

E-learning and traditional approaches in psychotherapy education: comparison

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Summary

Background: There is a trend towards delivering competency-based psychotherapy education in psychiatry training programmes, but many programmes are finding it difficult to meet the expanded requirements for learner competence in multiple modalities of psychotherapy. E-learning has been raised as a potential solution to the problem. However, there have been few studies determining if e-learning is any better than traditional learning.

Aims: The objective of this study is to determine if online learning modules can enhance knowledge acquisition and learner satisfaction in psychotherapy education.

Method: A need analysis was performed at one institution to determine the learning needs and preferences of the psychiatry residents. A blended course (consisting of traditional lectures, online modules and videotape review) was designed and developed based on these needs. Lectures and online modules were evaluated by means of pre-tests and post-tests. A paired t-test was used to determine if knowledge acquisition occurred in each online module and lecture group. An independent t-test was used to determine if there was greater knowledge acquisition in the online module group vs. the lecture group. A learner satisfaction questionnaire was distributed with each online module.

Results: Nineteen residents completed the study. There was statistically significant knowledge acquisition in each online module and lecture group, however, there was no difference in knowledge acquisition between online modules and lectures. Learners were satisfied with the modules, but experienced minor technical difficulties.

Conclusions: Online modules may enhance learner satisfaction in psychotherapy education. But there may be no difference in learning compared with traditional classroom-based lectures.

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INTRODUCTION

The Oxford English Dictionary [1] defines psychotherapy as the treatment of mental disorders by psychological rather than medical

means. While there are many different types of psychotherapies and many different professionals who provide it, most medical professionals look to psychiatrists as the leaders in the field.

In North America, training expectations have grown in psychotherapy education [2-3] and educators are facing new challenges. Teachers must find new ways to teach and assess competence in multiple modalities of psychothera-

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py. But before assessing for competency, psychotherapy educators must develop curricula that start with the basics. Such beginning curricula do not teach skills-based psychotherapy. Rather, they impart important knowledge necessary for the later development of skills.

E-learning has been raised as a possible platform for delivering such psychotherapy education. Simply put, e-learning is the use of technology to facilitate learning [4]. It is considered synonymous with web-based learning and online learning. E-learning can be developed for both knowledge-based and skills-based learning. It combines a variety of different elements which have been shown to enhance learning. By combining sensory stimuli through videos, text and audio files, multimedia has a unique advantage in simulating real-world scenarios. Davis & Galbraith [5] found that by focusing on a variety of case presentations – depicted through text and simulated patients – generalization to real cases occurs. Repeated exposure to videos/cases enhances consolidation of memory [6] and the use of multimedia has been shown to increase learner satisfaction in psychiatric teaching [7]. Pre – and post-tests are particularly useful features of e-learning modules and allow for greater retention of material [8].

In order to implement these e-learning principles in the field of psychotherapy education, Weersekera developed Psychotherapy Training e-Resources (PTeR) [9]. PTeR is an online, evidence-based learning resource that covers multiple psychotherapy modalities. By using multimedia, case presentations and simulated patients, this tool offers a comprehensive resource for psychotherapy learning. Although receiving much acclaim, PTeR has not yet been formally evaluated or compared with more traditional learning approaches such as didactic, classroom lectures.

Despite the obvious potential, there are many unanswered questions about the use of e-learning in psychotherapy education [10] and a paucity of studies available to answer these questions. One important question that has yet to be determined is whether e-learning is superior to traditional lectures in promoting knowledge acquisition. Ruiz et al. [11] showed that e-learning is equivalent to on-site learning in enhancing knowledge acquisition. Neither format (lec-

ture vs. online module) was seen to be superior, but this study was in a general medication education setting and did not focus specifically on e-learning in psychotherapy. The current project aims to determine if e-learning modules can enhance satisfaction with the learning experience and facilitate knowledge acquisition. Two modules were designed and developed following a needs analysis which addressed the residents' perceived needs, knowledge gaps and concerns with the existing curriculum. For further details of module design and development, go to www.mydistdp.ca (username: external1, password: reviewer1). Each module consisted of PowerPoint presentations, videos, pre-tests and post-tests. The psychotherapy modality of choice was Davanloo's Intensive Short-term Dynamic Psychotherapy (IS-TDP) [12]. However, any psychotherapy modality can be the subject of an e-learning module and the principles of module design, development and evaluation remain the same across modalities.

METHOD

- Methodological design

Modules were designed and developed for two core topics in IS-TDP. This project was carried out in the psychiatry residency programme at Memorial University of Newfoundland, in Eastern Canada. The blended teaching model was offered to junior residents during the academic half-day curriculum in 2013.

The junior residents were divided into two groups (group 1 and 2) and the material taught was divided into two topics: topic A, "Introduction to the metapsychology of the unconscious" and topic B, "Davanloo's technique of IS-TDP". Each group received one mandatory e-learning module and one mandatory lecture. The topic for each group was reversed – that is, each group received an e-learning module for one topic and a lecture for the other. Following the modules and lectures, both groups met with the author for a DVD review/discussion of actual patient sessions. Full approval was granted by the Health Research Ethics Board – Non-Clinical Trials Division.

