitative research methodology was used to dive in and understand the experiences of international nursing students in practice settings.

To gain a deeper understanding of the lived experiences of these students-including their perspectives, challenges, and coping

strategies within clinical settings-a phenomenological research approach was chosen. The data was collected from December 2024 to February 2025, a Semi-structured interview was used to gather data giving participants the freedom to share or describe their experiences with mentors, patients, and their counter parts Lithuania nursing students. The interview was conducted in person, face to face with the participant's permission and consent, each interview lasted roughly for 20–25 minutes and was digitally recorded by a smart phone with the consent of the participants. To ensure consistency while allowing for an in-depth exploration of each participants unique experiences, an interview guide using open-ended question was employed.

Participants. A purposive sampling technique was used to select students who have completed maximum number of clinical placements. Participants in this study were 3rd and 4th years international nursing students with a total number of 10 students comprising of two males and eight females. Criteria to participate in this study are: Third 3rd and fourth 4th year international nursing students, nursing students who are proficient in English language, Students who are willing and agreed to participate in the study. Exclusion criteria include Lithuania nursing students, other faculties and medical students

Detailed information about the characteristics of the participants is listed in the Table 1. The participants' names are changed because of confidentiality reasons.

Ethical Approval. Ethical authorization was permitted by the Bioethics Centre committee (No. 2024-BEC2-1342) of the Lithuania University of Health Sciences, also the Dean of Nursing Faculty granted approval for this research study, ensuring institutional endorsement and adherence to ethical research norms. Prior to participation, all students were given a comprehensive explanation of the study's title, aim, objectives, procedures, methodology, they were informed that their participation was wholly voluntary and that they have all right to withdraw at any time without repercussions. Furthermore, students were allowed to ask questions or express any concerns before agreeing to participate, allowing them to make informed decisions

Analysis of the data. Thematic analysis was utilized to evaluate interview and post-interview notes. This method helped identify patterns and themes, revealing participant's experiences. Initially, each interview transcript was comprehensively reviewed to ascertain its overarching significance. This technique entailed an in-depth and contemplative interaction with the data facilitating a thorough comprehension of the participant's experience prior to categorizing them into distinct themes. After the comprehensive reading, the text was subjected to selective examination to uncover preliminary themes. This was accomplished by isolating terms that were particularly pertinent to the phenomenon that was being investigated [23]. This technique was repeated for each interview after examining all transcripts, the original coding's highlighted words and phrases were thoroughly scrutinized and classified into main categories, subcategories and uncategorized data. These categories

Table 1. Demographic characteristics of participants

Informants	Age	Gender	Years of study	Continent
Student 1	24	Female	3rd year	Asia
Student 2	29	Male	4th year	Africa
Student 3	25	Female	3rd year	Asia
Student 4	24	Female	4th year	Europe
Student 5	23	Female	3rd year	Asia
Student 6	25	Female	3rd year	Asia
Student 7	26	Female	3rd year	Africa
Student 8	27	Male	3rd year	Asia
Student 9	24	Female	4th year	Asia
Student 10	24	Female	4th year	Africa

were modified and arranged into themes and sub-themes to appropriately represent participants' experience and viewpoint. This thematic analysis reveals major characteristics in international nursing students clinical practice experience. Based on the analysis, the following themes and sub-themes emerged:

Results and Discussion

Nursing students are guided and tutored during clinical practice by nurse mentors or teachers who help them bridge the gap between theory and practice by reinforcing academic knowledge, encouraging critical thinking and ensuring learning objectives are accomplished.

Clinical mentors who are experienced healthcare professionals working in clinical settings, support students by providing practical supervision, serving as role models and offering ongoing feedback, assisting students in gaining real-world experience, self-assurance and awareness of workplace culture. Despite these vital contributions of nurse mentors to the development of nursing students' professional identities, the experience nursing students encountered while working with their mentors has a profound impact on their practical education [24].

International nursing students' experience with mentors performing clinical procedures was described in 4 themes (Figure 1).

