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EVIDENCE BASED MEDICINE - THE KNOWLEDGE OF MEDICAL STUDENTS ON THE USE OF SCIENTIFIC EVIDENCE IN PROFESSIONAL PRACTICE

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ABSTRACT

Introduction: Evidence Based Medicine (EBM) is a criterion for excellence in the clinical decision-making process. Evidence-based medicine can be described as the integration of the clinician's expertise with the knowledge of other specialists, while also considering the patient's preferences. The objective of this study is to assess the knowledge of nursing and medical students regarding evidence-based medicine and its application in professional practice

Materials and Methods: A diagnostic survey method was applied in this study. The technique of a questionnaire based on a self-constructed survey was used. The study involved 120 students from the Medical University of Lublin, from both the medical and nursing programs.

Results: The questionnaire results confirmed the importance of EBM in clinical practice, but also highlighted the major barriers in its use, such as generational differences in approach to clinical practice, lack of time for correct implementation.

Conclusions: The study revealed that the vast majority of respondents are familiar with the concept of Evidence Based Medicine. Students report that there is a course in their curriculum that provides knowledge on this topic. The most common use of EBM among students occurs during the preparation of thesis papers, conference presentations, and writing articles.

KEYWORDS

Evidence Based Medicine, Nursing, Professional Practice

CITATION

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Introduction:

The term Evidence Based Medicine (EBM), meaning medicine based on evidence, is an approach to medical practice that emerged at the end of the 20th century and revolutionized the way clinical decisions are made [2]. It refers to the integration of individual clinical expertise with the best available clinical evidence from systematic research [2],[3],[4]. The main principles of EBM are based on the systematic analysis and critical appraisal of scientific research results, which enables the development of guidelines and recommendations grounded in high-quality evidence. This, in turn, supports the delivery of the highest quality healthcare by physicians, nurses, and other medical professionals [3],[4].

The practice of EBM is a lifelong learning process, with the patient's well-being as its primary focus [3],[4]. For physicians, it serves as a tool that enables more informed and justified clinical decision-making based on current guidelines and the most reliable research evidence [4]. For nurses, who are primarily responsible for implementing and monitoring a patient's therapeutic plan, the use of EBM allows them to provide care aligned with current standards and to respond effectively to sudden changes in a patient's health status. Knowledge of EBM principles makes it possible to assess whether the applied methods of treatment and patient care are optimal and safe. However, a key challenge remains the integration of theory with practice, which requires continuous professional development and interdisciplinary collaboration to ensure that the latest research and recommendations are reflected in everyday clinical work.

The aim of the study was to analyze the application of Evidence Based Medicine (EBM) in practice and the level of knowledge about it among medical and nursing students.

Material and methods:

The study was conducted in May 2024. It was carried out anonymously, in accordance with the principles of the research process. A survey technique was used based on a self-designed questionnaire. A total of 120 students from the medical and nursing programs at the Medical University of Lublin participated in the study. Women constituted 80.83% of the respondents, while men accounted for 19.17%.

The respondents were divided by age: 21–23 years (77.50%), 24–26 years (19.17%), and 27 years or older (3.33%). The questionnaire was completed by 47.50% nursing students and 52.50% medical students. Among the nursing students, those who were only studying (63.16%) and those who were both studying and working (36.84%) were distinguished.

The number of respondents represented particular years of study as follows: third year of undergraduate studies (15%), fourth year of studies—including the first year of master's studies and the fourth year of medical studies (54.17%), fifth year of studies—including the second year of master's studies and the fifth year of medical studies (27.50%), and sixth year of medical studies (3.33%). Detailed data are presented in Table 1.

Table 1. Characteristics of the Study Group.

		Total (N i %)	
Age	21-23 years	93	77,50%
	24-26 years	23	19,17%
	27+ years	4	3,33%
Sex	Female	97	80,83%
	Male	23	19,17%
Field of Study	Nursing	57	47,50%
	Medicine	63	52,50%
Year of Study	III year	18	15,00%
	IV year	65	54,17%
	V year	33	27,50%
	VI year	4	3,33%
Level of Studies	I	18	15,00%
	II	39	32,50%
	Integrated Master's Degree	63	52,50%
Current Status (concerning nursing)	Studying	36	63,16%
	Studying and working in their profession	21	36,84%
Background	Rural	55	45,83%
	Urban	65	54,17%

The obtained research results were subjected to statistical analysis. The values of the analyzed variables were presented using frequencies and percentages. The relationships between the analyzed variables were assessed using the Chi-square (χ^2) test. A significance level of $p < 0.05$ was adopted, indicating the presence of statistically significant differences or relationships. The database and statistical analyses were carried out using the Statistica 9.1 software (StatSoft, Poland).

The study received approval from the Bioethics Committee at the Medical University of Lublin – Resolution No. KE-0254/256/12/202

Results:

The results are presented in tables 2 and 3.

Students most often turn to scientific literature in order to prepare scientific articles (63.33%), conference presentations (60%), and during university classes (58.33%).

The main source of knowledge is publications in English, which form the basis of scientific work for 63.33% of respondents.

Students most frequently use scientific search engines such as PubMed (93.3%) and Google Scholar (82.5%).

The majority of students (62.5%) believe that they acquired skills in using EBM during their studies.

Only 7.5% of students consider academic teaching on EBM to be unnecessary.

Nearly half (47.62%) of nurses working in the profession declare that they apply EBM principles in their daily practice. However, as many as 85.71% of respondents observe that senior colleagues rarely rely on EBM, which indicates the presence of generational barriers in adopting this methodology.

