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Telepsychiatry after COVID-19 crisis: a new opportunity for Mental Health in Italy

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Summary

Objective. To conduct a review of telepsychiatry literature in order to evaluate its possible integration into CMHCs and other settings increasing access to specialized care.

Methods. we conducted a review of literature based on multiple keywords ("telepsychiatry", "telemental health" and "telemedicine"). To be included studies had to: 1) be published from January 2015 to May 2020 on peer-reviewed journals; 2) be written in English; 3) be original studies; 4) delivered therapy, services and treatment sessions through telephone or video technology. Articles were selected and screened in two phases to minimise the bias. In the first phase two authors conducted the literature search and reviewed all the abstracts of the studies to identify eligible ones. In the second step full-text articles that suited our inclusion criteria were reviewed and, eventually, selected. Out of 351 articles, 111 met our inclusion criteria and were fully analyzed. Some articles were found not to fit our main categories and, after reassessing studies' characteristic, 47 articles were included into our review.

Results. we identified a total of 351 full-text articles based on our literature search and, after a screening and eligibility process we identified 46 articles. Of these 15 evaluated the use of telepsychiatry in primary and consultations settings, 6 its application in emergency settings and 25 in secondary and specialized settings with 11 specifically focusing on psychotherapy and psychoeducation delivered through new technologies. Evidences suggest that telepsychiatry can be used into primary settings and mental health services with high efficacy, applicability and satisfaction of both patients and providers.

Conclusion. Integration of telepsychiatry into CMHCs would represent the true post-COVID revolution into our National Health System in terms of higher accessibility to care for our patients with lower costs and comparable efficacy and effectiveness.

Key words: telepsychiatry, mental health services, telemedicine, telemental health, consultation

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Conflict of interest
The Authors declare no conflict of interest.

Introduction

The COVID-19 crisis has highlighted the role of telepsychiatry as an important tool into mental health care setting in Italy. Telepsychiatry refers to the use of information and communication technologies, often using videoconferencing, to provide psychiatric services from a distance and can involve direct interaction between a mental health worker and the patient or his family [1].

The rapid widespread of the coronavirus disease 2019 pandemic and the resulting lockdown has forced mental health workers to change their traditional practice and rapidly virtualize their operations.

These activities have included the use of videoconferencing, in particular to

monitor the mental health status of patients or to conduct team meetings, as well as the possibility to conduct administrative operations through new technologies.
This rapid and historical change was possible because Community Mental Health Centers (CMHCs) were the only outpatient health services opened during the Covid-19 pandemic and there was the need to ensure both mental health care and safety of patients, citizens and mental health workers.
As in other countries, implementation in Italy has occurred at a pace never experienced in telemedicine [2], but at the same time the implementation was unorganized, based on local resources (i.e. the presence or absence of web-camera) and without specific guidelines or previous training.
Nevertheless, the COVID-19 crisis has helped to overthrow the historical cultural resistance to telepsychiatry and to highlight that both clinicians and patients can adapt with satisfaction to it and organizational barriers can be overcome.
Before this health emergency clinical experiences in Italy concerning telepsychiatry were fragmented and limited only to experimental project in limited areas with no extensive studies on the applicability and sustainability of this kind of tool carried out in the public sanitary context [3]. Several obstacles have hampered the spread and integration of telemedicine into routine care delivered through the National Public Health System, that with its rigid structure has difficulty to be contaminated by new technologies and changes [4].
This crisis has presented a unique opportunity not only to extend the use of telepsychiatry nationwide for future health emergencies, but also to permanently integrate this instrument into mental health services practice in order to increase access to care.
The aim of the study is to evaluate how and where telepsychiatry is more effective and easily implementable in order to use it as a new tool in CMHCs and other settings (e.g. primary care and emergency department) increasing access to specialized care. Therefore, this study provides a systematic review on most recent evidences on the use of telepsychiatry in different settings and analyzes, for each one of those, patients and providers' satisfaction, efficacy (in terms of treatment outcomes), applicability and cost-effectiveness.

Materials and methods

We conducted a review of telepsychiatry literature searching on PubMed, Scopus and PsychInfo for titles and abstracts relevant to our search. The search was based on multiple keywords ("telepsychiatry", "telemental health" and "telemedicine"). When the abstract seemed suitable for our review we examined the full-text to evaluate if it fitted our inclusion criteria: 1) studies published from January 2015 on peer-reviewed journals; 2) written in English; 3) original studies with an accurate prospective or respective design; 4) therapy, services and treatment sessions delivered through telephone or video technology. The last search was conducted in May 2020.

Articles were selected and screened in two phases to minimise the bias. In the first phase two authors (SP e GP) conducted the literature search and reviewed all the abstracts of the studies to identify eligible ones. In the second step full-text articles that suited our inclusion criteria were reviewed and, eventually, selected. The remaining studies were divided into three main categories: 1) telepsychiatry in primary setting; 2) telepsychiatry in emergency department; and 3) telepsychiatry in mental health care setting with a focus on telepsychiatry as a tool for psychotherapy in secondary setting. Every main category had the same four subcategories: a) applicability; b) efficacy (treatment outcomes); c) satisfaction; and d) cost-effectiveness. Some articles were found not to fit our categories and, after reassessing studies' characteristics, were discussed with the first author (LG), who reanalyzed them and made the final decision.

Data collection process

345 articles were obtained by the database search. Other 6 studies were extracted from the reference list of these articles. From the total of 351 articles, 32 were excluded because they were duplicates and then 208 because they did not fit our inclusion criteria. Other 48 were excluded in a second step because they did not describe the use of telepsychiatry in the setting we listed before.
We extracted 63 articles of the 385 retrieved at the beginning and excluded other 17 because they did not report any data regarding our sub-categories and reviewed the remaining 46 articles (Fig. 1).

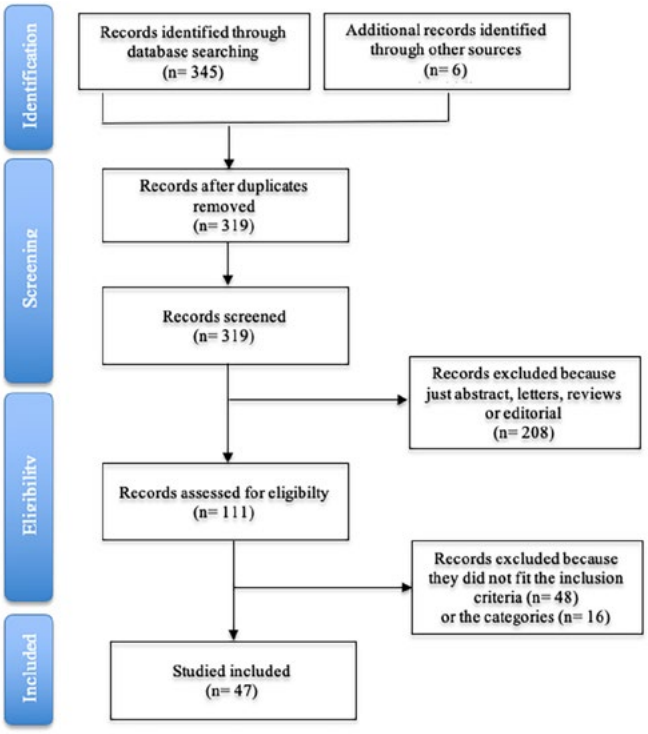

Figure 1.
Data collection process flow diagram.