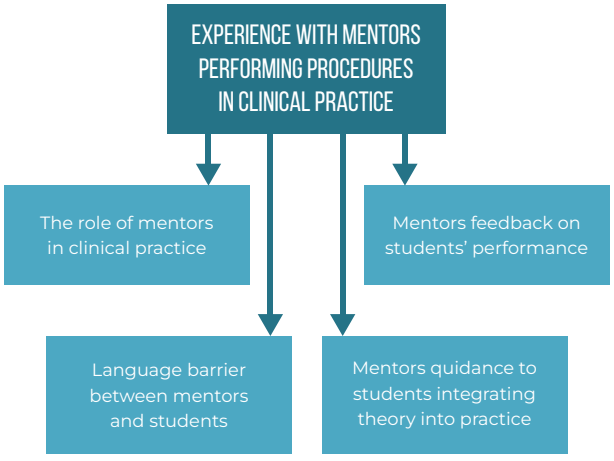

Figure 1. International nursing students experience with mentors performing clinical procedures

The role of mentors in clinical nursing practice

Research shows that mentors' support and tutelage are crucial for the development of nursing students' clinical skills. With their help and supervision, students grow to become competent and confident in their clinical practicum which reduces or perhaps zero out the gap between theory and practice. In addition, nurse mentors guide students and provide practical support as well as emotional support which helps to boost their performance, reduce their fear and help form their professional identity [25]. In the study carried out in Lithuania University of Health Sciences, majority of the students who participated in the interview stated they had a good experience with their mentors, they received support and guidance from their mentors.

- *"I will say my experience with my mentors have been great so far, working with my mentors in my clinical practice, they have been supportive, they helped me integrate the theory I learned with practical skills, they were kind and patient with me." (Student 3)*
- *" It was quite good working with mentors, most of my mentors helped me to practice nursing skills well in my clinical practice." (student 1)*
- *"It has been amazing, I will say working with my mentors, of Couse there were challenges but my experience in general was great, they really showed interest in mentoring me very well in nursing aspect and as well as preparing me for my career." (student 7)*
- *"My practice with mentors was very good, my mentor encourages me to practice more in my clinical practice." (student 2)*
- *"Actually, some mentors are very supportive, in my third year first clinical practice with a young mentor, she always used to tell me you need to learn more, she was really nice and explain to me properly how to perform some clinical tasks that was difficult for me." (student 8)*

While the students who participated in the interview stated that the older nurse mentors were more welcoming than the younger nurse mentors.

- *" I have worked with many mentors in different department both older and younger nurse mentors, in my experience I will say the older mentors were great working with than the younger mentors, the older mentors mostly allow me to perform clinical procedures than young mentors." (student 5)*

In summary, the growth of competent, self-assured and skilled nursing students who will be adequately prepare for their nursing career is greatly aided by mentors who offer professional support and supervision, direction, encouragement and opportunities for practical learning. This in turn improves patient outcomes and strengthens the healthcare workforce.

Language barriers between mentors and students

Research has repeatedly emphasized the difficulties that culturally and linguistically diverse nursing students encountered during clinical practice particularly in their interaction with their nurse mentors. Language barriers, differing communication styles and mentors limited intercultural competence can lead to misunderstanding, frustration and feelings of exclusion among students. These challenges may prohibit or limit students from engaging in learning and severely affect their clinical experience [26]. Interview conducted with students who participated in this research project conveyed their experiences in relation to what other researchers have uncovered.

- *"Some of the mentors don't speak our language like English, sometimes it is hard, they tried to talk with us, but it is difficult to understand them, they give us task, but we don't understand it properly because of the language barrier." (student 10)*
- *"Actually, in my first clinical practice experience, communicating with the mentors was difficult for me, but gradually I worked on my Lithuanian language skills so that I can be able to learn more at my clinical practice." (student 9)*
- *"I could not work with my mentor sometimes like Lithuania students which was hard for me because I could not speak the Lithuania language well" (student 3)*
- *" I will say the language is difficult to learn, but it is very important for my clinical practice, at the beginning of my clinical practice it was hard for me to talk with my mentors because of this I didn't get to do more task but with time I manage to improve a little bit in my Lithuania language skills." (student 5)*

The consequences of these difficulties experienced by students affect their clinical practice performance. The goal of clinical practice is to allow students to infuse theoretical knowledge into practice, with the presence of language barrier in clinical practice impinge upon the interaction between international nursing students and their mentors.

Mentors support nursing students integrating theory into practice

Integrating theory into practice is essential for nursing students, as it allows them to apply theoretical knowledge in real clinical settings, thereby enhancing their competence and building their confidence. To effectively translate theoretical knowledge into practice, a supportive learning atmosphere, practical experience and structure mentoring are essential. This integration is critical for ensuring patient safety, making better clinical decisions and preparing students for independent nursing practice [27]. Nursing students who were interviewed shared their experiences on how their mentors helped them integrate nursing theory into practice.

