

Access this article online
Quick Response Code:

Website: www.jehp.net
DOI: 10.4103/jehp.jehp_890_20

Designing, implementing, and evaluating the process of training advisor and teaching assistant at Isfahan medical school

Shahrzad Shahidi, Maryam Avizhgan

Abstract:

INTRODUCTION: The study aimed to design, implement, and evaluate the process of advisor and teaching assistant (TA) to increase the quality of cascade training in principal educational groups, presenting the obstacles and problems of this educational intervention and introducing them to educational planners.

METHODOLOGY: This applied developmental research was conducted in Isfahan University of Medical Sciences in 2017–2018 in principal educational groups (internal medicine, surgery, pediatrics, gynecology, and cardiology). For this purpose, a working party called TAs was composed of managers, faculty members, and active and interested assistants, including 24 people. The action plan, bylaws, job description, and logbooks were completed by the method of the focus group. Getting the report, monitoring the activity, exchanging the ideas, and drawing up the various plans were continuously done through bi-monthly in-person meetings, and the virtual group was organized for monitoring, starting a training logbook, and doing semi-organized interviews to evaluate.

RESULTS: In a total of 1131 h, various educational activities were conducted such as cooperating with the advisor, teaching some part of a class, holding a workshop, contributing to question design, preparing the educational resources, and organizing an educational round.

CONCLUSION: Improving the knowledge, attitude, and practice of assistants in cascade training, regulating their activities, learning the teaching skills, and exercising them with the teacher were some of the most significant opportunities of this study.

Keywords:

Medical education, medical student, peer teaching, teaching assistant, training advisor

Introduction

Peer teaching can be described as the process of training and helping other students acquire knowledge, perception, or skills in a way that is beneficial to both the teacher and the students. It demonstrates an effective way to encourage learning and a structured and flexible approach to education in a compassionate and friendly environment with better use of available resources.^[1] Numerous factors are effective

in training the medical students, and educators are of vital importance. In the field of medical education, the level of stress and its diversity is very high and considerable.^[2-5] Therefore, using all the opportunities and facilities is so important. In addition to the professors, the assistants also acted as educators. In some situations, they, willingly or unwillingly, will be involved in training medical students, the benefits of which are for both the teaching-learning group.^[6] The training that

Department of Internal Medicine (Nephrology), Isfahan Kidney Disease Research, Isfahan University of Medical Sciences, Isfahan, Iran

Address for correspondence:

Dr. Maryam Avizhgan,
Assistant Professor,
Medical Education,
Isfahan Medical Education
Research, Isfahan
University of Medical
Sciences, Isfahan, Iran.
E-mail: maryamavizhgan@gmail.com

Received: 25-07-2020

Accepted: 21-09-2020

Published: 28-01-2021

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: WKHLRPMedknow_reprints@wolterskluwer.com

How to cite this article: Shahidi S, Avizhgan M. Designing, implementing, and evaluating the process of training advisor and teaching assistant at Isfahan medical school. *J Edu Health Promot* 2021;10:34.

students receive from the assistants is a significant part of education.^[7]

The job description of the assistants includes the interns' training, and they have accepted it as their job responsibility.^[8] However, there is no definite time for this role in most programs designed for assistants.^[9] Several studies also confirm the usefulness of training for the assistants themselves.^[10,11] In one study, assistants have reported that they spend more than 25% of their time on training the medical students.^[12] In the study, the approach of participants toward the training role of assistants in various parts was distinctive, and the attitude of assistants was more different than that of trainees and interns in this field. This study emphasized that more attention should be paid to the training role of assistants.^[13] Arab Shahi also believes that assistants play a significant role in training the students and interns, many of whom are interested in training, but do not have enough teaching skills.^[14] In another study, the interns think that the assistants can better contribute to their education.^[15]

According to the above studies, there is some need for adopting a practical approach toward assistants' teaching to students, especially interns, empowering the assistants, and increasing their training skills. The authors of this study failed to trace the history of teaching assistants (TA) in general medicine, especially clinical course. Therefore, it seems necessary to create a suitable organization including interested and caring faculty members (as training advisors) and their TAs and to start a process for educational planning in the medical university days. This study intends to design, implement, and evaluate the process of faculty advisory committee members and TAs, improving the status of cascade training within the principal educational groups in clinical education.

