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Impact of treatment attendance on mental health outcomes within task-shared psychological treatments: a causal analysis from the PRIME India study

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Research Article

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Abstract

Task-shared psychological treatments play a critical role in addressing the global mental health treatment gap, yet their integration into routine care requires further study. This study evaluated the causal association between an implementation factor of a task-shared psychological treatment and participant outcomes to strengthen the implementation-to-outcome link within global mental health. This secondary analysis utilized cohort data from the Program for Improving Mental Health Care (PRIME) implemented in Sehore, India where trained non-specialist health workers delivered treatment for depression and alcohol use disorder (AUD). Propensity scores and inverse probability of treatment weights examined the impact of mental health service users' treatment attendance on users' symptom severity (PHQ-9 scores for depression; AUDIT scores for AUD) at 3 and 12-month follow-ups. Among the 240 patients with depression, higher treatment session attendance led to 1.3 points lower PHQ-9 scores (vs. no attendance) and 2.4 points lower PHQ-9 scores (vs. low attendance) at 3 months, with no significant effects at 12 months. Among the 190 AUD patients, treatment session attendance did not have a significant impact on AUDIT scores. Our findings have implications for enhancing treatment session attendance among those with depression within task-shared psychological treatments.

Impact statement

This study examines whether therapy sessions led by trained community health workers can improve mental health outcomes for individuals with depression or alcohol use disorder (AUD) in India. Using data from the PRIME project, where non-specialist health workers delivered psychological treatments in Sehore, India, we assessed the relationship between session attendance and symptom improvement. We found that higher therapy session attendance was associated with reduced depression symptoms at three months, though this effect did not persist at one year. Additionally, there was no significant impact on symptom severity for individuals with AUD. These findings highlight the potential short-term benefits of increasing therapy engagement for depression within task-shared mental health programs while underscoring the need for strategies to sustain long-term effects.

Introduction

Populations in low- and middle-income countries (LMICs) face a glaring mental health treatment gap (the gap between those who would benefit from mental health care and those who receive it) and a dearth of mental health professionals to bridge this gap (World Health Organization (WHO), 2009). Task sharing, or the involvement of non-specialist health workers (NSHWs) to deliver mental health services, has been at the forefront of efforts to make mental health care widely available and accessible in LMICs. Within randomized controlled trials, NSHWs have proved to be cost- and time-effective and efficient in the delivery of mental health care services leading to improvement in outcomes for a range of mental illnesses including depression, anxiety and alcohol-use disorders (AUD) (as compared to usual care) in LMICs such as Pakistan, Zimbabwe, and India (Buttorff et al., 2012; Chibanda et al., 2016; Patel et al., 2011; Rahman et al., 2008; van Ginneken et al., 2013). The impact of task-sharing in "real-world" conditions, however, has been less robust (Mutamba et al., 2013). For example, in Brazil, the

evaluation of a 12-week multifaceted training for primary care doctors and nurses, social workers, psychologists, psychiatrists and occupational therapists that involved workshops, lectures, web-based education, and practical clinical rounds, failed to demonstrate any significant changes in the recognition of mental illness by NSHWs such as primary care professionals (Goncalves et al., 2013). More recently, in India, a brief structured psychological treatment for AUD and depression delivered by lay counselors had only a moderate impact on patient functioning in a primary care setting (Shidhaye et al., 2019).

Several factors have been identified as barriers to the successful implementation of task-shared psychological treatments in routine care settings including limited resources at the health system level, NSHWs' competing priorities, gender norms, variations in delivery settings and treatment engagement (Endale et al., 2020; Qureshi et al., 2021). Despite the identification of such key and relevant factors for the successful implementation of mental health task-sharing, there is a dearth of studies systematically investigating the impact these factors have on participants' mental health outcomes.

Using data from a prospective cohort study conducted within Programme for Improving Mental Health Care (PRIME), a research consortium that aimed to provide a model for integrating mental health care into the primary healthcare system in five LMICs (Lund et al., 2012), this paper seeks to discuss a key factors impacting the implementation of a task-shared psychological treatment in India – treatment session attendance – and its impact on mental health outcomes among service users.

