

The therapeutic relationships, empathy, and satisfaction in teleconsultation for substance use disorders: Better or worse than in-person consultation?

Abhishek Ghosh¹, Tathagata Mahintamani^{1,2}, Kshitiz Sharma¹, Geetesh Kumar Singh^{1,3}, Renjith R. Pillai¹, Subodh BN¹, Debasish Basu¹, Surendra K. Mattoo^{1,4}

¹Drug Deaddiction and Treatment Centre, Department of Psychiatry, Postgraduate Institute of Medical Education and Research, Chandigarh, ²Department of Psychiatry, Lokopriya Gopinath Bordoloi Regional Institute of Mental Health, Tezpur, Assam, ³Department of Clinical Psychology, National Institute of Mental Health and Neurosciences, Bengaluru, Karnataka, ⁴Department of Psychiatry, Adesh Medical College and Hospital, Kurukshetra, Haryana, India

ABSTRACT

Context: Telemedicine has become one of the essential modes of healthcare delivery. Different aspects of the physician–patient relationship during tele and in-person consultation need to be studied.

Aims: This study aimed to compare perceived empathy and therapeutic relationship between tele and in-person consultation and assess the patient's satisfaction during teleconsultation for substance use disorder (SUD).

Methodology: We consecutively recruited 100 adult patients with SUD, registered to the tele-addiction service between June and September 2020, and experienced both video and in-person consultations. We assessed therapeutic relationships, perceived empathy (for teleconsultation and in-person consultation), and patients' satisfaction (with teleconsultation) with specific scales. We compared the scores of the therapeutic relationship and physician empathy scales for tele and in-person consultation.

Results: The mean age of the patients was 35.5 (± 10.4) years. Sixty percent had alcohol, followed by opioids (42%) and cannabis dependence (24%). Sixty percent of patients had comorbid tobacco dependence. Telehealth satisfaction (TSS) rating shows around 40% of patients had difficulty accessing the telehealth service and 7% felt their privacy was poorly respected. The mean total therapeutic relation (STAR) ($t = -14.4$; $P < .001$), positive collaboration ($t = -12.8$; $P < .001$), positive clinical input ($t = -11.9$; $P < .001$), and total Patient's Perceptions of Physician Empathy (PPPE) score ($t = -8.4$; $P < .001$) were lower in the teleconsultation than in-person consultation group. TSS was positively correlated with positive collaboration, positive clinician input, and STAR total score.

Conclusions: Our study suggests a stronger therapeutic relationship and higher physician empathy during in-person consultations. Poor accessibility and privacy concerns were critical challenges in telehealth service. TSS and therapeutic relationships positively influence each other.

Key words: Empathy, substance use disorders, telemedicine, therapeutic relationship

Address for correspondence: Dr. Abhishek Ghosh, Drug De-Addiction and Treatment Centre and Department of Psychiatry, Postgraduate Institute of Medical Education and Research, Chandigarh, India.
E-mail: ghoshabhishek12@gmail.com

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INTRODUCTION

Psychiatric illnesses in general and substance use disorders, in particular, are characterized by a wide treatment gap. In India, the treatment gap for overall mental illnesses is around 83%, whereas it is around 90% for substance use disorder (SUD).^[1] Multiple factors, such as the limited availability and access to treatment, and the stigma associated with the illness, compounded by a shortage of human resources, contribute to this treatment gap. These limitations are more significant in lower- and middle-income countries such as India.^[2] Over the last few decades, various forms of synchronous and asynchronous telemedicine-based initiatives in psychiatry have been used in India to bridge the gap in the accessibility of mental healthcare.^[3] The use of telemedicine in SUD was limited before the Coronavirus disease 2019 (COVID-19) emergent lockdown and restriction of human movement.^[4] The suddenly imposed lockdown in India resulted in the abrupt stoppage of supply of both licit and illicit substances, and the movement restriction and closure of routine outpatient-based consultation services curtailed the access to treatment for patients with SUD. The combined effect of both was associated with severe withdrawal, suicide attempts, criminality, and use of the adulterated substance.^[5] Telemedicine has emerged as an alternative treatment approach to address the problem. The telemedicine practice guideline was released in April 2020, followed by telepsychiatry guidelines.^[6] We started a direct, synchronous, and hierarchical model of telehealthcare for SUD.^[7]

