

International Classification of Functioning, Disability and Health and goal attainment scale approach as academic tools at student-run free clinic for diabetic patients with international collaboration

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ABSTRACT

The prevalence of diabetes is rising globally these days. Multidisciplinary teamwork for diabetes patients in nursing care is essential to preventing both acute and long-term complications. Additionally, this method of providing services will give students access to modern medical practice while they are in school. 120 students were enrolled in the post-piloted courses and 133 students

took the pre-test. Through the Erasmus+ project with international cooperation, we established a “student-run free clinic for diabetic patients” to support the treatment of diabetes, which makes use of the goal attainment scale method and the International Classification of Functioning, Disability and Health framework. Students are ready to offer free services for educational opportunities for other new generations of medical students and medical care to diabetic patients, according to the questionnaire for the student evaluation of the quality insurance of the piloted courses. In addition to offering diabetic patients and their families access to ongoing medical education, the “student-run free clinic for diabetic patients” also offers diabetic patients medical care.

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Key word: diabetes mellitus; service learning; ICF tool; GAS tool; student-run center.

Contributions: AU, FTH, conceptualization; TH, methodology; AFH, NFH, formal analysis; FTH, AU, investigation, data curation; TH, AP, draft preparation; FTH, TH, AU, writing-original; TH, AP, AU, FTH, writing-review and editing. All the authors approved the final version to be published.

Conflict of interest: the authors declare no potential conflict of interest.

Funding: this study was co-funded by the Erasmus + Program of the European Union, Project title “SMAPHC - Student run multidisciplinary allied Health Practices Center”. Project number: 598602-EPP-1-XK-EPPKA2-CBHE-JP (2018-3220/001-001).

Ethical approval and consent to participate: not applicable.

Availability of data and material: not applicable.

Received: 24 July 2024.

Accepted: 24 July 2024.

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Licensee PAGEPress, Italy
Italian Journal of Medicine 2024; 18:1774
doi:10.4081/ijm.2024.1774

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Introduction

Cardiovascular diseases, cancer, diabetes, and chronic respiratory disease are non-communicable diseases (NCDs) that cause extensive social and economic burden worldwide, particularly in low-income and middle-income countries.¹

Diabetes is an important public health problem in the entire world, one of four priority NCDs targeted for action by world leaders. Both the number of cases and the prevalence of diabetes have been steadily increasing over the past few decades. Adults living with diabetes are rising from 108 million in 1980 to 529 million in 2021, and it is expected to affect 592 million people by 2035.²⁻⁵

Diabetes of all types can lead to complications in many parts of the body and can increase the overall risk of dying prematurely. Possible complications include heart attack, stroke, kidney failure, leg amputation, vision loss, and nerve damage.²

In May 2001, at the 54th World Health Assembly, the Assembly Resolution 54.21, the International Classification of Functioning, Disability and Health (ICF) was officially endorsed by 191 state members as the international standard describing and measuring health and disability.^{6,7}

The ICF reflects functioning and disability which are crucially linked to health condition. It provides detailed and systematic information about the consequences of illnesses

and disorders on bio-psycho-social aspects, activities, and participation and takes into consideration the relevant contextual factors. The component body functions refer to the physiological and psychological alterations of the body, whereas body structures describe changes in the anatomical parts like organs or extremities. Both components are created to work together side by side. The component activities and participation involve tasks and actions of a person including the ability to execute, perform, and have the capacity to do them including the individual and environmental perspectives. The component environmental factors represent external influences on the functioning and disability of an individual which facilitate or hinder physical, social, and psychic issues.⁸

In their project, Beck *et al.* highlight how a student-run clinic fosters a strong sense of ownership among the students involved, providing a nurturing environment where the students' values and aspirations can be upheld and their passions, compassion, and leadership potential can flourish.⁹

Despite resource limitations, uninsured patients at student-run free clinics are able to reach and maintain target A1C at comparable rates to their insured counterparts.¹⁰

According to Ryskina *et al.*'s findings, diabetes patients treated at student-run free clinics can achieve intermediate clinical outcomes that are, for the most part, superior to those of patients with insurance and superior to those of the uninsured population in general. In all care settings, there is ample potential for improvement.¹¹

According to Stickel *et al.*, student-run preventative health consultation (PHC) programs may be able to help underserved patients with chronic illnesses become more knowledgeable about and involved in preventative healthcare.¹²