- *"Sometimes some mentors teach us in their own way, according to the standard which we study it feels different, clinical practice is a bit different, when they teach me in their own way, I feel it is easy to understand as compared to the classroom." (student 5)*
- *"So far for my practices that I have had with mentors, they really value applying theoretical knowledge into practical skills, they also helped me apply the knowledge gain from nursing theory when performing procedures." (student 2)*

- *"They really helped me, of course they have their own way of doing things, but they help me combine what I learned from the classroom to what they know in the clinical setting based on their own experience, they input and infuse their practical knowledge into me which elevate my practical knowledge." (student 9)*
- *"When my mentor gives me a task, she will always accompany me and tell me how to perform the task, she always tells me to follow the standard which is important for my safety and the patient as well." (Student 10)*
- *"My mentor always explains a procedure to me before telling me to go to a patient to do a task, whenever I have doubts, she will take her time to answer my question which help me to bridge the gap between theory and practice." (student 1)*

In summary, integrating theory into practice is fundamental for nursing students, having a good work relationship with mentors helps students to actively engage into clinical practice and close the gap between theory and practice which directly forms their professional identity.

Mentors feedback on student's performance in clinical practice

Feedback was developed by Rocket Engineers in the 1940s and expanded in the 1980s, as of now it is a widely recognized educational tool that is essential for improving students learning.

In nursing education, feedback provided by mentors significantly impact students and help in refining their skills, correct errors, and identify their strengths and weaknesses thereby encouraging lifelong learning and professional growth. Given the significance of feedback, the UK Quality Assurance Agency for Higher Education identifies it as a key criterion in evaluating the quality of teaching and learning. To simply put it, feedback is a potent learning and skill-acquisition tool that is used in nursing education and beyond [28]. In this study, most of the students interviewed stated that most of their mentors provided feedback to them.

- *"My mentor always says to me you are good whenever I do or perform a task very well, if I find it difficult to find a vein for blood draw or peripheral catheterization, my mentors will say to me, don't be discourage, with continuous practice you will get better." (student 10)*
- *"Well sometimes mentors don't give feedback, sometimes they do give feedback when you perform a task that is not a common procedure and manage to do it very well and perfectly." (student 4)*
- *"Because sometimes my mentors are very busy with patient care they don't have the time to provide feedback to me whenever I perform a procedure but when there is time we sit and discuss, and my mentors will tell me what I am good at and what I need to practice more." (student 5)*
- *"Well, my mentors have been very good in giving feedback, their feedback are usually positively constructed." (student 7)*
- *"After a procedure, if a mentor is supportive or open. She will say you did a great job, or you need to improve more." (student 8)*

Students who feel unsupported or alienated in the clinical environment may struggle to integrate into the healthcare team, restricting their hands-on learning and professional development. Loss of connection can cause anxiety, low confidence, and less self-efficacy making clinical training difficult for students. Establishing a warm and receptive clinical environment for nursing students helps to remove the barriers face by nursing students in their clinical placement and promote their professional development and dedication to patient care.

- *"After doing a procedure, if I do something wrong, my mentor does not complain in front of the patient, when we get out of the room she will say do it like this or like that, next time just improve on this, and it feel so good receiving feedback from my mentor." (student 2)*

In summary, both the student's narratives regarding the feedback they received from their mentors and the strong emphasis found in existing research highlight the critical role

of mentor's feedback in clinical learning. Students feel happy and motivated when mentors provide positive feedback or criticism on their performance, which ultimately help to improve their professional identity.

This research emphasizes the essential function of clinical practice in nursing education as a connection between theoretical knowledge and practical nursing. Clinical practice is crucial for cultivating clinical competence and practical abilities thereby allowing nursing students to implement theoretical knowledge in actual healthcare environments. Clinical mentors play an important part in this learning process by guiding, teaching, supervising, supporting, assessing also while providing feedback to students. Enhancing skills learning, fostering professional development, boosting student's confidence are all outcomes of effective mentoring. The feedback approach that mentors use is extremely important in the process of molding the clinical competence of students because it helps to identify their strength and areas for refinement. As students receive concise and specific feedback from their mentors, they can improve their skills and increase their capacity for decision-making. Furthermore, peer mentoring among nursing students serves as a supportive mechanism for enhancing collaboration, reducing stress and reinforcing learning in clinical settings.

