Evaluating the First University-Based Online Graduate Course on Telemental Health in the Middle East: Lessons Learned from Lebanon

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Abstract

Background: Despite the increasing interest in mental health and shift of many clinicians to using telemental health (TMH) services following the COVID-19 pandemic, university-based educational opportunities covering TMH remain scarce in multiple regions of the world including Lebanon. Through a mixed-methods design, we evaluated the first implementation of a university-based online graduate course on TMH in Lebanon. Data was collected from students of different disciplines during class time and were triangulated and synthesized.

Results: Despite this being an online course, high engagement and low absenteeissm was observed with students who remained interested in the topic. In-class interactive activities, limited theoretical pedagogical approaches, participation of international guest speakers, and contextualized material were all listed as key factors to the success of the course. Additionally, students demonstrated much critical thinking when asked about potential applicability of TMH in Lebanon during and after the course.

Conclusions: Our experience demonstrates that online learning for TMH in Lebanon can be highly engaging for students depending on certain key factors that should be considered in the design and implementation of the course. This course may have potential to be replicated in other settings across the Middle East in this format to improve knowledge and confidence in TMH in other settings. Recommendations for future studies and similar implementations are discussed in the manuscript.

1. Background

The interest in mental health has been steadily growing in the Middle East and North Africa (MENA) region, in general, and in Lebanon, in particular. This is evident from the multiple advocacy and awareness raising efforts, the increase in calls for research production, and steady shift of the general public's sensitization towards mental health topics (1). Following the COVID-19 pandemic, and in view of the multiple crises that hit Lebanon in the past couple of years such as the severe economic crisis, the Beirut Port Explosion, and continuous social and political upheavals, an increased interest in and a shift towards Telemental Health (TMH) has also been observed (2, 3). This transition was largely triggered by the mobility restrictions imposed on the general public in Lebanon and especially on vulnerable groups during lockdowns, by the shortage and skyrocketing prices of fuel, road blocks, and other internal conflicts (2, 4). In the absence of meaningful solutions to address these challenges and of adequate support for necessary mental health services, population mental health needs are expected to grow into what some are dubbing "tomorrow's silent epidemic" (5).

Research shows that many service providers in Lebanon, including mental health professionals, transitioned towards remote service delivery in the past few years in an effort to adapt to contextual challenges (2, 6). However, in the absence of clear regulatory oversight and adequate training and education in remote service delivery, little work has been done nationally to guide such practices (7, 8). Although some resources do exist internationally on TMH (9), to our knowledge, none have been contextualized to the specificities of the Lebanese context, which represents a unique setting by virtue of its tumultuous environment, unpredictable landscape, and overstretched healthcare system (10). Such training and education on TMH are pivotal to optimize TMH services and is especially needed in Lebanon. Despite limited research on this topic, studies from adjacent areas have demonstrated that although healthcare providers are willing to use e-health services, many express the need for additional training and education to deliver care more confidently (11). However, despite increasing adoption of TMH in Lebanon and in the Middle East, to the best of our knowledge, TMH has not yet been integrated in updated and revised curricula, leaving

interested trainees and willing practitioners with very limited options to learn and train in TMH. This is important because higher education settings are the primary source of training and education sought by future public health practitioners and mental health clinicians.

In this context, we sought to develop, deliver, and evaluate a university-based graduate course on TMH, which, to the best of our knowledge, is the first-of-its-kind at the national and regional level. The need for such a course is evident based on increasing public interest and scarcity of contextualized educational opportunities for professionals aiming to improve their knowledge and skills in this area of clinical practice and program implementation. Furthermore, because of the increasing reliance on online learning in formal educational settings and the limited documentation and evaluation of such approaches, the course was designed to be delivered fully online in a synchronous manner. To this end, the present paper evaluates the delivery of the course on TMH along with insights from enrolled students.

2. Methods

2.1 Study setting & design

The present mixed-methods study was conducted at the University of Balamand (UoB) under the Faculty of Health Sciences at the Public Health Department. The course was delivered by two instructors at the Public Health Department to graduate students representing multiple disciplines at UoB. The data included in this analysis is obtained from class assessments and activities approved by the university.

2.2 Course development

2.2.1 Structure

Based on previous experience in and familiarity with the literature on designing and implementing online courses, the course was developed with the primary intention of making it engaging and interesting for students. This was a high-priority because the course was to be delivered in a condensed manner of 3-hour sessions over 5 consecutive days, which could potentially compromise student engagement should they find the learning material not interesting enough and the sessions not interactive enough.