Adherence and success of any treatment modality depend on specific and non-specific factors. The therapeutic relationship, empathy, and patient satisfaction are important non-specific factors affecting treatment engagement.^[8] The therapeutic relationship consists of evaluating the patient's condition, tailoring treatment as per his/her requirement, and expert technical knowledge regarding the treatment options.^[9] It is at the center of care delivery in mental healthcare services. A recent review suggests that manipulation of the therapeutic relationship has a small but significant effect on both objective and subjective clinical outcomes.^[10] Empathy involves understanding the patient's condition and imagining oneself in that condition. The efficacy of a structured treatment for SUD can widely vary depending on the therapist's empathy. As a result, some researchers consider empathy a core competence for therapists treating SUD.^[11] *Digital empathy* is defined as "traditional empathic characteristics such as concern and caring for others expressed through computer-mediated communications."^[12] Patients' satisfaction is a complex concept. Various authors conceptualized satisfaction according to the expectation regarding the clinician encounter, treatment outcome, or patients' cognition. Satisfaction is sometimes conceptualized as an individual's positive evaluation of different dimensions of healthcare.^[13] The therapeutic relation, empathy, and

satisfaction are interrelated constructs. Studies regarding these therapeutic characteristics among the substance-using population are limited. Our study aimed to (i) compare the quality of therapeutic relationship and perceived empathy between telemedicine-based treatment and in-person treatment for SUD study, (ii) assess satisfaction with the telehealthcare, and (iii) determine the clinical and demographic correlates of the therapeutic relationship, telehealth satisfaction, and perceived empathy.

SUBJECTS AND METHODS

Study Setting: The study was conducted in a tertiary care general hospital addiction psychiatry set-up. We adopted a synchronous, stepwise, direct care model with three hierarchical steps of service delivery: telephonic, video, and in-person consultation. A psychiatrist provides all levels of consultations. The aims of telephonic consultation include obtaining a brief history, basic clinical assessment, choosing the treatment intensity, providing a brief psychological intervention, and explaining further consultation and treatment. Video consultation (VC) is considered for patients requiring detailed clinical assessment (e.g., dual diagnosis, complicated withdrawals), prescribing medications, and confirming patient identity. The video consultation (VC) happened on a Zoom platform or through a WhatsApp video call. A proportion of patients are also advised for in-person consultation (e.g., in cases that require detailed physical examination because of medical co-morbidities, presence of severe withdrawals, risk of suicide or overdose, and for prescribing medications which cannot be prescribed through telephonic consultation). We presented a detailed description of our model elsewhere.^[7]

Study Design and Sample: This was a cross-sectional survey of patients registered in the addiction treatment center between June 1 and September 30, 2020. We included 18–65 years old patients of either sex, with at least one experience of VC and in-person consultation. We excluded those with current psychotic symptoms, delirium, or other causes of severe cognitive impairment. We recruited 100 patients consecutively. The study intake period was between September and December 2020.

Sample Size Estimation: We assumed the effect size of the difference of primary outcome variables (i.e., STAR-P and PPPE scores) between matched pairs to be 0.3. A sample size of 97 was required for an α -error probability of 5% and 90% power.

The study was approved by the Institutional Ethics Committee. We obtained written or verbal informed consent from all study participants.

Assessment tools

Sociodemographic and clinical profile: Socioeconomic class was identified based on the modified Kuppuswamy

scale.^[14] Sociodemographic parameters assessed in our study included age, occupation, education level, and locality. The clinical record form included age of onset and duration of a SUD, duration of treatment (both in teleconsultation and in-person settings), and adherence to treatment using the Brief Adherence Rating scale.^[15]

Scale to Assess the Therapeutic Relationship in Community Mental Health Care Patient (STAR-P) version: This scale has 12 items. It assesses the perceived quality of therapeutic relationships in mental health care settings. It comprises three subscales-positive collaboration, positive clinician input, and non-supportive clinician input. Test-retest reliability for STAR-P was found to be $r = 0.76$, and its factorial structure was found to have a good fit.^[9]

Jefferson Scale of Patient's Perceptions of Physician Empathy (PPPE): It is a 5-item scale. It aims to assess physician empathy from the patient's perspective. The reliability coefficient (Cronbach's α coefficient of internal consistency) for the Jefferson scale of PPPE is 0.58; the 5-item scale makes it suitable to apply over a telephonic assessment.^[16]