In their work, Gorrindo *et al.* saw the potential of giving underprivileged patients care as a service-learning opportunity for medical students. Selected first- and second-year students received instruction from subject matter experts and met regularly to talk with endocrinologists. Students who volunteer their time do not get credit for their involvement in the classroom. These results show that, despite the inherent challenges of caring for patients from underprivileged backgrounds, a medical student health educator program at a student-run free clinic can deliver excellent diabetic care and support clinical improvement one year after enrollment.¹³

Primary health care, secondary health care, and tertiary health care are the three levels at which Kosovo's network of healthcare facilities is arranged.^{14,15}

The municipality of Gjakova has a population of 115,859 inhabitants, where a regional hospital and primary care physicians offer medical services.¹⁶

According to yearly data from the Department of Statistics of the National Institute of Public Health of Kosovo, diabetes is the most common non-communicable disease in the country.¹⁷

Based on research conducted in Kosovo by Ramadani *et al.*, the prevalence of prediabetes was 6.1% (95% CI: 5.3-7.1%) in 2019 at 18-69 years old, compared to 6.0% (95% CI: 4.6-7.9%) in 2011 at 15-64 years old. There was no discernible difference between the two rates ($P>0.05$).¹⁸

Conclusions on the prevalence of diabetes in Kosovo are unachievable due to the absence of the National Registry for Diabetes in Kosovo and the lack of official data based on the International Classification of Diseases-10 due to Kosovo's malfunctioning health information system.

Kosovo lacks a human resource for health strategy that tackles issues including migration, graduate medical specialization distribution, family medicine nurse education, specialization, and professional development, as well as more equitable geographic distribution of PHC practitioners.¹⁹

Individuals' health state is influenced by their socioeconomic features. Therefore, there is a lot of evidence that a higher wealth and education level are positively correlated with improved health.²⁰⁻²²

These individuals are referred to medical facilities after issues have arisen since they do not have access to early diagnosis, control, or preventive options due to their lack of health insurance and the absence of diabetes counseling centers in each community.

The purpose of this study is to establish a multidisciplinary practice center run by students, where clients would receive all services in one location and students would actively participate in all phases of the process, from the center's development to its implementation. Additionally, the center will offer medical opportunities to students for service-learning and free care for diabetic patients through multidisciplinary collaboration, giving them access to modern medical practice while they study.

Materials and Methods

Groundwork and preparation of the Medical Faculty staff from the University "Fehmi Agani" of Gjakova (UFAG), "Heimerer" College (HC), University of "Kadri Zeka" (UKZ) and European Union (EU) tutors from Finland and Turkey were actively included in the project "student-run multidisciplinary allied health practice center" (SMAHPC). The SMAHPC was conducted as a part of Erasmus+ program of the EU, where certain teachers implemented syllabuses of two courses together. The courses were "Nursing Surveillance" and "Methodology of Education and Health Promotion".

Student-run free clinics for diabetic clients and other chronic diseases, using the ICF approach and goal attainment scale (GAS) setting, can improve health education, academics, practical knowledge, and skills, and empower a strong feeling of medical students' ownership. At the same time, teamwork, with some student's leadership and strong commitment, raises their human and empathy values. The main objective was to strive to achieve goals such as educating, empowering, and inspiring medical students by providing excellent patient care for free. As a trained method, the ICF and the GAS approaches were used. The Specific, Measurable, Achievable, Realistic, and Timely tool was used, for identification and goal setting for our diabetic patients. Learning outcomes were made according to Bloom's taxonomy.

The study included 133 students in the pretest and 120 students in the post-piloted courses. The evaluation methodology was done in an electronic Google form shared with teachers and students of the project. We have assessed the pre- and post-piloted feedback that instructors and students submitted on the piloted courses. Under the supervision of academic medical professionals, medical students in the nursing department of the University "Fehmi Agani", Medical Faculty, Gjakova, manage the "student-run free clinic for diabetic pa-

tients”, which is situated in the facilities of the Medical Faculty, in the basement for client’s easier access.

The quality assurance team from our university evaluated the teachers and students who took part in the SMAHPC initiative using an electronically disseminated Google Form. The questionnaires had both closed- and open-ended questions about respondents’ views on continuing professional development (CPD) courses.

The Likert scale was used for evaluation and interpretation of students’ developed competencies during and after courses (Figure 1). The scale ranged from “Little knowledge” (1) to “very good” (4) and, as shown in Figure 2, the scale ranged from “Not so well” (1) to “Very well” (5).

The quality assurance team distributed the questionnaires pretest and posttest after applying the syllabus of the two generations of the nursing program, designed to assess the effectiveness of goal setting to use adequate approaches, which guarantees evidence-based success in the treatment process. At each test, at the beginning and at the end of the course, the quality team assessed the success in achieving the satisfaction level of the students with the new way of teaching methods (Figures 3-4).