The Programme for Improving Mental Health Care

In India, the PRIME project was carried out between 2011 and 2016 at three Community Health Centers (CHCs)[1] in the Sehore district, a predominantly rural area in the central state of Madhya Pradesh (Hanlon et al., 2014). Embedded in the task-sharing approach, PRIME focused on training NSHWs such as case managers (salaried CHWs appointed by PRIME), in identifying priority mental illnesses including depression, and alcohol use disorder (AUD) and in delivering evidence-based psychological treatments for these conditions – the Healthy Activity Program (HAP) (Patel et al., 2017) and Counseling for Alcohol Problems (CAP) (Nadkarni et al., 2017). HAP and CAP are culturally adapted low-intensity evidence-based interventions for depression and AUD proven to be efficacious in randomized controlled trials conducted in India. HAP is a manual-based treatment for depression based on behavioral activation (e.g., helping patients engage in enjoyable activities) delivered in three-phases over six to eight sessions, whereas CAP is manual-based treatment for AUD based on motivational interviewing (e.g., client-driven exploration of motivation and commitment to change) which is also delivered in three phases but in over up to four sessions.

Challenges to implementation of PRIME

PRIME India's cohort study revealed that the intervention produced only a small to moderate effect on reducing symptoms of depression and AUD in patients (Shidhaye et al., 2019). Relatedly, various challenges at the individual, provider, healthcare system and policy levels to the successful implementation of PRIME were reported (Shidhaye et al., 2019). Some of these were formatively addressed, such as a lack of awareness among the community and an unconducive implementation climate in the CHC (Shidhaye et al., 2019). In the current study, we focus on one of the challenges that remains to be explored further – treatment session attendance.

Treatment attendance

PRIME's implementation evaluation study reported low treatment session attendance as a major barrier (Shidhaye et al., 2019). Among all patients enrolled in the programme (n = 1,033 with depression and n = 575 with AUD), only 5.42% of those with depression and 15.13% of those with AUD completed HAP and CAP. Similar statistics were also noted in PRIME's cohort study where only 12.3% and 5.5% of the patients with depression and AUD, respectively, completed all the treatment sessions (Shidhaye et al., 2019). As a strategy to increase attendance, case managers gave telephonic reminders of an upcoming treatment session up to a day prior to the session, however, without any improvement in session attendance. Low follow-up could have been due to a lack of acceptability of the intervention among participants, or due to other under-explored cultural and contextual factors (Shidhaye et al., 2019). Of note, treatment session attendance in routine care settings has been lower as compared to the attendance rates noted within RCTs of task-shared psychological treatments globally (Chibanda et al., 2016; Jordans et al., 2016; Lund et al., 2020; Nadkarni et al., 2017; Patel et al., 2010; Patel et al., 2017; Shidhaye et al., 2017). Users' treatment session attendance, often used as a proxy for their treatment engagement, is essential for treatment gains, sustained treatment effects and to prevent relapse (Dale et al., 2011; Greene et al., 2016; March et al., 2018; Orhon et al., 2007; Reardon et al., 2002). However, the impact of treatment session attendance on mental health outcomes among users of task-shared psychological treatments in routine care has not been examined yet.

The current study examines the causal impact of treatment attendance on user mental health outcomes within PRIME. Exploring these links would provide insights into underlying mechanisms and inform strategies for the implementation of task-shared psychological treatments in India and other LMICs.

Methods

Sample selection and data collection

This study is a secondary analysis of data from PRIME India's cohort study. Participants were mental health service users who were recruited from the outpatient clinics in the participating CHCs in the district. Those who screened positive on the PHQ-9/AUDIT and received a diagnosis of depression or AUD from a medical officer were recruited to the treatment arm (n = 281 for depression; n = 218 for AUD) and received HAP or CAP from the case managers. Those who screened positive but were not diagnosed with depression or AUD were recruited to the control group (n = 157 for depression; n = 147 for AUD) and received usual care for their general health from the medical officer. The sample includes participants enrolled in the treatment arm of the cohort only. We analyzed data collected at enrollment and at 3 and 12-month follow-up visits.

[1]In India, the Government-funded health care infrastructure in rural areas has been developed as a three-tier system with Sub-Centers (first contact point between primary health care system and the community), Primary Health Centers (PHCs; a referral unit for 6 sub-centers) and Community Health Centers (CHCs; a hospital/referral unit for 4 PHCs) functioning in the country (Government of India, 2005).