Telehealth Satisfaction Scale (TSS): This scale consists of 10 items and assesses the level of satisfaction of patients with the telehealth service being provided to them. It has a good psychometric property (Cronbach's $\alpha = 0.90$).^[13]

Study procedure

We made a list of participants who met the primary eligibility criteria (i.e. experienced both video and in-person consultation during the defined study period). We telephonically contacted those who did not meet the clinical exclusion criteria. Among this group, those who could not be contacted and did not consent to participate were excluded. If a patient did not attend the call on the first occasion, three further attempts were made on consecutive days. If the patient was not available during these attempts, he/she was excluded. Finally, we recruited 100 patients. A trained clinical psychologist (CP) completed the assessment through a WhatsApp video call ($n = 60$) or in-person ($n = 40$) interview. He asked the participants to recollect their experience regarding the video and face-to-face consultations and administered the same set of questionnaires twice. Participants were first asked to think about their recent teleconsultation and answer the STAR-P and PPPE questions. Then, we applied the TSS. Finally, they were asked to think about their recent in-person consultation and to respond to the STAR-P and PPPE. Hence, we had two sets of values for an individual participant-one each for tele- and in-person consultation. The time taken for each assessment was around 30 min.

Statistical analysis

Statistical analysis was carried out using SPSS version 14.^[17] Demographic, clinical variables, and

telemedicine satisfaction were represented using descriptive statistics (e.g. frequencies and percentages for categorical variables and mean-standard deviation for continuous variables). The frequencies of individual items of STAR-P and PPPE scales were compared by Wilcoxon sign-rank test. The total and the scores on the subdomains of STAR-P and total PPPE scores between tele-and in-person consultation were compared by paired sample t -test. Pearson's correlation (e.g. years of education) and Kandel's Tau (e.g. socioeconomic status) were used to examine the correlations between the STAR-P, PPPE scores, TSS scores, and, relevant demographic and clinical parameters. We used Benjamini-Hochberg correction to adjust the level of statistical significance.

RESULTS

A total of 423 patients were registered for teleconsultations during the study period (May to September 2020). In total, 182 adult patients experienced both teleconsultation and in-person consultation, and 148 of them received both VCs and in-person consultations. We could not contact 15 patients, 7 denied consent, and 26 had active psychotic symptoms or severe cognitive impairment. Finally, we could recruit 100 patients for the study.

Demographic and clinical characteristics

Our sample had a mean age of 35.5 years. Sixty percent of the participants had alcohol dependence, followed by opioid dependence. See Supplementary Table 1 for details.

Inter-group comparison of individual item scores in STAR-P and PPPE

Positive collaboration, positive clinician input, and non-supportive clinician input are the three subdomains of the scale to assess the therapeutic relationship in community mental healthcare patient version.

The patients' ratings of the "positive collaboration" subdomain showed a higher frequency of positive ratings in several items (e.g. "openness to the therapist during a consultation," "mutual trust with a clinician") during in-person consultations than in VC. The mean score of positive collaboration was higher during in-person consultation than teleconsultation ($t[99] = -12.8$ and $P < 0.001$). We also observed a higher positive rating in several items (e.g. discussing personal goals, feeling unconditional positive regards) of the "positive clinician input" subdomain of STAR-P. The mean score of positive clinician input was higher during teleconsultation than during in-person consultation ($t[99] = -11.9$ and $P < 0.001$). The patients' ratings of the "non-supportive clinician input" domain of the STAR-P showed a higher likelihood of being impatient during teleconsultation. However, there was no intergroup difference in the non-supportive clinician input score. Finally, the mean STAR-P score was significantly

higher during in-person consultation ($t[99] = -14.4$ and $P < 0.001$) [Table 1].

The assessment of the perceived empathy scale showed in-person encounters had a higher positive rating in the therapist's understanding of patients, families, and daily concerns. The lower total PPPE score also reflected this during tele-than in-person consultation ($t[99] = -8.4$ and $P < 0.001$). For details, see Table 2.

Telehealth satisfaction

Patients who received teleconsultation services reported "good" voice quality (72%), visual quality (58%), and personal comfort in using telehealth systems (54%). The majority of them were satisfied with the length of time during the consultation, explanation of the treatment, thoroughness, skillful care of the team, courtesy, respect, sensitive behavior, and the ability to answer questions by the team. However, a considerable portion of the patients reported difficulty in getting to the telehealth department (39% rated poor vs. 36% rated fair). More than half of the patients rated the protection of privacy as poor (7%) or fair (57%). For details, see Table 3.