Nevertheless, 71.67% of respondents base their working methods on the research they have read.

As many as 66.66% of nursing students indicate that they encounter difficulties in using EBM in their daily work.

The main barrier is lack of time during shifts, as indicated by 67.39% of respondents.

Table 2. Percent of correct answers to multiple choice questions presented in the questionnaire

Question number	% correct answers
1	95%
2	98,34%
6	15%*
6	98,33%**
14	26,67%

*multiple choice question - people who chose all correct answer variants

**multiple choice question - people who chose at least one correct answer variant

Other questions present in the diagnostic survey were open-ended with no objectively correct choice

Table 3. Level of knowledge of participants of the diagnostic survey divided by field and year of study

Analyzed variable			Level of Knowledge		Statistical Significance
			lower (up to two correct answers)	higher (three or four correct answers)	
Field of Study	nursing	N	26	31	p=0,002
		%	45,61%	54,39%	
	medicine	N	12	51	
		%	19,05%	80,95%	
Year of Study	III	N	9	9	p=0,010
		%	50,00%	50,00%	
	IV	N	24	41	
		%	36,92%	63,08%	
	V–VI	N	5	32	
		%	13,51%	86,49%	
Total		N	38	82	—

Discussion:

The concept of Evidence-Based Medicine (EBM) has been widely used and promoted since its emergence; however, among students of health sciences and medical fields such as nursing and medicine, this topic has only relatively recently been introduced into academic curricula. Nevertheless, with the growing interest in EBM and the increasing number of studies examining its awareness among healthcare professionals, attention should also be given to assessing knowledge of EBM within academic institutions that educate future practicing physicians and nurses.

The present study analyzed the knowledge and application of Evidence-Based Medicine among nursing and medical students. During the study, the majority of students from both fields showed willingness to participate in the survey, which may be attributed to the increasing recognition of the concept of EBM over the years. Additionally, the analysis of the data indicates that both nursing and medical students demonstrate interest in this topic; however, differences in the level of knowledge and practical skills are evident and may result from differences in curricula and professional goals between these two groups.

The higher level of knowledge about Evidence-Based Medicine among medical students may be associated with broader access to courses related to critical appraisal of scientific literature and research methodology (such as the course “Fundamentals of Research Methodology”). The aim of this course is to familiarize students with methods of searching for reliable, evidence-based scientific information using available databases, internet search engines, and digital resources. In contrast, nursing students, who also have

EBM-related courses in their curriculum (e.g., “Research in Nursing”), demonstrate a stronger focus on the practical aspects of patient care, which is likely related to their earlier entry into professional practice. This may result in lower confidence in using advanced EBM tools such as systematic reviews or meta-analyses. However, it should be emphasized that nurses play a key role in implementing EBM recommendations, particularly in nursing care and patient education; therefore, the development of their competencies in this area is essential.

Additionally, based on the presented results, it was shown that working respondents experience difficulties in applying EBM in daily practice, often due to a lack of time during their duties. An important finding is also the observation by practicing nurses that senior colleagues do not use EBM. This may lead to a further decline in the use of evidence-based knowledge among younger medical staff due to a lack of support for such practices and possible reluctance from older colleagues stemming from differing perspectives.

The study also demonstrated a correlation between the year of study and knowledge of Evidence-Based Medicine, showing that EBM knowledge increases with each subsequent year of study.

Based on the presented arguments, it can be concluded that the vast majority of nursing and medical students are aware of Evidence-Based Medicine and use it in everyday practice to expand their knowledge, as well as when writing scientific papers or preparing conference presentations. A significant proportion of respondents (62.5%) confirm that they were introduced to EBM during their studies and are able to apply it in daily practice. However, particular attention should be paid to the lower level of EBM knowledge among nurses and the lack of support from colleagues in its application among working nurses.

To facilitate the use of evidence-based scientific information, it would be beneficial to improve interdisciplinary collaboration already at the educational stage. Both medical and nursing students are largely educated within their own professional groups, which limits their ability to collaboratively solve clinical problems based on scientific evidence. Increasing the number of integrated classes involving both fields could promote a better understanding of respective professional roles and shared responsibility for implementing EBM principles.

Although this study addresses an important topic, it was conducted over a relatively short period and included a small sample size; therefore, further research is needed. Nevertheless, the study confirms the existing disparity in knowledge and application of EBM between nursing and medical students at the Medical University of Lublin

Conclusions:

The study showed that a significant majority of respondents (95%) are familiar with the concepts of Evidence-Based Medicine and scientific evidence, which indicates their awareness of the importance of using scientific foundations in professional practice. Moreover, students are able to identify criteria indicating the credibility of a journal, which suggests that they possess the skills necessary for critical evaluation of knowledge sources, positively influencing their future clinical practice.

Students indicate that their curriculum includes a course providing knowledge on evidence-based medicine. Respondents most frequently use EBM when preparing conference presentations, writing scientific articles, and during academic classes, which demonstrates the practical application of acquired knowledge and its importance in developing both scientific and professional skills.

Medical students demonstrate a higher level of knowledge compared to nursing students, and those in higher years of study show a better understanding of the principles of evidence-based medicine. Working respondents identify lack of time during shifts and fear of team evaluation as the main barriers to applying Evidence-Based Medicine in practice.

The obtained results highlight the significant importance of EBM in medical education and practice; however, there are notable barriers such as lack of time and generational differences in attitudes toward the use of scientific evidence. Further efforts should focus on increasing access to EBM training and developing strategies to improve the implementation of this methodology in everyday professional practice.

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