Engaging in clinical procedures under the guidance of a mentor enables students to acquire practical experience while safeguarding patient safety. Direct engagement with patients facilitates the development of nursing student's clinical competence, critical thinking, problem-solving and communication skills-essential qualities for proficient nursing practice. Clinical practice, however, poses numerous problems such as elevated anxiety and stress stemming from performance pressure, unfamiliar settings and apprehensions of committing errors which in the end could negatively influence student's confidence and academic performance. Building excellent communication skills is another important aspect of nursing practice, as it improves patient care, teamwork and professional relationship.

Furthermore, cultural competence is widely acknowledged as a vital skill which ensures that nursing students are able to offer care to patients from a variety of backgrounds with compassion, respect and understanding. To make the most of nursing student time in clinical settings, the research generally agrees that mentorship programs, peer support, constructive criticism, and methods for dealing with stress are crucial. Improving patients care is a byproduct of assisting nursing students in making a seamless transition from classroom learning to clinical practice.

Recommendations for nurse student's mentors could be: provide clear and concise feedback to students to help them identify their strengths and weakness; foster a supportive learning environment where students are encouraged to open communication by asking questions when necessary; give students ample opportunities to practice procedures under supervision to build competence and confidence; provide adequate guidance and support to nursing students to help them form their professional identity.

Conclusion

The experience of international nursing students during their interaction with mentors in their clinical practice vary widely.

Mentors who exhibited clinical competence, effective communication and willingness to involve students in procedures that improved learning and confidence were characteristics of positive encounters.

Conversely, students also expressed that they encountered challenges such as limited guidance integrating theory into practice, language barrier, or mentors who preferred to perform procedures independently, which hindered the student's ability to gain hand-on experience.

In overall, it was established that mentors play a critical part in forming the student's professional identity as a nurse.

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PSYCHOSOCIAL FACTORS AND LIFESTYLE AMONG STUDENTS AT THE TECHNICAL UNIVERSITY OF MUNICH AND THE LITHUANIAN UNIVERSITY OF HEALTH SCIENCES

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ABSTRACT. Background and aim. Mental health issues and unhealthy lifestyles are prevalent among university students and can negatively impact their academic achievements. Research indicates a link between unhealthy lifestyle habits and psychological symptoms in this population. This study aimed to evaluate the associations between psychosocial factors and lifestyle among students at the Technical University of Munich (TUM) in Germany and the Lithuanian University of Health Sciences (LSMU) in Lithuania. **Methods.** A cross-sectional study was conducted at TUM and LSMU in 2024. The students of selected faculties completed a paper version of a self-administered questionnaire at the end of lectures, with permission from their lecturers. A total of 296 students participated in the study, 146 from LSMU and 150 from TUM. The sample comprised 72.9 % females and 27.1 % males. Spearman correlation coefficients and multivariable linear regression analyses were performed to assess the associations between lifestyle and psychosocial factors. **Results.** A significant proportion of students reported experiencing high levels of stress, with 47.8 % of males and 25.0 % of females at TUM ($p<0.05$), and 45 % of males and 51.6 % of females at LSMU. Lithuanian females were more likely to report symptoms of anxiety (31.7 %) compared to their German counterparts (17.8 %). The majority of students at both universities (61.7 %) reported feeling pressure to achieve academic success. Dietary habits of German female students were healthier than those of their Lithuanian peers. In Germany, students were more likely to engage in exercise at least five days a week, with males showing particularly high levels of physical activity and self-rated fitness levels. Students who experienced symptoms of anxiety and depression or feelings of loneliness tended to consume unhealthy foods more frequently and expressed dissatisfaction with their dietary habits. Students with high levels of stress and anxiety were less likely to exercise regularly, spent more time sitting, and had a poorer perception of their physical fitness. A strong sense of belonging to the university community was linked to higher levels of physical activity, fewer sedentary hours, and an improved perception of physical fitness. **Conclusion.** Universities should consider enhancing their support systems and implementing strategies to promote both physical and mental health of students.