Correlation of demographic, clinical variables, and TSS score and scores of STAR-P and PPPE scales

A significant positive correlation was retained (after Benjamini–Hochberg correction) between the TSS total score and positive collaboration ($r = 0.50$, $P < 0.001$), positive clinician input ($r = 0.42$, $P < 0.001$), and STAR total score ($r = 0.50$, $P < 0.001$). STAR total score correlated positively with the PPPE ($r = 0.42$, $P < 0.001$) during teleconsultation but during in-person consultation, the Positive Collaboration sub-domain of STAR (not total STAR) correlated ($r = 0.45$, $P < 0.001$) with PPPE. There was a small and positive correlation ($r = 0.25$, $P = 0.01$) between TSS and PPPE, but it lost the level of significance after adjusting the P value. For further details, see Tables 3a and 3b.

DISCUSSION

We believe that ours is the first Indian study to systematically assess telehealth satisfaction, therapeutic relationship, and perceived empathy during teleconsultation in patients with SUD. Only an Indian study that examined the level of satisfaction among patients in telehealthcare was done in telepsychiatry aftercare. That study had only 2% of patients with alcohol dependence.^[18] Adequate power, consecutive sampling, use of standard instruments, and assessment by a trained psychologist added to the strengths of our study. Broadly, our study showed higher patients' perception of therapists' empathy and better therapeutic relationship during in-person than during VC. Patients reported "good" telehealth satisfaction in all items except for access to treatment and protection of privacy. Telehealth satisfaction modestly correlated with the positive therapeutic relationship.

The therapeutic relationship is the keystone of effective service delivery. The mean score of the therapeutic relationship scale suggests an overall favorable relationship during teleconsultation. Still, the patients felt higher positive collaboration, positive clinician input, and more favorable therapeutic relationships during an in-person consultation. Some other studies comparing therapeutic relationships during different modes of consultation across various psychiatric disorders found similar results,^[19,20] whereas some researchers observed that telemedicine service providers had better therapeutic relationships with patients.^[21] This discrepancy can also be due to various socio-cultural factors not yet extensively studied.^[22] A nationwide study based in the USA found that generation of prescriptions had an odd of around three for rating a physician five stars after teleconsultation.^[23] Based on Indian telepsychiatry guidelines, we could not start most of the medications for withdrawal management (i.e. benzodiazepines except clonazepam) and prophylactic medications (e.g. buprenorphine, naltrexone) in our patients without an in-person consultation.^[6] This might also have adversely affected the relationship. As a novel and emerging mode of service delivery, both Indian patients and physicians need to adapt to telehealthcare. There is a scope to improve physicians' skills to develop and maintain therapeutic relationships during teleconsultation.

Empathy is the foundation of a positive patient–physician relationship. Our finding of a relatively poor perception of physicians' empathy in teleconsultation could be explained by the following: absence or limited nonverbal communication (which is a significant part of the face-to-face conversation), the physical appearance of a therapist, and the online disinhibition effect.^[12,20,24] A US-based study showed lower vocally encoded emotional arousal (denoting a calm and contented state of mind) and increased vocal synchrony between the therapist and the patient during motivational interviewing sessions that correlated with higher empathy for the therapist.^[25] Although a cause-and-effect relationship between voice quality and empathy was not established in the study, this could be pertinent in our study scenario. The voice quality in teleconsultation was often compromised due to poor connectivity. This could have affected the patients' perception of empathy.

In our study, patients scored favorably in all parameters for telemedicine satisfaction, except for the ease of access to telehealthcare and protection of privacy. This finding was in line with various other studies revealing favorable responses of patients to the technology-related variables (audio and video quality, access to the internet, smartphone), clinician-related variables (skill, courtesy, respect, care, friendly behavior, length of time spent, explanation of treatment, ability to answer the question), patient-related variables (personal comfort).^[26,27] Other studies that found reasonable patients' satisfaction with teleconsultation and video conferencing^[28] recruited patients purposefully (based on long-distance, poor

