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## USE OF PEER LEARNING MODEL - IN CLINICAL SKILLS TRAINING COURSE

Clinical Skills and Multidisciplinary Simulation Department of Tbilisi State Medical University, Georgia

Doi: <https://doi.org/10.52340/jecm.2022.07.37>*ირმა მანჯავიძე, დალი ჩიტაიშვილი, პირდარა ნოზაძე***მოდელის „თანატოლთა სწავლება“ გამოყენება - სასწავლო კურსში „კლინიკური უნარები“**

თბილისის სახელმწიფო სამედიცინო უნივერსიტეტის კლინიკური უნარებისა და

მულტიდისციპლინური სიმულაციის დეპარტამენტი, საქართველო

**რეზიუმე**

**შესავალი:** სამედიცინო განათლებაში, ისევე როგორც სხვა სფეროებში, მასწავლებლის როლს ზოგჯერ თავად სტუდენტები და რეზიდენტები ასრულებენ. რეზიდენტურის დროს „თანატოლთა სწავლება“, შეიძლება ეფექტური იყოს როგორც თავად რეზიდენტებისთვის, ასევე სასწავლო დეპარტამენტებისთვისაც. ჩვენი კვლევა მიზნად ისახავდა იმის გარკვევას, თუ როგორ ატასებენ რეზიდენტები მოდელს „თანატოლთა სწავლება“.

**მასალა და მეთოდები:** გაანალიზებული იყო რეზიდენტების (n=13) კითხვარები, რომლებიც მუშაობდნენ მინიმუმ ერთი სემესტრით, როგორც ე.წ. „მონვეული მასწავლებლები“ თსსუ-ის კლინიკური უნარების და მულტიდისციპლინური სიმულაციის დეპარტამენტში 2019-2020 და 2021-2022 აკადემიურ წლებში.

**შედეგები:** ყველა რესპონდენტმა დადებითად შეაფასა „თანატოლთა სწავლება“. მათი დიდი უმრავლესობა (76,9% n=10) დიდ რეკომენდაციას უწევს ასეთ აქტივობაში მონაწილეობას.

**დასკვნები:** რეზიდენტებს მოსწონთ კურსის „კლინიკური უნარები“ სწავლება და გამოთქვამენ დიდ სურვილს გააგრძელონ თანამშრომლობა ჩვენს დეპარტამენტთან. ჩვენ მივიჩნევთ, რომ მისაღებია დეპარტამენტის შევსება და მუდმივი განახლება ახალგაზრდა კადრებით, რადგან ეს დადებითად ისახება, როგორც დეპარტამენტზე ისე თავად რეზიდენტებზე და სტუდენტებზე.

**Introduction.** In medical education, as in other fields, the role of teacher is sometimes played by students and residents themselves. In this regard we can distinguish three main directions: students teach students (1), residents teach residents (2) and residents teach students (3). The first two models, are so-called „peer learning“. „Peer learning“ is defined as "People from similar social groups who are not professional teachers, helping each other learn and learn themselves by teaching" [2]. Peer-assisted learning is also defined as "individuals of similar training levels who are not professional teachers who help each other learn and as a result learn by teaching [1].

There are two main types of peer tutoring: same age and cross age (near peer learning). In cross-age peer tutoring, an older learner takes the tutoring role and is paired with a younger tutee or tutees. Near-peer teaching (NPT) is also defined as "a trainee one or more years senior to another trainee on the same level of medical education (teaching one another)" [9,10].

There are many studies on peer learning, namely, peer-teaching in undergraduate medical programs is compared to traditional teaching. It is revealed that "student-teachers benefit academically and professionally. Long-term effects of peer-teaching during medical school remain poorly understood and future research should aim to address this" [2].

Some studies are about peer learning among residents [9,10]. Existing studies have shown that "peer learning" during residency, so-called RAE model, can be effective for residents, and their role is very valuable for clinical education [5,6]. As most of them also have some clinical and pedagogical experience, since some of them participated in student peer learning programs. There are also programs that involve teaching students by residents. Although students and residents are at different levels of education, in literature this is sometimes referred to as peer learning as well. According to one study residents spend 20–25% of their time teaching students and peers and medical students learn 30–85% of the curriculum in undergraduate medical education from residents [3,13,14,15]. Consequently, many medical students perceive residents as their most important and valuable clinical mentors or teachers [3,11,16].