For this reason, the instructors avoided adopting a standard didactic approach. Rather, each session was broken down into (1) a 30-minute lecture to introduce the session and provide key information regarding the specific aspect of TMH to be addressed in the session, (2) a 20-minute knowledge assessment form, (3) a 10-minute break, (4) a 1-hour in-class activity, and (5) a 1-hour group presentation and class discussion. By virtue of the multiple settings in which TMH has been reported to be implemented in the literature, we split the class into 6 groups representing the most common implementation settings, namely (1) universities, (2) community or primary healthcare centers, (3) in-patient hospitals, (4) schools, (5) private clinic / home-based, and (6) prisons and correctional facilities. Students matched with the same group in each session during the class activity to ensure continuity of learning. Intergroup knowledge sharing was fostered through the group presentations and class discussions.

2.2.2 Content

The course content was largely based on the international and local literature on TMH and on the professional experiences of presenters, many of which were experts on TMH and who practiced in the US as managers or as clinicians. A breakdown of the sessions can be found in Table 1.

Table 1
Overview of Course Content

	Session 1: Covering the basics	Session 2: Planning & Contextualizing your Practice	Session 3: Monitoring and Evaluating your Practice	Session 4: Telemental Health in Practice and Future Directions	Session 5: Telemental Health in Lebanon
Objectives	To introduce graduate students to the history of the evolution of TMH and its current modalities and applications	To aid students in developing an effective and contextualized implementation plan for a TMH program/practice	To aid students in developing an effective and contextualized monitoring and evaluation plan for a TMH program/practice	To offer students insight into TMH as experienced by clinicians and mental healthcare providers	To familiarize students with the potential barriers and opportunities to implement TMH in resource-limited settings
Description of In-class activity	Students are divided in groups of 6. Each group is assigned an article describing the implementation of TMH in a specific setting. Students are asked to critically read and extract evidence from the reading that shows how TMH improves clinical and public health outcomes	In break-out rooms, each group of students is asked to reflect on the particular setting that they are assigned and list specific considerations when planning a TMH intervention.	In break-out rooms, each group is asked to identify the relevant clinical and non-clinical outcomes and their corresponding key performance indicators that would help in the development of an effective monitoring and evaluation plan.	. In break-out rooms, each group is tasked to reflect on their particular setting and come up with a communications and advocacy plan to advocate for the value of TMH implementation in each setting. Make sure you have a different rationale and strategy for each type of stakeholder.	In break-out rooms, students are expected to discuss the feasibility of implementing TMH in Lebanon within their aforementioned settings. The group discussion should result in a 1-page SWOT Analysis and be prepared to present it to their peers and instructors.
Learning outcomes	Students are able to describe the historical evolution of TMH and the various types of TMH modalities, their different applications, and their potential clinical and public health implications	Students are able to identify and appraise the core components that make up a successful TMH practice/program and plan one's practice/program accordingly	To identify clinical and non-clinical indicators to effectively monitor and evaluate a TMH practice/program	To explain how TMH providers operate across technology and distance and learn about the future directions of the field	To explain how TMH can fit into the current mental health landscape in the MENA region in general and Lebanon in particular
Total allocated time	3 hours	3 hours	3 hours	3 hours	3 hours

2.2.3 Evaluation tools

To evaluate the course, we used data from the following course assessment tools.

Table 3
Overview of Evaluation Tools

Assessment Tool	Number of items	Categories	Time point
Welcome survey	17 open-ended and close-ended questions	1. Student's previous professional experience 2. Knowledge and perceptions of TMH 3. Course Expectations	Pre-class delivery
Knowledge assessment	5 questions per session (total of 25)	Session 1: history of TMH, definitions, and TMH effectiveness Session 2: core components of a TMH program, considerations at each level of implemetationl Session 3: purpose of M&E, clinical and non-clinical M&E indicators Session 4: clinical considerations, suitability of TMH for specific clinical cases Session 5: prevalence of mental health disorders in Lebanon, applicability of TMH in Lebanon	During class time
In-class assignment	5 Graded class activities	Assignment 1: Appraising Telemental Interventions in Selected Settings Assignment 2: Planning and Contextualizing Your Intervention Session 3: Setting Up Your Monitoring and Evaluation Plan Session 4: Overcoming Stakeholder Resistance Session 5: Conducting a SWOT Analysis for TMH in Lebanon Appendix 1 provides a rubric for in-class activity grading	During class time
Exit survey	14 closed-ended and open-ended questions	1. Perceived Utility of TMH 2. Knowledge and perceptions of TMH 3. Attitudes towards practicing TMH in the future 4. Applicability of TMH in Lebanon 5. Expectations from the course	Post course delivery

2.2.4 Participants

All participants (N = 30) are graduate students registered at the Faculty of Health Sciences at UoB. Students represented multiple fields of study including Medical Laboratory Management, Public Health, and Nursing. Their total years of professional experience in the healthcare sector ranged from 0 to 12, with a mean of 3.5 years, of which 38% was in the field of public health, and 25% in the field of mental health. Prior to attending this course, most had not received any information about TMH / digital mental health in any previous courses (67%), and all had not attended any course, workshop, or seminar that focused on the topic.

