Patient, health professional and psychiatrist satisfaction with emergency department telepsychiatry during the COVID-19 pandemic: a pilot study

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Abstract

Background Emergency department telepsychiatry (EDTP) can improve healthcare delivery. However, no studies document implementation and overall satisfaction within the Canadian pandemic context. The objectives of this study were to (i) describe barriers associated with EDTP; and (ii) assess patients', ED health professionals', and psychiatrists' perceived satisfaction with EDTP during the COVID-19 pandemic. Data were collected in three New Brunswick hospitals over 8-weeks in 2021. Psychiatrists ($n = 6$) completed a self-report questionnaire following each EDTP consultation, patients ($n = 58$) completed a telephone-administered questionnaire 1-week post EDTP consultation, and ED health professionals ($n = 31$) completed a single self-report questionnaire at the end of the study period.

Results One-third of psychiatrists and two-thirds of ED health professionals encountered a barrier, respectively. The most common barriers related to problems linked to sound/video/connection, lack of experience and guidelines, or increased workload. Despite these barriers, high levels of satisfaction were reported by patients and psychiatrists (mean satisfaction score (sd): 4.2 (0.6) and 4.8 (0.4), respectively). ED health professionals reported lower satisfaction scores; however, most believed that EDTP was associated with healthcare delivery advantages.

Conclusions These findings indicate moderate to high EDTP satisfaction. Additional training, guidelines, and change management strategies may be necessary to insure harmonious EDTP implementation for all health professionals.

Keywords Telepsychiatry, Emergency department, Satisfaction, Telemedicine, COVID-19

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Background

Telepsychiatry (TP) is defined as the use of communication technologies to deliver clinical psychiatric care remotely (Pesämaa et al. 2004; Salmoiraghi and Hussain 2015). This technology focuses mainly on videoconference consultations, although virtual care can also include telephone assessments and electronic messaging to patients (Naslund et al. 2020; Ward et al. 2015). In a context where psychiatric care access remains worrisome, TP can provide additional support to healthcare teams by reducing geographic barriers and contribute to mental health professionals' recruitment and retention

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in underserved areas (Hensel et al. 2020; Reinhardt et al. 2019).

Although TP shows promise in healthcare delivery, research within the emergency department (ED) is relatively new with a paucity of studies in Canadian healthcare settings (Reinhardt et al. 2019; Li et al. 2021; Natafgi et al. 2021). While smaller hospitals may adopt TP to maintain mental health services and enable/increase access to psychiatric care, larger hospitals may utilize these platforms to reduce overcrowding in the ED and meet patient demands (Donley et al. 2017). Empirical evidence suggest that emergency department TP (EDTP) can alleviate stress in healthcare workers (e.g. reducing travel times) and improve cost-effectiveness of emergency psychiatric healthcare delivery by reducing the length of hospital stays, admission rates, and transfer rates (Reinhardt et al. 2019; Donley et al. 2017; Reliford and Adebanjo 2019; Brenner et al. 2020; Kothadia et al. 2020; Narasimhan et al. 2015). EDTP can also expedite access to psychiatric care by significantly reducing wait times. Brenner et al. (2020) reported that EDTP consults were associated with an 84% reduction in wait time regardless of the patient's age or sex when compared to ED in-person psychiatric assessments (Brenner et al. 2020).

Two studies support the notion that EDTP provides quality care delivery equivalent to traditional face-to-face consultations. Seidel and Kilgus (2014) compared the psychiatric evaluations of 73 adult patients met face-to-face or via TP carried out by two independent psychiatrists. For each assessment, a psychiatrist "observer" completed a second assessment at the same time as the treating psychiatrist (Seidel and Kilgus 2014). No difference was detected between both face-to-face or TP evaluations (84% agreement for patients met face-to-face and 86% agreement for patients met via telepsychiatry). Further, a 12-month prospective study comparing clinical characteristics and ED psychiatric assessments of children and adolescents assessed face-to-face ($n=60$) or via TP ($n=60$) reported no significant differences between groups in outcome measures (e.g. admission, referrals) suggesting that TP is suitable for emergency situations (Roberts et al. 2017).

Existing studies measuring implementation and satisfaction towards EDTP also report a high degree of effectiveness, efficiency and/or satisfaction from patients (children, adolescents, and adults) and psychiatrists (Donley et al. 2017; Brenner et al. 2020; Roberts et al. 2017; Thomas et al. 2018; Lange 2017). For example, Brenner et al. (2020) reported that 97% of patients were satisfied with their EDTP consultation and 80% agreed that it was as good as a face-to-face visit. However, other ED health professionals are often overlooked—nursing staff, emergency physicians and other health professionals working in the ED work in difficult conditions and are often faced with lack of human resources. It is unknown if or how EDTP can affect their workload and what is their general satisfaction perception towards this healthcare delivery model.

