Original Article

Evaluating Tele-Counselling for Anxiety and Depression among Youth in Conflict-Affected Areas of Pakistan: A Pilot Pre–Post Interventional Study

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Abstract

Background: Insecurity, stigma, and a shortage of healthcare professionals restrict access to in-person psychological care among young people in conflict-affected areas, contributing to the burden of anxiety and depression. Tele-counselling may offer a scalable and culturally acceptable alternative for improving access to mental health support.

Objective: To assess the feasibility, acceptability, and preliminary outcomes of an eight-week tele-counselling programme in reducing symptoms of anxiety and depression among young people in conflict-affected districts of Azad Jammu and Kashmir, Pakistan.

Methods: This pilot pre–post interventional study was conducted among 60 adults aged 18–30 years in conflict-affected districts of Azad Jammu and Kashmir, Pakistan, from January to May 2025. All participants underwent baseline assessment; six were lost to follow-up, leaving 54 participants who completed the study. Participants received eight weekly tele-counselling sessions, each lasting 30 minutes, delivered by trained psychologists through WhatsApp audio and video calls. Anxiety and depressive symptoms were assessed at baseline and post-intervention using the Generalized Anxiety Disorder-7 (GAD-7) and Patient Health Questionnaire-9 (PHQ-9), respectively. Feasibility and acceptability were evaluated through session attendance, participant feedback, willingness to recommend the programme to peers, and in-depth interviews with 20 participants.

Results: Among the 54 participants who completed the study, baseline mean scores indicated moderate levels of depressive symptoms (PHQ-9: 14.3 ± 3.8) and anxiety symptoms (GAD-7: 12.1 ± 3.5). Following the intervention, mean scores decreased to 8.2 ± 3.1 for depressive symptoms (42.6% reduction; paired $t = 10.83$; $p < 0.001$) and 6.9 ± 2.7 for anxiety symptoms (42.9% reduction; paired $t = 9.41$; $p < 0.001$). Overall, 81.5% of participants attended at least seven sessions, while 77.8% reported improvements in well-being and daily functioning. Qualitative findings identified convenience, confidentiality, and cultural sensitivity as key facilitators, whereas poor internet connectivity and occasional discomfort when discussing sensitive issues remotely were identified as barriers. No adverse psychological events or emergency escalations were reported.

Conclusion: Tele-counselling delivered by qualified psychologists appears feasible and acceptable, with preliminary findings suggesting reductions in anxiety and depressive symptoms among young people in conflict-affected areas. Integrating culturally sensitive, technology-enabled counselling into educational institutions and public mental health services may improve access to psychological support.

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Introduction

Mental health problems are increasing worldwide, with anxiety and depression being particularly prevalent among young people living in conflict-affected regions.[1,2] Displacement, insecurity, exposure to violence, and disruption of social support systems can further aggravate these psychological burdens.[3,4] Studies have reported a substantial burden of mental health problems among adolescents living in conflict-affected regions, including post-traumatic stress disorder (PTSD), anxiety, and depression. A meta-analysis reported a pooled prevalence of 29.4% for PTSD among adolescents exposed to war-related trauma, although estimates varied considerably across studies.[5,6]

Despite this considerable burden, access to mental health services remains limited in conflict-affected settings because of damaged healthcare infrastructure, social stigma, and shortages of trained mental health professionals.[7,8] Tele-counselling offers a potential approach to addressing these barriers by providing psychological support through digital communication platforms.[9] Technology-based interventions, including telephone and video counselling, have demonstrated potential in reducing symptoms of anxiety and depression, particularly among populations with limited access to conventional healthcare services.[10,11] Tele-counselling may also offer greater privacy and convenience while overcoming geographical barriers. These advantages may be particularly important for young people who avoid in-person mental health services because of stigma, insecurity, or safety concerns.[12,13]

Langarizadeh *et al.* demonstrated that telemental healthcare could serve as an alternative to conventional mental health services. Their review highlighted its potential to improve access to psychological care and provide mental health support. However, implementation in conflict-affected settings remains challenging, particularly regarding long-term effectiveness, sustainability, cultural acceptability, and technological barriers.[14,15]

In Pakistan, young people living in conflict-affected areas of Azad Jammu and Kashmir (AJK) may face considerable barriers to accessing psychological support. However, evidence regarding the feasibility and acceptability of technology-based mental health interventions in these settings remains limited. This study therefore aimed to evaluate the feasibility, acceptability, and preliminary outcomes of an eight-week tele-counselling intervention in reducing anxiety and depressive symptoms among young adults in conflict-affected areas of AJK, Pakistan.

