

## Interventions Brief Report

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# Development of a transdiagnostic stepped care programme for common adolescent mental health problems in Indian secondary schools: lessons from a pilot study examining acceptability and feasibility

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## Abstract

**Background.** The 'PRemIum for aDolEscents' (PRIDE) project has developed a school-based, transdiagnostic stepped care programme for common adolescent mental health problems in India. The programme comprises a brief problem-solving intervention ('Step 1') followed by a personalised cognitive-behavioural intervention ('Step 2') for participants who do not respond to the first step.

**Methods.** A mixed-method design was used to evaluate the acceptability and feasibility of the stepped care programme in five schools in New Delhi. Participants were  $N = 80$  adolescents (mean age = 15.3 years, females = 55%) with elevated mental symptoms and associated distress/impairment.

**Results.** 61 (76%) of the enrolled sample were assessed following Step 1, from which 33 (54%) met non-remission criteria. Among these 33 non-remitted cases, 12 (36%) opted for Step 2 and five (42%) completed the full programme. The remaining non-remitted cases ( $n = 21$ , 64%) opted out of further treatment. Perceived resolution of the primary problem ( $n = 9$ , 43%) was the most common reason for opting out. The median time to complete each step was 22 and 70 days respectively, with a gap of 31 days between steps. Qualitative feedback from adolescents and counsellors indicated requirements for a shorter delivery schedule, greater continuity across steps and more collaborative decision-making.

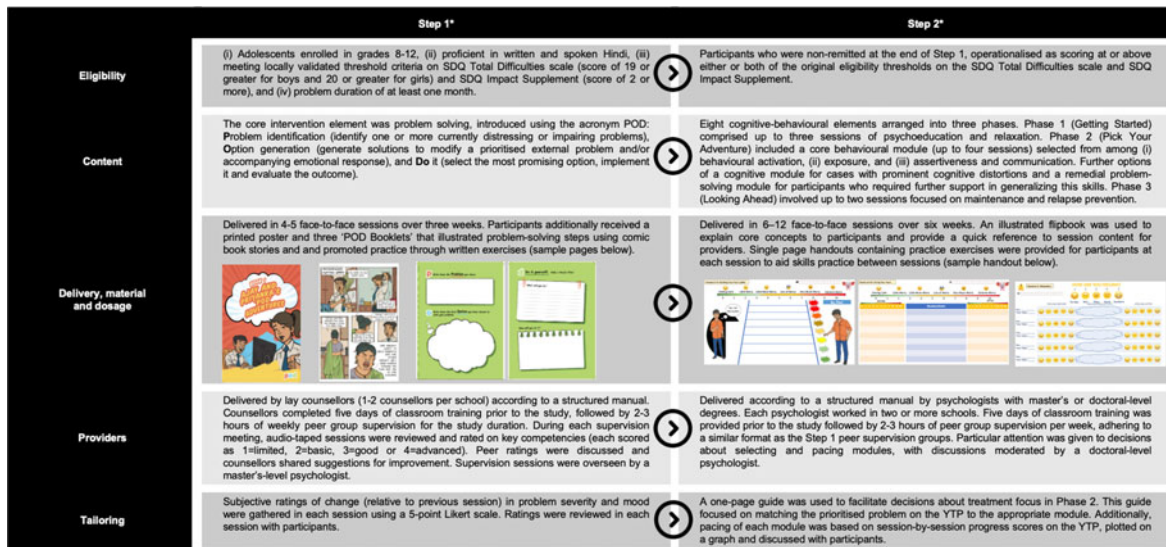
**Conclusions.** This study provides preliminary evidence for a stepped care programme aimed at common adolescent mental health problems. Modifications are recommended to enhance the acceptability and feasibility of the programme in low-resource settings.

## Introduction

The 'PRemIum for aDolEscents' (PRIDE) project was initiated in 2016 to address the large burden of adolescent mental health problems in India, home to 20% of the global population of adolescents (United Nations, Department of Economic and Social Affairs, Population Division, 2019). Designed initially for urban, low-income secondary schools, the PRIDE intervention model incorporates three design innovations. First, a core set of practice elements have been systematically identified by matching evidence-based practices to common adolescent problems in the local context (Boustani *et al.*, 2020). These practices are combined within a structured transdiagnostic protocol that targets elevated presentations of anxiety, depression and conduct problems, identified through screening for symptoms and associated distress/impairment (Chorpita *et al.*, 2020; Michelson *et al.*, 2020a). Second, PRIDE employs lay counsellors as the primary delivery agents, in line with evidence for the cost-effectiveness of task-sharing in mental health care in diverse low-resource settings (Raviola *et al.*, 2019). Third, a stepped care architecture (Bower and Gilbody, 2005) allows for further resource efficiency, such that a broadly applicable problem-solving intervention ('Step 1') is delivered as a brief first-line intervention, followed by a more tailored, higher-intensity second step ('Step 2')

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\*Early development of each step has been described in previous publications (Michelson *et al.*, 2020a; Chorpita *et al.*, 2020).