The COVID-19 pandemic marks an important milestone in healthcare delivery, including the disruption of clinical mental health services and a period marked with significant increases in emergency psychiatric care (Bojdani et al. 2020). In general, during this population-based crisis, telemedicine applications are encouraged by medical associations worldwide because they can help protect patients and healthcare professionals by reducing contacts (i.e. maximizing physical distancing) and consequently mitigating the risk of infection (Natafgi et al. 2021; Smith et al. 2020; Dursun et al. 2021; Hollander and Carr 2020). However, few studies document EDTP-related characteristics during the pandemic. A recent review article identified 12 peer reviewed EDTP studies published in the past 2 years, none focussing on EDTP during the pandemic (i.e. all studies used data collected pre-pandemic) (Natafgi et al. 2021). To our knowledge, only one study to date evaluates the implementation of EDTP in a pandemic context (Vakkalanka et al. 2022). However, although the study offers great insight into facilitators and barriers in a US setting, the study was conducted in underserved areas, data were not collected from patients and multiple types of health professionals, only part of the study was conducted during the pandemic, and results are not presented by study period (study period: June 2019–December 2020) (Vakkalanka et al. 2022). Important unanswered questions include: Are Canadian patients satisfied with EDTP services during the pandemic? Do psychiatrists and ED healthcare workers share a positive perception of EDTP in the current context and what are the barriers?

Our current healthcare landscape in an evolving pandemic context compels a research agenda that aims to better understand characteristics associated with EDTP to inform healthcare practice. Although EDTP has the potential to provide quality psychiatric care delivery, few studies document barriers, facilitators, and overall satisfaction with this technology in patients, psychiatrists, and other ED healthcare professionals and no Canadian studies document EDTP implementation and satisfaction within the pandemic context. The objectives of this study were (i) to describe barriers associated with EDTP; and (ii) assess patients', ED health professionals' and psychiatrists' perceived satisfaction with EDTP in New-Brunswick (Canada) hospitals during the COVID-19 pandemic.

Methods

EDTP procedure and data collection

EDTP was implemented in spring 2021 in three suburban or rural New Brunswick hospitals within Vitalité Health Network (i.e. Chaleur Regional Hospital; Tracadie Hospital; Enfant-Jésus RHSJ† Hospital). Vitalité Health Network is one of two regional health authorities within the province of New Brunswick, delivering healthcare to a predominantly French-speaking population in the northern and southeastern parts of the province. For this study, upon arrival at the ED, all patients were assessed by an ED physician to determine the need for an emergency psychiatric evaluation. If a patient required a psychiatric consultation, the ED physician contacted the on-call psychiatrist to determine if the patient met the inclusion criteria for EDTP. Exclusion criteria included paediatric patients < 16 years, patients demonstrating violent, aggressive behaviours or severe psychiatric symptoms for which the ED physician (in consultation with the referent and/or on-call psychiatrist if needed) determined that immediate face-to-face medical attention was needed. All other patients requiring a psychiatric emergency evaluation were eligible.

Virtual EDTP consultations took place in private rooms equipped with a laptop with videoconferencing technology (i.e. Jabber, Teams, or Zoom Health). ED nursing staff were responsible for setting up EDTP consultations. Prior to each virtual assessment, psychiatrists described the current research project and obtained verbal consent for the EDTP consultation and to transfer patients' contact information to the research team. Patients who did not meet inclusion criteria or who refused to participate to an EDTP consultation were assessed in a standard usual care face-to-face consultation by the on-call psychiatrist. EDTP consultations took place even if the patient did not agree to participate in the research project.

Data for this pilot study were collected over an 8-week period (April–May 2021). Psychiatrists completed a self-report questionnaire following each EDTP consultation. Psychiatrists completed a questionnaire even if the patient refused to participate in the study because it assessed questions regarding the psychiatrist experience with each EDTP consultation and did not include any question on the treated patient. Patients evaluated via EDTP who agreed to participate to the research project were contacted 1 week following their EDTP consultation (or following hospital discharge) by the research team to complete a short telephone-administered questionnaire. Finally, each ED health professional who encountered at least one patient evaluated via EDTP completed a single self-report questionnaire at the end of the study period.

Study variables

Perceived EDTP satisfaction of patients, ED health professionals and psychiatrists were assessed by modified versions of validated scales (Yip et al. 2003; Thomas et al. 2018). *Patient EDTP satisfaction* was measured by a 7-item scale (5-point Likert scale from strongly disagree to strongly agree) that included questions on: (i) *efficiency* (e.g. telepsychiatry reduces emergency wait time to see a psychiatrist compared to usual care); (ii) *quality of care* (e.g. I was satisfied with the level of confidentiality during the session); and (iii) *similarity to face-to-face* (e.g. I could easily talk to my health-care provider). In addition, *patient overall EDTP satisfaction* was assessed in a 1-item question: "Overall, how satisfied are you with telepsychiatry in the emergency department?". Response choices included very satisfied, satisfied, neither satisfied nor dissatisfied, dissatisfied, and very dissatisfied.