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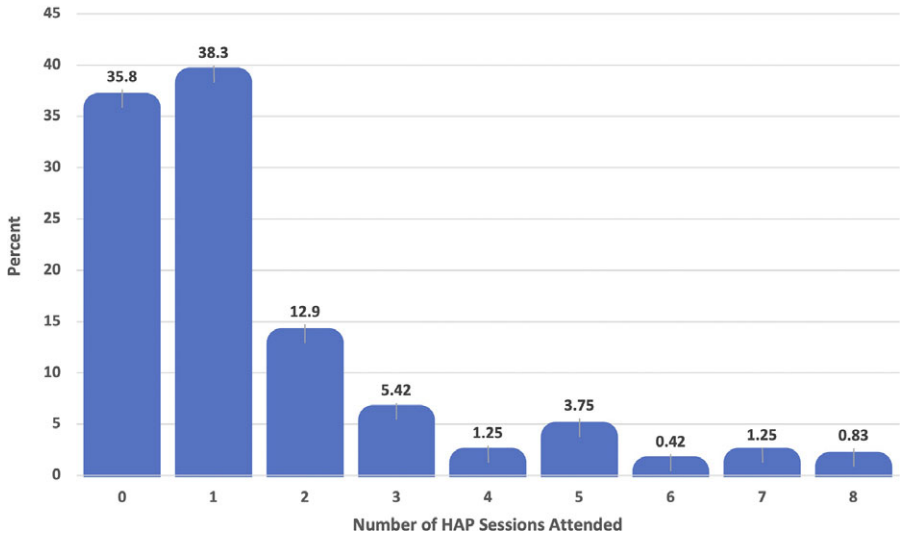

Figure 1. Distribution of HAP session attendance in PRIME India depression cohort.

Study variables

Exposure measure: individual-level treatment attendance

Treatment attendance was defined as the number of HAP or CAP sessions attended by each user in the respective cohorts by the 3-month follow-up after enrollment. Treatment attendance was modeled as an ordinal categorical variable. It was categorized distinctly for the two cohorts based on the range of number of sessions in their respective treatments (0–8 for HAP and 0–4 for CAP) and the distribution observed.

In the depression cohort, the maximum number of HAP sessions one could attend was eight, however, treatment could be wrapped up in four sessions. Figure 1 shows the distribution of HAP attendance among users in the depression cohort. Between enrollment and 3-month follow-up, there appeared a natural break between those who attended no sessions, attended 1 session, or attended 2 or more sessions. We carried out *t*-tests and chi-squared tests to assess if these groups were systematically different from each other: as compared those who attended 1 session, those who attended no sessions had higher PHQ-9 scores, higher internalized stigma scores and a higher disability score. Furthermore, those who attended 2 or more sessions (as compared to those who attended 1 session) had a higher baseline PHQ-9 score and internalized stigma score, and were using psychotropic medications. Subsequently, we created three ordinal attendance categories for HAP, namely, no attendance, low attendance (1 session) and high attendance (2 or more sessions).

In the AUD cohort, the maximum number of CAP sessions was four while treatment could be wrapped up in 1 session. Figure 2 shows the distribution of CAP session attendance among users in the AUD cohort. [2] *t*-test and chi-squared test results revealed that those who attended 2 or more sessions had a higher disability score as compared to those who attended 1 session. While comparing those who attended no sessions with to those who attended 1 session, the former had a higher disability score and were using psychotropic medications. This, along with the fact that CAP could be wrapped up in one session, two attendance categories were created for CAP: no attendance and some attendance (1 or more sessions).

For both depression and AUD cohorts, we believe that this way of categorizing treatment session attendance best captures real-world engagement patterns.

Outcome measure: individual-level symptom severity

Our primary outcome was depression and AUD symptom severity (measured by PHQ-9 and AUDIT, respectively) at the individual level at 3-month and 12-month follow-up visits. Both scales have been previously validated for use among the Indian population with standard cut-offs (≥10 on PHQ-9 and ≥ 8 on AUDIT) (Nayak et al., 2009; Patel et al., 2008). AUDIT was mistakenly skipped in the AUD cohort at the 3-month follow-up, hence, AUDIT scores at the 12-month follow-up were considered the primary outcome in this cohort. Secondary outcomes in the depression cohort were PHQ-9 scores at the 12-month follow-up.