Results

We identified a total of 351 full-text articles based on our literature search and, after a screening and eligibility process we identified 46 articles (fig.1). Of these 15 evaluated the use of telepsychiatry in primary and consultations settings (3 were randomized controlled trails, RCTs), 6 its application in emergency settings and 25 (of which 11 were RCTs) in secondary and specialized settings with 11 of those with a specific focus on psychotherapy and psychoeducation delivered through new technologies.

Telepsychiatry in primary setting (Tab. I)

Primary care setting is crucial to identify and deliver care to people who suffer from mental disorders, but there is a lack of services in remote and rural areas worldwide, where the shortage of psychiatrists and mental workers leads to poor outcomes and increased the use of emergency department and hospitalization [5]. Primary-care providers (PCPs) report lack of competence in treating and adequately manage mental health disorders. With telehealth, through videoconferencing, telephone, and computer-based communications, specialists can easily communicate with PCPs for patient care. Based on 10 studies [6-15] that use self-rating questionnaire, PCPs and general physicians reported mixed opinion regarding TP consultation. Some studies have reported that PCPs highlight frustration due to TP recommendations which sometimes cannot be made locally and also complain about onerous referral forms and length between consultations, but, on the other hand, PCPs perceived an increase of confidence through specialists' consultation in providing case appropriate care and making suitable treatment decisions [7]. In general allied providers have expressed high level of satisfaction, especially those in rural and remote areas where patients have accessed much easier to healthcare with implementation and integration of primary care with telemental health [12]. Although patients and providers have shown concordance recognizing the importance of the telepsychiatry instrument, patients usually reported higher levels of satisfaction, correlated with the number of sessions attended [8], feeling comfortable and able to communicate adequately, founding sessions as beneficial as direct physical presence and almost all of them would had used it again. For example, Schubert and colleagues have found that almost 80% of patients agreed that TP sessions were easier to attend, allowed them to get healthcare sooner and the vast majority (89.1%) reported that TP saved their and their families' time reducing travel requirement. Overall, 96.3% of patients were satisfied with the use of telepsychiatry and would have used it again stating that consultations via videoconference were as good as in-person visits [12].

Efficacy has been demonstrated in few studies as improvement of global functioning or reduction or remission of symptomatology [15,16]. Hilt and colleagues described an integrated care model to manage behavioural and psychiatric problems in children with a drastic reduction of

Table I. Review of telepsychiatry: primary setting and consultation.

Ref.	Participants				Intervention			Results
	N	Recruitment source	Mean age or range	Target disorder/Population characteristics	Type and structure	Duration/frequency	Provider	Findings
Hilt JR et al.	229	Wyoming Medicaid and Foster Care Division	0-18 y	Each pt had diagnostic issues: Disruptive behaviour disorder (52%); depressive disorder (42%); ADHD (39%); PTSD (36%); anxiety (28%)	1) MDTs 2) Medication reviews (2nd opinion) 3) ETC	229 MDTs 125 medication reviews 277 ETC	Team of TM child and adolescent psychiatrists of University of Washington School of Medicine	**Efficacy**: with TP implementation children < 5 y using psychotropic medication decreased by 42% (p<0.001) and children using psychotropic doses > 150% of FDA maximum decreased by 52% (p<0.001). **Cost**: 1.82 return on investments (net savings/operating expenses)
Shore JH et al.	135	Urban outpatient women's clinic	29.6 y [16-43]	Depression and other mood-related disorders, adjustment disorder and anxiety.	Universal depression screening and virtually embedded BHC and virtual integration of TP services into collaborative care model.	834 contacts between BHC and pt 508 contacts between BHC and social and community support agencies	BHC Psychiatrists Psychotherapists	**Efficacy**: only 24% required psychiatry referral. No pt admitted into psychiatry wards. **Satisfaction**: 85% pt would recommend TP; 86% were comfortable using TP and 92% found TP easy to use.
Pignatiello et al.	43 rural PCPs from a pool of 174 (24.7% response rate) AND 11 (42.3%) of the 26 TP child and adolescent psychiatrist	Telelink Mental Health Program in rural area	n/a	n/a	n/a	Survey and semi-structured interview	n/a	**Applicability**: 58,1% PCPs reported discomfort managing YP with MH issues. 49% made 5-30 referrals/year. **Satisfaction**: 51.3% of PCPs rated the recommendations received as good/very good,7% as excellent,41.7 % as fair to poor.
Christensen LF et al.	199 patients	Primary setting	51.63 y (SD = 15.56)	Moderate-severe depression	1. VCs between specialists and/or GP without the pt. 2.VCs between specialist and GP with the patient present. 3. Follow-up or outpt care of the pt at home. 4. VC from acute ward to a specialist.	Mean n of session 9.79 (SD = 9.03)	Psychiatrists and mental health workers	**Satisfaction**: significant positive correlation between number of sessions attended [Spearman's rho = 0.5777, p < 0.001] and CSQ 8 total score. Correlation persisted after adjusting for age, gender, region, symptoms score, and education level in a multiple linear regression model [p = 0.004].
Christensen LF et al.	201 pt and 161 providers	Primary setting	Pt: 51.59 y (SD =15.53)	n/a	As above	n/a	Psychiatrists and mental health workers	**Satisfaction**: providers had a mean total CSQ-3 score = 9.17 (95%, CI = 8.90-9.45) and pt mean score = 9.70 (95%, CI = 9.44-9.98). Total satisfaction was higher in pt than providers.