Psychiatrist EDTP satisfaction was measured by an 8-item scale (5-point Likert) which included questions on: (i) *efficiency* (e.g. Telemedicine saves me time travelling to the hospital); (ii) *quality of care provided* (e.g. Overall, I am satisfied with quality of care I am able to provide to patients using telepsychiatry); and (iii) *similarity to face-to-face* (e.g. The session went as well as an in-person consultation).

ED health professionals EDTP satisfaction was measured by a 7-item scale (5-point Likert) which included on: (i) *efficiency* (e.g. Telepsychiatry did not have a negative impact on my workload); and (ii) *quality of care* (e.g. Telepsychiatry in the ED provides better access to psychiatric services for patients).

Data on *EDTP barriers* were collected from psychiatrists and ED health professionals and *EDTP advantages* were collected from ED health professionals. Additional file 1: Table S1 describes each item investigated including response options, and re-coding for analysis.

Finally, data were extracted from participants' medical records to describe sociodemographic and clinical characteristics of patients evaluated via EDTP including age, sex, language (French, English), reason for visiting ED, and psychiatric diagnosis following EDTP.

Statistical analyses

Descriptive statistics were used to address the study objectives. Internal reliability of EDTP scales was calculated using Cronbach's alpha. Analyses were performed using SPSS, Version 26.0 (IBM Corp. Released 2012. IBM SPSS Statistics for Windows, Version 26.0. Armonk, NY: IBM Corp.).

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Results

Study sample

Fifty-eight patients were evaluated via TP in New Brunswick hospitals between April and May 2021. Accordingly, 58 self-report EDTP questionnaires were completed by six psychiatrists on-call during the study period. Among patients evaluated via EDTP, 35 (60% of eligible patients) completed satisfaction questionnaires (4 participants refused to participate to the study (at the ED); 8 refused to complete a questionnaire after their EDTP consultation; 4 were excluded from the study (e.g. did not recall the evaluation); and 7 could not be reached). Thirty-one ED health professionals completed a self-report questionnaire at the end of the study period including six ED physicians, one medical administrator and 24 nursing professionals.

Sociodemographic and clinical characteristics of patients

The mean age (sd) of patients was 38.5 (14.8), 51% were male, and 68% of patients were French unilingual. The most frequent reason for ED visit were suicidal crisis (63%) followed by depressive (17%), psychotic (8.5%), and anxiety-related symptoms (8.5%) (Fig. 1A). Following their EDTP consultation, 49% of patients were diagnosed with a depressive disorder (Fig. 1B).

EDTP satisfaction

Cronbach's alpha of the EDTP scale for patients ($\alpha=0.807$), psychiatrists ($\alpha=0.836$) and ED health professional ($\alpha=0.957$) indicated a high level of internal consistency.

Patients reported a high degree of satisfaction with EDTP (mean satisfaction score (sd): 4.2 (0.6)) (Table 1). Overall patient EDTP satisfaction measured by a single item was similar to the mean satisfaction score obtained with the EDTP 7-items scale (mean satisfaction score (sd): 4.2 (0.9); $r=0.8$) indicating that the single item was a good predictive indicator of overall EDTP satisfaction. Patients' overall mean satisfaction scores did not differ by sex, age, language, hospital visited, or treating psychiatrist (Additional file 1:Table S2).

In general, psychiatrists were satisfied or very satisfied with EDTP (mean satisfaction score (sd): 4.8 (0.4); Table 1). Overall mean satisfaction scores varied from 4.0 (0.7) to 5.0 (0) among participating psychiatrists.

The overall mean satisfaction scores of ED health professionals were lower than among patients and psychiatrists (mean satisfaction score (sd): 2.9 (1.3); Table 1). Differences by hospital and type of respondent were observed (Additional file 1: Table S3). In general, nursing and administrative staff across the 3 surveyed hospitals reported overall satisfaction scores lower than ED physicians who shared a positive satisfaction perception towards EDTP (2.6 and 2.3 vs 4.3, respectively). Health professionals working at the Chaleur Regional Hospital reported the lowest mean satisfaction scores (Additional file 1: Table S3).

EDTP barriers

Two psychiatrists and 20 ED health professionals (17 nursing staff, 2 ED physicians and one medical administrator) reported encountering a barrier during—or while setting up—an EDTP consultation. While response rates were too low for a reliable thematic analysis, most frequent barriers reported by ED health professionals included problems linked to sound/video/connection ($n=5$), lack of experience or guidelines ($n=4$), and problems linked to increased workload (i.e. takes too long; $n=9$). Eighty-nine per cent, 75% and 80% of barriers related to increased workload, lack of training or guidelines and sound/video/connection, respectively, were reported by nursing staff. The 5 incidents reported by psychiatrists related to sound/video/connection ($n=4$) and lack of experience or guidelines ($n=1$).