Potential confounding variables

Baseline confounding variables controlled for in the analysis were: demographic characteristics including age, sex, religion, education, marital status, employment status; clinical characteristics including baseline symptom severity, psychotropic medications use, functioning/disability and internalized stigma; social characteristics including social support. See, Supplementary Table A for a list of these confounders and the corresponding scales/questionnaires.

Ethical review

Ethical approval for the PRIME cohort study was obtained from the Institutional Review Boards of the WHO (Geneva, Switzerland), University of Cape Town (South Africa), Sangath (Goa, India) and the Indian Council of Medical Research (New Delhi, India). All study participants gave written informed consent.

Data analysis

For drawing causal inferences, we employed propensity scores and inverse probability of treatment weights (IPTW; outlined below).

[2] $n = 3$ participants reported attending five sessions which is more than the maximum number of CAP sessions one could receive but the PRIME India team clarified that if participants needed, they could continue receiving treatment/attending sessions during the implementation phase.

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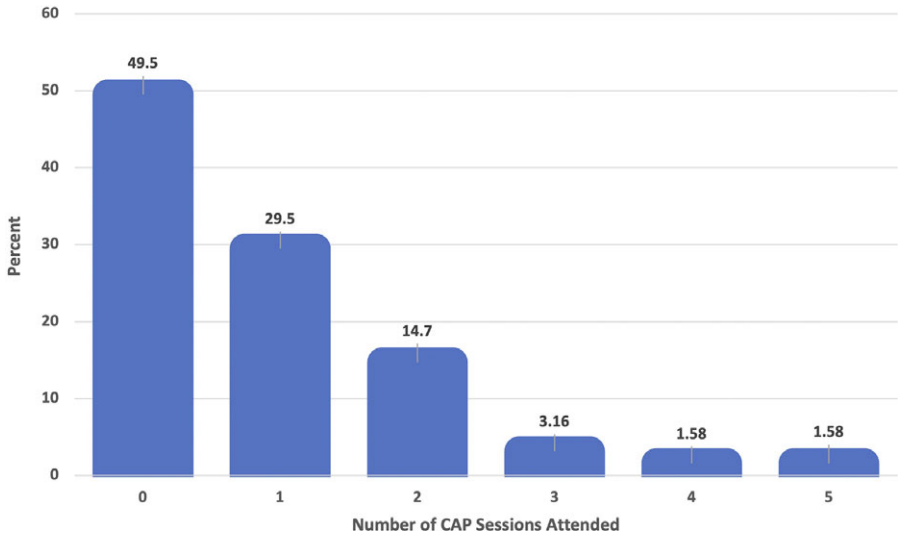

Figure 2. Distribution of CAP session attendance in PRIME India AUD cohort.

As compared to controlling for confounders in statistical models such as through adjusting for true and potential confounders in regression models, propensity scores model relationship between covariates and treatment assignment and have been shown to be a better alternative to increase comparability between groups than the traditional methods (Faires et al., 2010). Propensity scores offer an efficient alternative by calculating the conditional probability of exposure given measured confounders, thereby balancing confounder distribution between comparison groups. Weighting based on propensity scores helps mimic a randomized experiment by ensuring that the likelihood for treatment assignment is equally distributed across groups, as compared to conditioning them on covariates (Williamson and Ravani, 2017). In addition, propensity scores provide statistical advantage of reduced degrees of freedom in the model. All analyses were conducted in SAS software (version 9.4; SAS Institute, 2004) Since the characteristics of our exposure variable differed between depression and AUD cohorts, we conducted an analysis stratified by cohort.

Step 1: estimating individual's propensity scores

We first calculated propensity scores for having no/low/high attendance in the depression cohort, and no/some attendance in the AUD cohort in each cohort using multivariable logistic regression, controlling for potential confounding variables. Sex, employment status and religion were not accounted for in the propensity score models in the AUD cohort given the minimal variability within (see Table 1).

Once propensity scores were calculated, we evaluated "overlap" in the distribution of propensity scores or whether there were individuals with similar propensity scores in each group. Causal comparisons are generally invalid without similar distribution or overlap.