Methodology

This applied developmental study was done for 2 years in the principal educational groups (internal medicine, surgery, pediatrics, gynecology, and cardiology) of Isfahan-Iran Medical School. It was carried out in three stages of design, implementation, and evaluation as follows:

Design (the first stage)

A working party entitled TAs was purposefully established, including managers, faculty members, and active and interested assistants. Training groups were selected according to the opinion of the working party's members. Purposefully, ten interested experienced faculty members volunteered as advisors to participate in this study. The dean of the medicine faculty stated

with the same title to the faculty advisory committee members. Each member of the committee proposed the names of three assistants as TA in order of priority, and then, based on the opinion of the department head, the senior assistant, and the relevant assistant. Finally, a notice was issued to one person as a TA. After reviewing the texts and forming a focus group, the draft of bylaws and job descriptions were prepared and presented to the working party of TAs and then to the faculty board and approved after amendments. To record and report the educational activities by the members of the Academic Advisory Board and TAs, according to the bylaws and the action plan, a pocket booklet (logbook) was prepared via the method of the focus group. A virtual group was set up for continuous communication, such as meeting news, sending minutes, following up on approvals, obtaining new ideas, taking innovative actions and activities, and so on.

Implementation (second stage)

The scheme (including time, place, and manner) of communication between the members of the faculty advisory committee and TAs with students was designed and sent to all stakeholders through various means such as site, social media, faculty site, department heads, faculty deputies, student's representatives, advising and counseling council, and distributing leaflets in their busy places. TAs performed activities and kept them in the logbook according to the previous scheme, under the supervision of the advisor. The activity report was monthly presented both in the working party of TAs and also in the form of sealed and approved logbooks by a training advisor. By the end of the year, based on the level of TA's cooperation, a certificate was issued to them, and the final report was submitted to the faculty board.

Evaluation (the third stage)

Getting reports, monitoring activities, exchanging opinions, and coming up with various ideas were continuously done through bi-monthly in-person meetings, social media, and logbooks to monitor the activities of advisors and TAs. The main evaluation criterion was a semi-organized interview with ten advisors and TAs. Sampling was done by a purposive method, and the sample size was determined based on the saturation phenomenon. The average duration of the interview was 40 min, conducted by prior appointment, with the participant permission to record the voice, emphasizing their confidentiality. Initially, the objectives of the research, the method, right of participating or refusing to attend the interview, or removing the recorded voice at the request of the participant were described. Interview questions included What strengths did the implementation of the TA process add to the training of interns and externs? With what problems did you encounter in implementing? What strategies

do you suggest for successful implementation? After implementing content recording, the responses were formulated using the analysis method of conventional content. The number of 98 codes was obtained and divided into three categories of strengths, weaknesses, and suggestions via spotting the similarities and differences. The researchers tried to increase the validity of the findings by spending enough time on collecting data and continuously reviewing them. The analysis steps were reviewed by an external observer to enhance the reliability, and accurate recording and reporting were done to increase data validation. The study was ethically supported by the National Center for Strategic Research in Medical Education, and the confidentiality was preserved.

Results

The applied developmental study focused on the design, implementation, and evaluation of the process of faculty advisory committee members and TAs. Among the products of the first design phase was the action plan, developed in five steps, including holding a working party, selecting the advisors and TAs, designing the instruments (bylaws, job description, and logbook), implementing and evaluating, and was approved by the faculty board. To clarify the job descriptions as well as to prevent problems causing the work to stop or slow down, “the bylaws of training advisor and teaching assistants” was the second product of the design phase, taking into account all working conditions and procedures and ethical considerations. The bylaw began with the definition of training advisor and TA and then was formulated in four paragraphs, including the duties of the educational development office, advisor and TAs, and their conditions and approved in the relevant working party. To facilitate the recording of occurrence, coordinate the activities, and evaluate them, the logbook was completed as a third product. It involves seven parts, including (1) bylaw, (2) seven tables with titles, (3) learners, (4) listing the specific clinical cases on the website or virtual groups for the use of students, (5) assisting in teaching clinical and theoretical courses with the advisor, (6) assisting in holding student workshops, and (7) recording the activities and reporting them to the advisor.