Finally, 50% of ED health professionals believed that EDTP was associated with health delivery advantages (43% of nursing staff compared to 83% of ED physicians). It is noteworthy that 40% of ED health professionals who encountered a barrier still believed that EDTP is associated with advantages (compared to 70% among ED health professional respondents who did not encounter an obstacle).

Discussion

EDTP may improve access to psychiatric care, service delivery, and management in a cost-effective manner (Ward et al. 2015; Reinhardt et al. 2019; Natafgi et al. 2021; Donley et al. 2017; Brenner et al. 2020; Naslund et al. 2022). However, this technology remained underutilized in ED settings prior to 2020 (Smith et al. 2020). In the wake of the COVID-19 pandemic, mental health services turned to alternative healthcare delivery strategies to help bridge the gap between demand, access, and psychiatric care delivery. This is the first Canadian study to describe EDTP implementation during the COVID-19 pandemic and assess perceived satisfaction, not only from patients and psychiatrists, but also from ED healthcare professionals (i.e. ED physicians, nurses, and administrative staff).

Perceived satisfaction with EDTP
Patients

Results from the current study suggest that patients were very satisfied with the efficiency and quality of care received via EDTP. This concords with pre-pandemic

A.   Reasons for ED visit

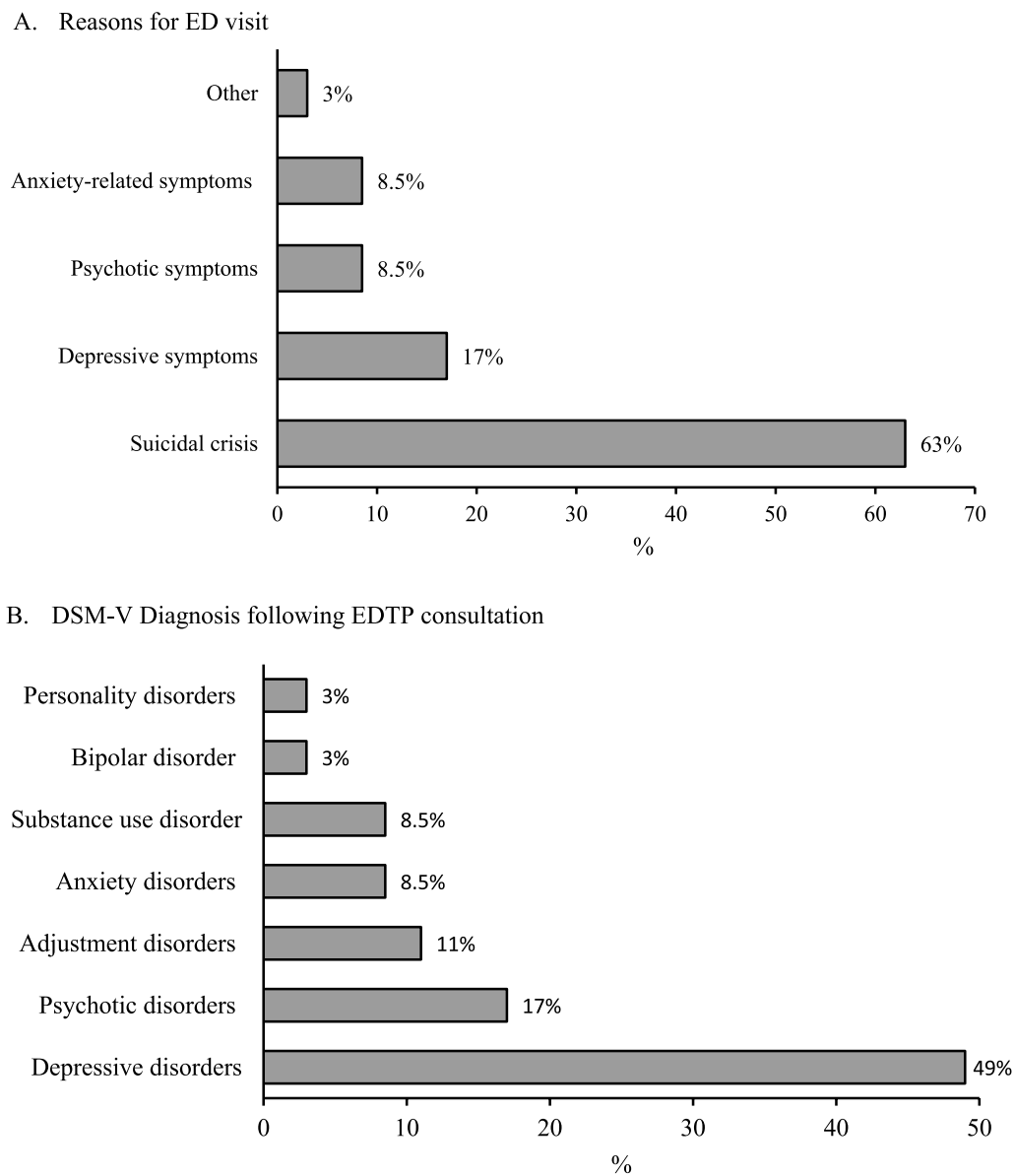
B.   DSM-V Diagnosis following EDTP consultation