Introduction

University students face numerous challenges, including meeting and collaborating with new people, preparing for exams, completing assignments on time, managing their finances, and balancing studies with other responsibilities. This stage of life is particularly vulnerable to mental health issues and the development of unhealthy behaviours [1, 2].

Previous studies have indicated a high prevalence of mental health problems within the student population. The World Health Organisation's World Mental Health International College Student project, which surveyed 19 colleges across eight countries,

found that 35 % of 14 000 students met the diagnostic criteria for at least one common mental health condition [3]. A cross-sectional study assessing symptoms of depression among a large sample of first-year students from Europe, Asia, Western Pacific, Latin America, and North America reported that 48.1 % of students had clinically significant symptoms of depression [4]. At Leuven university (Belgium), approximately one in three freshmen reported experiencing mental health problems in the past year, which were linked to decreased academic performance [5]. Systematic reviews have shown that the prevalence of depression among undergraduate students ranges from 10 % to 58 %, while anxiety prevalence ranges from 15 % to 52 % [2, 6].

Several factors may influence students' mental health, including moving away from home, financial pressures, heavy workload, competitiveness, poor time management skills, and insufficient coping mechanisms [7]. In addition, students' mental and physical health can be negatively impacted by unhealthy lifestyle habits. Previous studies have shown a high prevalence of unhealthy behaviours among students, including insufficient physical activity, irregular eating patterns, poor diets, and engagement in risky behaviours such as smoking, alcohol consumption, and substance use [8–11]. Evidence indicates a relationship between unhealthy lifestyle habits and psychological symptoms among students. Lifestyle factors such as unbalanced diets, sedentary behaviours, and substance use are linked to increased levels of stress, depression, and anxiety symptoms [1, 12–14].

Recognising the complex relationship between lifestyle choices and psychosocial factors, this study aims to examine their associations among university students. By comparing students from two institutions – the Technical University of Munich (TUM) and the Lithuanian University of Health Sciences (LSMU) – the study will also consider how cultural and institutional differences may influence health behaviours and psychosocial characteristics.

Methods

A cross-sectional study was conducted at two universities in Germany and Lithuania, the Technical University of Munich (Faculty of Sports and Health Sciences) and the Lithuanian University of Health Sciences (Faculty of Public Health, Faculty of Animal Sciences and Faculty of Veterinary Medicine) in 2024. The students from the different study years of selected faculties completed a paper version of a self-administered questionnaire at the end of the lectures with the permission of the lecturers. Students were provided with information about the study and instructions for completing the questionnaire. In total, 296 students participated in the study, 146 from the LSMU and 150 from the TUM. The sample included 72.9 % of females and 27.1 % of males.

The study was approved by the Bioethics Centre of the Lithuanian University of Health Sciences on 23-04-2024 (Nr. 2024-BEC2-553) and the Technical University of Munich on 19-04-2024.

The original questionnaire consisting of 42 items was subdivided into five domains: general information, nutrition, physical activity, substance use, and psychosocial factors.

Standard statistical analysis methods were used for data analysis. The categorical variables were compared, using the chi-square test and z-test with Bonferroni correction for multiple comparisons. Spearman correlation coefficients and multivariable linear regression analyses were performed to assess the associations between lifestyle and psychosocial factors.

Factor analysis was used to derive dietary patterns from 11 food groups. Dietary patterns were named according to the foods that loaded most positively on the factor: (1) 'Healthy nutrition,' which included vegetables, fruits, legumes, nuts and whole grains, (2) 'Unhealthy nutrition,' which included fast food, unhealthy snacks, energy drinks and sweetened drinks, (3) 'Sweet foods,' which included sweets and bakery products. Together, these factors accounted for 55 % of the variation in students' nutrition. Factor scores calculated for every individual were used for the evalua-

tion of associations between psychosocial factors and dietary patterns.

Results

Nearly half of the students rated the stress level associated with their academic workload as moderate (Table 1). At TUM, a larger percentage of female students reported experiencing high levels of stress compared to their male counterparts, 47.8 % and 25.0 % respectively. Females in Lithuania were significantly more likely to report experiencing symptoms of anxiety (31.7 %) compared to females in Germany (17.8 %). When comparing male and female students in Germany, it was found that females experience anxiety more frequently than males, with 52.2 % of females reporting occasional symptoms compared to 25.0 % of males. Additionally, more female students at TUM reported that they did not feel being a part of the university community (21.1 %) compared to female students at LSMU (7.1 %). In

Table 1. Distribution (%) of male and female students at TUM and LSMU by psychosocial factors.