Prior to launching the online modules, a brief orientation was given on how to use them.

Twenty-one junior psychiatry residents were expected to attend this course. The evaluation of the online modules covered two areas – impact on knowledge (as gleaned through quantitative data) and learner satisfaction (as determined by qualitative data).

- Impact on knowledge

To determine if learning (or knowledge acquisition) had occurred in each module and lecture, a pre-test and post-test were necessary. The literature was reviewed. There were no validated measures of knowledge in IS-TDP, therefore these were compiled by the author. The pre-test and post-test for topics A and B each consisted of 20 multiple-choice questions. Each question was based on the objectives of the module/lecture. The pre-test for topic A was identical to the post-test; the same was true for topic B. The pre-test and post-test were embedded in each online module. For each lecture, time was allotted for test completion.

A paired, two tailed *t*-test was used to assess whether there was a statistically significant difference in the scores on the pre-test and post-test for each subgroup (1A, 1B, 2A, 2B). This determined if knowledge acquisition occurred within each subgroup. Two independent *t*-tests were used for each group. Specifically, data were analyzed to see if there was a statistically significant difference in the pre-test and post-test scores for group 1(A), those who completed the module for topic A and group 2(A), those who attended the lecture for topic A. The same was done with group 1(B), those who attended the lecture for topic B and group 2(B), those who completed the module for topic B.

- Learner satisfaction

The second aspect of evaluation in this study focused on resident feedback on the modules. Feedback was given on the lectures (as per the standard form used for all university lectures). However, according to university policy, these feedback forms cannot be released to the author for 2 years (to protect resident anonymity).

The literature was reviewed for evaluation forms for online modules. Skye et al. [13] developed an online module for family practice residents. The questions for this particular evaluation form were adapted from their evaluation survey and embedded in each

module. The first four questionnaire items focused on basic demographic data. Questions 5 through 11 focused on the attributes of the modules themselves. Question 15 focused on time allotment for completion of the modules. Responses were given on a 5-point Likert scale (1 – strongly disagree, 2 – moderately disagree, 3 – neutral, 4 – moderately agree, 5 – strongly agree). Questions 12–14 focused on open-ended responses pertaining to likes, dislikes and improvements that could be made to the modules (see Appendix 1).

RESULTS

For group 1(A) (online module on topic A), the mean score on the pre-test was 10.4 out of 20 and on the post-test it was 18.8 out of 20 (mean difference 8.4, SD=4.06; $t=6.54$, $p<0.001$). For group 2(A) (lecture on topic A), the mean scores were 11.13 on the pre-test and 16.75 on the post-test (mean difference 5.63, SD=1.60; $t=9.96$, $p<0.0001$). For group 1(B) (lecture on topic B), the mean scores were 16.33 and 18.5 respectively (mean difference 2.16, SD=1.16; $t=4.54$, $p<0.01$). For group 2(B) (online module on topic B), the mean scores were 15 and 17.78 respectively (mean difference 2.78, SD=2.64). The sample size needed to detect a statistically significant difference with this subgroup ($\alpha=0.05$, power=0.80) was 10, but the group had only 9 participants.

- Results of between-group analyses

To compare the scores between group 1(A) and group 2(A), we conducted an independent *t*-test. The mean difference in pre – and post-test scores in group 1(A) was 8.4 (SD=4.01) and in group 2(A) it was 5.63 (SD=1.60). The *t*-value was 2 and not statistically significant ($p>0.05$).

Similar comparison of scores was performed between group 1(B) and group 2(B). The mean difference in group 1(B) was 2.17 (SD=1.17) and in group 2(B) 2.78 (SD=2.64); $t=0.61$ ($p>0.05$) was again not statistically significant.

- Residents' perceptions of e-learning modules

Nineteen out of twenty-one residents completed the questionnaire associated with the e-learning modules: 31% were in their first year of residency, 37% were in their second year and

31% were in their third year. The majority (84%) of the residents rated their level of computer expertise as intermediate, whereas 16% rated it as advanced.

In terms of previous participation in online courses, 26% of residents had not completed any, 11% had completed one online course and 63% had completed two or more courses. Less than half (42%) residents had no previous training in brief dynamic therapies and 47% had very little training in this area.

All of the residents agreed or strongly agreed that the modules were well organized and contributed to their understanding of the content. They similarly agreed that the objectives matched the content of the modules. The vast majority of residents felt that the modules were user friendly, flowed well and were an effective means of delivering the material. Most residents found that there was sufficient time to complete the modules.

When asked about what they liked about the modules, the residents cited the easy accessibility, which meant they could complete them in their own time. The use of videos and cases, the ability to review material, and the use of pre – and post-tests were also seen as strengths. The modules were perceived as well organized.

Dislikes about the modules included technical problems, reported by almost half of the residents. Also, some residents felt there was a need for orientation (despite one having been offered). There were some concerns that the cases and videos were too short.