Step 2: calculating inverse probability of treatment weights

IPTW for attendance was calculated to up-weight those who were under-represented and down-weight those who were over-represented with respect to the exposure.

Step 3: evaluating confounder balance after weighing

We evaluated the distribution of confounders after weighing between the various levels of each group using standardized differences. For the current study, the standardized difference of more than 0.25 was considered as indicative of covariate imbalance, suggesting that the propensity score model may have been misspecified (Austin, 2011). In case of a misspecification, we modified the propensity score models on an ad hoc basis – by including interaction terms between the baseline confounders until the differences decreased – as suggested by Austin (Austin, 2011).

Step 4: outcome analyses

Within the depression and AUD cohorts, we regressed treatment session attendance on PHQ-9 scores at 3-month/12-month follow-up and AUDIT scores at 12-month follow-up, respectively, and incorporated stabilized IPTW as regression weights to account for confounding.

Missing data were handled using a multiple imputation approach with 20 imputed datasets, under a missing at random assumption (Allison, 2000).

Results

Study population characteristics

A total of 499 users were recruited into the treatment cohorts (n = 281 in depression cohort; n = 218 in AUD cohort); 3 users (n = 2 for depression; n = 1 for AUD) screened negative on the PHQ/AUDIT at baseline and were excluded from the analysis. 6.8% users (n = 21 from depression cohort and n = 13 from AUD cohort) were missing most data at baseline and were subsequently lost to follow-up. At baseline, data from 258 and 204 patients were analyzed in the depression and AUD cohorts, respectively.

At 3-month follow-up, 6.9% of the sample analyzed at baseline (n = 18 from depression cohort and n = 14 from AUD cohort) were lost to follow-up. At 12-month follow-up, 7.1% of the sample analyzed at baseline (n = 17 from the depression cohort and n = 16 from AUD cohort) were lost to follow-up (see, Figure 3).

At baseline, the average age of the overall study sample was 38.5 years, nearly two-thirds were male, most were Hindu (92.2%), had at least primary education (46.5%), employed (71.4%) and married (91.3%). The depression cohort was on average 37 years

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Table 1. Socio-demographic and clinical characteristics of the PRIME India cohort study population at baseline

	Depression cohort (n = 258)	AUD cohort (n = 204)
	Mean (SD)	
Age (yrs)	37(12.5)	40(12.3)
PHQ scores	14.4(3.1)	–
AUDIT scores	–	18.4(7.8)
	n (%)	
Sex		
Men	99(38.4%)	203(99.5%)
Education		
<Primary education	55(21.3%)	56(27.5%)
>Primary education	115(44.6%)	100(49%)
Uneducated or illiterate	88(34.1%)	48(23.5%)
Employment		
Employed	132(51.2%)	198(97.1%)
Unemployed	126(48.8%)	6(2.9%)
Religion		
Hindu	226(87.6%)	200(98%)
Muslim	32(12.4%)	2(1%)
Christian	0(0.0%)	1(0.5%)
Other	0(0.0%)	1(0.5%)
Marital status		
Married	228(88.4%)	194(95%)
Married, not living together	2(0.8%)	2(1%)
Divorced	1(0.4%)	0(0.0%)
Widowed	15(4.7%)	1(0.5%)
Single	12(4.6%)	7(3.4%)
Asset Index[a]		
Highest wealth	58(32.2%)	45(25.9%)
Middle wealth	61(33.9%)	49(28.1%)
Lowest wealth	61(33.9%)	80(46%)

[a]n = 78 from depression cohort; n = 30 from AUD cohort missing data on asset index at baseline.

old, largely female (61.6%), Hindu (87.6%), with at least primary education (44.6%), employed (51.2%) and married (88.4%). The AUD sample was almost all male (99.5%) and employed (97.1%). They were, on average, 40 years old, had at least primary education (49.2%), were Hindu (92.2%), married (95.%) and belonged to the lowest wealth category (46.0%) (Table 1). Supplementary Table B outlines the differences in the sample analyzed at baseline, 3-month and 12-month follow-up.

In the depression cohort, between baseline and 3-month follow-up, n = 86 had "no attendance" (attended 0 HAP sessions), n = 92 had "low attendance" (attended 1 session) and n = 62 had "high attendance" (attended 2 or more sessions). In the AUD cohort, between baseline and 3-month follow-up, n = 94 had "no attendance" while n = 96 had "some attendance" (attended 1 or more sessions).