2.2.5 Data analysis

Information on participants' educational and professional backgrounds are reported as frequencies and percentages. In-class knowledge assessments are reported as means, and paired-samples t-test was conducted to determine mean difference on items in pre-post questions administered in the welcome and exit surveys. Qualitative responses were analyzed using qualitative content analysis.

3. Results & Discussion

The present study evaluated the first university-based online graduate course on TMH in Lebanon. Based on results from the welcome survey, almost all students indicated that they primarily registered for the course because they were curious about it and found the topic to be novel and interesting for them. This is unsurprising given that mental health has become a booming topic in Lebanon in recent years, as evidenced by the numerous advocacy campaigns and increased awareness of the general public regarding mental health (5). Furthermore, TMH has also been perceived as essential for the Lebanese context following the COVID-19 pandemic (3). In this regard, prior to delivering the course, students explained in the survey that they expected the course to increase their knowledge about mental health and deepen their understanding about the applicability of TMH in Lebanon. Previous research has shown that the mental health literacy of university students in Lebanon is low, with non-psychology students having significantly less knowledge about mental health than psychology students (12). Therefore, in this context, the value of and the need for this course could not overstated among public health, nursing, and other majors in the healthcare sector.

Given this appetite for TMH, the course witnessed high registration (30 students) and limited absenteeism (average of 3 absences per class) which are one indication of the success of the course. Based on the quantitative data, the paired-samples t-tests indicated that means of self-reported knowledge regarding TMH, confidence regarding working in TMH, perceived utility of TMH in improving mental health services significantly increased before and after the course ($p < 0.05$; see Table 3). By the end of the course, as indicated by the qualitative findings, students were able to identify key areas where TMH may be useful in the provision of mental health services such as improving access, reducing transportation burdens, catering for people living with disabilities among others. Interestingly, despite that, students' perception of the potential applicability of TMH in Lebanon decreased after the course although this did not reach the set statistical significance cut-off ($p < 0.07$), and only a trend was observed, potentially due to the small sample size. This may also validate knowledge increases since students may have realized the complexities of implementing TMH in Lebanon given the multiple challenges and the need for adequate infrastructure to implement TMH programs in Lebanon. For instance, when triangulated with the qualitative data, it appeared that students appreciated the challenges of implementing TMH in Lebanon given the intersection of crises the country is facing in comparison to other countries where TMH is implemented. Potential barriers for applicability include (1) logistic barriers, such as shortage of qualified mental health professionals, rising costs of electronic devices and internet subscriptions, limited connectivity, limited power supply and other infrastructural

limitations, and (2) cultural issues such as stigma and privacy within the household concerns. In other words, although students believed in the potential of TMH to improve access to, and delivery of, mental health services, the have become more skeptical about its applicability in Lebanon once they learned about all the considerations they need to take into account in planning, deploying, monitoring and evaluating a TMH practice or program.

A13: …However, after the rise in internet packages prices which took place few weeks ago less people might attend TMH. Another drawback is lack of power supply and poor network connections in Lebanon which makes it very hard for patients and teleclinicians to stay focused on the session. Also, most of the lebanese population aren't familiar with the applications used in TMH which provides maximum security and confidentiality and they don't know how to use these application. Another drawback for TMH in lebanon is that not every household has few private rooms for the meeting. Moreover, the current situation made many well trained and well educated TMH professionals to migrate.

Table 3
Paid-samples t-test results (n = 24*)

	Mean - pre	Mean - post	df	p-value
Rate your current knowledge of TMH	2.63	4.42	23	0.000
How confident do you feel about working in TMH	2.33	3.46	23	0.000
To what extent is TMH useful in improving access to MHS	4.00	4.83	23	0.000
To what extent is TMH applicable in Lebanon	3.21	2.75	23	0.069
*Only participants that have completed both the Welcome Survey and the Exit Survey were included in this analysis.				

When asked to specify which aspects of the course the students found engaging and interesting, they mentioned (1) the in-class activities and discussions, (2) the opportunity to interact with international guest speakers, (3) the non-traditional and hands-on pedagogical approach with limited reliance on lecture-based sessions, (4) the brevity and condensed nature of the course, and (5) the contextualization of TMH in the Lebanese setting in which they operate. Student engagement tends to be a primary issue facing online courses, given the difficulty of replicating in-person settings, however this did not appear to be a shortcoming of the present course (13, 14). None of the participants reported experiencing boredom or disengagement, which was extremely important given that course was delivered remotely for 5 consecutive days with each session being 3 hours long. Also, most students reportedly did not have prior knowledge about TMH and were not well knowledgeable about mental health topics. The qualitative findings indicated that students perceived their knowledge to increase significantly after this course, with many of their questions and misconceptions about TMH being adequately answered after the sessions. When triangulated with in-class knowledge assessments, results show that the average scores were relatively high, whereby the final class average was 80%. In line with findings reported above, some students even mentioned that the course changed their attitudes towards TMH, as prior to attending the course, they did not understand its applicability or believe in its potential to improve access to mental health services and effectively treat mental health concerns.