Fig. 1 Clinical characteristics of telepsychiatry patients. **A** Histogram showing the most frequent reasons for ED visit; **B** Histogram showing the most frequent diagnoses received following EDTP. *ED* Emergency department; *EDTP* Emergency department telepsychiatry

findings from Donley et al. (2017) who reported that 80% of ED patients would accept a next psychiatric evaluation by TP (Donley et al. 2017). These results are highly encouraging with growing evidence of worsening mental health symptoms among the general population during the pandemic and the importance of patient-centred care (Xiong et al. 2020). Canadian estimates suggest that 50% of Canadians saw their mental health decline since the beginning of the pandemic, the majority indicating an increase in anxiety symptoms (CAMH 2020). The psychological burden associated with this pandemic has made various individuals vulnerable, namely, those suffering from social isolation, those caring for family members or grieving for loved ones, people with financial difficulties or stress/anxiety related to job losses as well as people with pre-existing psychiatric disorders (Kola 2020; Yao et al. 2020; Roth et al. 2021). Hence, it is of the utmost importance to increase safe emergency psychiatric access and services for all Canadians. Indeed, patients in our study expressed that EDTP facilitated access to emergency psychiatric care and contributed to decreased wait times for a mental health assessment.

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Table 1 EDTP satisfaction among patients, psychiatrists, and ED health professionals

EDTP satisfaction items	Mean satisfaction score* (SD)
Patients (*n* = 35)	
Efficiency	
TP reduces emergency wait time (to see a psychiatrist) compared to usual care	3.9 (0.9)
Quality of care provided	
My healthcare provider was able to understand my health condition	4.2 (0.9)
I was satisfied with the level of confidentiality during the session	4.2 (0.8)
I obtained better access to healthcare services by use of TP at the ED	4.3 (0.8)
I would use TP again in the ED	4.2 (0.9)
Similarity to face-to-face	
I did not encounter any technological problems (sound, image, etc.)	4.0 (0.9)
I could easily talk to my healthcare provider	4.2 (1.0)
Overall mean satisfaction score patients	4.2 (0.6)
Psychiatrists (*n* = 58)	
Efficiency	
TP reduces wait times (to see a psychiatrist) compared to usual care	4.5 (1.0)
Telemedicine saves me time travelling to the hospital	4.7 (0.8)
Quality of care provided	
I was happy with the privacy of the session	5.0 (0.1)
Overall, I am satisfied with the quality of care that I am able to provide to patients using TP	4.9 (0.3)
I am ready to use EDTP on a regular basis	4.8 (0.6)
Similarity to face-to-face	
TP was appropriate for this consultation	5.0 (0.2)
The session went as well as an in-person consultation	4.7 (0.7)
I did not encounter any technological problems (sound, image, etc.)	4.6 (0.9)
Overall mean satisfaction score psychiatrists	4.8 (0.4)
ED health professionals (*n* = 31)	
Efficiency	
TP reduces emergency wait time (to see a psychiatrist) compared to usual care	2.8 (1.6)
TP did not have any negative impact on the continuity of services	2.8 (1.4)
TP did not have a negative impact on my workload	2.8 (1.5)
My roles and responsibilities in relation to TP are clear	3.3 (1.3)
Quality of care provided	
I am satisfied with this model of service delivery	2.9 (1.6)
TP in the ED provides better access to psychiatric services for patients	3.1 (1.6)
TP in the ED should be common practice	2.8 (1.6)
Overall mean satisfaction score ED health professionals	2.9 (1.3)

*Mean satisfaction score based on a 1–5 Likert scale

With the future of pandemic landscape uncertain, healthcare delivery networks must stay resilient to offer the best services to patients.

Psychiatrists

Pre-pandemic, select studies reported psychiatrists' reluctance to choose TP when face-to-face consultations were possible (Bishop et al. 2002; Math et al. 2015). Fear to be unable to form a therapeutic alliance—vital for treatment and positive therapy outcomes (Chen et al. 2018; Norcross and Lambert 2018)—appeared to be a main concern (Hubley et al. 2016; Ryu et al. 2021). During the pandemic, perceptions remained divided in non-ED settings; despite having reported a positive experience, some still conveyed a strong preference to return to face-to-face consultations as soon as possible (Li et al. 2021). Our results show that in an ED setting, treating psychiatrists welcomed the use of TP and were highly satisfied

with its efficiency. They reported being confident that it provided quality psychiatric care similar to face-to-face consultations which concords with pre-pandemic ED findings from Donley et al. (2017) who reported that 88% of psychiatrists were satisfied with EDTP in lieu of a face-to-face assessment (Donley et al. 2017).