A model known worldwide as "Residents as educators" (RaE) or "Residents as Teachers"(RaT) has been introduced at the Department of Clinical Skills and Multidisciplinary Simulation (CSMS) of Tbilisi

State Medical University (TSMU) since 2012. According to Georgian legislation residents can participate in undergraduate medical education, namely they can work as an invited teacher during the residency period. From an administrative perspective, recruiting residents for the position of teacher brings the full benefits of the program and department, especially during Covid-19 pandemics, when we often have to replace teachers. RaT may alleviate the pressure on overburdened medical teachers and preserve the quality of medical education in situations of limited medical and educational resources. Considering the diligence, time constraints, and workload of medical staff, there is a growing need for resident teachers.

Our study aims to find out how residents evaluate their work.

**Methods.** CSMS Department designed mandatory and elective courses for various faculties of the TSMU including medicine, physical medicine and rehabilitation, nursing where they are given the opportunity to learn various procedures and manipulations using manikins and simulators. Among them are three compulsory training courses for Y2, Y4 and Y6 students of the Georgian, English and Russian-language programs of the Faculty of Medicine. As the Department is Multidisciplinary and vast variety of topics are taught, it requires the presence of several teachers in different directions. (Table 1). Residents are involved to teach undergraduate students of all abovementioned programs and courses, which is very helpful considering overburdened schedule of medical teachers and the multidisciplinary nature of our department.

**Table 1.** Topics learned at the Department of CSMS

| Y2 | Topic   | Residency programs presented by resident teachers |
|----|---|---|
|    | Parenteral, intradermal injection. Intramuscular injection.                             | different   |
|    | Intravenous injection.  | different   |
|    | First aid for external bleeding.  | different   |
|    | Patient transport.  | different   |
|    | Function tests of respiratory system.   | different   |
|    | Adult Resuscitation- Basic Life Support (BLS):  | different   |
| Y4 | Topic   |   |
|    | Basic principles of communication with the patient.                                     | different   |
|    | Pelvic examination.   | different   |
|    | Speculum examination.   | obstetric gynecology                              |
|    | Pap smear   | obstetric gynecology                              |
|    | Active management of 3 <sup>rd</sup> stage of labour                                    | obstetric gynecology                              |
|    | Intrauterine device insertion, contraceptive implant insertion.                         | obstetric gynecology                              |
|    | Operative vaginal delivery  | obstetric gynecology                              |
|    | Physical examination of a newborn   | pediatric   |
|    | Newborn Emergency Care.   | pediatric   |
|    | Pediatric respiratory examination   | pediatric   |
|    | Pediatric cardiovascular examination  | pediatric   |
|    | Nasogastric intubation  | different programs                                |
|    | Bladder catheterization   | different programs                                |
| Y6 |   |   |
|    | Patient Safety and Team Working   | different programs                                |
|    | Auscultation of lungs in adults and its X-rays images.                                  | no invited resident                               |
|    | Auscultation of the heart in adults:  | no invited resident                               |
|    | Basics of Ultrasound Examination  | internal-medicine                                 |
|    | ECG recording and interpretation of a normal ECG and the main types of pathological ECG | internal-medicine                                 |
|    | Interpretation of arrhythmias   | internal-medicine, emergency-medicine             |
|    | Adult resuscitation. Management of arrhythmias.   | emergency-medicine                                |
|    | Sutures, knots and ligatures  | surgery   |
|    | Wound management  | surgery   |
|    | Ophthalmological examination  | ophthalmology                                     |
|    | Ear examination   | otolaryngology                                    |

Residents (n-16) who worked at least one semester as so called “invited teachers” in the CSMS department of TSMU from 2019-2020 to 2021-2022 academic year were eligible for our study. Our respondents represent different residency programs: 3 of them are in pediatric residency, 2 of them in surgical residency program, 3 in otolaryngology; 4 in internal medicine; 1 in ophthalmology; 2 in emergency medicine; 1 in obstetrics and gynecology. During the online meeting we provided participants with information about the survey, and told them that their participation was completely voluntary and anonymous, that they could in any time refuse to participate in it. Questionnaires were designed by the department and the link was sent to 16 participants. The questionnaire consisted of 21 questions. Respondents were asked to express their level of agreement with 13 items using a Likert scale ranging from 1 to 5. They were asked to answer several open-ended questions as well (Table 2).