Methods

Study Design and Participants

This single-arm pilot pre–post interventional study was conducted from January to February 2025 among young adults living in conflict-affected areas of Azad Jammu and Kashmir (AJK), Pakistan, after getting approval from the institutional review board. All procedures involving human participants were conducted in accordance with the ethical principles of the Declaration of Helsinki.

Adults aged 18–30 years were recruited from one university and one vocational training centre in Muzaffarabad District, AJK. Individuals were eligible if they resided in conflict-affected areas, had access to a smartphone with stable mobile network coverage, and provided written informed consent to participate in weekly tele-counselling sessions over eight weeks. Recruitment was facilitated by academic counsellors and student welfare officers who were trained to identify students experiencing psychological distress through preliminary screening interviews. Individuals with a previous diagnosis of psychiatric illness, those receiving psychiatric medication for any indication, and those reporting suicidal thoughts were excluded and referred for appropriate mental health assessment and care.

A target sample of 60 participants was pragmatically selected for this pilot study to assess the feasibility of the tele-counselling intervention and obtain preliminary estimates of changes in anxiety and depressive symptoms. Purposive sampling was used to recruit eligible participants.

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Intervention and Data Collection

Anxiety and depressive symptoms were assessed at baseline and at the end of the eight-week intervention using the validated Urdu versions of the Generalized Anxiety Disorder-7 (GAD-7) and Patient Health Questionnaire-9 (PHQ-9), respectively.

Following baseline assessment, participants received one 30-minute tele-counselling session per week for eight weeks, comprising eight sessions in total. Sessions were delivered through WhatsApp voice or video calls, depending on participants' preferences and internet connectivity.

The intervention was delivered by five postgraduate licensed clinical psychologists based in Lahore and Islamabad, with expertise in trauma-informed care and remote counselling practices. Each session followed a semi-structured protocol based on the principles of low-intensity cognitive behavioural therapy (CBT). The sessions incorporated emotional regulation, problem-solving, and stress-management strategies tailored to the local context.

To maintain continuity of care, participants were also offered additional text-based communication with their assigned counsellors throughout the week. A 24-hour helpline was made available to provide additional support. Session records and communication logs were audited and analysed, with encryption and anonymisation procedures used to protect participants' confidentiality and data privacy.

At the end of the eight-week intervention, participants were reassessed using the same GAD-7 and PHQ-9 scales. Of the 60 participants initially enrolled, 54 completed the study, while six were lost to follow-up.

Data Confidentiality and Security

All tele-counselling communications were conducted through WhatsApp, which provides end-to-end encryption for personal messages and calls. Session logs and participant records were anonymised using unique identification codes, with identifying information kept separately from study data. Electronic records were stored securely with access restricted to authorised research personnel to maintain participant confidentiality and protect data privacy.

Qualitative Assessment

Twenty participants were randomly selected from among those who completed the intervention for semi-structured interviews. The interviews explored their experiences with tele-counselling, perceived benefits, barriers to engagement, and suggestions for improvement. Interview transcripts were analysed thematically to identify recurring patterns and generate key themes reflecting participants' experiences and perceptions of the intervention.

Statistical Analysis

Data were analysed using IBM SPSS Statistics version 28. Descriptive statistics were used to summarise participant characteristics and study findings. Paired-samples *t*-tests were applied to compare baseline and post-intervention GAD-7 and PHQ-9 scores among the participants who completed both assessments. A *p*-value of less than 0.05 was considered statistically significant.

Results

Of the 60 participants enrolled, 54 (90.0%) completed the eight-week tele-counselling intervention, including 21 (38.9%) males and 33 (61.1%) females. The remaining six participants discontinued participation due to internet connectivity issues (n = 5) and scheduling conflicts (n = 1). The analysis was therefore based on the 54 participants who completed both baseline and post-intervention assessments. The mean age of the participants was 22.7 ± 2.9 years.

Table 1 and Figure 1 present the comparison of anxiety and depression scores before and after the intervention. Mean GAD-7 scores decreased from 12.1 ± 3.5 at baseline to 6.9 ± 2.7 post-intervention, representing a 42.9% reduction. Similarly, mean PHQ-9 scores decreased from 14.3 ± 3.8 to 8.2 ± 3.1, representing a 42.6% reduction. Both reductions were statistically significant ($p < 0.001$).

The mean duration of tele-counselling sessions was 31.4 ± 4.6 minutes. Table 2 summarises the feasibility, acceptability, and participant experiences associated with the intervention. Among the 54 participants who completed the intervention, 44 (81.5%) attended at least seven

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sessions, while 42 (77.8%) reported meaningful improvements in emotional well-being and daily functioning. Furthermore, 46 (85.2%) expressed willingness to recommend the service to others. No adverse psychological events were reported during the intervention. In-depth interviews with 20 participants identified three major themes: enhanced emotional resilience, improved coping with academic and familial stress, and increased openness to seeking psychological support. These themes reflected participants' perceptions of the benefits of the tele-counselling intervention and their experiences of accessing psychological support. The findings are summarised in Table 3.