ED health professionals

ED health professionals reported the lowest overall EDTP satisfaction compared to psychiatrists and patients. Because this initiative was implemented in April 2021, we hypothesize that the COVID-19 pandemic may have already put an enormous strain on Vitalité Health Network's ED workforce, potentially explaining low satisfaction scores. Future studies will have to measure EDTP satisfaction routinely in a continuously changing pandemic landscape. Interestingly, our results show that the mean satisfaction scores differed by respondent type—ED physicians appeared to share a positive view of EDTP, whereas members of the nursing staff reported lower satisfaction scores. It is possible that lack of human resources and strains associated with these shortages had greater impact on members of the nursing staff. Qualitative studies are needed to better understand barriers and facilitators amongst different types of health professionals to mitigate negative effects on workload and healthcare delivery. Finally, change management strategies may have to be tailored to different health professionals.

Perceived barriers and facilitators

In a recent qualitative study of perceived EDTP barriers among novice EDTP users, Hensel et al., (2020) identified three broad categories of barriers: (i) *clinical* (e.g. ability to determine a patient's suitability for EDTP; ability to perform accurate assessment); (ii) *logistical and technical* (e.g. coordination; associated costs; technological problems); and (iii) *readiness* (e.g. engagement of professionals and patients; availability of equipment and space) (Hensel et al. 2020). It is noteworthy that all barriers were not distributed equally among respondent: while most ED professionals (including psychiatrists) reported similar clinical and logistical concerns, ED physicians and administrators reported a higher proportion of concerns related to readiness than psychiatrists (Hensel et al. 2020). In this study, one-third of psychiatrists and two-thirds of ED health professionals encountered a barrier, respectively. The most common barriers reported were problems linked to sound/video/connection, lack of training and available guidelines. Additionally, ED health professionals, especially the nursing staff, were concerned with the increased workload associated with EDTP. These results mirror findings from Vakkalanka et al. (2022) who reported that staff were dissatisfied with

a lack of clarity towards EDTP processes as well as technical limitations of select platforms (Vakkalanka et al. 2022). Lack of guidelines on how to use new technological platforms can represent an additional source of stress and burnout for healthcare providers (Golz et al. 2021; Smith et al. 2022). These results suggest that detailed standardized clinical guidelines and timely training and education on use and troubleshooting of videoconferencing platforms could improve satisfaction and overcome select barriers during implementation.

Clinical implications and future directions

Implementation of any type of telemedicine is not without its challenges. To be effective and efficient, it is essential to mobilize and maximize change management to insure harmonious implementation of EDTP for all health professionals. Implementation, proper training, and management of any new initiative must involve all actors, including patient partners, to ensure work satisfaction and optimization of service delivery (Donley et al. 2017). In addition, conducting change management should be managed independently in each hospital, and address concerns of different health professional groups, to better understand the specificities of each setting. Waller and Stotler (2018) suggested that healthcare organizations may benefit from clinical leaders (i.e. "champions") and a full-time program coordinator responsible for the implementation and management of telemedicine programs (Waller and Stotler 2018).

Finally, changes in organizational setting may also be necessary. Current emergency rooms may not be well-suited to accommodate the influx of psychiatric consultations needed in our modern pandemic reality. Hospitals may need to rethink its physical environment to include rooms adapted for telemedicine, including optimal telepsychiatry technologies, to improve patient care, increase service delivery efficiency, as well as workflow and service delivery satisfaction of health-care workers. Future studies should include longitudinal data on patients, psychiatrists, and health professionals' EDTP satisfaction and develop clinical best practices guidelines adapted to emergency settings to ensure best quality of care.

Limitations

Limitations of this analysis include that use of a purposive sample and small sample size could limit generalizability. Data from this pilot study did not permit us to study perceived satisfaction by psychiatric diagnosis. In addition, we did not collect data on COVID-19 status and were not able to study its association with EDTP satisfaction. Finally, self-report data are subject to recall bias.

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Conclusions

Although TP may not be suitable for all patients or contexts, it can provide a complementary form of quality ED psychiatric care delivery (Dursun et al. 2021; Pineau et al. 2006). This study suggests that the majority of health professionals report high EDTP satisfaction during the COVID-19 pandemic. Post-pandemic, a combined or hybrid TP approach will likely be part of an exemplary care model in most health networks (Smith et al. 2020; Bouchard et al. 2020; O'Brien and McNicholas 2020). Additional training, guidelines, and change management strategies may be necessary to insure harmonious implementation of EDTP for all health professionals.