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Wojtuszek M et al.	207 (psychiatrists=105; pt=102)	Primary setting	Psychiatrists: 26-75 y Pt: 21-79 y	Psychiatric pt and psychiatrists	n/a	n/a	n/a	**Applicability** ***Pt***: 66% no knowledge about TP, 15% heard about it but did not know the meaning, 18% general knowledge; 1% wide knowledge. ***Psychiatrists***: 15% extensive knowledge, 76% general knowledge, 6% just heard about it, 3% do not know what it means. Only 16% used TP. **Satisfaction. *Pt***: 50% answered positively about TP. ***Psychiatrists***: majority perceive positive aspects but 60% are against general insertion of TP.
Campbel R et al.	87	Remote locations in Ontario	-	Psychiatric pt	TP	n/a	n/a	**Satisfaction**: 95.2% were comfortable with TP, 92.9% were able to communicate adequately; 84.5% found sessions as beneficial as direct physical presence; 98.8% reported that they would use the service again.
Schubert NJ et al.	110 pt and 10 providers	Rural primary care clinics	40.5 y	Outpatients attended to TP consultations appointments	TP consultations	n/a	9 Psychiatrists and 1 psychiatric consultant nurse from urban tertiary academic health center	***PT.* Applicability**: 76.2% pt agreed that TP sessions were easier to attend, saved time (89.1%), allowed them to get healthcare sooner (75.4%) and reduced travel requirement (79.8%), made easier to get healthcare (79.9%) and that is a convenient form of healthcare (86.2%). **Satisfaction**: 96.3% were satisfied with TP sessions. ***Providers.* Applicability**: compared to in-person visit, 100% providers agreed that TP sessions saved their patient time and 94.9% that TP provided pts with earlier access. **Satisfaction**: 100% would use TP again and 100% would recommend TP to their colleagues.
Seritan AL et al.	33	Movement disorders and Neuromodulation Centre	61.1 y (SD= 10.5) [22-74]	Movement disorders with multiple concurrent psychiatric dg (1-5; mean = 2.5 per pt). Most common dg: 79% depressive disorders, 70% anxiety disorders and 39% MND.	119 TP consultation and 62 in-ps visits.	30-60 min	Movement Disorders and Neuromodulation Centre psychiatrist	**Applicability**: 76% pt reported high satisfaction, 19% satisfaction and 5% problems with technical quality of TP. **Efficacy**: of 124 scheduled TP visits, there were 5 no-shows (96% visit completion rate). **Satisfaction**: pt were very satisfied with care (95%), convenience (100%), comfort (95%) and overall visit (95%). 100% would recommend TP to family or friends.
Mayworm AM et al.	270	25 Baltimore public school	-	High school students, care givers and providers	Students accessed to in-ps visits, TP visits or blended therapy (50% sessions in ps and 50% with TP) 548 total visits (65.3% in-ps and 34.7% with TP).	-	7 Child and adolescent psychiatrists from University of Maryland School Mental Health Program	**Applicability**: no difference in psychiatrists' ratings of their ability to identify presenting concerns or in their perception of pt satisfaction across TP and in-ps sessions (p>0.05). **Satisfaction**: ***Parents***: high satisfaction (mean > 4.5 on 1-5 Likert scale). Mean scores were not significantly different between TP and in-ps sessions (p>0.05). ***Students***: Mean scores were not significantly different between TP and in-ps sessions (p>0.05). ***Provider***: high level of satisfaction with both TP and in-ps sessions (all items mean scores >4.00). Providers reported higher levels of satisfaction for in-ps compared with TP sessions (p < 0.01 for all item comparisons).
Dham P et al.	101	Primary settings (referral from GP)	75.89 y (SD =7.55)	Older adult resident in rural areas with psychiatric disorders (100%) and comorbid medical illness (83.5%). Mean MMSE score =24.4 (SD = 4.98)	TP consultation in community hospital or health center in rural and remote regions of South Australia. 51.5% accompanied by clinician from community team, 39.6% by family members.	134 TP consultations: 64.9% recommendations included meds changes with/without psychosocial assessments/treatments and 25.4% recommended in-pt treatment	Adelaide hub psychiatrists	**Satisfaction: *Pt***: Mean scores (on a 5 points Likert scale) feedback raging between 3.88-4.41, with scores> 4.0 across domains of process of referral, waiting times, technical aspects, comfort and satisfaction with the consultation and recommendation. Satisfaction with consultation had a mean score= 4.14 (SD = 0.75); whereas overall expression of dissatisfaction was minimal (2-11.2%). ***Community GP and nurses***: mean score of the feedback ranged from 4.36-4.73 (N= 59, response rate 57.8%), on all questions with> 90% satisfaction. ***Psychiatrists***: (response rate = 81.3%) mean scores ranged between 3.67-4.45. Highest mean score was 4.45 (SD = 0.8) for encouraging of the use of TP. Lowest mean score was 3.67 (SD = 1.39) for preference for TP vs face to face consultation.

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Xiong GL et al.	43 (ATP n=22; STP n=21)	Skilled Nursing Facilities	ATP= 72.9 y (SD = 3.3) STP = 75.5 y (SD =11.1)	Dementia (52%); depression (25%); BD (17%) schizophrenia-primary psychotic disorder (8%)	STP vs ATP for provision psychiatric care in Skilled Nursing Facilities	12 moths follow up	Psychiatrist and trained clinicians	**Efficacy**: both groups improved significantly (CGI scores) at 6 and 12-month follow up ($p < 0.01$). No differences ATP vs STP ($p>0.7$) **Satisfaction**: no significant difference between ATP and STP group (60% reported extreme satisfaction)
Graziane JA et al.	64	Medical-surgical inpatients	67 y	Cognitive Disorders, Delirium, Dementia, Mood Disorder, Adjustment disorder, Anxiety disorder, Conversion Disorder, Psychotic Disorder, OCD, personality disorder	TP inpatient consultation using a standard desktop computer, laptop o tablet on both physician and pt side	n/a	Psychiatrist	**Applicability**: TP can implement and serve an important role in the provision of psychiatric care for rural hospitals.
Yeung A et al.	190 (Intervention group =97, 51%; control group=93, 49%)	Primary Care Setting	50 y (SD=14.5)	MDD (M.I.N.I.)	Intervention= TP-based culturally sensitive collaborative treatment cultural consultation and care management; Control= TAU	6 months	Secondary specialist treatment team	**Efficacy**: odds of achieving response (decrease at HDRS score >50%) (OR=3.9 [95% CI, 1.9-7.8]) or remission (HDRS score <8) (OR=4.4. [95% CI, 1.9-9.9]) were significantly greater for the intervention group. Intervention group had significant greater improvement over time in HDRS ($p=0.002$), CGI-S ($p=0.003$) and CGI-I ($p=0.02$) scores.
Roberts N et al.	60 TP group and 60 FtF consultation	63% Pediatric ED, 20% Primary Care, 18% School	14 y (SD=0.36)	-	Assessment by CAMHUCC: urgent psychiatric assessment within 48 h for pt presenting to the ED, PCP, school boards, and CMHAs + 4 wk intervention for medication initiation, individual and family crisis and behavior management	n/a	Child and adolescent psychiatrist, a social worker	**Satisfaction**: assessed at a 5-point Likert Scale. Pt were willing to have TP appointment (mean score= 4.38, SD=0.49), did not find any differences between TP and FtF consultation (mean score= 3.88, SD=1.08. **Cost**: pt thought that TP saved money to them and their families (mean score=4.58, SD=0.65).