In the implementation phase, a total of 1131 h of training activity was reported by ten TAs. These activities included holding a workshop, conducting a training round, collaborating on question design, and preparing a CD. The lowest hours of activity belonged to the pediatrics group (6.4%) and the highest ones to the surgery one (36%). Correction of learners’ educational problems was the utmost activity in cardiology (24.5%) and pediatrics (63%) groups. Teaching some part of a

class session, cooperation in asking questions related to the written and OSCE examinations, and holding training rounds were reported in the gynecology (41.3%), the surgery (49%), and the internal medicine (41.9%) groups, respectively [Table 1].

The discussion results and interviews were published in working parties and the comment sections, respectively, and divided into three categories, namely strengths, weaknesses, and suggestions. Limitations included a lack of motivation and cooperation to attend classes, the high workload of the assistants, and large numbers of the assistant-driven hospitals. From the interviewees’ point of view, improving the knowledge, attitude, and practice of assistants in cascade training, encouraging faculty members to develop education, regulating their activities, learning the teaching skills, and practicing them with the teacher are among the strengths and opportunities of this study. Their suggestions are as follows: drawing the support of department heads, vice-chancellors, and internship officials to provide facilities and working condition, gaining cooperation with TAs and organizing their activities, motivating the exemplary and active interns to cooperate with TAs, introducing them in the briefings of the learners, and celebrating different student events such as a white robe, internship, etc.

Discussion

This study addressed designing, implementing, and evaluating the process of the faculty advisory committee members and TAs. The successful results of this intervention include more than 1000 h of various educational activities. Collaborating on asking some questions in the written and OSCE examinations, conducting educational rounds, correcting learners’ educational issues, and teaching some part of a class were the most reported activities performed by the TAs. Greater use of them as educators is an ideal opportunity for the educational system and the educational process of medical students. Numerous studies have pointed to the significant role of assistants in educating the students.^[14,15]

In this study, the level of assistants’ activity varied based on the group and the interest, perseverance of the advisors and TAs, and workload. According to reports, most activities were conducted by TAs of surgery, who cited their strong interest and motivation as the reason. In one study, the most positive attitude toward TAs was 70% in the psychiatric group, followed by pediatrics, gynecology, internal medicine, and surgery (50% or less), which was inconsistent with our study.^[13] Furthermore, the study of Garakyaraghi *et al.* showed that the interns expressed less satisfaction with the teaching of assistants

Table 1: Number of hours and percentage of activities of teaching assistants by type of activity in the year 2017–2018

Type of activity	Departments					Total hours (%)
	Internal medicine	Surgery	Gynecology	Pediatrics	Cardiology	
Correction of learners' educational problems			7 (6.4)	46 (63)	36 (24.5)	89 (7.9)
Case report	4 (1)		12 (11)		6 (4)	22 (1.94)
Exercise class	60 (15.2)	128 (31.4)	2 (1.83)	7 (9.6)	6 (4)	203 (17.9)
Holding a workshop	64 (16.2)	40 (9.8)			16 (10.9)	120 (10.6)
Conducting a training round	165 (41.9)	22 (5.4)				187 (16.5)
Teaching some part of a class session			45 (41.3)	7 (9.6)		52 (4.6)
Provide educational resources including movies, CD, and booklets	14 (3.5)	14 (3.4)				28 (2.5)
Collaborating on question design		200 (49)				200 (17.7)
Collaborate with advisor	87 (22)	4 (0.98)	43 (39.5)	13 (17.8)	83 (56.5)	230 (20.3)
Total hours (%)	394 (34.8)	408 (36)	109 9.64	73 (6.4)	147 (13)	1131 (100)

related to surgery (orthopedic surgery, gynecological surgery, and neurosurgery).^[15]

