Comparative Analysis of the Results of Traditional and New Distance Learning Method Among the Master's Degree Students and Physicians in Uzbekistan

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Abstract

The rapid changes in medical theory and practice require physicians to undertake continuing medical education. The low level of qualifications of physicians can eventually lead to medical errors. There is a special currency to measure and evaluate the obsolescence of knowledge, the so-called half-life of knowledge.

Materials and Method: Analysis of results and evaluations using various forms of training method on one topic between 2nd year master's degree students (masters) of Tashkent pediatric medical institute and physicians. Training was conducted traditionally (face-to-face form for periods of each time 1 hundred 10 minutes) and distance-based (internet point of-care learning and journal-based continual medical education). The results of tests among 72 masters and 84 physicians were retrospectively analyzed.

Results: According to the study, it was found that the average rating in the group of Masters via traditional method with an "unsatisfactory" evaluation was 2 (4%) while in the group of physicians with the same test the number with an unsatisfactory evaluation was 9 (21%), (which is four times more). The number of Masters who received a satisfactory evaluation was 12 (23%) (18 physicians received the same evaluation, representing 43%). The number of Masters who got a good evaluation was 23 (43%) and only 10 or 24 % of the physicians got the same score (which is twice less than the result of masters) and 16 (30%) Masters received an excellent rating (5 physicians received the same mark or this was 3 times less).

Discussion: More than half of the physicians (being 27 or 64%) responded to the test with an evaluation of "satisfactory" and "unsatisfactory", while only 14 (26% or 2.5 times less) Masters received such marks. Only 15 (35%) physicians received "good" or "excellent" rating, whereas among the masters, this result was 39 (60% or 2 times higher than the responses of physicians). However, among the participant soft the online program unsatisfactory response was not observed. 8 (42%) participants answered satisfactorily, 11 (58%) of the participants responded with good or excellent marks.

Conclusions: Following the results of the analysis, the study showed that the increase in theoretical knowledge has been identified in a larger number of masters. The knowledge gained through traditional teaching or distance (online and journal form of training) learning, seems virtually identical, and the study seems to indicate that they even surpass the traditional method of training.

Keywords: *Medical error, obsolescence, chronic diseases.*

Introduction

The rapid changes in medical theory and practice require physicians to undertake continuing medical education both on the workplaceas well as at home, with additional financial costs associated with accommodation and meals[1]. There are more than 72000 (10000 population-24) physicians in Uzbekistan and Each physician should improve his/her qualification by earning 288 credits within every 5 years. Initially, physicians have to earn 144 credits at the Tashkent Institute of Postgraduate Medical Education (TIPME),

and the other credits can be earned in other short trainings[2]. In the American literature, there is a special currency to measure and evaluate the obsolescence of knowledge, the so-called half-life of knowledge[4]. As a result of obsolescence of knowledge as new information appears, the competence of physicians is reduced by half in a 3-4 years time period[3]. This rapid obsolescence of knowledge dynamics may be relevant to setting educational standards and planning training program accordingly[5].

The purpose of the study: Analysis of results and evaluations using various forms of training method on one topic between 2nd year master's degree students(masters)of Tashkent Pediatric Medical Institute and physicians.

Materials and Method

Materials are the results of the tests obtained among 136 respondents who have undergone training on "Improving method and cost-effectiveness of prevention of several chronic diseases", consisting of a series of 15 questions, and research method are both mathematical as well as statistical.

To achieve the objective, we, together with the Tashkent Pediatric Medical Institute and the Tashkent Institute of Postgraduate Medical Education (TIPME) have developed a training programme on "Improving approaches and cost-effectiveness of prevention of several chronic diseases. Training was conducted traditionally (face to face form for periods of each time 1 hour and 10 minutes) and distance-based (internet point-of-care learning and journal-based CME).

Results

The results of tests among 72 masters and 84 physicians were retrospectively analyzed (Tab. №1).

Traditional teaching method for masters and physicians. Second year Masters have been trained at the department of "Public Health" in 2014. For physicians,the training was conducted at the Institute of Health and Medical Statistics. After training, each participant was given 20 minutes to answer the questions with the following results. A comparative evaluation of results was carried out among the masters of the Russian group before and after training. Before the training, the average number of correct answers was 10,9 (73%), whereas after the training this figure increased to 11,3 (78%). The masters of the Russian group were informed in advance that they would be tested, whereas the masters of the national groups (Uzbeks) were tested immediately after the presentation without warning. According to test results among national groups, the average number of correct answers was 11,3 (or 75%). The average number of correct answers among the practitioner-physicians after the training was significantly lower than those Masters of Russian and national groups and was 8,7 (58%).