Table 1. Comparison of Anxiety and Depression Scores Before and After the Tele-Counselling Intervention

	Baseline Mean ± SD	Post-Intervention Mean ± SD	Reduction %	*df*	*t* value	*p* value
Anxiety (GAD-7)	12.1 ± 3.5	6.9 ± 2.7	42.9%	53	9.41	<0.001
Depression (PHQ-9)	14.3 ± 3.8	8.2 ± 3.1	42.6%	53	10.83	<0.001

Note: Values are presented as mean ± standard deviation (SD). PHQ-9: Patient Health Questionnaire-9; GAD-7: Generalized Anxiety Disorder-7. Percentage reduction was calculated relative to baseline scores. Statistical significance was assessed using a paired-samples t-test.

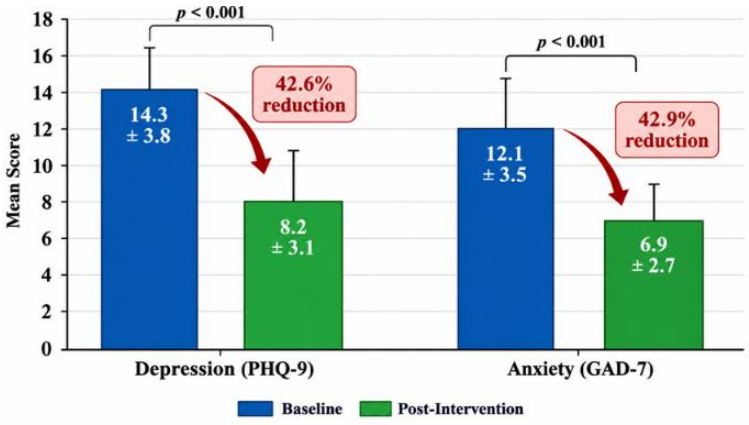

Figure 1. Comparison of mean depression (PHQ-9) and anxiety (GAD-7) scores at baseline and post-intervention

Table 2. Feasibility, Acceptability, and Participant Experiences with the Tele-Counselling Intervention (n = 54)

Indicator	n (%)
Participants reporting meaningful improvement	42 (77.8%)
Participants attending ≥7 sessions	44 (81.5%)
Willingness to recommend the service	46 (85.2%)
Reported adverse psychological events	0 (0%)

Note: Emotional well-being and daily functioning were assessed using a self-rated 5-point Likert scale administered post-intervention.

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Table 3. Major Themes Identified from In-Depth Interviews with Participants (n = 20)

Major theme	Description
Enhanced emotional resilience	Participants reported improved ability to recognize and manage their emotions, greater confidence in managing psychological distress, and increased ability to cope with challenging situations.
Improved coping with academic and familial stress	Participants reported better strategies for managing academic pressures, family-related challenges, and everyday stress events.
Increased openness to seeking psychological support	Participants demonstrated increased willingness to discuss mental health concerns and seek professional psychological support, with phone-based counselling as a confidential and accessible approach that reduced stigma-related barriers to seeking mental health support.

Note: Themes were identified through thematic analysis of transcribed in-depth interviews conducted with 20 participants following the tele-counselling intervention.

Discussion

The findings of this pilot study suggest that tele-counselling is a feasible and acceptable approach associated with reductions in anxiety and depressive symptoms among young adults (n = 54) residing in conflict-affected areas of Azad Jammu and Kashmir, Pakistan. The findings also highlight the potential of remotely delivered psychological support to address barriers to accessing conventional mental health services in geographically isolated and resource-constrained settings.

Evidence from larger digital mental health interventions in low- and middle-income countries (LMICs) has demonstrated moderate-to-large effect sizes (Hedges' g ≈ −0.6 to −0.7) for depression and anxiety outcomes.[16] These findings provide broader support for the potential benefits of digital mental health interventions and are consistent with the substantial pre–post reductions in PHQ-9 and GAD-7 scores observed in the present study. Similarly, previous meta-analyses have reported that guided internet-based cognitive behavioural therapy (CBT) can achieve outcomes comparable to face-to-face CBT for mood disorders across different settings.[17] Although the present study cannot establish comparative effectiveness, its findings provide preliminary evidence supporting further evaluation of tele-counselling in conflict-affected communities.