Unfortunately, most TAs considered the high volume of their work as the main obstacle in this direction. In medical education, learners are involved in both education and remedy of patients.^[16] Assistants are one of the principal elements in improving the performance of the educational and medical system. They are also responsible for the day and night treatment of patients in centers for medical education.^[17] Javadi *et al.* recommended that social and legal support for assistants increase their motivation for teaching and learning.^[18] In a study by Soleimanha *et al.*, they found that most assistants were dissatisfied with the state of payment and education and had low professional motivation. Stress and anxiety caused by increased occupational therapy have created psychological problems for assistants.^[17] Garakyaraghi *et al.* suggested insufficient attention to the educational role of assistants and the need for a proper attitude toward its necessity for the professors, students, and assistants themselves.^[15] To improve clinical education for gaining more assistants' cooperation, according to theories of adult learning, several studies have been conducted, and solutions such as holding workshops or training courses have been suggested.^[19–22] Assistants can teach students practically clinical knowledge and skills and help them to be successful.^[23] One study considered training as one of the essential competencies for the assistants required them to teach students, other assistants, nurses, and other medical staff and saw the evaluation of their educational skills in this field necessary.^[24] In another intervention, peer-assisted learning was proposed as an effective practical approach to health promotion and clinical risk management topics in medical education.^[25]

One of the strengths of this study is the students' use of counseling and guidance with an appropriate reference and the promotion of cascade training. On the other

hand, the benefits of this education are for both teacher and learner groups. Furthermore, for monitoring the assistants and receiving feedback from them, an efficient reference is needed, which was played by advisors. However, lack of cooperation or withdrawal of some advisors and TAs during the implementation, low cooperation of some department heads in informing the group, refusal of giving privilege to advisors and TAs, and lack of educational skills are some of the weaknesses and limitations of this study.

This experience can be generalized to other medical schools and used as a model for other colleges and universities. However, the interested, motivated, and active faculty advisory committee members and TAs should carefully be selected to guarantee further implementation and cooperation. Furthermore, due to the busy schedule of the assistants, the 3rd-year ones should be chosen as teaching ones in the 4-year courses and the 3rd-and 4th-year ones in the 5-year programs. Furthermore, the assistants should gain skills in training, effective presentation, evaluation, giving feedback, and teaching techniques. The attention should be paid to some following tips: drawing the support of faculty and university administrators, especially the vice-chancellor to provide grants with TAs, reducing the burden of treatment, gaining the cooperation of the vice-chancellor for student affairs to inform the learners, and encouraging them to use this opportunity. Given that this study was performed in five main medical groups, it is suggested that more comprehensive research be conducted in all groups.

Conclusion

In a total of 1131 h, various educational activities were performed, including cooperating with the advisor, teaching some part of a class, organizing a workshop, participating in asking questions, preparing the educational resources, and holding educational

rounds. Improving the knowledge, attitude, and practice of the assistants in cascade training and learning teaching skills and practicing them with the teacher were the most significant benefits of this intervention from the TAs' view.

Acknowledgment

We would like to thank all the professors and residents who contributed to this research included Dr. Elham Naghshineh, Dr. Safoura Rouholamin, Dr. Farzaneh Ashrafi, Dr. Somayeh Sadeghi, Dr. Mojgan Mortazavi, Dr. Bahareh Ward, Dr. Behnoosh Esteki, Dr. Seyed Mohammad Hashemi, Dr. Davood Shafiei, Dr. Mohsen Kolahdoozan, Dr. Morteza Shah Bandari, Dr. Manijeh Danesh, Dr. Shadi Salek, Dr. Maryam Dehghan, Dr. Bahareh Safaeian, Dr. Elahe Shaklabadi, Dr. Soheila Shokralahi, and Dr. Seyed Mohammad Hosseini Asl.

Financial support and sponsorship

"This project has been carried out with the financial support of the National Center for Strategic Research in Medical Education, Tehran, Iran, with project number 960189."

Conflicts of interest

There are no conflicts of interest.