**Table 2.** Evaluation of RAT offered by the Department of CSMS by residents

| Questionnaire Items   | Response                  |                            |                        |                            |                       |
|---|---------------------------|----------------------------|------------------------|----------------------------|-----------------------|
|   |                           |                            |                        |                            |                       |
| 1. How comfortable was the working environment?   | Not at all comfortable    | Slightly comfortable       | Moderately comfortable | Quite comfortable          | Extremely comfortable |
|   | 0                         | 0                          | 0                      | 5(38,5%)                   | 8(61,5%)              |
| 2. How would you rate yourself as a teacher?  | 1 point (very poor)       | 2 points (satisfactory)    | 3 points (good)        | 4 points (very good)       | 5 points (excellent)  |
|   | 0                         | 1 (7,7%)                   | 4(30,8%)               | 4(30,8%)                   | 4 (30,8%)             |
| 3. How prepared were the students?  | Not prepared              | Badly prepared             | Fairly well prepared   | Well prepared              | Very well prepared    |
|   |                           |                            | 7 (53,8%)              | 5 (38,5%)                  | 1 (7,7%)              |
| 4. Do you think the time for the class was enough?  | more time is need         | slightly more time is need | adequate               | slightly less time is need | less time is need     |
|   | 1 (7,7%)                  | 5 (38,5%)                  | 6 (46,1%)              | 1 (7,7%)                   | 0                     |
| 5. Would you recommend your resident friend to take part in this activity?                                    | strongly do not recommend | do not recommend           | neutral                | recommend                  | strongly recommend    |
|   | 0                         | 0                          | 0                      | 3 (23,1%)                  | 10 (76,9%)            |
| 6. How satisfied do you think the students were with your role as a teacher?                                  | not at all satisfied      | slightly satisfied         | moderately satisfied   | quite satisfied            | extremely satisfied   |
|   | 0                         | 0                          | 0                      | 10 (76,9%)                 | 3 (23,1%)             |
| 7. How interesting did you find working with us as a teacher?   | not at all interesting    | slightly interesting       | moderately interesting | quite interesting          | extremely interesting |
|   | 0                         | 0                          | 0                      | 7 (53,8%)                  | 6 (46,2%)             |
| 8. How do you think this teaching experience has helped you better understand this topic?                     | almost nothing            | a little bit               | some                   | quite a bit                | a great amount        |
|   | 1 (7,7%)                  | 0                          | 0                      | 4 (30,8%)                  | 8 (61,5%)             |
| 9. Do you think this teaching experience has helped you in your practice?                                     | almost nothing            | a little bit               | some                   | quite a bit                | a great amount        |
|   |                           | 1 (7,7%)                   | 3 (23,1%)              | 4 (30,8%)                  | 5 (38,5%)             |
| 10. Do you think that you need to have more knowledge and skills to conduct this course?                      | not at all                | slightly more              | some                   | quite a bit                | a great amount        |
|   | 1 (7,7%)                  | 8 (61,5%)                  | 3 (23,1%)              | 1 (7,7%)                   | 0                     |
| 11. How confident are you in the process of teaching?   | not at all confident      | slightly confident         | moderately confident   | quite confident            | extremely confident   |
|   | 0                         | 0                          | 2 (15,4%)              | 3 (23,1%)                  | 8 (61,5%)             |
| 12. Remember your student years and compare your lessons with the lessons taught by the same subject teacher. | mine worse                | mine are much worse        | same                   | mine are better            | mine are much better  |
|   | 0                         | 0                          | 1 (7,7%)               | 5 (38,5%)                  | 7 (53,8%)             |
| 13. Rate this activity of the Department  | 1 point (very poor)       | 2 points (satisfactory)    | 3 points (good)        | 4 points (very good)       | 5 points (excellent)  |
|   |                           |                            |                        | 5 (38,5%)                  | 8 (61,5%)             |

**Results.** A total of 16 residents were asked to participate in our study. 13 out of them filled out the questionnaire (response rate=81,25%). Residents ranged in age from 26 to 34 and had a mean age of 28.3 ( $SD = 8.5$ ). The sample was represented mainly by residents of the final year (53,8%  $n = 7$ ), and the year previous to graduation year (30,8%  $n = 4$ ), the rest were junior residents (15,4%  $n = 2$ ). There were 8 female (61,5%) and 5 male (38,5%) participants. 6 (46,1%) out of 13 residents responded that they have been teaching at our department only for one semester, 3 residents (23,1%) have been teaching for 2 semesters, 1 respondent (7,7%) noted that has been teaching for 3 semesters and 3 residents (23,1 %) answered that they have been teaching for 5 or more semesters. (mean 2,5;  $SD 1,7$ ). The majority of residents (61,5%  $n=8$ ) had no previous experience of teaching medical students before coming to our department. 3 (23,1%) respondents had teaching experience during residency at other Medical Schools and 2 (15,4%) of them during undergraduate medical education. One (7,7%) respondent replied that taught biology at school.