**Fig. 1.** Description of stepped care components used in the current study

for non-responders. The blueprinting of these intervention steps has been detailed elsewhere (Chorpita *et al.*, 2020; Michelson *et al.*, 2020a), while Step 1 has also been trialled as a standalone intervention (Michelson *et al.*, 2020b; Malik *et al.*, 2021). The latter showed small but sustained effects over 12 months on multiple outcome domains, including mental health symptoms, self-defined problems, functional impairment and perceived stress. Nonetheless, around half of the Step 1 participants did not meet remission criteria in the short term, suggesting the need for extended and more differentiated treatment among early non-responders. Here we report the first formal evaluation of the integrated steppedcare programme, examining acceptability and feasibility with respect to quantitative process indicators, indicative outcome measures and qualitative feedback from intervention participants and providers.

## Methods

### Design and setting

A mixed-method design was used to assess the acceptability and feasibility of the stepped care programme in three government-aided and two charity-aided secondary schools in New Delhi, India. Three of the schools were co-educational and two were all girls' schools, with sampling frames in grades 8–12 ranging in size from 560 to 1250 across the five schools. None of the schools had pre-existing individual counselling provision. Approvals were obtained from the partner schools and Institutional Review Boards of Sangath (the implementing organisation) and Harvard Medical School (the sponsor).

### Participants, measures and procedures

Study referrals were accepted from teachers and directly from students over a 7-month period (July 2019–February 2020). Referrals were generated using a combination of whole-school and classroom-based sensitisation activities (see Parikh *et al.*, 2021 for a detailed description). The former included poster displays on school notice boards and information sessions with teachers

and principals. Classroom activities included counsellor-led presentations involving an explanatory video and interactive discussion. Referred students were followed up individually by the research team and assessed for eligibility using the Strengths and Difficulties Questionnaire (SDQ) and its Impact Supplement (Goodman, 2001), which are internationally validated measures of youth mental health symptoms and distress/impairment respectively. Eligibility thresholds are set out in Fig. 1 and elaborated elsewhere (Parikh *et al.*, 2019). Individual assent was obtained from participants along with parent/guardian consent for adolescents aged below 18 years. At baseline (T0), participants completed the Youth Top Problems (YTP, Weisz *et al.*, 2011), a self-reported idiographic measure of prioritised psychosocial problems. Participants were then offered a lay counsellor-delivered problem-solving intervention (Step 1). Following Step 1, adolescents were re-assessed (T1) and those who were non-remitted were offered further intervention (Step 2) by a psychologist. As described in Fig. 1, the Step 1 providers included six lay counsellors (one per school and one supplementary counsellor deployed in co-educational schools). Step 2 was delivered by three psychologists (each shared between two schools). All providers received five days of office-based training by intervention developers, followed by weekly supervision for the study duration. Further details about the intervention steps are provided in Fig. 1.

Participants who completed the T1 assessments were followed up at T2 (approximately 12 weeks from T0, or immediately following Step 2 if this extended beyond 12 weeks). Participants who received both intervention steps were additionally invited to take part in semi-structured individual interviews. Qualitative data were also obtained from separate focus group discussions with Step 1 and Step 2 providers. All outcome assessments, individual interviews and focus groups were conducted by researchers who were not involved in intervention development or delivery.

