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Remote learning as assessed by students of Collegium Medicum of the Jan Kochanowski University in Kielce (survey questionnaire research)

Jakub Mlodawski[1], Marta Mlodawska[1] , Grzegorz Swiercz[1]

[1]Collegium Medicum, Jan Kochanowski University in Kielce (Poland)

Abstract

During the COVID-19 pandemic in Poland, there was a temporary transition to distance learning at universities. For students of the medical faculty, this change lasted for a shorter than other faculties and was effective until the start of mass vaccinations. For 6 months lectures, seminars, and exercises were held remotely. We conducted an internet-based survey among medical students regarding their assessment of their distance learning experience. We wanted to compare the assessment of students from the first to the third year of studies (group A), who mostly have theoretical classes, and the fourth to sixth (group B), who should mostly have exercises "at the patient's bedside".

Students of the medical faculty (n=82) participated in the survey (62% from group A and 38% from group B). All respondents had free access to a computer and the Internet. We assessed the individual areas of interest in the survey with a five-point Likert scale. There were no differences in the assessment of their own IT competencies among students of both groups. Students of both groups noticed that their level of IT competencies increased in the course of distance learning. The groups differed in terms of the assessment of the level of education offered by the university (4.6 vs 3.2, $p < 0.05$), and the assessment of their own involvement (4.5 vs 3.4, $p < 0.05$). The highest-rated forms of remote learning by students were group work on projects in designated channels of communication with assistants (86% and 78% willingly participate in it). The form assessed to be the worst was teaching based on providing content in electronic form (35% and 42%, respectively, willingly participate in it).

The students of the group are less satisfied with the remote classes, which may correspond to the lack of contact with the individual patients. Less satisfaction with the classes conducted leads among students to less involvement on their part.

Keywords: COVID-19, remote learning, medical faculty

1. Introduction

The COVID-19 pandemic affected the entire healthcare and education system in Poland. Medical personnel were largely relocated to pandemic-related duties. Part of this staff included scientists and medical faculty members. Due to the excessive amount of time spent in places where patients were being treated for COVID-19, the access students had to their teachers was limited. For 6 months, lessons were conducted by medical faculties throughout Poland using online platforms. Teaching medicine is unique in the necessity to combine instruction in academic theory with practical teaching "at the patient's bedside"; without the latter, a student cannot observe the physical and psychological aspects of the profession. The aim of practical clinical training is also to integrate the knowledge gained in various basic subjects with that acquired from contact with patients with multimorbidity. This element of teaching was completely removed from the curriculum for 6 months during the COVID-19 pandemic, while remote teaching had to act as a substitute. This was a large challenge because students could not lose this education time, but at the same time, the COVID-19 pandemic showed how socially necessary these medical personnel are. Lectures and seminars can naturally be conducted at a distance, but the greatest challenge remains the conducting of exercises. The specificity of medical science varies depending on the years of study. During the first three years, mainly primary subjects are taught and students do not have clinical teaching. In subsequent years, more and more classes are conducted in hospital wards. Taking into account the new situation faced by teachers and students, we decided to examine the views of students on the conducted classes and compare the assessments of medical students in years 1-3 of their studies with those of students in years 4-6.

2. Design

The survey was an anonymous online survey consisting of 5 questions. In question 5, the students evaluated the various forms of classes (5.1-5.10). The questionnaire was partly used previously in other studies. (1) In our work, we used its own modification. The survey was addressed to students in years 1-3 and in years 4-6 of their medical studies. The form consisted of a metric and a research section in which students answered questions about elements of remote learning based on a five-point Likert scale. The central tendency in a given group was presented using the median; the groups were compared using the Kruskal Wallis test. For the best and worst rated forms of remote education, the percentage of responses was presented as "5" and "1" in a given group, and the groups were compared with the help of the Chi-squared test.