A13: All these 5 sessions[s] made me understand the pros and cons of TMH. Before the session I wasn't convinced that TMH can be applied in Lebanon and I wasn't convinced it is efficient in helping the patients. However, now I realized TMH is very beneficial for the Lebanese population and especially in this current situation. Moreover, before

the session I wasn't aware of the importance of preparedness of the location, equipment to be used and the importance of teleclinician... pre-TMH session and the importance of trainings to provided TMH session to patients. Now, I realize the importance and reason why we have to be well trained and well prepared before the sessions. This course helped me to understand [the] importance of my role as a nurse in the hospital and in the community to help and encourage patients to seek mental health care and provide them with all the information they need to understand before attending the sessions.

A15: Before attending the course, I had limited knowledge about telemental health. This course allowed me to not only gain knowledge and info about the topic, but rather gave me an opportunity to develop a part of planning for a telemental health service, where we were able to apply the knowledge on spot- in the class assignments. Giving us the opportunity to work in this module as a workshop type of delivery was very beneficial, as we are now well equipped with the concepts, especially also after direct correcting from the professors.

When asked about recommendations to improve the course, students mentioned the importance of having it be integrated within the curriculum not only as a special topics course, because many believed that TMH is the future of mental health services. Also, that way the course may be spread across the semester as opposed to it being condensed in one week. Other recommendations for improvement included for guest speakers to be mindful of cultural and language barriers when delivering their lectures, and adding options to demonstrate what actual TMH sessions may look like.

4. Limitations

Findings from this study should be viewed in light of some important limitations. First, despite high attendance rates, some students could not ensure full attendance because of them having to attend to work commitments which is understandable as many were trainees or practicing professionals. Also, our evaluation approach was not ideal since all data collection took place during class time, most of which were not in-depth approaches as we did not conduct interviews or focus group discussions with students. However, this may potentially not be considered a strong limitation affecting our results since data saturation was largely reached given repetitions in the patterns of answers. More in-depth assessment may have yielded additional results; however, they are unlikely to change or negate our main findings. Furthermore, we delivered only one course to one cohort; however, we believe that our results are likely to be consistent across other cohorts given that the present topic has not been offered at universities in Lebanon previously and therefore most students are likely to share similar curiosity and limited knowledge about TMH before joining the course. Finally, this course format is not fully representative of courses traditionally delivered in university settings. Most online courses may not be able to hold similar engagement levels by capitalizing on in-class activities because most classes are stretched throughout semesters. It would be interesting to explore in the future if shorter and more spread-out sessions would have different attendance and engagement rates.

5. Conclusions

We reported an evaluation of the first university-based online graduate course on TMH in the MENA and in Lebanon. Our findings generally indicate favorable responses from students as this course seemed to have increased their knowledge and improved their attitudes towards mental health. It also allowed them to critically consider its applicability in the Lebanese context. The course success was primarily due to (1) strong appetite for mental health topics among students and the need to upscale mental health services in Lebanon, (2) interactive and engaging

class sessions, and (3) continuity across sessions and relevance of the material to local context. The significance of this study is that it is the first documentation and evaluation of a TMH course in Lebanon, a course which is useful for both graduate students and professionals, and may be replicated in other contexts and university settings. Also, this study adds value to the literature on online learning because unlike most published research on this topic, this TMH course format proved to be highly engaging and positively reviewed by students. As such, our recommendations and lessons learned for educators and researchers interested in this area of research include:

1. Target topics that are of significance to pertinent local challenges and interest
2. Limit theoretical pedagogical approaches to delivering needed key information and capitalize on class interaction and practical approaches
3. Invite guest speakers who hold strong credibility and expertise in the field, and ensure that potential challenges arising from cultural and language barriers are mitigated
4. Tailor in-class activities to fit session content and clarify main take-aways from exercises
5. Ensure continuity across the sessions both in content and in in-class activities
6. Consider integrating an example (e.g video) of what an actual TMH session may look like.
7. Offer a full course with a certificate for professionals
8. Test similar pedagogical approaches in other online graduate courses

Abbreviations

TMH
Telemental Health
COVID-19
Coronavirus disease 19
MENA
Middle East and North Africa
UoB
University of Balamand

Declarations

Ethics Approval and Consent to Participate:

The study was conducted in a graduate course that was approved by the Faculty of Health Sciences at the University of Balamand. Data was collected from in-class activities.

Consent for Publication:

Not applicable

Availability of data and material:

The data can be shared by the authors upon reasonable request.

Competing Interests:

None

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