Psychosocial factor	TUM (n=150)			LSMU (n=146)		
	Males (n=60)	Females (n=90)	p-value	Males (n=20)	Females (n=126)	p-value
Stress level related to academic workload						
Low	20.0*	3.3	0.001	5.0	3.2	0.818
Moderate	55.0	48.9		50.0	45.2	
High	25.0*	47.8		45.0	51.6	
Experiencing symptoms of anxiety or depression						
Often	15.0	17.8#	<0.001	30.0	31.7	0.502
Sometimes	25.0*	52.2		30.0	40.5	
Rarely or never	60.0*	30.0		40.0	27.8	
Feeling a sense of belonging within the university community						
Agree	66.7*	31.1	<0.001	60.0*	31.0	0.030
Neutral	23.3*	47.8#		40.0	61.9	
Disagree	10.0	21.1#		0	7.1	
Feeling pressure to succeed academically						
Yes	60.0	61.1	0.999	47.4	65.1	0.202
No	40.0	38.9		52.6	34.9	
Feeling lonely at university						
Often	8.3#	13.3	0.631	42.1	23.0	0.200
Sometimes	31.7	31.1		21.1	31.0	
Occasionally or never	60.0	55.6		36.8	46.0	
Feeling satisfied with the level of support at university						
Satisfied	33.3	21.2	0.226	36.8	35.7	0.955
Neutral	56.7	64.4		57.9	57.1	
Dissatisfied	10.0	14.4		5.3	7.2	

**p<0.05 compared to females at respective university (z-test with Bonferroni corrections); #<0.05 compared to respective gender at LSMU.*

contrast, male students at both universities were more likely than female students to feel a strong sense of belonging to the university community. The majority of students at both universities (61.7 %) reported feeling pressure to achieve academic success, with no significant gender-based differences identified. Almost half of the students (52.1 %) stated that they occasionally or never felt lonely or isolated while attending university. However, 42.1 % of male students in Lithuania reported experiencing feelings of loneliness quite often, compared to only 8.3 % of male students in Germany. Most students in both countries rated the level of emotional and academic support provided by their university as neutral, with only about one-third of students expressing satisfaction with this support.

Females at TUM consumed red meat daily less frequently than males, 3.4 % and 16.7 % respectively (Table 2). In Lithuania, a higher proportion of female students consumed red meat daily compared to their counterparts in Germany. Conversely, more females

Table 2. Prevalence of some lifestyle factors among male and female students at TUM and LSMU

Lifestyle factor	TUM (n=150)			LSMU (n=146)		
	Males (n=60)	Females (n=90)	Males (n=60)	Females (n=90)	Males (n=60)	Females (n=90)
Eating read meet daily	16.7	3.4*	0.005	35.0	22.2	0.214
Eating fish at least several times a week	18.3	13.5*	0.422	25.0	24.6	0.969
Eating vegetables daily	76.7	76.4*	0.970	75.0	61.9	0.258
Eating fruits daily	60.0	70.8*	0.171	50.0	43.7	0.596
Eating bakery products daily	31.7	25.8*	0.458	40.0	40.5	0.968
Eating fast food at least several times a week	20.0	6.7*	0.015	40.0	26.4	0.210
Eating unhealthy snacks at least several times a week	26.7	25.8*	0.911	40.0	48.8	0.464
Satisfied with their current dietary habits	61.7*	42.2*	0.020	35.0	19.0	0.105
Physical activity at least 5 days a week	63.3*	36.7*	0.001	30.0	19.0	0.260
Rating students' own physical fitness level as excellent	23.3	4.4	<0.001	15.0	6.3	0.173
Drinking strong alcohol at least several times a week	20.0	6.7	0.360	10.0	1.6	0.032
Drinking beer at least several times a week	35.0*	7.9	<0.001	15.0	3.2	0.021
Using drugs several times per month	18.3	6.7	0.038	15.0	1.6	0.002

**<0.05 compared to respective gender at LSMU.*

at LSMU reported eating fish at least several times a week compared to those at TUM. Most students consumed vegetables daily, with a higher proportion of female students in Germany than in Lithuania. Additionally, females at TUM ate fruits more frequently compared to females in Lithuania. Bakery products were consumed by both male and female students at a similar frequency; however, a higher number of females at LSMU consumed baked goods on a daily basis compared to those at TUM. In Germany, female students consumed fast food less frequently than male students. Furthermore, fast food and unhealthy snacks were consumed more often by female students at LSMU than at TUM. A lower proportion of Lithuanian students were satisfied with their dietary habits compared to students in Germany. Additionally, male students at TUM reported higher satisfaction with their nutrition habits than female students.