### Analysis

Acceptability was examined using quantitative indicators of uptake, completion, and reasons for non-completion for each

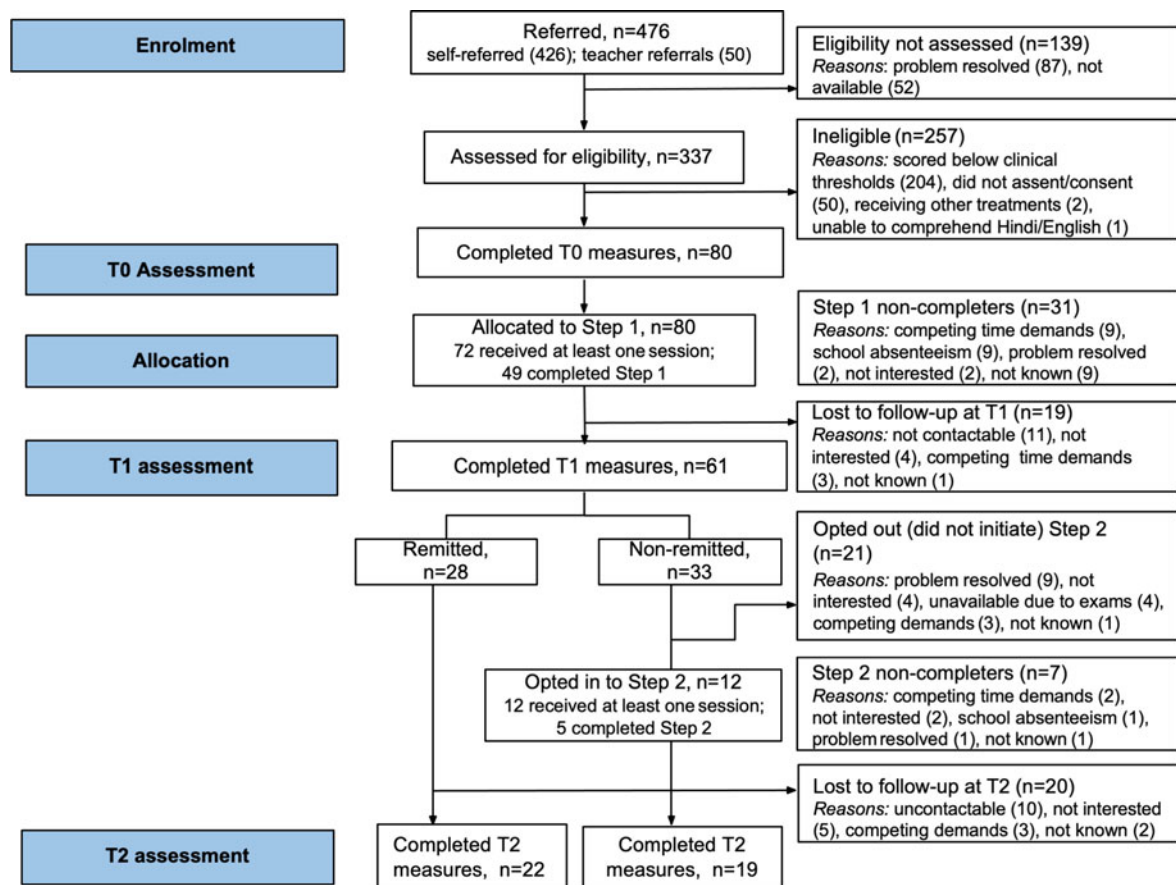


Fig. 2. Flowchart of research activities with adolescents.

intervention step. These data were triangulated with themes from qualitative interviews with adolescents ( $n = 9$ ). Feasibility was examined using quantitative indicators of dosage, duration of intervention steps and transitions, as well as qualitative feedback from Step 1 providers ( $n = 5$ ) and Step 2 providers ( $n = 3$ ). Indicative clinical outcomes (SDQ Total Difficulties and YTP scores) were analysed descriptively for those participants who completed assessments across the three time points. The remission rate, operationalised as scoring below initial eligibility cut-offs on both the SDQ Total Difficulties and SDQ Impact scales, was assessed at T2.

## Findings

### Acceptability

A total of 476 referrals were received, accounting for 43% of the student population in 32 classes sensitised during the study period. As shown in Fig. 2, 337 (71%) of the referred adolescents were assessed for eligibility, from which 80 (24%) completed consent procedures and were enrolled in the study (age:  $M = 15.3$  years,  $s.d. = 1.4$ ;  $n = 44$ , 55% females). From this enrolled sample, 72 (90%) started Step 1 and 49 (61%) attended 4 or 5 sessions, as recommended by the intervention protocol. Sixty-one (76%) study participants were assessed at T1, of which 33 (54%) met non-remission criteria and were thus eligible for Step 2. Only 12 (36%) non-remitted participants opted for Step 2 (age:  $M = 14.7$  years,  $s.d. = 1.3$ ;  $n = 4$ , 33% females) and five (42%) completed the full course (i.e., attended at least five sessions, including