Internet point-of-care learning. To explore and introduce new forms of learning we had put our training program "Improving approaches and cost-effectiveness of prevention of several chronic diseases" on to the website of the Medical Association of Uzbekistan (www.avuz.uz). A web application was developed to save the data. Participation in the test tasks,training and testing weredone on a voluntary basis. After registering, participants received access to training program. Thus, 19 masters and physicians were registered and participated on this topic. All data were saved in the database of the website with the consent of the participants, which included the participation date, the amount of time to answer the tests and the percentage of correct answers. At the initial level, the average number of correct answers was 10,6 (70,6%) spending 7,4 minutes on average, while after the training, the average number of correct answers was 11,7 (73%). However, online learning allows reading, printing of educational material and learning in a convenient location for the physician.

Journal-based training. In 2010-2015, more than 1200 physicians participated in journal-based trainings in Uzbekistan, 1021 of whom have been awarded a certificate. Training theme: "Improving method and cost-effectiveness of prevention of several chronic diseases",was published in the "Bulletin of the Medical Association of Uzbekistan." In the journal form of training 42 physicians participated from various regions of Uzbekistan, including (Tab. №2)

Tables 1: Participants of journal-based training.

№	Region	Number of participants
1	Republic of Kazakhstan	1
2	Bukhara region	8
3	Andijan region	7
4	Surkhandarya region	2
5	Tashkent city	3
6	Tashkent Region	3

№	Region	Number of participants
7	Jizzakh region	5
8	Namangan region	2
9	Kashkadarya region	1
10	Samarkand region	7
11	Navoi region	2
12	Syrdarya Region	1
	Total	42

Journal-based learning is not free of charge: and every physician was required to pay 10 euros. All the successful physicians(65% of the test) were given certificates that could be used in the delivery of documents for obtaining a certificate of qualification.

Discussion

Comparative analysis of the results and assessment (Tab. №3). According to the study, it was found that the average rating in the group of Masters via traditional method with an"unsatisfactory" evaluation was2 (4%) while in the group of physicians with the same test the number with an unsatisfactory evaluation was 9 (21%), (which is four times more). The number of Masters who received a satisfactory evaluation was12 (23%) (18 physicians received the same evaluation, representing 43%). The number of Masters who got a good evaluation was 23 (43%) and only 10 or 24 % of the physicians got the same score (which is twice less than the result of masters) and 16(30%) Masters received an excellent rating (5 physicians received the same mark orthis was 3 times less).

More than half of the physicians (being 27or 64%) responded to the test with an evaluation of "satisfactory" and "unsatisfactory", while only 14(26% or 2,5 times less) asters received such marks. Only 15(35%) physicians received "good" or "excellent" rating, whereas among the masters, this result was 39 (60% or 2 times higher than the responses of physicians).

However, among the participants of the online program unsatisfactory response was not observed. 8 (42%) participants answered satisfactorily, 11 (58%) of the participants responded with good or excellent marks.

There were no candidates with unsatisfactory ratings among the participants of the journal-based training, 6 participants (14%) got a satisfactory rating, 36 (86%) of the participants got good or excellent response. Because of the payment for this type of training, we assume that physicians are more motivated to read carefully the training program and can consult with colleagues before completing and submitting test items for review by experts of Tashkent Institute of Postgraduate Medical Education - this may explain the best result answers.

Conclusions

Following the results of the analysis, the study showed that the increase in theoretical knowledge has been identified in a larger number of masters in contrast to the practicing-physicians, although there is no doubt that the physicians are more experienced. The knowledge gained through traditional teaching or distance (online and journal form of training) learning, seems virtually identical, and the study seems to indicate that they even surpass the traditional method of training. These data show that how physicians are trained and their requirements need to be reviewed with an emphasis on the development of distance learning method of training(online and journal-based form) and also experience can be learned from developed countries.

Ethical Clearance: No ethical approval is needed.

Source of Funding: Self

Conflict of Interest: Nil

References

1. Abdurakhimov Z. A. IS. E-learning: prospects for the development of self-study of physicians and patients as well as for prophylactic treatment. Asclepius. Internationally write-off on history and philosophy in medicine. 2014;(9): p. 56-60.
2. I M. Five years on from the introduction of the method of "Distance learning" in medical curriculullm in B & H. Med-e Tel. 2007 april 18-20;: p. 97-8.
3. Musings EE. "A half-life of 5 years". Can Med Assoc J. 1975; 112:557.
4. Haynes RB DDMATP. A critical appraisal of the efficacy of continuing medical education.. JAMA. 1984; 251:61(64).
5. Davis DA TMOAHR. Changing physician performance: a systematic review of the effect of continuing medical education strategies. JAMA. 1995; 274: p. 700-705.