Results in the depression cohort

The pooled propensity scores for treatment attendance showed substantial overlap across different levels, with mean scores of 0.44 (see Supplementary Figure 1). Stabilized weights were adjusted to address extreme values, achieving confounder balance for treatment attendance and as indicated by weighted standardized differences below 0.25 (see Supplementary Figures 2–4).

Mean PHQ-9 score at 3-months was 1.34 points lower among those with high HAP attendance as compared to those with no attendance (95%CI: −2.62, −0.05). Those with a high HAP attendance, as compared to those with low attendance had 2.42 points lower mean PHQ-9 score at 3-month follow-up (95%CI: −3.68, −1.16). Mean PHQ-9 score at 3-month follow up among those with low attendance was 1.08 points higher as compared to those with no attendance (95%CI: −0.06, 2.22; Table 2). There was no evidence of an impact of HAP attendance on PHQ-9 scores among those who remained in the study at 12-months follow-up (see Table 2).

Results in the AUD cohort

The pooled propensity scores for treatment attendance showed substantial overlap across different levels with a mean of 0.6 (see Supplementary Figures 5 and 8), leading to confounder balance (see Supplementary Figure 6).

As compared to those who had no CAP attendance, those who attended some CAP sessions had 1.17 points lower AUDIT scores at 12-months (95%CI: −3.79, 1.46) (see Table 3).

Discussion

We report findings from an analysis of the impact of an implementation factor – treatment session attendance – on users' mental health outcomes within a task-shared psychological treatment for depression and AUD in India. Among those with depression, higher treatment attendance led to lower depression symptom severity at the 3-month follow-up but not at the 12-month follow-up visit. Among those with AUD, we did not find statistically significant differences in our sample.

Decreasing depression symptom severity at higher attendance levels

It is likely that essential components of HAP, such as building a counseling relationship, structuring and scheduling activities and developing problem-solving skills, require more than one session to implement effectively (Chowdhary et al., 2016). Inadequate treatment session attendance might have hindered addressing these, which may ultimately impact symptom severity. Furthermore, we found little evidence of an impact of attending one session as compared to not attending any sessions, which might also be explained by such a mechanism. This may also have implications for the sustained effect of treatment attendance. Within the RCT of HAP, the sustained effect of HAP at 12-month follow-up was partially mediated by increased levels of behavioral activation at 3 months (Weobong et al., 2017). Despite high attendance, limited user engagement and the resultant inactivation of key treatment components may explain the loss of the impact of treatment attendance on symptom severity in the longer run. Future studies would need to test this potential underlying mechanism.

Interestingly, we note that high attendance had a greater magnitude of impact when compared to low attendance (estimated

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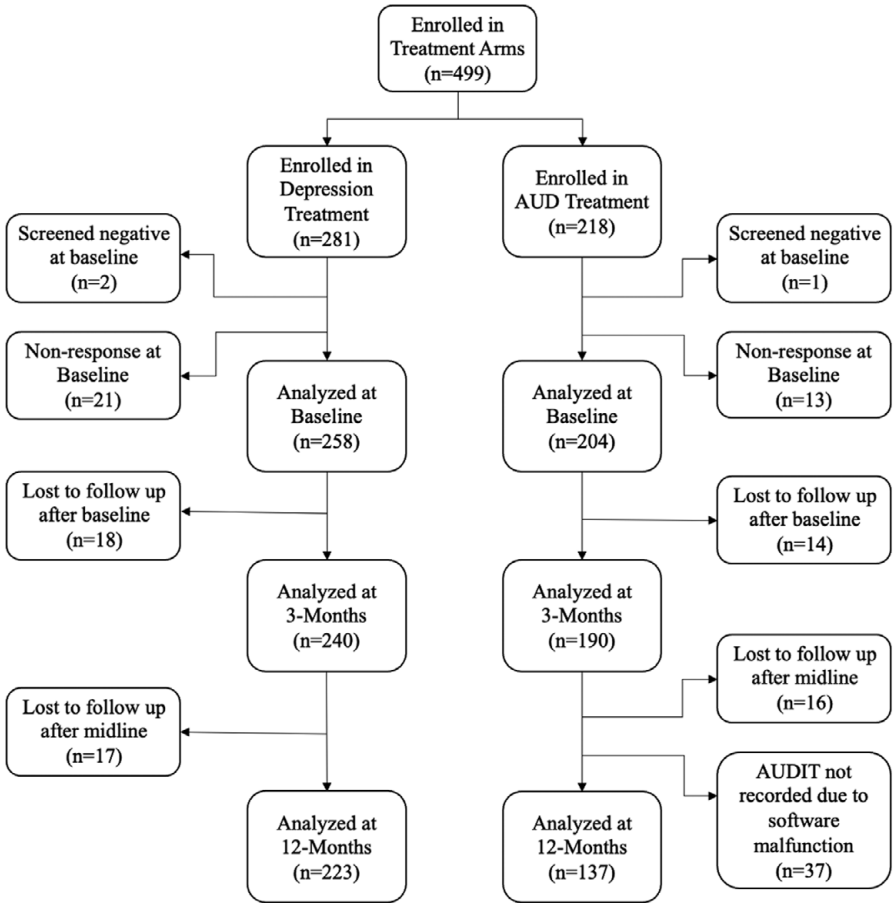