Male students at TUM were more likely to participate in physical activity five days a week or more compared to female students. Additionally, a higher proportion of students in Germany reported engaging in physical activity at least five days a week compared to those in Lithuania. Most male students at TUM rated their physical fitness as excellent (61.7 %), which is significantly higher than the percentage of female students (26.7 %). At LSMU, a larger portion of female students rated their physical fitness as fair or poor (46.0 %) compared to their counterparts at TUM (30.0 %). In Lithuania, a higher number of male students reported consuming strong alcohol a few times per week compared to female students. Beer was most popular among German male students. Most students at both universities indicated that they do not use drugs; however, drug use was reported more frequently among males than females at both institutions.

Some psychosocial characteristics were associated with lifestyle habits. Students who frequently experienced symptoms of anxiety and depression or felt lonely and isolated at the university tended to consume unhealthy foods more often (Table 3).

Table 3. Multivariable linear regression analysis of associations between 'Unhealthy nutrition' dietary factor and psychosocial characteristics

Psychosocial characteristic	β*	95% CI	p
Experiencing symptoms of anxiety or depression	0.142	0.036–0.249	0.009
Feeling lonely at university	0.218	0.085–0.352	0.001

**Adjusted by university, gender, age, and other dietary factors.*

Students who experienced higher levels of stress often expressed dissatisfaction with their dietary habits (Table 4). Those facing increased anxiety and depression were also more likely to be unhappy with their diet. Furthermore, individuals who felt lonely at university tended to report greater dissatisfaction with their eating patterns. Conversely, a stronger sense of belonging within the university community was associated with greater satisfaction regarding dietary habits.

Respondents with higher stress levels tended to exercise less frequently, spend more time being sedentary, and have a poorer perception of their physical fitness compared to those with lower stress levels (Table 4). Additionally, students who experienced high levels of anxiety or depression were less active, sat longer, and felt less fit physically. In contrast, a strong sense of belonging to the university community was linked to higher levels of physical activity, fewer sedentary hours, and an improved perception of physical fitness. While academic pressure does not significantly impact physical activity levels, it may lead to increased sedentary behaviour.

Table 4. Spearman correlations coefficients between psychosocial characteristics and lifestyle habits.

Psychosocial characteristic		Satisfaction with dietary habits	Frequency of physical activity	Sedentary hours per day	Rating students' own physical fitness level
Stress	r	0.179	0.167	0.165	0.217
	p	0.002	0.004	0.004	<0.001
Anxiety or depression	r	–0.227	–0.162	–0.183	–0.215
	p	<0.001	0.005	0.002	<0.001
Sense of belonging to the university community	r	0.144	0.162	0.129	0.227
	p	0.013	0.005	0.027	<0.001
Pressure to succeed academically	r	–0.109	–0.035	–0.139	–0.073
	p	0.063	0.548	0.017	0.214
Loneliness or isolation at university	r	–0.228	–0.017	–0.091	–0.111
	p	<0.001	0.769	0.118	0.056

Discussion

University students are at a high risk of experiencing poor mental health and having unhealthy lifestyle. This study examines lifestyle and psychosocial characteristics among students at TUM in Germany and LSMU in Lithuania and the association between lifestyle and psychosocial factors.

The assessment of psychosocial characteristics revealed that nearly half of the students in Lithuania and female students in Germany reported experiencing high levels of stress. Additionally, almost one-third of students at LSMU and one in six to seven students at TUM often experienced symptoms of anxiety or depression. These findings align with previous studies that indicate a high prevalence of psychological distress among the student population [2–4, 6]. Most students at both institutions expressed feeling pressure to succeed academically and reported feelings of loneliness and isolation at university. Male students were more likely to feel a sense of belonging within the university community. Only one in three students expressed satisfaction with the level of support available at the university. Other researchers have emphasized the need to implement mental health-promoting strategies at universities, including tailored counselling services and mentorship programs that address the specific needs of students [1, 15].