ADHD= attention-deficit hyperactivity disorder; ATP= asynchronous telepsychiatry; BD= bipolar disorder; BHC = behavioural health clinician; CGI-I = Clinical Global Impression Improvement; CGI-S= Clinical Global Impression Severity of Illness; CAMHUCC= Child and Adolescent Mental Health Urgent Consult Clinic; CI = confidence interval; CMHAs= children's mental health agencies; CSQ = Client Satisfaction Questionnaire; ED = emergency department; ETC= Elective Telephone Consultation; FDA = Food and Drug Administration; FtF= face to face; GP = General Practitioner; MDD = major depressive disorder; MDTs= Televideo consults for Multidisciplinary Teams; MH = mental health; M.I.N.I. = MINI international neuropsychiatric interview; MMSE = Mini-Mental State Examination; MND = major neurocognitive disorder; n/a= not applicable; OCD = Obsessive-Compulsive Disorder; PCP = Primary Care Physicians; ps= person; pt= patient; PTSD= Post-Traumatic Stress Disorder; SD= standard deviation; STP= synchronous telepsychiatry; TM= telemedicine; TAU= treatment as usual; TP = telepsychiatry; VC = Video-conference; wk = week; y = year; YP = young people

hospitalizations and accesses to emergency department and a decreased of inappropriate psychotropic dosage (over 150% of Food and Drug Administration maximum) of medication in young patients [17]. Also drop-out and missing sessions seemed to be reduced with TP compared to in-person care [13].

Moreover, telepsychiatry has been applied with benefit with patients of all ages [7,14,17-19], multiple settings of care, as for perinatal screening for depressive disorders [6], movement disorders [13], surgical and medical inpatients [20] and also in schools [18].

Only 2 of the studies we have included reported data on cost-effectiveness, one reporting data of self- reported questionnaire on saving time and money of participants and their families[19] and the other with a cost-effectiveness analysis indicating a positive return on investiments [17].

Telepsychiatry in emergency department (Tab. II)

There is a burden of psychiatric emergencies that, due to the shortage of specialized mental health workers and psychiatrists in local and community centers, increase the amount of access to emergency departments (EDs), where a dearth of psychiatrists leads to problems and inability to correctly manage patients with acute psychiatric disorders increasing hospitalizations and costs for the Health System [21]. TP has been introduced as a fundamental instrument, especially in remote areas [22,23], to enhance the ability to treat psychiatric emergencies. Consultations with psychiatrists via telephone or videoconference substantially decrease the number of EDs accesses after TP introduction [22]. Moreover, telemental health in emergency department reduces significantly the length of stay of patients who will not be admitted [23,25-27] and the turnaround time for assessments compared to face-to-face consultation [24]. Data on admission rates are mixed, with one study reported a significant lowering after specialized consultation via videoconference and another no difference with the introduction of TP programs [25,27].

3 studied indicated a reduction of health care costs with TP compared to in-person consultation [23,25,27], with also one studied underling a lowering of specialists' dwelling time [26].

Telepsychiatry in mental health care setting (Tab. III)

We included 13 studies on the use of telepsychiatry in specialized settings, including psychiatric inpatients clinic and outpatient mental health community centers. One main question is to understand if the use of telepsychiatry in secondary care achieve similar or better outcomes than treatment as usual delivered face-to-face. 6 of those studies were randomized controlled trials that evaluated treatment outcomes of mental health specialized intervention delivered via TP [28-33]. Most of these studied were conducted with outpatients, one showing that there was no difference in therapeutic alliance at the follow up visits between TP and face-to face interventions ($p < 0.005$) [28], and others reporting positive relationships between TP and completion of follow-up visits ($p < 0.005$) with lower drop-out rates compared to TAU [29-30]. Hulsbosch and colleagues showed a significant reduction of severity symptomatology and increase

Table II. Review of telepsychiatry: emergency department.

Ref.	Participants				Intervention			Results
	N	Recruitment source	Mean age or range	Target disorder/Population characteristics	Type and structure	Duration/ frequency	Provider	Findings
Maeng et al.	452 pt in the PAO groups and 761 non-PAO comparison group	Three rural hospital EDs	44.1 y and 38.4 y	n/a	PAO TP program: on site PAO into ED to perform psychiatric and behavioural health examinations; Telementoring between psychiatrists and PAOs; Direct psychiatric consultation	n/a	University of Rochester Medical Centre PAOs and psychiatrists	**Efficacy**: following PAO treatment a reduction in ED visit rates 36.2% per 30-day period (p=0.03) in the 90-day period was observed and a reduction of 44.2% (p<0.01) persisted into the subsequent 90-day period.
Fairchild RM et al.	87	4 Rural ED	5-17 y	Depression- or anxiety-related disorders (49%), suicidal ideation/attempt or self-harm (46%), with substance abuse in 5% of cases	1:1 pt/teleprovider interviews using video-based interaction in a ED examination room for TP visits with distant psychiatric specialist.	n/a	Wabash Valley Rural Telehealth Network providing specialist-based psychiatric care via TP	**Applicability**: mean ED wait times 29 min for children admitted to IP care and 33 min for OP care. Mean LOS of 8 h 56 min for IP care compared with LOS of 6 h 58 min for those discharged to OP care. **Cost**: mean total payor reimbursements were lower than actual ED costs (p<0.001)
Brenner R et al.	206 pt in TP group and 186 pt in control group	General hospital non-psychiatric ED	>18 y	n/a	Emergency psychiatric consultation using TP in general hospital ED vs FtF traditional consultation	n/a	Mental health care psychiatrists	**Efficacy**: 84% reduction in the turnaround time for TP consults compared to FtF consultation **Satisfaction**: 97% of the pt were satisfied with TP services
Narasimhan, M et al.	7261 ED psychiatric pts treated via TP vs 7261 matched psychiatric pts treated in ED without mental health personnel	Nonpsychiatric ED	35.7 (SD= 14.9)	Psychiatric admission diagnosis (schizophrenia, BD, MDD, substance use disorder, MND, other (ICD codes 290-319)	TP referral: review ED intake form, health record, conduction of a standard history and MSE, elaboration of treatment plan with recommendations, management in ED, 2nd visit or consultation if warranted	n/a	South Carolina Department of Mental Health (SCDMH) TP intervention	**Efficacy**: TP pts were less likely admitted to the hospital (11% vs 22%; p<0.001). TP consult during the index ED led to a reduction of 0.86 days in inpatient LOS. **Cost**: 30-day inpatient costs were $2,336 (p= 0.04) lower for TP, but 30-day total health care costs were not statistically different.
Reliford A et a.	-	Pediatric ED	-	-	Evaluation by the physician on duty through TP	n/a	Child and adolescent psychiatrists	**Efficacy**: TP significantly reduced the total monthly LOS for nonhospitalized pts in ED (p = 0.032). **Cost**: TP on average saved psychiatrists 46.2 h of time saved in total for weekend calls during the study period.
Thomas JF et al.	494	Pediatric psychiatric ED in rural areas	< 18	Pediatric pts presenting to ED with acute behavioral health condition: suicide intent with plan (26.1%), Self-harm no plan (43.7%); harm to others (9.1%); depression or anxiety (14.6%); hallucinations or delusions (3%); unknown (3%)	TP Intervention with synchronous consultation vs TAU	n/a	Children's Hospital Colorado providing ED TP consultation	**Efficacy**: children receiving TP consultations had shorter median ED of stay (5.5 h vs 8.3 h, p< 0,01). **Costs**: children receiving TP consultations had lower total patient charges (p< 0.01). **Satisfaction**: providers and patients' caregivers reported high satisfaction with TP.