Figure 3. Flow diagram of sample size from enrollment through 12-month follow-up in the PRIME India cohort study.

Table 2. Impact of healthy activity program attendance and therapy quality on PHQ-9 scores in PRIME India depression cohort

	Difference in PHQ-9 scores between baseline and 3-month follow-up (*n* = 240)		Difference in PHQ-9 scores between baseline and 12-month follow-up (*n* = 223)	
	Estimate	95% CI	Estimate	95% CI
Treatment attendance				
High vs no attendance	−1.34	−2.62, −0.05	0.03	−1.34, 1.41
High vs low attendance	−2.42	−3.68, −1.16	−0.64	−2.05, 0.76
Low vs no attendance	1.08	−0.06, 2.22	0.68	−0.58, 1.94

Notes: Weighted linear regression was used to analyze the data; results are pooled from across 20 imputed datasets.

Table 3. Impact of counseling for alcohol program attendance in PRIME India AUD cohort

	Difference in AUDIT scores between baseline and 12-month follow-up (*n* = 137)	
	Estimate	95% CI
Treatment attendance		
Some attendance	−1.17	−3.79, 1.46
No attendance	Ref.	-

Notes: Weighted linear regression was used to analyze the data; results are pooled from across 20 imputed datasets; AUDIT was mistakenly skipped in the AUD cohort at the 3-month follow-up, hence, AUDIT scores at the 12-month follow-up is the primary outcome here; Therapy quality impact analysis was not conducted due to some weighted standardized differences exceeding 0.25.

mean PHQ-9 difference = −2.42) than when compared to no attendance (estimated mean PHQ-9 difference = −1.34). Previous studies have pointed out to the potential for less desirable or negative mental health outcomes in psychological treatments (Barlow, 2010) which might explain these results. Especially in routine care settings where participants attended a lesser number of treatment sessions than observed in controlled settings. Reasons for dropping out of psychological treatment such as perceptions of the ineffectiveness of therapy, unrealistic expectations from the treatment, limited therapeutic relationship with the provider, etc. (Linden, 2013) might explain the deterioration of symptoms among those with low attendance, and the subsequently greater impact of higher treatment attendance as compared to no treatment attendance that we observed in our sample.

While it may seem intuitive that low session attendance would limit intervention impact, our findings provide empirical evidence of the extent of this challenge in routine implementation. The high proportion of participants attending zero or only one session reflects real-world barriers to engagement, emphasizing the need

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for further research on strategies to improve retention and maximize intervention effectiveness.

In consideration of these findings, initiatives to encourage higher treatment attendance for task-shared psychological treatments for depression need attention. Both HAP and CAP were generally acceptable to patients in PRIME's cohort study in India, however, patients reported that they were not willing to travel to the CHC for follow-up sessions (Shidhaye et al., 2019). An alternative would be to provide therapy at home, however, this may not always be feasible given the number of personnel needed for implementation at this scale in addition to privacy concerns. Building a specialized lay-workforce to create a cadre of community mental health workers may be effective approach. Furthermore, using a combination of interventions (such as patient education and follow-up phone calls) has been previously found to improve treatment attendance in low-income clinics in the United States (Gandy et al., 2019) and could also be explored as a viable strategy in low resource settings globally. It would also be worthwhile to investigate the determinants of treatment attendance among this population in future studies.