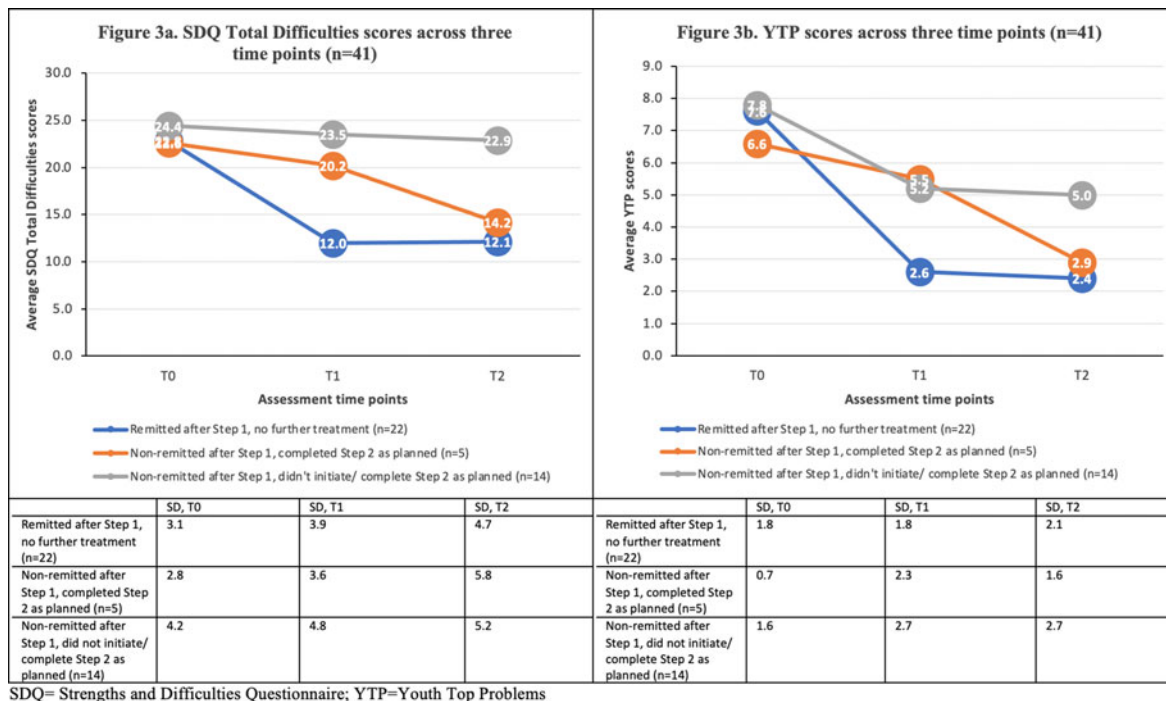
final maintenance and relapse prevention session). The remainder of the non-remitted cases ( $n = 21$ , 64%) opted out from further treatment, most commonly because of perceived resolution of the primary problem ( $n = 9$ , 43%) (see Fig. 2 for other reasons for opting out and non-completion of intervention across both steps).

Adolescent interviews suggested that the relatively shorter duration of Step 1 was preferred because it minimised interference with participants' other regular commitments. There was also consensus around the benefits of a strong therapeutic bond and the undesirability of transitioning to a new counsellor between steps. In addition, most interviewees preferred the illustrated comic-book format of the Step 1 booklets compared with the text-based handouts given during Step 2. Nevertheless, most participants felt that Step 2 provided a useful complement to Step 1 by teaching additional coping skills.

### Feasibility

Step 1 completers attended a mean of 4.7 sessions ( $s.d. = 0.5$ ) spread over 22.0 days (IQR = 17.0, 34.0). Step 2 completers attended an additional 7.4 sessions ( $s.d. = 2.7$ ), spread over 70 days (IQR = 37.0, 74.0), with a median gap of 31 days (IQR = 22.0, 67.3) between steps. These feasibility indicators were longer than planned for Step 2 and for the transition between the two steps (Fig. 1).

