Training School Teachers to promote Mental and Social Well-being in Low and Middle Income Countries: Lessons to facilitate scale-up from a Participatory Action Research Trial of *Youth First* in India

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Mental and social wellbeing (MSWB) promotion programs could improve mental health and other outcomes for youth in Low and Middle Income Countries (LMICs). Unfortunately, few such programs have progressed to scale-up and few studies have detailed processes and considerations that could facilitate doing so. This study begins to fill these gaps, describing key findings from training and supporting government middle school teachers to deliver the *Youth First Resilience Curriculum*, a MSWB promotion program, in Bihar, India. We conducted a Participatory Action Research trial of the resilience curriculum among 792 middle school youth and 55 teachers at 15 government schools. Participant-observations, exit interviews, and group discussions were conducted and analyzed via multiple rounds of coding to generate thematic findings. A number of schools showed relatively high levels of interest, session reliability and fidelity, student interaction and teacher facilitative abilities, but there was great variation within the sample. Three leverage points emerged to facilitate future scale-up: factors for successful site assessment and program initiation, supporting teacher success via interest and motivation, and responding to varied teacher skill levels. These points represent critical focus areas for practitioners and policy-makers as more MSWB promotion programs begin to scale in LMICs.

Keywords: Well-being, youth, India, scale-up, resilience

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Introduction

Today, there are 2.2 billion children and adolescents in low and middle income countries (LMICs) (UN, 2015) and their mental health represents a grave concern. Seventy-five percent of mental disorders emerge before age 25 (McGorry, Purcell, Goldstone, & Amminger, 2011). Additionally, LMIC youth face a host of mental health risks, including poverty, discrimination, and malnutrition (Barry, Clarke, Jenkins, & Patel, 2013; Kieling et al., 2011). The consequences of poor mental health among youth are wide-ranging: mental health is related to many other outcomes, including educational attainment, violence, reproductive and sexual health, and substance use (Patel, Flisher, Hetrick, & McGorry, 2007).

Mental and social wellbeing (MSWB) promotion programs can improve mental health and related outcomes for youth and can prevent problems (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011; Payton et al., 2008; Petersen et al., 2016; Weare & Nind, 2011). Such programs have variously been called 'social emotional learning', 'resilience', 'life skills', 'mental health promotion', and 'character education', programs, among others (Weare, 2010; Weare & Nind, 2011). We use the term 'mental and social wellbeing promotion programs' to mean any programs that aim or have been shown to improve mental and/or social wellbeing. Though there are exceptions, MSWB promotion programs often share similarities: structurally, they are often conducted in small groups by trained facilitators (Durlak et al., 2011); thematically, they often include sessions building skills such as emotional regulation and management, resilience, communication, problem-solving, and conflict resolution (Weare & Nind, 2011). However, most MSWB promotion programs have been conducted and evaluated in higher income countries (Barry et al., 2013; Patel et al., 2007; Patel, Flisher, Nikapota, & Malhotra, 2008). The few LMIC programs have generally failed to progress beyond pilot to scale-up (Barry et al., 2013).

A number of critical considerations should be made prior to scaling-up any intervention, including delivery personnel, delivery location, and funding at scale. One promising model for scaling up MSWB promotion programs in LMICs that addresses all of these considerations involves training government school-teachers to conduct programs in schools, eventually transferring capacity to government to integrate programs into school-based offerings.

However, training LMIC teachers to facilitate such programs is challenging. LMIC teachers face time constraints as student enrollment has outpaced teacher hiring. Teacher absenteeism, lack of qualified/credentialed teachers and low teacher motivation are also common (Chaudhury, Hammer, Kremer, Muralidharan, & Rogers, 2006; Moon & Dladla, 2013; Snilstveit et al., 2015; UNESCO, 2016). LMIC teachers may also lack facilitation skills or have low comfort levels with students, leading to difficulty discussing sensitive topics (Chandra-Mouli, Lane, & Wong, 2015), which is often necessary in MSWB promotion programs. Additionally, infrastructure concerns remain prevalent, leaving teachers lacking classroom space, water and electricity, which may affect not only the quality of a school's teaching and learning (Glewwe, Hanushek, Humpage, & Ravina, 2011) but also the quality of a school-based MSWB promotion program.

Recently, studies have examined factors supporting or impeding school-based MSWB promotion programs, such as contextual factors like policies or infrastructure (e.g., Greenberg, Domitrovich, Graczyk, &

Zins, 2005; Han & Weiss, 2005; Lochman et al., 2009). Few have focused on factors related to teacher skills necessary for conducting MSWB promotion programs (Han & Weiss, 2005). Additionally, most research has been done in higher income countries, ignoring LMIC-specific factors. This manuscript begins to fill these gaps, presenting a participatory action research trial of a school-based MSWB promotion program in Bihar, India. In this manuscript, we describe key experiences and challenges in training teachers as facilitators and identify key leverage points to help improve processes as programs scale.