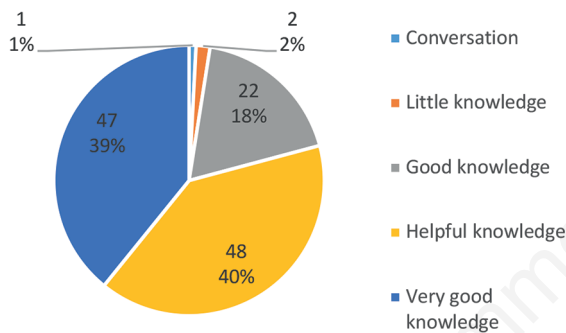


Figure 1. How did the courses help you become more proficient at collaborating across multidisciplinary teams?

Results

Over the two years that followed, in 2020 and 2021, the piloting of the nursing program’s course and the evaluation of students took place. About pre-piloted feedback from students, there were 133 participants from all partners, most of them from UFAG (113 of them), HC (13 of them), and UKZ (7 of them).

During this period, our students have helped dozens of patients with type 2 diabetes by taking their body mass index, helping medical professionals with medication, treating sole wounds, completing the evaluation process with patients, and offering advice on lifestyle and diet.

Due to the educational purposes of implementing the “student-run free clinic for diabetic patients”, they were actively involved in voluntary work. While participating in clinical practice in the hospital, the students were supervised by clinical mentors under the guidance of their professors in small groups.

The comments were predicated on the anticipations of the 127 students who completed the survey before the pilot pro-

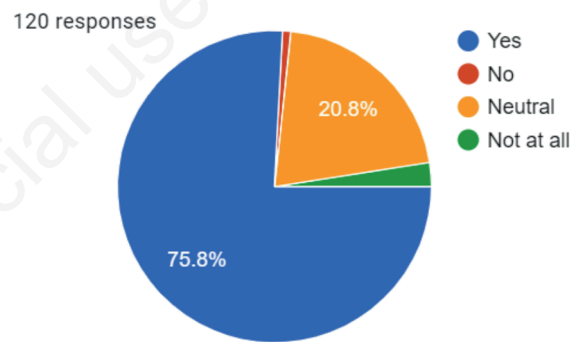


Figure 3. Do you believe you learned what you expected to learn from the course?

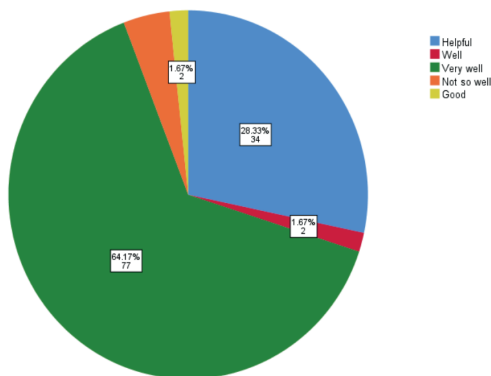


Figure 2. How did your competence in evidence-informed practice develop during the course?

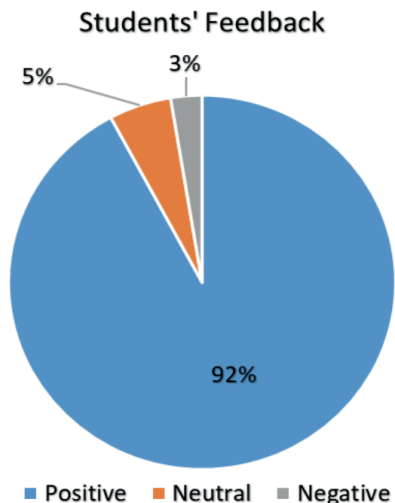


Figure 4. What do you think about these courses after attending them?

grams. 64% of respondents provided good comments, 34% were neutral, and only 2% provided negative input, according to the results.

The questionnaire was completed by 120 participants in the post-piloted courses, where 75.8% of them had expectations that the course satisfied, whereas 20.8% had neutral expectations.

A Likert scale was used to assess and interpret the students' responses to a question about their developed competencies in multidisciplinary cooperation during the courses. Of them, 39.17% (no=47) regard their knowledge of multidisciplinary cooperation as "very good," approximately 18.33% (no=22) as "good," and approximately 40% (no=48) as "helpful".

Approximately 64.17% (no=7) of the students said they had completed the course with "very well" competencies developed in evidence-based practice; approximately 28.33% (no=34) of the students said they had learned competencies that were rated as "helpful"; and approximately 4.16% (no=5) of the students said their answers were "not so well."