The study highlighted differences in dietary habits, physical activity levels, and substance use between students at TUM and LSMU. Students at TUM, particularly females, tended to adopt healthier dietary patterns. They reported more frequent consumption of fruits and vegetables, and less frequent intake of red meat, bakery products, fast food, and unhealthy snacks. Gender differences in dietary habits were also evident at TUM, with female students consuming red meat and fast food less often than their male counterparts. These findings align with previous research indicating that female students generally have healthier dietary patterns than males [8, 16, 17].

In terms of physical activity, TUM students were more likely to engage in exercise, with males showing particularly high levels of physical activity and self-assessed fitness. One possible explanation is that the study was conducted at TUM's Sport and Health Science campus, where students have better access to sports facilities and a stronger emphasis is placed on physical activity. Nevertheless, a high level of physical activity among students was also observed in another study conducted in Germany [18]. In contrast, most studies indicate that students generally demonstrate low levels of physical activity [8, 19, 20].

Our study found that psychosocial characteristics of students were linked to lifestyle factors. An increase in the consumption of unhealthy foods, such as fast food, unhealthy snacks, energy drinks, and sugary beverages, was associated with symptoms of anxiety or depression and feelings of loneliness. Those students who were dissatisfied with their nutrition habits reported higher levels of stress, anxiety or depression, as well as feelings of loneliness and academic pressure. Previous studies have highlighted significant associations between dietary habits and mental health. A study conducted in three European countries – Germany, Poland, and Bulgaria – found that perceived stress was associated with a more frequent consumption of sweets and fast foods, and a less frequent consumption of fruits and vegetables among female students [21].

In addition, depressive symptoms were related to lower fruit and vegetable intake [21]. In Spain, symptoms of anxiety were linked to an unhealthy diet among nursing students [1]. Another study involving Australian students showed that high intake of snack foods and skipping meals were associated with increased depression and stress scores [12]. In China, skipping breakfast was closely related to abnormal psychological health symptoms [14]. Furthermore, associations between stress, anxiety, depression, and junk food consumption were found among undergraduates at an Egyptian university [22].

In our study, a higher frequency of physical activity, fewer sedentary hours per day, and a better self-reported physical fitness level were associated with lower stress levels, decreased frequency of anxiety or depression, and a greater sense of belonging to the university community. Other studies have also shown that regular physical activity is inversely related to stress and symptoms of anxiety and depression, while longer periods of sitting increase the risk of psychological distress [1, 12–14, 23, 24]. Furthermore, research indicates that exercise can activate the endocannabinoid system, which positively impacts depression, partly through its effects on neurotrophins [25]. A scoping review of 61 articles indicated that interventions such as yoga, tai chi, aerobic exercise, and moderate- to high-intensity exercise are effective in managing stress and improving mental well-being among university students [26].

Strength and limitations. One of the strengths of this study is its comprehensive approach to examining the associations between students' lifestyles and psychosocial factors. By including students from two different universities – the Technical University of Munich and the Lithuanian University of Health Sciences – this study provides valuable insights into the cross-cultural differences in health behaviours and psychosocial well-being.

Despite its strengths, the study has several limitations. First, the sample was predominantly female (72.9 %), which limits the ability to generalise findings to the male student population. The lower number of male participants may have influenced the statistical power for gender comparisons. Second, the study used a convenience sampling method, which may introduce selection bias and limit the representativeness of the findings for the broader student population. Third, all data were self-reported using a questionnaire, which carries the risk of response bias. Participants may have provided socially desirable answers rather than fully accurate responses, particularly on sensitive topics like substance use or mental health.

Finally, the cross-sectional design of the study prevents the establishment of causal relationships between psychosocial factors and health behaviours. Longitudinal studies are recommended to better assess these associations over time. Future research should aim to increase male participation, employ probability sampling techniques, and incorporate objective mental health measures to enhance the reliability and generalizability of the findings.

Conclusions

The findings of this study highlight a significant prevalence of psychological distress symptoms among students in Germany and Lithuania. There is a clear relationship between psychosocial characteristics and lifestyle factors. Recognising the substantial impact of these psychosocial factors on students' lifestyles, universities should consider strengthening their support systems and implementing strategies that promote both physical and mental health. Social support can help reduce feelings of depression and anxiety. Therefore, fostering social networks and minimizing loneliness can be effective approaches.

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