Treatment session attendance and alcohol use disorders

Findings from the RCT of CAP suggested that increased readiness to change at 3 months mediated the effects of CAP on drinking outcomes at 12 months (Nadkarni et al., 2017). In alignment, our results suggest that just "attending" CAP sessions might not have an impact on alcohol-use-related outcomes, as long as users do not meaningfully engage with CAP to lead to a change in understanding, perceived need and commitment to change. Future research would need to understand the extent of participant engagement in task-shared psychological treatments.

However, as in the depression cohort, we cannot negate the possibility of a lack of sustained effect of treatment attendance. There is a need to test for the impact of treatment attendance on AUD symptom severity over shorter versus longer periods of time in future studies.

Key considerations and potential limitations

A key consideration in our study is the operationalization of "high attendance" as two or more sessions in HAP. While this threshold may appear low from an ideal treatment fidelity perspective, it reflects real-world engagement patterns in task-shared interventions. Given the implementation constraints in community-based settings, defining high attendance in this manner allowed for a pragmatic understanding of intervention exposure. Our study prioritizes external validity by examining how attendance in task-shared psychological treatments functions in real-world settings. While attendance rates varied, this reflects the reality of programme implementation, where participants may only attend a limited number of sessions. Though this structure does not allow us to parse out the impact of each additional session, our analysis is designed to compare meaningful attendance groups in a way that best captures real-world engagement patterns. However, we acknowledge that this categorization does not capture a more nuanced dose–response relationship, which remains an important area for future research.

The results of our study must be interpreted in light of some limitations. First, given the quasi-experimental nature of the study, we may not have captured every potential confounder of the associations of interest (such as acceptability of treatment, etc.), resulting in residual confounding. We also acknowledge the wide 95% confidence intervals of our estimates indicating imprecise estimates given the smaller sample size. Future research would need to examine the extent to which our findings apply to task-shared psychological treatments in other parts of India, especially in urban settings, for other mental illnesses and in other LMICs using a larger sample size. We initially also carried out an analysis of the causal impact of another implementation factor, provider-level therapy quality, on participant outcomes, however, could not generate statistically reliable results because of the small sample size ($n = 6$). We also suggest that future research could explore the role of quality of task-shared psychological treatment delivered and other implementation factors, independently and in relation to each other.

Conclusions

Of the several factors integral to the successful implementation of task-shared psychological treatments in routine care settings, treatment attendance has been reported as a major barrier. However, little research exists on the extent of its impact on treatment outcomes. In the current study, we found that higher treatment attendance led to a decrease in symptom severity of depression among users of a task-shared psychological treatment at 3 months but with little evidence of an effect at 12-month follow-up. We did not find evidence of any impact of treatment attendance on symptom severity among those with AUD at 12-month follow-up. Our findings have implications for enhancing session attendance among those with depression within task-sharing-based psychological treatments.

Open peer review. To view the open peer review materials for this article, please visit http://doi.org/10.1017/gmh.2025.36.

Supplementary material. The supplementary material for this article can be found at http://doi.org/10.1017/gmh.2025.36.

Data availability statement. The data that support the findings of this study are available from Alan J Flisher Centre for Public Mental Health, Department of Psychiatry & Mental Health, University of Cape Town. Restrictions apply to the availability of these data, which were used under license for this study.

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Author contribution. S.D. led the conceptualization and design of the study, conducted formal analysis and data curation, and prepared the original draft. S.D., J.G., and C.N. were involved in methodology, data interpretation, and manuscript development. J.G., C.N., V.P., and A.L. provided critical revisions and supervised the study. All authors read and approved the final manuscript.

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Ethical approval. Ethical approval for the PRIME cohort study was obtained from the Institutional Review Boards of the WHO (Geneva, Switzerland), University of Cape Town (South Africa), Sangath (Goa, India), and the Indian Council of Medical Research (New Delhi, India). All study participants gave written informed consent prior to their involvement in the study.

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