Behavioural intervention technologies combined with human support may enhance participant engagement, improve adherence to therapeutic interventions, and strengthen clinical outcomes.[18] In the present study, 81.5% of participants attended at least seven of the eight scheduled sessions, indicating a high level of session attendance among those who completed the intervention. This finding is consistent with previous research on structured tele-mental health interventions in LMICs, where engagement may be supported through brief and individualised sessions.[19] Participants also highlighted the convenience, confidentiality, and cultural relevance of the counselling approach. These experiences support previous evidence suggesting that culturally adapted digital interventions may improve their acceptability and uptake among young populations.[20] Cultural adaptation frameworks similarly emphasise the importance of tailoring mental health interventions to local languages, cultural values, and social norms to improve their relevance, acceptability, and accessibility.[21]

Tele-counselling may provide an alternative means of addressing gaps in mental health service provision, particularly in areas with limited numbers of trained mental health professionals. In Pakistan, the shortage of psychiatrists remains a substantial challenge, with fewer than one psychiatrist per 100,000 population.[22] Consistent with the experiences reported by participants in this study, reviews of tele-mental health interventions in LMICs have frequently identified infrastructural barriers, particularly unreliable internet connectivity, poor network coverage, and limited access to digital resources.[23,24] In the present study, internet connectivity problems were the main reason for discontinuation among the six participants lost to follow-up. Some participants also reported that the privacy offered by phone-based counselling made it easier to discuss

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sensitive mental health concerns. Evidence from other South Asian settings similarly suggests that remote mental health services may help overcome stigma-related barriers associated with seeking face-to-face psychological support.[25] Digital mental health services may therefore offer an important opportunity to improve access to psychological support among young people living in remote and rural communities, particularly during public health emergencies and other situations that restrict access to conventional services.

Despite these potential benefits, the sustainability and wider implementation of digital mental health interventions in LMICs depend on several factors, including funding, policy support, and digital literacy.[26] Recent evidence has also highlighted the need for rigorous evaluation of digital interventions tailored to adolescents and young people in LMICs, particularly regarding equitable accessibility, acceptability, and long-term outcomes. In Pakistan, collaboration among academic institutions, healthcare organisations, and non-governmental organisations could help support the development and evaluation of scalable community-based mental health services. Global mental health research has similarly emphasised the importance of accessible, community-based care models for addressing the psychological needs of young people in post-conflict settings.[27]

Overall, participants reported positive experiences with remote counselling, particularly its flexibility, privacy, and perceived cultural sensitivity. Most participants also expressed willingness to recommend the service to others. No adverse psychological events or emergency escalations were reported during the intervention. These findings support the feasibility and acceptability of the tele-counselling model and suggest its potential to improve access to psychological support among young people in conflict-affected settings. Nevertheless, the absence of a control group, relatively small sample, purposive recruitment, and short follow-up period limit the interpretation and generalisability of the findings. Further studies involving larger and more diverse populations, controlled study designs, and longer follow-up periods are required to establish the effectiveness, sustainability, and broader applicability of tele-counselling in these settings.

Conclusion

This pilot study suggests that tele-counselling is a feasible, acceptable, and culturally appropriate approach associated with preliminary reductions in anxiety and depressive symptoms among young people residing in conflict-affected regions of Pakistan. The improvements observed in mental health measures and the high willingness of participants to recommend the service highlight the potential of remote psychological services to address gaps in mental healthcare access in underserved communities. Given the growing mental health needs of vulnerable populations affected by conflict and limited healthcare resources, scalable digital interventions may offer a promising approach to expanding access to psychological support. Further controlled studies involving larger samples and longer follow-up periods are warranted to determine the effectiveness, long-term outcomes, and sustainability of these interventions.

Limitations of the Study

The small sample size and short follow-up period limit the generalisability of the findings. Reliance on self-reported measures may have introduced social desirability and reporting biases. In addition, intermittent internet connectivity, particularly in remote mountainous areas, occasionally disrupted counselling sessions. The use of purposive sampling and recruitment from a limited number of educational institutions may also restrict the representativeness of the sample. Finally, the absence of a control group limits the ability to attribute the observed improvements solely to the intervention or establish its comparative effectiveness.

Recommendations and Future Research

Future studies should include larger and more diverse samples, longer follow-up periods, and randomized controlled designs to strengthen the evidence base and establish the effectiveness of tele-counselling. Multicentre studies involving participants from different conflict-affected and underserved regions of Pakistan would also improve the generalisability of findings. Integration of tele-counselling into existing public healthcare infrastructure, supported by

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appropriate training and supervision of community health workers, may enhance its scalability and sustainability. Furthermore, developing culturally adapted digital resources and providing multilingual support may improve accessibility, engagement, and participation among marginalised populations. Strategies to address internet connectivity issues and ensure access to reliable communication facilities should also be considered when planning wider implementation.

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