1) How do you assess your IT competencies? 1(low) - 5(high)
2) How do you assess the change in your IT skills during remote learning? 1(decidedly decreased) - 5 (decidedly increased)
3) How would you rate the level of remote learning offered by the university during the 2020/2021 winter term? 1(very low) - 5 (very high)
4) How would you rate your level of involvement in remote learning? 1(low) – 5(high)
5) How would you rate the form of remote learning? 1(I am reluctant to participate in this form of classes) – 5 (I am very eager to participate in this form of classes):
- virtual meetings in a group of students (5.1)
- virtual individual meetings (5.2)
- individual telephone conversations (5.3)
- chat (5.4)
- instructions explaining the topics/tasks sent to students (5.5)
- individual work on projects/problems with designated communication channels that have a virtual assistant (e.g., in Teams files) (5.6)

- links to important content, videos, etc. (5.7)
- scans, photos, presentations of original materials from lecturers (5.8)
- scans, photos, presentations of materials by authors other than lecturers (5.9)
- lecture recordings (5.10)

3. Objectives

The objectives of this study are to present an evaluation of remote learning by students of the medical faculty of the Collegium Medicum of Jan Kochanowski in Kielce; as well as compare the evaluation results of the group of students in years 1-3 (group A) of their studies with those of the group in years 4-6 (group B).

4. Results:

The results were presented in Table 1. The groups differed significantly only in terms of their evaluation of the level of classes and their own involvement in remote learning. The highest-rated type of distance learning was group work on projects, using designated communication channels with virtual assistants (86% and 78% willingly participate in this form of learning, p=0.62). The worst-rated was providing content in electronic form (35% and 42%, respectively, willingly participate in doing this, p=0.72).

Figure 1 Quantitative results of the survey (the legend for the presented question numbers can be found in the paragraph labelled "design")

Number of question	Group A (median)	Group B (median)	p
1	4,8	4,7	0,94
2	3	3,1	0,91
3	4,6	3,2	<0.05
4	4,5	3,4	<0.05
5.1	4,2	4,1	0,92
5.2	3,9	4,1	0,86
5.3	3,2	3,1	8,89
5.4	2,5	2,4	0,91
5.5	2,1	1,8	0,79
5.6	4,9	4,7	0,82
5.7	2,2	2,1	0,89
5.8	3,1	3	0,92
5.9	3,1	3,1	1
5.10	4,3	4,2	0,89

5. Discussion

The study results indicate differences between medical students in years 1-3 of their studies and those in years 4-6 in terms of their needs and assessment of distance learning. In the initial period of study, classes are mainly theoretical, making the transition to remote learning less of a problem. Thus, distance learning is assessed more favourably by students in years 1-3 than by students in years 4-6. This is also in keeping with the results of the self-assessment of involvement in classes. It is slightly more difficult to provide older students with a substitute for practical teaching; as a result, remote learning and level of self-involvement are assessed significantly lower by them. The expectations of older students in relation to practical classes are therefore high.

The literature presents many ideas that may increase student satisfaction with "practical" classes conducted online. A tailor-made online surgical learning platform that was based on video materials enabled students to achieve a statistically significant increase in the number of points earned on their exam compared to what was obtained through book learning; a high level of student satisfaction was also achieved (4). Such solutions, however, have limited application in low-income countries due to the limitation of the lack of information technology infrastructure and support from national governments (4). The majority of older students believe that the pandemic should not have affected their clinical rotation (61.3%); however, given the risk to hospitalised patients, this rotation had to be halted before vaccinations were available. A majority of students (74.7%) believe that the pandemic has significantly changed their level of education. (5) Due to the COVID-19 pandemic, 59.3% of students believe that they are less prepared for clinical work (5). During the pandemic, our way of thinking about practical education had to be completely changed; but this allowed us to attempt many new teaching methods that had not been widely used until now. Moreover, our students' perceptions of these methods could be checked throughout the term, along with the educational results obtained by using them. This period has been very educational and we think that the hybrid form of learning will stay with us for a long time. This discussion is mainly concerned with interactive classes in which audiovisual materials can be widely used to teach clinical subjects. Among students, the most popular forms of distance classes are those in which a clinical problem is solved with the aid of a virtual assistant. This form of class is particularly well perceived among older students. Such classes are focused on the integration of knowledge accumulated in various subjects, and they require the involvement of the entire group and an assistant. The least liked classes are those that require relatively little work on the part of the assistant, i.e., sending materials to study. This form of distance learning differs little from the traditional work of a student with a textbook. The results of our survey also indicate that there is a correlation between the assessment of the level of teaching and one's own involvement in the learning process. In other words, there is a certain symmetry between the involvement of teachers and students in learning, which is also visible in the case of distance learning. This survey can contribute to determining the proper forms of classes in the future event of a necessary switch to remote learning.

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