Table 1: Inter-group comparison of individual item scores of STAR-P

Items	Teleconsultation <i>n</i> (%) / mean (SD)	In-person <i>n</i> (%) / mean (SD)	Wilcoxon/Tvalue	Df	<i>P</i>
1. My clinician speaks with me about my personal goals and thoughts about treatment					
Never	1 (1)	0 (0)	2740.5	4	<.001
Rarely	25 (25)	1 (1)			
Sometimes	64 (64)	39 (39)			
Often	10 (10)	58 (58)			
Always	0 (0)	2 (2)			
2. My clinician and I are open with each other.					
Never	1 (1)	0 (0)	2289.0	4	<.001
Rarely	27 (27)	2 (2)			
Sometimes	61 (61)	39 (39)			
Often	11 (11)	58 (58)			
Always	0 (0)	1 (1)			
3. My clinician and I share a trusting relationship					
Never	4 (4)	0 (0)	1410.6	4	<.001
Rarely	30 (30)	2 (2)			
Sometimes	54 (54)	60 (60)			
Often	12 (12)	36 (36)			
Always	0 (0)	2 (2)			
4. I believe my clinician withholds the truth from me [†]					
Always	15 (15)	30 (30)	278.5	3	0.04
Often	23 (23)	8 (8)			
Sometimes	21 (21)	15 (15)			
Rarely	41 (41)	47 (47)			
Never	-	-			
5. My clinician and I share an honest relationship					
Never	4 (4)	1 (1)	1717.0	3	<.001
Rarely	30 (30)	4 (4)			
Sometimes	58 (58)	55 (55)			
Often	8 (8)	40 (40)			
Always	-	-			
6. My clinician and I work toward mutually agreed upon goals					
Never	1 (1)	0 (0)	1700.0	4	<.001
Rarely	32 (32)	6 (6)			
Sometimes	60 (60)	57 (57)			
Often	7 (7)	36 (36)			
Always	0 (0)	1 (1)			
7. My clinician is stern with me when I speak about things that are important to me and my situation [†]					
Always	14 (14)	20 (20)	167	3	0.38
Often	16 (16)	8 (8)			
Sometimes	17 (17)	16 (16)			
Rarely	53 (53)	56 (56)			
Never	-	-			
8. My clinician and I have established an understanding of the kind of changes that would be good for me					
Never	1 (1)	1 (1)	1268.0	4	<.001
Rarely	30 (30)	6 (6)			
Sometimes	57 (57)	55 (55)			
Often	12 (12)	37 (37)			
Always	0 (0)	1 (1)			
9. My clinician is impatient with me [†]					
Always	20 (20)	9 (9)	785.0	3	<.001
Often	23 (23)	25 (25)			
Sometimes	29 (29)	20 (20)			
Rarely	28 (28)	46 (46)			
Never	-	-			
10. My clinician seems to like me regardless of what I do or say					

Contd...

Table 1: Contd...

Items	Teleconsultation <i>n</i> (%) / mean (SD)	In-person <i>n</i> (%) / mean (SD)	Wilcoxon/Tvalue	Df	<i>P</i>
Never	18 (18)	24 (24)	1384.5	3	0.004
Rarely	53 (53)	29 (29)			
Sometimes	26 (26)	28 (28)			
Often	3 (3)	19 (19)			
Always	-	-			
11. We agree on what is important for me to work on			1773.0	4	<.001
Never	3 (3)	0 (0)			
Rarely	32 (32)	7 (7)			
Sometimes	58 (58)	62 (62)			
Often	7 (7)	30 (30)			
Always	0 (0)	1 (1)			
12. I believe my clinician has an understanding of what my experiences have meant to me			2083.0	4	<.001
Never	3 (3)	0 (0)			
Rarely	18 (18)	4 (4)			
Sometimes	67 (67)	38 (38)			
Often	12 (12)	57 (57)			
Always	0 (0)	1 (1)			
STAR Positive Collaboration	16.5 (2.8)	20.2 (2.2)	-12.8	99	<.001
STAR Positive Clinician Input	7.8 (1.4)	9.5 (1.4)	-11.9	99	<.001
STAR Non-Supportive Clinician Input	8.6 (2.8)	8.7 (3.2)	-0.8	99	0.46
STAR total score	32.8 (5.4)	38.4 (4.7)	-14.4	99	<.001

Bold values show significant difference after post hoc test (z score>1.96) STAR Scale to assess the therapeutic relationship^{¶¶} Reverse scoring