BD= bipolar disorder; ED = emergency department; freq = frequency; FtF= face to face; h = hours; ICD = International Classification of Diseases; IP= inpatient; min = minutes; MDD = major depressive disorder; MND = major neurocognitive disorder; MSE = mental state examination; LOS = length of stay; OP= outpatient; n/a= not applicable; PAO = Psychiatric Assessment Officer; pt= patient; t = time; TAU= treatment as usual; TP = Telepsychiatry; y = year

Table III. Review of telepsychiatry: specialized settings.

Ref.	Participants				Intervention			Results
	N	Recruitment source	Mean age or range	Target disorder/Population characteristics	Type and structure	Duration/ frequency	Provider	Findings
Lal S et a	51	FEP Clinic of the University of Montreal Hospital Centre	26.1 y (SD= 4.1) [18-38]	FEP	Questionnaire	n/a	n/a	**Satisfaction**: 49% (n = 25) were very favorable
Das S et al.	50	Mental Health Centre, pt after discharge from inpatient unit in rural area (India)	35.8 y (SD = 15.1)	Schizophrenia and related disorders (36%); BD (32%); Anxiety disorders (18%); depression (8%); organic disorder and alcohol dependence (2%). Mean DOI = 10.1 y (SD= 10.5)	After discharge consultation: video-based TP consultation (halfway between discharge date and regular in-ps follow up date).	1	Tele Medicine Centre, Department of Psychiatry	**Applicability**: 100% pt attended to TP consultation. 22% video-consultation received scanned copy of original prescription through emails. **Satisfaction**: 96% pt wanted to repeated TP consultations. **Cost**: TP saved a mean of ₹20000 (SD = 31729₹) for pt and their family
Legha RK et al.	103 in TP group and 103 in control group	Residential substance abuse treatment program in Alaska Native community	TP group 38.6y (SD = 11.5) Control group 38.7y (SD = 10.9)	SUD AND at least one psychiatric comorbidity (most frequent: depression, BD, PTSD)	2 h/w TP services leads by psychiatrists. Staff support through TP (phone contact daily and VC weekly) including supervision, training, case coordination and planning and program development.	6.1 (SD =4.3)	Psychiatrists	**Efficacy**: 1) Pt who received iTP stay engaged longer: mean LOS (days) in TP group 154.8 (SD = 69.5) and 110.3 (SD = 76.3) in control group (p< 0.001). 60.2% pt in TP group and 44.7% of control group completed treatment (p = 0.03). Odds of treatment completion 99% greater for pt in TP group than those in control group (OR = 1.99, 95% CI = 1.12-3.56; p = 0.02).
Mazhari S et al.	50	IP psychiatry department of a university-affiliated hospital	35.2 y [21-62]	n/a	All patients were interviewed by a psychiatrist once FtF and once by VC by another psychiatrist.	n/a	Psychiatrists	**Applicability**: 85% patients found TP easy to use. **Efficacy**: diagnostic agreement between the 2 interviewers was 75%. **Satisfaction**: 82.5% patients would recommend TP; 85% would prefer TP for follow-up visits; 77.5% felt they could express everything they wanted through VC
Hantke N et al.	40	Western Telemental Health Network of Veterans Affairs, an expansion of MHS	71.46 y (SD = 5.74) [65–88]	MDD (20%), PTSD (18%) or co-occurring (33%), anxiety disorder (10%), BD (8%), schizoaffective disorder (3%), ADHD (3%), delusional disorder (3%), and MND (6%).	n/a	Telegeropsychiatry (assessment, medication reviews, etc.)	Psychiatrists	**Satisfaction**: 90% reported liking or even preferring TP as an option to receive psychiatry service. **Cost**: Participants saved an average of 168 driving miles (SD = 59.2; range 2–480) each visit.
Farabee et al. RCT	104 (TP, n=40 vs FtF, n=64)	OP psychiatric care	38.1 y (SD =10.3)	Parolees referred to psychiatric care	Evaluation of satisfaction with treatment, therapeutic alliance, medication adherence	n/a	n/a	**Efficacy**: No significant groups differences in medication adherence and psychological functioning. At follow up TP patients had lower therapeutic alliance (p <0.05) **Satisfaction**: high satisfaction with TP

(continues)

(follows)