References

- Kamble PH, Khare AS, Maske SS, Sharma G, Kowale AN. Peer-assisted teaching method to foster learning physiological basis of electrocardiography among 1 year medical graduate students: An interventional study. *J Educ Health Promot* 2019;8:64.
- Azim SR, Baig M. Frequency and perceived causes of depression, anxiety and stress among medical students of a private medical institute in Karachi: A mixed method study. *J Pak Med Assoc* 2019;69:840-5.
- Fawzy M, Hamed SA. Prevalence of psychological stress, depression and anxiety among medical students in Egypt. *Psychiatry Res* 2017;255:186-94.
- Hope V, Henderson M. Medical student depression, anxiety and distress outside North America: A systematic review. *Med Educ* 2014;48:963-79.
- Yusoff MS, Abdul Rahim AF, Baba AA, Ismail SB, Mat Pa MN, Esa AR. The impact of medical education on psychological health of students: A cohort study. *Psychol Health Med* 2013;18:420-30.
- Dunnington GL, DaRosa D. A prospective randomized trial of a residents-as-teachers training program. *Acad Med* 1998;73:696-700.
- Makama JG, Ameh EA. Quality of teaching provided by surgical residents: An evaluation of the perception of medical students. *Niger J Med* 2011;20:341-4.
- Busari JO, Prince KJ, Scherpbier AJ, Van Der Vleuten CP, Essed GG. How residents perceive their teaching role in the clinical setting: A qualitative study. *Med Teach* 2002;24:57-61.
- Busari JO, Scherpbier AJ, van der Vleuten CP, Essed GG. The perceptions of attending doctors of the role of residents as teachers of undergraduate clinical students. *Med Educ* 2003;37:241-7.
- Frattarelli LC, Kasuya R. Implementation and evaluation of a training program to improve resident teaching skills. *Am J Obstet Gynecol* 2003;189:670-3.
- Moore J, Parsons C, Lomas S. A resident preceptor model improves the clerkship experience on general surgery. *J Surg Educ* 2014;71:e16-8.
- Ryg PA, Hafler JP, Forster SH. The Efficacy of Residents as Teachers in an Ophthalmology Module. *J Surg Educ* 2016;73:323-8.
- Vahidshahi K, Mahmoudi M, Shahbaznejad L, Zamani H, Ehteshami S. The attitude of residents, interns and clerkship students towards teaching role of residents. *Iran J Med Educ* 2009;9:147-55.
- Soltani Arabshahi S, Ajami A, Siabani C. Determination of the effect of teaching skills workshop on the quality of residents' teaching. *RJMS* 2004;11:49-57.
- Garakyaraghi M, Sabouri M, Avizhgan M, Ebrahimi A, Zolfaghari M. Interns' viewpoints toward the St Aut's of training by residents in Isfahan University of medical sciences. *Iranian J Med Educ* 2008;7:361-69.
- Momeni M, Shirani F, Lachini M, Vahidi E, Saeedi M, Karimialavijeh E. Effective factors on the quality of teaching aids in the emergency department; a cross-sectional study. *Iran J Emerg Med* 2018;e5:1-6.
- Soleimanha M, Heydarzadeh A, Haghighi M, Khoshrang H, Haghparsast Z, Akbari M. Assessment of Job-Education Satisfaction in Residents of Guilan University of Medical Sciences. *Res Med Educ* 2013;5:45-51.
- Javadi Z, Arasteh H, Abbasian H, Abdollahi B. Designing a model to improve the quality of residents' education in implementing the Health System Transformation Plan. *RME* 2020;12:24-35.
- Morrison EH, Friedland JA, Boker J, Rucker L, Hollingshead J, Murata P. Residents-as-teachers training in U.S. Residency programs and offices of graduate medical education. *Acad Med* 2001;76:S1-4.
- Morrison EH, Rucker L, Boker JR, Hollingshead J, Hitchcock MA, Prislun MD, *et al.* A pilot randomized, controlled trial of a longitudinal residents-as-teachers curriculum. *Acad Med* 2003;78:722-9.
- Morrison EH, Rucker L, Boker JR, Gabbert CC, Hubbell FA, Hitchcock MA, *et al.* The effect of a 13-hour curriculum to improve residents' teaching skills: A randomized trial. *Ann Intern Med* 2004;141:257-63.
- Morrison EH, Shapiro JF, Harthill M. Resident doctors' understanding of their roles as clinical teachers. *Med Educ* 2005;39:137-44.
- Henry BW, Haworth JG, Hering P. Perceptions of medical school graduates and students regarding their academic preparation to teach. *Postgrad Med J* 2006;82:607-12.
- Zabar S, Hanley K, Stevens DL, Kalet A, Schwartz MD, Pearlman E, *et al.* Measuring the competence of residents as teachers. *J Gen Intern Med* 2004;19:530-3.
- Brunelli L, Tullio A, Perri G, Lesa L, Grillone L, Menegazzi G, *et al.* Peer education for medical students on health promotion and clinical risk management. *J Educ Health Promot* 2020;9:51.