Table 2: Inter-group comparison of individual item scores of PPPE

Items	Tele-consultation <i>n</i> (%) / mean (SD)	In-person <i>n</i> (%) / mean (SD)	Wilcoxon/T value	Df	<i>P</i>
1. Understands my emotions, feelings, and concerns*			3381.0	3	<0.001
Strongly disagree	-	-			
Somewhat disagree	15 (15)	0 (0)			
Not sure	67 (67)	14 (14)			
Somewhat agree	15 (15)	74 (74)			
Strongly agree	3 (3)	12 (12)			
2. Seems concerned about me and my family*			2046.0	3	<0.001
Strongly disagree	-	-			
Somewhat disagree	23 (23)	5 (5)			
Not sure	62 (62)	38 (38)			
Somewhat agree	11 (11)	47 (47)			
Strongly agree	4 (4)	10 (10)			
3. Can view things from my perspective (see things as I see them)*			2221.0	3	<0.001
Strongly disagree	-	-			
Somewhat disagree	26 (26)	4 (4)			
Not sure	59 (59)	34 (34)			
Somewhat agree	12 (12)	53 (53)			
Strongly agree	3 (3)	9 (9)			
4. Asks about what is happening in my daily life			2154.0	4	<0.001
Strongly disagree	1 (1)	1 (1)			
Somewhat disagree	25 (25)	0 (0)			
Not sure	55 (55)	42 (42)			
Somewhat agree	17 (17)	46 (46)			
Strongly agree	2 (2)	11 (11)			
5. Is an understanding doctor			2293.0	4	<0.001
Strongly disagree	1 (1)	0 (0)			
Somewhat disagree	5 (5)	1 (1)			
Not sure	56 (56)	16 (16)			
Somewhat agree	31 (31)	57 (57)			
Strongly agree	7 (7)	26 (26)			
PPPE total score	15.6 (4.2)	19 (2.5)	-8.4	99	<0.001

Bold values show a significant difference after the post hoc test (z score>1.96). PPPE, Patients Perception of Physicians Empathy

accessibility, or they themselves opted for teleconsultation). Patients from rural backgrounds were more satisfied during

telepsychiatry consultation, as the alternative was no care or referral to a faraway hospital.^[29] Thus, it appears that

Table 3a: Correlations of demographic and clinical characteristics of the sample, and treatment-related variables during teleconsultation

Parameters	1	2	3	4 [†]	5 [†]	6 [†]	7	8	9	10	11	12	13	14
Age	-0.06 (.54)													
Education	-0.3 (.003)	0.1 (.34)												
Income	-0.19 (.01)	-0.2 (.01)	-0.56 (<.001)*											
Occupation [†]	-0.21 (.01)	-0.38 (<.001)*	-0.74 (<.001)*	0.7 (<.001)*										
Socio-economic status [†]	0.12 (.16)	0.03 (.71)	-0.02 (.83)	-0.09 (.31)	-0.004 (.96)									
Locality [†]	0.13 (.21)	-0.06 (.56)	0.09 (.39)	0.03 (.72)	0.03 (.75)	0.11 (.20)								
Adherence score	0.03 (.74)	-0.01 (.93)	0.19 (.054)	-0.14 (.07)	-0.11 (.19)	0.03 (.72)	0.24 (.02)							
Treatment duration (teleconsultation)	0.19 (.06)	-0.03 (.75)	0.09 (.38)	-0.03 (.67)	0.09 (.28)	0.02 (.80)	0.49 (.63)	0.18 (.07)						
Positive Collaboration	0.04 (.70)	0.06 (.53)	-0.01 (.92)	-0.15 (.06)	0.09 (.28)	0.11 (.22)	0.17 (.10)	0.16 (.11)	0.63 (<.001)*					
Positive Clinician Input	-0.05 (.64)	0.04 (.72)	0.05 (.60)	-0.07 (.39)	0.05 (.58)	0.14 (.87)	0.16 (.12)	0.22 (.03)	0.31 (.002)	0.21 (.04)				
Non-Supportive Clinician Input	0.08 (.41)	0.02 (.86)	0.07 (.48)	-0.09 (.26)	-0.09 (.28)	0.03 (.76)	0.02 (.88)	0.25 (.01)	0.84 (<.001)*	0.69 (.001)*	0.74 (<.001)*			
STAR total score	0.17 (.10)	0.04 (.68)	0.15 (.15)	0.003 (.97)	-0.07 (.40)	0.09 (.33)	0.08 (.43)	0.16 (.11)	0.46 (<.001)*	0.3 (.003)	0.2 (.05)	0.42 (.001)*		
PPPE total score	-0.06 (.58)	-0.10 (.33)	0.1 (.34)	0.12 (.12)	-0.12 (.15)	-0.04 (.64)	0.04 (.67)	0.27 (.01)	0.50 (<.001)*	0.42 (<.001)*	0.25 (.01)	0.50 (<.001)*	0.25 (.01)	
TSS total score														