Discussion

The innovative aspect of the student-run clinic is to provide services for populations that are severely disadvantaged. The student-run clinic focused on that our students take the lead in issue solving and they start to understand how to navigate in health system, learning approach and environment. Through the "student-run free clinic for diabetic patients", our university was very crucial for the training of nursing students and for the community in the Municipality of Gjakova to provide these services to patients with type 2 diabetes.

Even after the project is over, this center remains operational at our institution, where we continue to work with our type 2 diabetes clients with the help of the students who were part of and who are now teaching the younger students how to work with these patients. However, even patients with diabetes find this center to be a comfort because it provides them with the required care and guidance regarding their condition, saving them from having to travel to other hospitals in Kosovo in the lack of counseling facilities in the municipality of Gjakova.

The results of numerous studies regarding the student-run free clinic indicate that using visual cues and academic detailing can help increase the number of diabetic foot exams. In a student-run free clinic with paper records and rotating clinical personnel, the rate of foot exams was increased by using a half sheet of paper as both a reminder and documentation.^{23,24}

The systematic review supports the use of no removable devices for the treatment of plantar foot ulcers, and the other study looks at the various offloading techniques that are frequently used to treat and prevent ulcers while accounting for the mechanical impact of these techniques on stability.^{25,28}

In our study for the first time, our students used ICF and GAS methods on diabetic patients, which are still not used in Kosovo.

In order to examine the content validity of the ICF core set for diabetes mellitus from the perspective of nurses, Wildeboer *et al.* conducted a two-round Delphi investigation with nurses who specialize in diabetes care and were chosen via purposive sampling. The content validity of the ICF core set for diabetes mellitus was somewhat bolstered by specialized

nurses. The content validity of categories derived from environmental components was not well-supported by data.²⁷

The suggestion for preventative foot care in diabetics by Mayfield *et al.* states that "all healthcare providers of people with diabetes should be able to conduct a simple screening exam of the neurological, vascular, dermatological, and musculoskeletal systems." A strong interest in foot care may lead medical practitioners to specialize in treating high-risk foot problems by pursuing more education. Additional training in callus and nail care, shoe adaptations, foot surgery, and patient education can be required.²⁸

Similarly to a previous study, in our "student-run clinic for diabetic patients", we have used for examination of all tests in an assessment evaluation form for neurological, vascular, dermatological, and musculoskeletal systems. Training and education of students is a priority for treatment and advising clients for nail and callus care, foot hygiene, proper shoe wearing and footwear solution suggestions, and client education about diabetic disease and their complications.

There is ample evidence to support the use of electronic medical record tools which improved diabetic foot examination performance in a specialty clinic.²⁹

The Faculty of Medicine is currently offering the same CPD course as a pilot program to new generations. On the other hand, our staff has also benefited a lot from the use of these new techniques in the evaluation, diagnosis and treatment of patients in the Gjakova Region with type 2 diabetes.

It would be beneficial if these methods were implemented at the national level across the entire Republic of Kosovo.

Conclusions

Projects that aim to develop a student-run free client clinic are welcome in the future, because Kosovo, as a low-income state, has high needs for these initiatives, achieving higher standards for providing healthcare and education for clients.

As a result, our university's multidisciplinary "student-run free clinic for diabetic patients" provides access to these patients in an effort to prevent both acute and long-term issues in type 2 diabetics.

Additionally, we treated these individuals using techniques that had never been employed before during this trial.

The "student-run free clinic for diabetic patients" provides an opportunity for continual medical education for medical students and diabetic clients with their families, also they provide medical care to diabetic clients. Students are very dedicated and enthusiastic about achieving learning outcomes, providing patient care, and using their passion to serve patients effectively. This unit, established in our university, will continue to educate new generations of students and provide healthcare for diabetic clients by students.

References

1. Lisy K, Campbell JM, Tufanaru C, et al. The prevalence of disability among people with cancer, cardiovascular disease, chronic respiratory disease and/or diabetes: a systematic review. *Int J Evid Based Healthc* 2018;16: 154-66.
2. World Health Organization (WHO). Global regional, and national burden of diabetes from 1990 to 2021, with pro-