Majority of them (69,2%  $n=9$ ) reported that they have received formal training at the Department of Clinical Skills and Multidisciplinary Simulation. 11 (84,6%) respondents gave a positive answer to the question "Do you receive feedback for your teaching from students?"

An open-ended question asked respondents what was their motivation for participating in this activity. 10 out of 13 residents answered this question. Respondents noted that their motivation is due to several factors: Deepening knowledge ( $n=2$ ), interaction and communication with students ( $n=2$ ), exchange of experience ( $n=2$ ); to gain experience in teaching ( $n=8$ ); new challenge ( $n=4$ ); growth and development ( $n=2$ ); love of profession ( $n=2$ ). All residents think that there was a comfortable working environment for them. They were asked to rate themselves as a teacher. An equal number of respondents, namely 4 respondents scored three, four and five points for themselves, while the remaining one respondent scored 2 out of 5 points for himself/herself.

Respondents think that students were coming prepared for their classes. (Before coming to the class our students must read study materials and watch the video tutorials). Nearly one half of residents (46,1%  $n=6$ ) believe that there was enough time for the class, the second half believe that there was not enough time for the class. Only one respondent thinks that there was more time than needed.

Great majority of residents (76,9%  $n=10$ ) would strongly recommend to take part in such activity to their friends. Respondents think that the students were satisfied with them as teachers, three (23,1%) of them even believe that they were "extremely satisfied". Respondents believe that it was interesting to work as a teacher. 8 residents (61,5%) believe that teaching experience extremely helped them to better understand the topic and 5 (38,5%) of them believe it helped them a lot in their practice as well.

Respondents were asked how confident they felt while conducting training. Most of them (61,5%  $n=8$ ) feel very confident while teaching. All but one believe they need more knowledge and skills to deliver this course. They were asked to choose the answer they most agree with to the next question: "Why do you combine practical work with "pedagogical"?" We got the following answers: "it is prestigious work" (38,5%  $n=5$ ), "to improve my knowledge and skills" (46,2%  $n=6$ ), for my CV (7,7%  $n=1$ ), for additional income -1 respondent (7,7%);

We asked the residents to recall their student days and compare the lessons they conducted to the lessons taught by the same subject teacher. The vast majority of respondents believe that they conduct lessons better (38,5%,  $n=5$ ) or much better (53,8%;  $n=7$ ) than their teachers. Only one 7,7% of them thought that he/she conducted lessons equally well.

**Conclusions:** According to our study residents really like to teach clinical skills and express a great desire to continue cooperation with our department. We consider it acceptable to recruit and regularly equip the department with young personnel, as it has positive impact on faculty, residents and medical students. In order to facilitate cooperation with residents and to enhance their clinical teaching skills it would be good if "residents as teachers" will be officially integrated into residency program.

Our study has several limitations as it was conducted within a small group of residents during two academic semesters. Future studies are needed.

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### USE OF PEER LEARNING MODEL - IN CLINICAL SKILLS TRAINING COURSE

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#### SUMMARY

**Introduction:** In medical education, as in other fields, the role of teacher is sometimes played by students and residents themselves. "Peer learning" during residency, so-called RAE model, can be effective for residents, and their role is very valuable for faculty too.

**Objective:** To find out how residents evaluate their work as teachers.

**Methods:** Questionnaires of residents' (n=13) who worked at least one semester as so called "invited teachers" in the CSMS department of TSMU from 2019-2020 to 2021-2022 academic were analyzed.

**Results:** All of the respondents positively evaluated "peer-learning activity". Great majority of residents (76,9% n=10) would strongly recommend to take part in such activity to their friends.

**Conclusions:** Residents like to teach clinical skills and express a great desire to continue cooperation with our department. We consider it acceptable to recruit and regularly equip the department with young personnel, as it has positive impact on faculty and resident teachers are well received by medical students in the classroom.

**Keywords:** residents as teachers; residents as educators; peer teaching; near-peer teaching.