The Intervention: The Youth First Resilience Curriculum

Youth First combines a resilience-based MSWB promotion program for youth with an adolescent health program. Youth First has been developed and implemented by CorStone, a US-based 501(c)3, and aims to improve mental, social, physical, and educational wellbeing. *Youth First* begins with a 15-session MSWB promotion program called the *Youth First Resilience Curriculum*. Session topics include character strengths, emotional awareness and management, goal setting, problem solving, and assertive communication. The resilience curriculum is followed by a 15-session adolescent health curriculum, covering topics such as reproductive and sexual health, clean water and hygiene, and nutrition. *Youth First* is administered through peer-support groups of 12-15 students each, meeting one hour weekly during the school day, led by pairs of trained schoolteachers. The pedagogy is interactive and facilitative, utilizing stories, discussions and activities to convey concepts. This study focuses on the resilience curriculum, representing *Youth First*'s MSWB promotion component.

Studies, including a randomized controlled trial, have shown that this resilience curriculum is feasible, acceptable, and effective in a range of settings in India. This curriculum has been shown to significantly improve assets such as emotional resilience and self-efficacy, as well as psychological and social wellbeing, vs. controls (Leventhal, Gillham and DeMaria, 2015). *Youth First* has also been shown to significantly improve health behaviors such as hand washing, clean water behaviors, and ability to get to a doctor when needed, vs. the health curriculum alone (Leventhal, DeMaria and Gillham, 2016). More about *Youth First*'s content, pedagogy, and effects is available elsewhere (Leventhal, Gillham and DeMaria, 2015; Leventhal, DeMaria and Gillham, 2015, 2016)

Current Study

Prior to the current study, the resilience curriculum was a school-based program conducted by community facilitators rather than teachers. The current study aimed to document and improve the processes of training and supporting government schoolteachers to deliver the curriculum, a critical step towards scale-up via government schools. The study was a participatory action research trial conducted in rural Bihar, India among government schoolteachers of Standard VIII students (equivalent to US 8th grade). This manuscript describes teacher behaviors, skills and attitudes throughout the process of training and supporting them to become facilitators and identifies key leverage points that may allow for better teacher performance in similar school-based MSWB programs in LMICs in the future.

Methods

CorStone partnered with school administrators and a local implementing partner, Integrated Development Foundation, to test the resilience curriculum. The Government of Bihar provided permission to train government schoolteachers to conduct the program within government schools. Two Master Trainers (MTs) provided training and support to teachers and two Research Assistants provided additional observations during the study. MTs and Research Assistants were trained and managed by CorStone and based at Integrated Development Foundation. The study was overseen by two Institutional Review Boards (IRBs): Sangath IRB (India), and Chesapeake IRB (US).

Setting and Participants

Home to over 100 million people, Bihar is India's third most populous state and also has some of the country's worst education outcomes (Bihar's illiteracy rate, for instance, is India's highest: 50% vs. 37% for all of India; Census of India, 2011). Study participants included 792 Standard VIII youth and 55 teachers at 15 government schools in rural Patna district, Bihar. Table I provides information about schools and participants.

Table I. School, Teacher and Student Characteristics

School Characteristics	n	M	SD
Standard VIII students	15	82.2	36.5
% female Standard VIII students (excluding one all-girls school)	14	53.4%	10.8%
Student:teacher ratio (Standards I-VIII)	15	46.9	18
Demographics	n	Freq.	%
Schools with majority scheduled castes, tribes, and/or other backwards castes	15	12	80%
Student Characteristics	**n**	**M**	**SD**
Age at program start (years)	610	13.5	1.0
Teacher Characteristics	**n**	**M**	**SD**
Age at program start (years)	55	39.5	9.7
Years of prior teaching experience	55	7.0	7.1
Highest Education Completed	n	Freq.	%
High School (Standard XII)	55	10	18.2%
Bachelor's Degree	55	22	40.0%
Post-graduate Diploma	55	5	9.1%
Master's Degree	55	14	25.5%
Doctoral Degree	55	4	7.3%

Participatory Action Research

The theory used to guide the study was participatory action research (Bergold & Thomas, 2012), which is a "systematic inquiry, with the collaboration of those affected by the issue being studied, for purposes of education and taking action or effecting change" (Green et al., 2003, p. 419). During this study, stakeholders (including principals, teachers, MTs and other intervention staff) collaborated with researchers to generate and interpret data while conducting the intervention. Various methods were used to ensure the participatory nature of this process, including participant-observations, focus-group discussions, and advisory groups. Training and supporting teachers to conduct the curriculum included several phases, including a formative phase, a school and teacher selection process, teacher training, and ongoing mentoring/support for teachers as they facilitated sessions.

Formative component

The formative phase included 24 respondents in interviews and focus group discussions, including NGO representatives who had previously trained Bihar's teachers to deliver school-based curricula, government agency representatives familiar with Bihar teachers' capacities (e.g., Bihar Education Project Council; State Council of Education Research and Training), and Bihar's government school principals and teachers. Interviews and focus group discussions aimed to identify barriers and challenges to a teacher-led program and potential strategies and solutions to be tested as the study progressed.