- jections of prevalence to 2050: a systematic analysis for the Global Burden of Disease Study 2021. *Lancet* 2023;402:203-34.
3. Washington RE, Andrews RM, Mutter R. Emergency department visits for adults with diabetes, 2010. Statistical Brief #167. Healthcare cost and utilization project (HCUP). Agency for Healthcare Research and Quality. 2013. Available from www.hcupus.ahrq.gov/reports/stat-briefs/sb167.jsp.
 4. Dunning T, Sinclair A. The IDF global guideline for managing older people with type 2 diabetes: Implications for nurses. *J Diabetes Nurs* 2014;18:145-50.
 5. NCD Risk Factor Collaboration (NCD-RisC). Worldwide trends in diabetes since 1980: a pooled analysis of 751 population-based studies with 4.4 million participants. *Lancet* 2016;387:1513-30.
 6. World Health Assembly. Fifty-fourth World Health Assembly, Geneva, 14-22 May 2001: and decisions. World Health Organization. 2001. Available from: <https://apps.who.int/iris/handle/10665/260183>.
 7. World Health Organization (WHO). Towards a Common Language for Functioning, Disability and Health: ICF. WHO, 2002.
 8. Müller SM. Validation of the International Classification of Functioning, Disability and Health (ICF) core set for diabetes mellitus: a Worldwide Delphi Survey Among Physicians. Ludwig Maximilians University Munich, 2014.
 9. Beck E. The UCSD student-run free clinic project: trans-disciplinary health professional education. *J Healthc Poor Underserved* 2005;16:207-19.
 10. Laitman BM, Mosley G, Thomas DC, Meah YS. How well does a student-run free clinic care for diabetic patients? *J Student Run Clin* 2017;3.
 11. Ryskina KL, Meah YS, Thomas DC. Quality of diabetes care at a student-run free clinic. *J Healthc Poor Underserved* 2009;20:969-81.
 12. Stickel J, Ngo S, Kumar A, et al. Evaluation of a preventative health consultation service for patients at student-run walk-in health clinics. *J Stud Run Clin* 2021;7.
 13. Gorrindo P, Peltz A, Ladner TR, et al. Medical students as health educators at a student-run free clinic: improving the clinical outcomes of diabetic patients. *Acad Med* 2014;89:625-31.
 14. Ministry of Health, Republic of Kosova. Plani i Veprimt për përcaktimin e kritereve për regjistrin e banorëve për Kujdesin Parësor Shëndetësor, Prishtinë, 2022.
 15. Ministry of Health. Administrative Instruction (Health) UA 04/2020 Primary Health Care, Prishtina, 2020.
 16. Kosovo Agency of Statistics. Statistics Yearbook of Republic of Kosova, Prishtina, 2021.
 17. National Institute of Public Health of Kosova. Department of Health Statistics. Health statistics report. Report of survey on risk factors for chronic disease. Prishtina. 2011-2021.
 18. Ramadani N, Hoxha-Gashi S, Muçaj S, et al. Trends in Prediabetes and diabetes prevalence in Kosovo: a comparison of the results of steps survey from 2011 and 2019. *Int J Biomed* 2023;13:47-53.
 19. World Health Organization (WHO). Primary health care in Kosovo: rapid assessment. 2019.
 20. Mackenbach JP, Stirbu I, Roskam AJ, et al. Socioeconomic inequalities in health in 22 European countries. *N Engl J Med* 2008;358:2468-81.
 21. World Health Organization (WHO). Closing the gap in a generation: health equity through action on the social determinants of health. Final report of the Commission on Social Determinants of Health. Geneva: Commission on Social Determinants of Health; 2008. 13.
 22. Kiuiila O, Mieszkowski P. The effects of income, education and age on health. *Health Econ* 2007;16:781-98.
 23. Steinman J, Wosiski-Kuhn M, Haddad D, et al. Foot exams in a student-run clinic. *J Stud Run Clin* 2017;3.
 24. Bus SA. Foot structure and footwear prescription in diabetes mellitus. *Diabetes Metab Res Rev* 2008;24:S90-S95.
 25. Bus SA, Valk GD, van Deursen RW, et al. The effectiveness of footwear and offloading interventions to prevent and heal foot ulcers and reduce plantar pressure in diabetes: a systematic review. *Diabetes Metab Res Rev* 2008;24:S162-S180.
 26. Van Deursen R. Footwear for the neuropathic patient: offloading and stability. *Diabetes Metab Res Rev* 2008;24:S96-S100.
 27. Wildeboer AT, Stallinga HA, Roodbol PF. Validation of the International Classification of Functioning, Disability and Health (ICF) core set for Diabetes Mellitus from nurses' perspective using the Delphi method. *Disabil Rehabil* 2022;44:210-8.
 28. Mayfield JA, Reiber GE, Sanders LJ, et al. Preventive foot care in people with diabetes. *Diabetes care* 1998;21:2161-77.
 29. Pocusis J, Janci MM, Thompson HJ. Improving diabetic foot examination performance using electronic medical record tools in a specialty clinic. *Comput Inform Nurs* 2015;33:173-6.