Suggested improvements included lengthening the videos and including more actors/cases. Technical issues needed to be fixed. Residents also wanted protected time for the modules as well as an orientation to them, but both of these had been arranged and offered.

DISCUSSION

The main limitation of this study was the lower than ideal number of participants. The residency programme is small and some residents could not participate due to leave. In addition, the residents were not randomized to either arm of the study. Some residents preferred to do the online module rather than attend the lecture if

they were post-call, for example, and these requests were accommodated. As such, residents (and the author) were not masked to group and subgroup assignment. Also, the outcome measures – the pre – and post-tests – were designed by the author because no similar instruments could be found in the literature. It remains to be seen whether these are valid measures of knowledge acquisition in this topic. Technical issues were also a limitation. Most of these were not made known to the investigator until after completion of the module.

However, technical issues definitely affected learner satisfaction.

Three out of four subgroups had statistically significant findings – that is, the difference in the pre – and post-test scores was significant. However, one might ask if this is an educationally meaningful finding. Perhaps residents would have had similar increases in test scores if they read a book or chapter on the subject. However, one cannot assume that students will learn after any reading endeavour or teaching intervention, as this is not always the case.

When comparing the delivery of teaching (module vs. lecture) for a given topic, the findings were not as robust. For both topics (A and B), there was no difference in learning between the module and lecture subgroups. This finding could be in keeping with the work of Ruiz et al. [11] who showed that e-learning is equivalent to on-site learning in enhancing knowledge acquisition. In our study, neither format (lecture vs. online module) was seen to be superior.

That said, the psychiatry residents at this institution were a computer savvy cohort who seemed satisfied with the module experience. Most had at least some experience in completing online modules. They were pleased with the use of tests, videos and cases. They appreciated the ability to review material at their own pace and considered the modules to be well organized and helpful.

CONCLUSIONS

This work suggests that online modules may be useful in enhancing knowledge acquisition in psychotherapy education. However, further work needs to be done with a larger sample size,

ideally randomizing and masking both participants and teachers. There is no evidence to suggest that online modules are superior to lectures in increasing knowledge, however, it could be argued that they need not be superior in order to be worthwhile educational tools. Their usefulness may lie not in replacing traditional teaching methods, but in enhancing learner satisfaction. They remain an important part of the armamentarium of any psychotherapy educator who is interested in promoting learning in an innovative way.

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REFERENCES

1. Oxford University Press. Oxford English Dictionary. OUP, 2015 (<http://oed.com>). Accessed 21 July 2015.
2. Royal College of Physicians and Surgeons of Canada. Specialty Training Requirements in Psychiatry. Editorial Revisions – 2013. Version 1.2. RCPSC, 2013 (http://rcpsc.medical.org/residency/certification/training/psychiatry_e.pdf). Accessed on 19 February 2014.
3. Accreditation Council for General Medical Education. ACGME Program Requirements for Graduate Medical education in Psychiatry. ACGME, 2007 (https://www.acgme.org/acgmeweb/portals/0/pfassets/programrequirements/400_psychiatry_07012014.pdf). Accessed on 13 December 2015.
4. Joint Information Systems Committee. Effective Practice with E-learning: A Good Practice Guide in Designing for Learning. JSIC, 2004 (<http://www.jisc.ac.uk/media/documents/publications/effectivepracticeelearning.pdf>). Accessed on 8 April 2014.
5. Davis D, Galbraith R, American College of Chest Physicians Health and Science Policy Committee. Continuing medical education effect on practice performance: effectiveness of continuing medical education: American College of Chest Physicians Evidence-Based Educational Guidelines. *Chest*. 2009; 135 (Suppl 3): 42S–48S.
6. Loftus G. Learning, memory and cognition. *J Exp Psychol*. 1985; 11: 397–406.
7. Roediger H, Karpicke J. Test-enhanced learning: taking memory tests improves long-term retention. *Psychol Sci*. 2006; 17: 249–255.
8. Averbuch R, Garvan C. It works! Teaching psychiatry with videos enhances long-term retention. Plenary Session, Research in Medical Education, 35th Annual Meeting of Association of Directors of Medical Student Education in Psychiatry, Portsmouth, NH, 19 June 2009.
9. Weerasekera P. Psychotherapy Training e-Resources (PTeR): on-line psychotherapy education. *Acad Psychiatry*. 2013; 37: 51–54.
10. Berger T. Computer-based technological applications in psychotherapy training. *J Clin Psychology*. 2004; 60(3): 301–315.
11. Ruiz J, Mintzer M, Leipzig R. The impact of e-learning in medical education. *Acad Med*. 2006; 81(3): 207–212.
12. Davanloo H. Intensive Short-term Dynamic Psychotherapy. Selected Papers of Habib Davanloo, MD. Chichester: Wiley and Sons, 2001.
13. Skye E, Wimsatt L, Master-Hunter T, Locke A. Developing online learning modules in a family medicine residency. *Fam Med*. 2011; 43(3): 185–192.