Abbreviations
ED   Emergency department
EDTP   Emergency department telepsychiatry
SD   Standard deviation
TP   Telepsychiatry

Supplementary Information

The online version contains supplementary material available at https://doi.org/10.1186/s42269-024-01164-8.

> **Additional file 1: S1 Table**. Description of study variables. **S2 Table**. Differences in patients mean overall satisfaction score* by sex, age, language, hospital visited, or treating psychiatrist (n = 35).

Availability of data and materials
Data for this pilot study are available upon request.

Declarations

Ethics approval and consent to participate
The study was approved by Vitalité Health Network Ethics Review Committee (#101230).

Consent for publication
Patients, ED health professionals and psychiatrists provided informed verbal consent for the study and publication of results.

Competing interests
The authors declare that they have no competing interests.

References

Bishop JE, O'Reilly RL, Maddox K, Hutchinson LJ (2002) Client satisfaction in a feasibility study comparing face-to-face interviews with telepsychiatry. J Telemed Telecare 8(4):217–221

Bojdani E, Rajagopalan A, Chen A, Gearin P, Olcott W, Shankar V et al (2020) COVID-19 pandemic: impact on psychiatric care in the United States. Psychiatry Res 289:113069

Bouchard S, Allard M, Robillard G, Dumoulin S, Guitard T, Loranger C et al (2020) Videoconferencing psychotherapy for panic disorder and agoraphobia: outcome and treatment processes from a non-randomized non-inferiority trial. Front Psychol 11:2164

Brenner R, Madhusoodanan S, Logiudice J, Castell G, MacKenzie T, O'Shaughnessy PM (2020) A comparison study of the turnaround time for telepsychiatry versus face-to-face consultations in general hospital nonpsychiatric emergency rooms. Ann Clin Psychiatry 32(1):12–16

CAMH. Mental Health in Canada: Covid-19 and Beyond. CAMH Policy Advice 2020. https://www.camh.ca/-/media/files/pdfs---public-policy-submissions/covid-and-mh-policy-paper-pdf.pdf. Accessed 19 Sept 2022

Chen R, Atzil-Slonim D, Bar-Kalifa E, Hasson-Ohayon I, Refaeli E (2018) Therapists' recognition of alliance ruptures as a moderator of change in alliance and symptoms. Psychother Res 28(4):560–570

Donley E, McClaren A, Jones R, Katz P, Goh J (2017) Evaluation and implementation of a telepsychiatry trial in the emergency department of a metropolitan public hospital. J Technol Human Serv 35(4):292–313

Dursun OB, Turan B, Pakyürek M, Tekin A (2021) Integrating telepsychiatric services into the conventional systems for psychiatric support to health care workers and their children during COVID-19 pandemics: results from a national experience. Telemed J E Health 27(3):269–275

Golz C, Peter KA, Müller TJ, Mutschler J, Zwakhalen SMG, Hahn S (2021) Technostress and digital competence among health professionals in swiss psychiatric hospitals: cross-sectional study. JMIR Ment Health 8(11):e31408

Hensel J, Graham R, Isaak C, Ahmed N, Sareen J, Bolton J (2020) A novel emergency telepsychiatry program in a Canadian urban setting: identifying and addressing perceived barriers for successful implementation: un nouveau programme de télépsychiatrie d'urgence en milieu urbain Canadien: identifier et aborder les obstacles perçus d'une mise en œuvre réussie. Can J Psychiatry 65(8):559–567

Hollander JE, Carr BG (2020) Virtually perfect? Telemedicine for Covid-19. N Engl J Med 382(18):1679–1681

Hubley S, Lynch SB, Schneck C, Thomas M, Shore J (2016) Review of key telepsychiatry outcomes. World J Psychiatry 6(2):269–282

Kola L (2020) Global mental health and COVID-19. Lancet Psychiatry 7(8):655–657

Kothadia RJ, Jones K, Saeed SA, Torres MJ (2020) The impact of the north carolina statewide telepsychiatry program (NC-STeP) on patients' dispositions from emergency departments. Psychiatr Serv 71(12):1239–1244

Lange K (2017) Innovating for improvement. Introducing telepsychiatry into routine practice in an emergency department psychiatric service. Oxford Health NHS Foundation Trust (Final Report 2017). https://www.health.org.uk/sites/default/files/5.%20Oxford%20Health_Telepsychiatry.pdf

Li H, Glecia A, Kent-Wilkinson A, Leidl D, Kleib M, Risling T (2021) Transition of mental health service delivery to telepsychiatry in response to COVID-19: a literature review. Psychiatr Q 93(1):181–197

Math SB, Moirangthem S, Kumar NC (2015) Tele-psychiatry: After mars, can we reach the unreached? Indian J Psychol Med 37(2):120–121