In line with qualitative feedback from adolescents, providers endorsed a shorter intervention and greater continuity between



**Fig. 3.** Outcomes for participants on SDQ and YTP (mean and s.d.) across three time points ( $n = 41$ ).

steps. To this end, they recommended (i) more regular availability of school-based counsellors to enable flexibility in scheduling, (ii) use of the same trained lay counsellors to deliver both intervention steps, and (iii) counsellors (rather than researchers) conducting step-up assessments to enable more dynamic and collaborative decision-making.

### Clinical impact

Complete outcome data were available for 41 participants (see Fig. 2). As shown in Fig. 3a and b, the cohort of 22 participants who were remitted at T1 sustained overall improvements in their SDQ Total Difficulties and YTP scores up to T2 without further treatment being provided. Among the group that was non-remitted at T1 ( $n = 5$ ), completing Step 2 coincided with reduced scores from T1 to T2. Among the participants who were eligible for, but did not initiate or complete Step 2 ( $n = 14$ ), outcomes were unchanged from T1 to T2. At the individual case level, 18 out of 22 (82%) Step 1 remitters remained remitted at T2. Step 2 completers were more likely to remit (3 out of 5, 60%) compared with counterparts that did not start or otherwise did not complete Step 2 (3 out of 14, 21%).

### Discussion

This study examined the acceptability and feasibility of a novel stepped-care programme targeting common adolescent mental health problems in India. The results suggested that teaching additional coping skills could help to improve outcome trajectories for non-responders to a first-line intervention. However, several factors deterred uptake of Step 2. These included a mismatch between the stepping up criteria and adolescents' subjective perceptions of improvement, delays in stepping up, dissatisfaction with changing counsellors, and the prolonged overall treatment duration.

Further, the relatively limited appeal of text-heavy printed hand-outs affected adolescents' engagement with Step 2 materials.

Following from these results, four key modifications have been incorporated into an optimised stepped care protocol. First, a two-provider model has been superseded by an arrangement where a single trained (lay) counsellor delivers both steps. Second, we have changed the decision-making procedures for stepping up. Rather than deploying binary cut-offs based on standardised symptom-based measures, counsellors focus on trajectories of change on the YTP, a person-centred outcome measure (Krause *et al.*, 2021). The new system emphasises shared decision-making, involving collaborative discussions that explore the index adolescent's expectations and perceived progress, leading to a shared understanding about the need for, and potential focus of, additional treatment (Guinaudie *et al.*, 2020). Third, the preference for an accelerated delivered schedule has been addressed by capping the maximum number of Step 2 sessions at six and providing practice materials earlier in the intervention so that participants can use these at their own pace. Fourth, we have re-designed the adolescent-facing resource materials for Step 2 to ensure better consistency with illustrated booklets used in Step 1. A future report will provide evidence on the modified stepped care protocol, including data on its use remotely during the Covid-19 pandemic when schools were physically closed.

To our knowledge, this is the first study to evaluate a stepped care mental health intervention for adolescents in a low- or middle-income country. Strengths of the study include the triangulation of multiple data sources, and a participant sample with diverse mental health presentations that reflect real-world case mix, thus strengthening the generalisability of findings. However, the findings need to be interpreted with caution, given the lack of a control condition, the small number of participants who ultimately completed both intervention steps, and the relatively large proportion of Step 1 participants who were

unavailable for follow-up. Moreover, future research is needed to assess the PRIDE stepped care model and other stepped protocols across diverse populations and resource contexts, such as out-of-school youth and in rural communities. Research is also needed to investigate how the competencies required to deliver shared decision-making can be operationalised, learned and used effectively by lay counsellors.

## Conclusion

This study provides preliminary evidence for a sequential stepped-care programme addressing common adolescent mental health problems in a low-resource setting. Several modifications have been proposed to ensure that the next iteration of the stepped care protocol is more collaborative and attuned to changes in young people's prioritised problems (rather than symptoms *per se*), can be delivered in a time-efficient manner, and affords adequate continuity between steps. Future research is planned for the modified stepped care protocol, particularly with respect to the use of intervention in the context of the COVID-19 pandemic and the feasibility of implementing shared decision-making.

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**Conflict of interest.** The authors declare no conflict of interest.

**Ethical standards.** The authors assert that all procedures contributing to this work comply with the ethical standards of the relevant national and institutional committees on human experimentation and with the Helsinki Declaration of 1975, as revised in 2008. The study was approved by the Institutional Review Boards of Sangath, India (Reference number: VP\_2015\_017) and Harvard Medical School, USA (Reference number: IRB17-0379). The written consent procedure is detailed in the manuscript.

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