*Significance retained after Benjamini–Hochberg correction. [†]Kendall's Tau B correlation**Table 3b: Correlations of demographic and clinical characteristics of the sample, and treatment-related variables during in-person consultation**

Parameters	1	2	3	4 [†]	5 [†]	6 [†]	7	8	9	10	11	12	13
Age	-0.06 (.54)												
Education	0.3 (.003)	0.1 (.34)											
Income	-0.19 (.01)	-0.20 (.01)	-0.56 (<.001)*										
Occupation [†]	-0.21 (.01)	-0.38 (<.001)*	-0.74 (<.001)*	0.70 (<.001)*									
Socio-economic status [†]	0.12 (.16)	0.03 (.7)	-0.02 (.83)	-0.09 (.31)	-0.004 (.96)								
Locality [†]	0.13 (.31)	-0.06 (.56)	-0.09 (.4)	0.03 (.72)	0.03 (.75)	0.11 (.20)							
Adherence score	0.29 (.003)	<.001 (.99)	0.03 (.76)	-0.2 (.01)	-0.08 (.33)	-0.02 (.85)	0.06 (.58)						
Treatment duration (in person)	0.15 (.13)	-0.1 (.35)	0.07 (.47)	0.09 (.28)	<.001 (.99)	<.001 (.99)	0.17 (.09)	0.07 (.50)					
Positive Collaboration	-0.05 (.62)	0.05 (.65)	-0.05 (.62)	-0.1 (.23)	-0.06 (.51)	0.12 (.17)	0.25 (.01)	<.001 (.99)	0.39 (<.001)*				
Positive Clinician Input	0.01 (.99)	0.03 (.74)	-0.06 (.53)	0.003 (.99)	0.03 (.70)	-0.04 (.67)	-0.19 (.06)	0.18 (.07)	0.14 (.16)	-0.04 (.71)			
Non-Supportive Clinician Input	0.06 (.58)	-0.01 (.94)	-0.02 (.82)	0.005 (.95)	0.03 (.72)	0.01 (.89)	0.02 (.82)	0.09 (.35)	0.7 (<.001)*	0.46 (<.001)*	0.75 (<.001)*		
STAR total score	0.23 (.02)	0.18 (.07)	0.07 (.50)	0.12 (.13)	0.09 (.28)	-0.09 (.31)	0.12 (.23)	0.12 (.24)	0.45 (<.001)*	0.02 (.81)	0.01 (.91)	0.23 (.02)	
PPPE total score													

*Significance retained after Benjamini–Hochberg correction. [†]Kendall's Tau B correlation

telemedicine is preferred when the alternative option is absent or is costlier or difficult. The difficulty in access to telehealth care could have been due to several reasons. During the pandemic, the exclusive route of registration was teleconsultation, and there was only one phone number dedicated to registration to addiction psychiatry. Besides this, the doctors sometimes were unable to establish telephonic contact with the registered patient due to technical challenges encountered by the patients during video consultations. A nationwide cross-sectional study conducted in Saudi Arabia assessing teleconsultation satisfaction during the COVID-19 pandemic observed that ease of registration and ability to talk freely were two significant parameters of overall satisfaction. The majority of the patients scored high in these parameters.^[30] Privacy for teleconsultation was another critical issue. In-person consultation has the inherent advantage of ensuring one-to-one conversation and more privacy for the patient. Privacy in teleconsultation can be compromised due to the presence of others in the vicinity during the consultation, using others' mobile phones for consultation, or for obtaining prescriptions.^[7,31,32] Increased use of mobile phones (m-Health) and social media for telehealthcare have a higher risk of compromising patients' privacy.^[33] In countries such as India that have criminalized drug use, a concern for privacy protection may be seen as a major barrier to implementing telehealth care for SUD.