Narasimhan M, Druss BG, Hockenberry JM, Royer J, Weiss P, Glick G et al (2015) Impact of a telepsychiatry program at emergency departments statewide on the quality, utilization, and costs of mental health services. Psychiatr Serv 66(11):1167–1172

Naslund JA, Mitchell LM, Joshi U, Nagda D, Lu C (2020) Economic evaluation and costs of telepsychiatry programmes: a systematic review. J Telemed Telecare 28(5):311–330

Naslund JA, Mitchell LM, Joshi U, Nagda D, Lu C (2022) Economic evaluation and costs of telepsychiatry programmes: a systematic review. J Telemed Telecare 28(5):311–330

Natafgi N, Childers C, Pollak A, Blackwell S, Hardeman S, Cooner S et al (2021) Beam me out: review of emergency department telepsychiatry and lessons learned during COVID-19. Curr Psychiatry Rep 23(11):72

Norcross JC, Lambert MJ (2018) Psychotherapy relationships that work III. Psychotherapy (chic) 55(4):303–315

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O'Brien M, McNicholas F (2020) The use of telepsychiatry during COVID-19 and beyond. Ir J Psychol Med 37(4):250–255

Pesämaa L, Ebeling H, Kuusimäki ML, Winblad I, Isohanni M, Moilanen I (2004) Videoconferencing in child and adolescent telepsychiatry: a systematic review of the literature. J Telemed Telecare 10(4):187–192

Pineau G, Mowadem K, St-Hilaire C, Perreault R, Levac É, Hamel B. Agence d'évaluation des technologies et des modes d'intervention en santé (AETMIS). Télésanté: lignes directrices cliniques et normes technologiques en télépsychiatrie. 2006. p xxii-76

Reinhardt I, Gouzoulis-Mayfrank E, Zielasek J (2019) Use of telepsychiatry in emergency and crisis intervention: current evidence. Curr Psychiatry Rep 21(8):63

Reliford A, Adebanjo B (2019) Use of telepsychiatry in pediatric emergency room to decrease length of stay for psychiatric patients, improve resident on-call burden, and reduce factors related to physician burnout. Telemed J E Health 25(9):828–832

Roberts N, Hu T, Axas N, Repetti L (2017) Child and adolescent emergency and urgent mental health delivery through telepsychiatry: 12-month prospective study. Telemed J E Health 23(10):842–846

Roth CB, Papassotiropoulos A, Brühl AB, Lang UE, Huber CG (2021) Psychiatry in the digital age: A blessing or a curse? Int J Environ Res Public Health 18(16):8302

Ryu J, Banthin DC, Gu X (2021) Modeling therapeutic alliance in the age of telepsychiatry. Trends Cogn Sci 25(1):5–8

Salmoiraghi A, Hussain S (2015) A systematic review of the use of telepsychiatry in acute settings. J Psychiatr Pract 21(5):389–393

Seidel RW, Kilgus MD (2014) Agreement between telepsychiatry assessment and face-to-face assessment for emergency department psychiatry patients. J Telemed Telecare 20(2):59–62

Smith AC, Thomas E, Snoswell CL, Haydon H, Mehrotra A, Clemensen J et al (2020) Telehealth for global emergencies: Implications for coronavirus disease 2019 (COVID-19). J Telemed Telecare 26(5):309–313

Smith K, Torous J, Cipriani A (2022) Teaching telepsychiatry skills: building on the lessons of the COVID-19 pandemic to enhance mental health care in the future. JMIR Ment Health 9(10):e37939

Thomas JF, Novins DK, Hosokawa PW, Olson CA, Hunter D, Brent AS et al (2018) The use of telepsychiatry to provide cost-efficient care during pediatric mental health emergencies. Psychiatr Serv 69(2):161–168

Vakkalanka JP, Nataliansyah MM, Merchant KAS, Mack LJ, Parsons S, Mohr NM et al (2022) Telepsychiatry services across an emergency department network: a mixed methods study of the implementation process. Am J Emerg Med 59:79–84

Waller M, Stotler C (2018) Telemedicine: a primer. Curr Allergy Asthma Rep 18(10):54

Ward MM, Jaana M, Natafgi N (2015) Systematic review of telemedicine applications in emergency rooms. Int J Med Inform 84(9):601–616

Xiong J, Lipsitz O, Nasri F, Lui LMW, Gill H, Phan L et al (2020) Impact of COVID-19 pandemic on mental health in the general population: a systematic review. J Affect Disord 277:55–64

Yao H, Chen JH, Xu YF (2020) Patients with mental health disorders in the COVID-19 epidemic. Lancet Psychiatry 7(4):e21

Yip MP, Chang AM, Chan J, MacKenzie AE (2003) Development of the telemedicine satisfaction questionnaire to evaluate patient satisfaction with telemedicine: a preliminary study. J Telemed Telecare 9(1):46–50. https://doi.org/10.1258/135763303321159693

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