								reported (TSQ quality of care= 3.7, SD =1.3; TSQ similarity to FtF encounters 4.0, SD =1.3)
Haghnia et al. RCT	671 (37 experimental arm and 34 control group)	Tabriz Fajr Psychiatric Hospital	Intervention group 51 y (SD = 3); control group 49 y (SD =3) [45-60]	Iranian war veterans with PTSD (ICD-10)	TP experimental group vs TAU (FtF sessions) control group Treatment sessions = Ads management, psychoeducation and brief supportive counseling	Firsts 3 session FtF consultation both arms, then 6 weekly sessions TP or TAU of 20 min	Psychiatrists	**Efficacy**: positive and significant relationship was found between the use of TP and the completion of follow up sessions (p =0.001). **Satisfaction**: average response was > 2.5, indicating that most participants were willing to complete therapy sessions. **Cost**: significant positive relationship was found between reduction in treatment costs and TP (p =0.001).
Tarp K et al. RCT	71	Public OP alcohol clinic	TAU = 47.3 y (SD=12.4) TAU-I = 46.0 y (SD=13.5)	Alcohol use disorder	TAU-I group had the option to choose to receive TAU via VC	3-6-12 months follow up. Mean duration of treatment = 7 months. Treatment session = 30-60 min, 1-3/w	Psychiatrists and trained and supervised nurses and social workers	**Efficacy**: TAU-I group had lower dropout rate at 6 months follow up (p=0.008) and 12 months follow up (25% vs 44%, p=0.02). More patients in TAU-I group were still attending treatment after 1 year (p=0.03).
Cheng KM et al.	86 OP in custody for TP and 249 age-matched OP in custody TAU	Correctional Services Department	Intervention group=40.4y (SD=11.0); control group=40.2y (SD=9.2) [21-64]	Intervention group: SUD 52.3%, schizophrenia 27.9%, affective disorder 5.8%, others 14.0%. Control group: SUD 51.8%, schizophrenia 15.7%, affective disorder 7.2%, others 25.3%.	TP consultation vs FtF consultation at specialist OP clinic	Intervention pt attended a maximum of 4 consecutive TP consultations, after which they had FtF follow-up consultation. Control pts attended only FtF consultations	Psychiatrists and psychiatric nurses	**Efficacy**: pre-post difference in GHQ-12 score in the intervention group was significantly higher than that of TAU group (p=0.023). **Satisfaction**: scores on the satisfaction survey questionnaire ranged from 9 (the most satisfied) to 45 (the least satisfied). Mean satisfaction score of intervention group was 16.48 (SD=4.35).
Hungerbuehler I et al. RCT	104 OP (53 intervention group and 54 TAU)	OP psychiatric university clinic	35.64 y (SD= 8.33) [18-64] Intervention group: 35.42 y (SD= 8.18) TAU: 35.87 y (SD= 8.53)	Mild depression (M.I.N.I. + PHQ-9 >5 and HDRS < 17)	TAU = monthly FtF consultations at the psychiatric hospital with their psychiatrist. Intervention = monthly home-based consultations with psychiatrists using VC	All pt had in-ps consultation at baseline, after 6 and 12 months. In between: 8 monthly consultation via VC or in-ps depending on the treatment condition	7 Psychiatrists from Institute of Psychiatry of San Paulo Medical School trained in implementing consultations via VC	**Efficacy**: ***severity of symptoms***: each group showed a significant decrease in severity of depression (p<0.001) and increase in mental health status (p=0.001). ***Drop-out***: at 6 months there were significantly more drop out in FtF group than VC. ***Compliance***: pt in FtF group tended to miss more appointments than pt in VC group (p=0.06). ***Working alliance***: both groups showed significant increase in working alliance during the 12 months (p<0.001). **Satisfaction**: satisfaction significantly increased during the first 6 months among the whole sample (p=0.04).
Hulsbosch AM et al. RCT	93	Community mental health teams	46.28 y (SD =10.66) [24–72]	OP with severe mental illness (SCID-I and low functioning)	Experimental group received VC on top of TAU and control group received TAU	18 months	Integrated specialist team	**Efficacy: f**or none of the secondary outcomes (QoL, loneliness, psycho-social functioning, care needs) a statistically significant time by treatment interaction effect was found. **Satisfaction**: statistically significant time by treatment interaction effect was found for the grades given by the pt (p=0.03).
Zheng W et al. Retrospective chart review	100 (TP = 46, FtF= 54)	West Virginia University Department of Behavioral Medicine and Psychiatry	TP= 37.2 y (SD=7.6) FtF=34.4 y (SD=9.9)	Opioid Use Disorder	Opioid use disorder treatment through both FtF and TP clinics by using an interdisciplinary team approach	-	Integrated team (psychiatrists, psychologist, nurse, mental health and social workers)	**Efficacy**: 49% of TP group attaining 90 consecutive days and 37% of FtF group (p=0.31). Among those reaching 90 days of abstinence time, 43% TP and 27% FtF pt did not use any additional substances.
Shulman M et al. RCT	22 (of 222 of identified): TP=11 and TAU=11. 6 (of 48) providers	Zucker Hillside Hospital out-pt clinic, NY	TP= 42 y (SD=11) TAU= 37 y (SD=10) [18-65]	OP: 36% Schizophrenia spectrum disorder, 36% Mood disorder, 27% anxiety disorder, 45% multiple axis I disorders + comorbid personality disorder 27%, SUD 27%, medical condition 82%	Home-based consultation through TP vs TAU (in-ps consultation)	6 months. Frequency of visits continued as clinically indicated in both groups (mean 1/month)	Psychiatrist, residents, nurse practitioners	**Efficacy**: Pt in TP group missed 23% (SD= 25) of scheduled visits, and TAU group missed 31% (SD=19). Improvement from baseline did not differ significantly between TP group and TAU. **Satisfaction**: no statistically significant differences between TP and TAU pt regarding satisfaction.
Gentile JP et al.	900	Pt discharged from developmental centers and state psychiatric hospital	-	Developmental disability	Provision of educational programs, 2nd psych assessments, and county collaborative team development)	n/a	Multidisciplinary team from Ohio's Coordinating Center of Excellence in Intellectual Disability	**Efficacy**: ED visits decreased 96% (from 195 to 8) and hospitalizations decreased 85% (from 74 to 10) compared to previous year. **Cost**: state saves approximately US$80,000 per person per year.

ADHD = Attention-deficit Hyperactivity Disorder; BD = Bipolar Disorder; CI = confidence interval; DOI = duration of illness; FEP = first episode psychosis; FtF = face-to-face; GAD = Generalized Anxiety Disorder; GHQ-12= General Health Questionnaire; HDRS = Hamilton Depression Rating Scale; iCBT = internet-based CBT; IP = inpatient; LOS = length of stay; MDD = Major Depressive Disorder; MHS = Mental Health Service; min = minutes; M.I.N.I. = MINI international neuropsychiatric interview; MND = major neurocognitive disorder; n/a= not applicable; OP = out patients; OR = odds ratio; out-pt = outpatient; PD = Panic Disorder; PHQ-9 = Patient Health Questionnaire; ps = person; pt = patient; PTSD = Post-Traumatic Stress Disorder; QoL = quality of life; SCID= Structured Clinical Interview for DSM Disorders; SD = standard deviation; SUD = Substance Use Disorders; TAU = treatment as usual; TAU-I= implemented treatment as usual; TP = telepsychiatry; TSQ = Telemedicine Satisfaction Questionnaire; VC = videoconference; VHA= Veteran's Health Administration; y = year.

in mental status both after treatment delivered via TP and in- persons (p < 0.01), significantly lower rates of drop-out in TP treatment at 6 and 12 months follow-up (p =0.004) and a better compliance in TP group [12]. Interestingly applicability of a large number of different types of interventions have been shown to be delivered via telemental health both in young and elderly population [34,35], in substance abuser both in residential facilities and outpatients clinics [30,36,37], in parolees and outpatients in custody [28,38], and from mild-severe neurotic to severe psychotic patients [31,32], with satisfaction and benefits. Few studies reported data regarding cost- efficiency, some of those with self-questionnaire completed by patients and their families on the saving of their time and money with psychiatric intervention delivered through telepsychiatry [35,40] some others focusing on the reduction of services' costs with TP [29,33].