Our study revealed telemedicine satisfaction had positive correlations with the overall quality of therapeutic relationship and its subdomains, positive collaboration, and positive clinician input. Previous literature showed a positive correlation between satisfaction and therapeutic relationship during in-person consultations among patients in forensic mental health settings and those with suicidality.^[34,35] Similar positive association between higher physician trust and better quality of therapeutic relationships was also seen in studies for telehealth satisfaction in psychology and general healthcare.^[36,37] We replicated the results for patients with SUD. An aim to improve therapeutic relationships should improve satisfaction with telehealth and may also increase the uptake of telemedicine among patients with SUD. The correlation between empathy and the therapeutic relationship (or a sub-component positive collaboration) highlighted the association between these two therapeutic variables.^[38] Not surprisingly, the association was evident in in-person, as well as during teleconsultation. Younger age and higher income have been inconsistently associated with telehealth satisfaction.^[35,39] The lack of correlation of age, education, income, and summated socioeconomic status with telehealth satisfaction was counterintuitive. Still, the encouraging aspect is that, apparently, modulating therapeutic variables can positively influence treatment satisfaction, irrespective of the sociodemographic variables.

Our study has several limitations. This study was based on retrospective recall of participants' experience with the

tele- and in-person consultations for their substance use problems. There was a possibility of recall bias. Moreover, the assessment for in-person and teleconsultation was done in the same sitting. This might pose challenges to some participants. However, we believe, the brevity of the scales, the time provided to the participants to think and respond to the questions, and the sequence of administering the questions should have minimized the difficulties. The sample did not include women. It was a single-center study. The standardized local language adaptation of the scales was not available. However, both PPPE and STAR-P have been used in the Asian and Indian contexts, without adaptations.^[40-42] We did not assess the patient's comfort with technology, access to the internet, internet speed, network strength, and other technological aspects. These might be unevenly distributed across the study population and can affect teleconsultation and video consultation differently. The time to assessment following tele- and in-person consultation may be different for different participants. This might have affected the response of the participants. However, we would like to inform you that consultations took place in a narrow window of 4 months. Hence, the variability, even if was there, might not have been substantial to influence the outcome. Future studies need to systematically address these limitations and can also focus on the difference in therapeutic relations, physicians' empathy, and patients' satisfaction between telephonic and VC experiences. Moreover, we need qualitative studies to explore and understand barriers, challenges, and facilitators of telemedicine-based addiction treatment in the Indian context.

In sum, our study suggested patients with SUD perceived a better therapeutic relationship and doctors' empathy in in-person than VC. Overall, patients were satisfied with telehealth-based addiction treatment, and improvement in therapeutic relationships may improve telehealth satisfaction. In this regard, clinicians should improve their skills to deliver telehealthcare. The policymakers may like to pay attention to the ease of access to telemedicine and the protection of privacy of patients with SUD. There is a need for national-level training and capacity building of healthcare professionals to deliver telemedicine-based addiction care. We should also improve public awareness and perception of telemedicine.

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Conflicts of interest

There are no conflicts of interest.

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Supplementary Table 1: Sociodemographic and clinical Characteristics

Parameter	Mean±SD (Range)/n (%)
Age	35.5±10.4 (18-68)
Income (Rupees)	13651±11764.3 (0-65000)
Education	
Primary	11 (11)
Middle	18 (18)
Matric	23 (23)
10+2 (Diploma)	31 (31)
Graduate	12 (12)
Masters/Professionals	5 (5)
Years of education in years	10.7±3.1 (5-17)
Occupation	
Unemployed	20 (20)
Semiskilled and skilled labourer	45 (45)
Clerical, shop owner, farmer, semi-professional	32 (32)
Student	3 (3)
Locality	
Urban	63 (63)
Rural	37 (37)
Socio-economic status	
Lower	2 (2)
Upper-lower	42 (42)
Lower middle	33 (33)
Upper middle	23 (23)
Age of onset (years)	21.8±5 (12-38)
Duration of treatment (months)	28.2±28.5 (1-120)
Duration of teleconsultation (months)	4.9±2.3 (1-10)
Adherence to treatment	81.1±13.8 (24-100)
Diagnosis	
Alcohol use disorder	60 (60)
Tobacco use disorder	60 (60)
Opioid use disorder	42 (42)
Cannabis use disorder	24 (24)
Sedative-hypnotic use disorder	6 (6)