Even if there is not standardized method reportinging satisfaction, there is quite an agreement on determine high

satisfaction both from patients and providers with tele-delivered interventions [30-40].

Telepsychiatry as a tool for psychotherapy in secondary setting (Tab. IV)

We included 11 studies on the use of blended therapy, stepped or fully in-person delivered cognitive behavioural therapy [41-51]. Only five of these articles had RCT design with quantitative data on outcomes of the therapy. Friedl and colleagues reported that patients' more severe symptomatology and worse general functioning at the baseline predicted worse outcome with face-to-face CBT compared to internet-based CBT [41]. Some studies demonstrated a trend of equivalence of in-person and CBT delivered through telepsychiatry and at post-treatment assessment equivalent therapy alliance in both arms ($p < 0.001$) [45], lower drop-out rates in iCBT arm [46] and significant reduction of symptomatology comparable with the two different types of intervention [47,48,51]. Population of the studies included only neurotic diagnosis (mostly mood, anxiety and stress-related disorders), where iCBT has demonstrated to be an applicable and effective instrument, comparable to traditionally delivered psychotherapy.
An interesting type of intervention is the stepped program, where iCBT, considered as a low-intensity care, is given to all patients at the beginning and, for those who do not respond, the treatment is stepped up to face-to-face CBT (fCBT), considered as a higher-intensity level of care [44]. Nicholas et colleagues reported that more than 75% of participants did not need to be stepped to fCBT, indicating that psychotherapy delivered through TP could be an effective instrument for many patients, increasing their access to psychotherapy also at the CMHCs.
Both by participants and providers reported high levels of satisfaction, with some studies highlighting a trend of satisfaction's increase with treatment sessions with videoconference-delivered therapy and a decrease with in-person therapy [49].

Conclusion

Our study confirmed that there is a solid evidence for the use of telepsychiatry as a tool to deliver mental health care in different settings.
Implementation with telepsychiatry in primary settings and CMHCs has shown strong evidences, whereas we still lack solid data regarding hospital and liaison medicine, despite the fact that few studies showed a good efficacy, especially in remote areas. Nonetheless, it's worth to be highlighted that emergency departments of these articles differ from Italian ones, because in US, where most of these studies are conducted, lots of hospital and emergency facilities do not have psychiatric service on site.
Evidences suggest interesting applications for our National Health System in the context of primary care, integrating telepsychiatry as a facility into collaborative care programs. In this context it could be used both to carry out diagnostic assessments and therapeutic reviews of mild-moderate disturbances and to give a second consult to PCPs (e.g. introducing or reviewing pharmacological treatment). As our review shows, implementation with telepsychiatry in this setting is easy to perform, cost-efficient and lead to good satisfaction's response from both patients and providers.
Positive outcomes were highlighted also in specialized settings (CMHCs), where different types of interventions (psychotherapy, psychoeducation and pharmacological follow ups) can be delivered from different mental workers profiles in an integrated model of care.
Integration of telepsychiatry into CMHCs would represent the true post-COVID revolution into our National Health System in terms of higher accessibility to care for our patients with lower costs and comparable efficacy and effectiveness. For example, a blended model of care could be used to monitor patients living in remote areas, far away from CHMC, in order to extent the possibility to access to care, including psychotherapy, and to closely monitor therapeutic program of patients living into residential facilities. Furthermore, the opportunity to remotely supervise different mental workers professional profiles by those more specialized and experienced, would enlarge the possibility to deliver high standard of care also in remote clinic and centers and residential facilities.
It is essential, in order to achieve a higher diffusion of telepsychiatry, to overcome administrative and bureaucratic problems (e.g. informed consent), cultural oppositions of mental workers and to develop digital system to be used into CHMC. Nevertheless, these problems seem to have been overcome during COVID-19 pandemic emergency and this could represent a new opportunity to improve the use of telepsychiatry in mental health services.
Lastly, although there are solid evidences supporting the implementation of mental health services with telepsychiatry programs worldwide, we are not aware of literature regarding diffuse and consistent experiences in Italy before COVID-19 pandemic emergency. The rapid spread of telepsychiatry during this period should represent a stimulus to realize studies and pilot projects to start integrating this fundamental tool into mental health care.

Take home messages for psychiatric care

- Telepsychiatry represents a valid and cost-effective tool to increasing access to specialized care for patients
- Patients and providers reported satisfaction with the use telepsychiatry
- Telepsychiatry can be integrated as an instrument into our model of care, overcoming bureaucratic, administrative and cultural limitations

Table IV. Review of telepsychiatry: psychotherapy.

Ref.	Participants			Intervention			Results
	N	Recruitment source	Mean age or range	Target disorder/Population characteristics	Type and structure	Duration/ frequency	Provider	Findings
Rhee et al.	3	Primary care	58 y	Mild-moderate depression (HAM-D >=16) In HIV-Positive Adults	CBT/CBT TP	11	Psychiatrist	**Efficacy**: HAM-D had a reduction of the 29.4% at wk 4 and of 26.7% wk 8 with CBT-TP. **Satisfaction**: 85.7% of providers were totally satisfied with TP. 100% of pt were comfortable, satisfied and would have used TP again.
Friedl N et al.	251	Primary and specialized MHC	41.0 y (SD =13.7)	MDD (M.I.N.I. and PHQ-9 > 5)	Blended treatment (fCBT combined with iCBT) vs TAU	11-20	CBT therapists	**Efficacy**: higher baseline symptomatology predicts better outcomes in iCBT, whereas Pt's symptomatology and general functioning predicted worse TAU outcomes
Mol M et al.	21 Therapists	Mental Health Care Organization	38 y (SD =9.5) [24-60]	n/a	Integrated bCBT protocol where fCBT and iCBT sessions were alternated.	10	CBT trained psychologists, MH nurses and psychiatrists	**Satisfaction**: 77% of therapists stated that bCBT met all their needs, 94% were overall very or mostly satisfied with bCBT and 97% would recommend bCBT in the future to their pt
Nicholas J et al	312 randomized participants (151 iCBT stepped care arm)	General Population	33 y [27-49]	MDE (M.I.N.I. and QIDS >12)	Stepped program: iCBT; if non-responders (PHQ > 16 between 4th-8th w or > 12 btw 9th-13th w or > 8 after 13th w) stepped up to tCBT	**iCBT**: 20 wk modular program via audio-video clips + 15 min calls from therapists wk. **tCBT**: 1 h phone session per wk + strategies and social skills training.	Therapists	**Efficacy**: 76.2% of participants did not meet criteria to be stepped up from iCBT; 23.8% stepped during the treatment period. Pre-treatment PHQ-9 score was significantly associated with meeting stepping criteria within the treatment period (p=0.049). Participants who stepped early had a higher median pre-treatment depression severity.
Maieritsch KP et al. Rct	90	Veterans of Iraq/Afghanistan conflict from two VHA hospitals in USA	30.93 y (SD=6.05)	PTSD at SCID I (CAPS >45)	CPT in ps or over VC	50 min	8 CPT-trained doctoral level psychologists	**Efficacy**: Trend of equivalence between treatment arms (p=0.094).
Kemmeren LL et al. RCT	200	Mental Health Care Setting	41.7 y (SD = 12.9)	MDD (M.I.N.I. and PHQ-9 > 5)	bCBT (minimum 1/3 of fCBT sessions + minimum 1/3 of iCBT sessions) vs TAU (psychotherapy and/or pharmacotherapy)	10-20 wk	Trained psychotherapists and psychiatrists	**Efficacy**: drop out rated of bCBT was lower (13.5% never starting treatment and 22.5% not complaint).
Mathiasen K et al.	60 OP treated for depression; 143 OP treated for anxiety	iCBT clinic Internetpsykiatrien (secondary OP's clinic)	Pt with depression =36.03 y (SD = 10.97) [19-67]. Pt with anxiety = 36.80 y (SD = 13.55) [19-69]	Dg (ICD-10): MDD, PD, agoraphobia, social phobia, specific phobia, GAD	iCBT	iCBT treatment program and weekly or biweekly clinical support	Licensed clinical psychologists	**Applicability**: of all pt with depression 61.7% completed the treatment. Among pt with anxiety, 39.9% completed treatment. **Efficacy**: significant reduction in depressive symptoms on PHQ-9 (p<0.001) with a large effect size (d=1.0). Pt with anxiety had a significant reduction in the symptom level on the GAD-7 (p<0.001) with a large effect size (d=1.1). Noncompleters showed a significant decrease in symptom severity (p=0.004), with a lower yet moderate-to-large effect size (d=0.7). There was a nonsignificant trend in the interaction between treatment effect and noncompletion (p=0.08).
Valentine LM et al.	250	Clinical Video Telehealth service at a VHA hospital	45.4 y (SD= 14.8)	Mood (42%) (average PHQ-9= 12.6 (SD = 5.9); anxiety (38%) (mean GAD-7=12.4 (SD=4.9) and other (20%) disorders (M.I.N.I.)	Psychotherapy via VC	154 (62%) referred for home-based CBT and 96 (38%) were referred for CBT to one of three CBOCs	Psychotherapists	**Applicability**: 37% of veterans attended at least one therapy visit. On average, veterans attended 5.2 (SD =4.6; range=1-23). **Efficacy**: significant difference in the n of appointments based on dg (p=0.02) with a medium-to-large effect (partial η^2=.09). Veterans with mood disorder attended significantly more appointments than those with anxiety disorders (6.7 versus 3.8 visits). Scores on GAD-7 were negatively correlated with n of CBT visits (p < 0.05).
Lawn S et al.	680	Pt after acute hospital admission for anxiety and depression	Completers 55.5 y (SD=15.6); Non-Completers 52.1 y (SD=16.3)	Depression or Anxiety	Mindstep: LiCBT delivered by phone	Assessment =1 h; treatment session=30 min over 6-8 wk	LiCBT coach under clinical supervision	**Applicability**: clients valued the ease of access positively. **Efficacy**: completion rate 62.7%. Completers (n=427) large ES for post treatment PHQ-9 (d=1.03) GAD-7 (d=0.99); recovery rate 62% (95% CI:57-68). **Satisfaction**: qualitative data showed positive attitude towards Mindstep both from clients and coaches.
Bidargaddi N et al.	241	Pt after acute ED admission for anxiety and depression	37 (SD=15) [18-65]	-	Telephone-based LiCBT after crisis presentation	At least 2 sessions over a duration varying 2-8 wk On average 4.1 (SD=2.3) sessions, including initial FtF assessment	-	**Efficacy**: at the end of the treatment 59% of pt met the criteria for recovery. 27% pt responded and provided data at 12 months follow up: they had significantly lower scores for GAD-7 (tp<0.01), PHQ-9 (p<0.01) and WSAS (p<0.01) than the rest of the sample. ANOVA analysis showed significant improvement in PHQ-9, GAD-7 and WSAS at follow-up compared to initial assessment (p<0.01).
Gehrman P et al.	214	Veterans from VHA	57.8 y(SD=12.9)	Insomnia, medical (chronic pain) and psychiatric (PTSD and depression) comorbidities	CBT-TP for insomnia was delivered in a 6-session protocol. The target group size was 6-8 veterans.	6 total weekly session. Duration of sessions: 60-90 min	Clinical Psychologists	**Efficacy**: mean ISI score at baseline=19.8 (moderate severity of insomnia). After last treatment session, mean ISI score was significantly decreased (p < 0.0001). **Satisfaction**: quality of the TP connection was rated as very high and described as more than adequate to provide good clinical care from pt and providers.

bCBT = blended CBT; CAPS = clinician-administered PTSD scale; CBOC= community-based outpatient clinic; CBT = Cognitive behavioural Therapy; CBT-TP= telepsychiatry Cognitive Behavioural Therapy; CPT = Cognitive Processing Therapy; ED = emergency department; ES = effect size; fCBT = face-to-face CBT; FtF= face to face; GAD = generalized anxiety disorder; GAD-7 = Generalized Anxiety Disorder-7; h = hour; HAM-D = Hamilton – Depression scale; HIV= Human immunodeficiency virus; iCBT= internet-based CBT; ISI = Insomnia Severity Index; LiCBT= low intensity cognitive behavior therapy; MDD = major depressive disorder; MDE = Major Depressive Episode; MH = mental health; MHC = mental health center; min = minutes; M.I.N.I. = MINI international neuropsychiatric interview; n = number; OP = out patients; PHQ-9 = Patient Health Questionnaire – 9; PD = Panic Disorder; ps= person; pt = patient; PTSD= Post-Traumatic Stress Disorder; QIDS = Quick Inventory of Depression Symptomatology—Clinician Rated; SCID= *Structured Clinical Interview for DSM Disorders;* TAU= treatment as usual; tCBT = telephone-based CBT; TP = telepsychiatry; VHA= Veteran's Health Administration; wk = week; WSAS= Work and Social Adjustment Scale

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