Site selection

Following the formative phase, we selected schools for study participation. School selections were restricted to three blocks in rural Patna district (Maner, Phulwarisharif and Bihta) to ensure accessibility. Integrated Development Foundation sampled 44 schools for inclusion in the study frame, selected purposively to include diverse circumstances, such as schools with different major castes and/or religions (including schools with high percentages of backward and/or scheduled castes/tribes), schools in different geographies, etc., to increase generalizability. Fifteen schools were selected based on infrastructure, principal interest, student/teacher ratio, and number of interested/available teachers. We invited all enrolled girls and boys in Standard VIII to participate in the 5-month program.

Teachers were invited to participate as facilitators based on a group discussion with MTs about resilience concepts, motivation and interest in participating, and principals' and students' recommendations. Principals recommended teachers after receiving a presentation about the curriculum and desired facilitator skills. A convenience sample of 2-3 students per school recommended teachers with whom they had good relationships.

Implementation and observation

MTs trained teachers to conduct the curriculum during a three-day residential training at program outset. The training included concepts, theories, and evidence on which the curriculum is based (including Positive Psychology, Emotional Intelligence, and Restorative Practices), the content and procedure of conducting

sessions using the facilitator's manual, and facilitation skill-building. The training included activities, discussions, and practice sessions. Teachers received a small travel allowance for attending this training.

MTs visited schools for supervision, mentoring and support approximately monthly at each school where they observed sessions and reviewed content and facilitation skills as needed. MTs also scheduled one-on-one or small group support sessions to address specific concerns or training needs.

MTs and Research Assistants recorded participant-observations of and reflections on interactions with teachers, students, and school administrators throughout the process, generating more than 185 documents. Participant-observations included two broad components: 'observation description' and 'observer reflections'. Additionally, semi-structured exit interviews were conducted with a convenience sample of 66 students directly following sessions, including questions about students' session experiences, their perceptions of teachers' facilitative abilities, and their comfort levels with teachers during sessions.

Teachers contributed to assessing and improving processes throughout the study via two teacher advisory groups: one group of ten teachers from participating schools in Bihta and Phulwarisharif and another of five teachers in Maner. These groups met regularly to discuss experiences, challenges, and potential solutions.

Data analysis

Data and notes from each step were discussed by the research team throughout the study. Any challenges that arose through observations or teacher or staff experience were discussed and potential solutions generated. After sessions concluded, all observations, interviews and focus group discussions were coded by multiple research team members to generate thematic findings. In the first coding round, one researcher sorted through raw data, applying descriptors to excerpts. In the second coding round, another researcher refined and sorted descriptors into thematic findings. Analysis was inductive and deductive, searching for specific barriers to success, but also allowing for unexpected findings.

The following major themes emerged through consecutive coding rounds: teacher and school interest, teacher reliability, fidelity to intervention, teachers' abilities to elicit student interactions, and teacher reflectivity. To disentangle and describe the range and diversity of experiences, we qualitatively distributed each school as high, medium, or low within each theme in comparison to the other participating schools. For example, regarding teacher interest, schools where teachers showed overt interest were rated as high, those where teachers made neutral remarks medium, and those where teacher opinions diverged greatly or were even antagonistic were rated low. Because of variability in the data, not all schools were assessed within each theme. For instance, if not enough information was available to adequately understand teacher reliability from interviews or observations at a school, we do not describe teacher reliability at that school.

Trustworthiness

To ensure trustworthiness of data, we used two strategies proposed by Maxwell (2005): Triangulation of time, space, and individuals; and searching for discrepant evidence and negative cases. Triangulation reduces (but does not eliminate) chance associations and systematic biases while allowing for a better overall assessment

of the topic. We used triangulation of participants, time, and space by engaging multiple sites with multiple teachers, administrators, and stakeholders. During analysis, we identified and analyzed discrepant data and negative cases to explore competing explanations. We rigorously examined supporting and discrepant data to assess plausibility of retaining or modifying our conclusions. In addition, drawing from participatory action research, we sought feedback from participants to test our biases and assumptions.

Findings

The primary findings from this trial emerged in five major themes: teacher and school interest, teacher reliability, fidelity to intervention, teachers' abilities to elicit student interactions, and teacher reflectivity.

Teacher and school interest

We initially visited 44 mapped schools and rated schools on criteria that could affect implementation, including teacher and principal interest levels, space and infrastructure adequacy, and number of available teachers. We weighted all factors equally, selecting schools with the highest ratings. No school emerged with uniformly high ratings on all indicators; thus, some selected schools had good infrastructure but poor teacher/principal interest, or poor infrastructure but adequate interest, etc.

Of the 15 selected schools, seven demonstrated high initial interest with earnest willingness to implement the program. At one school, one teacher said; "if nobody joins your program, I will join your program as it is necessary in today's context." The principal at this school assured all possible support and the required number of teachers.

Other selected schools had infrastructure challenges that personnel initially believed might hinder participation. One principal noted that classes were at capacity with no space for children to sit, and plywood partitions separated makeshift offices from classrooms. Another school had frequent open defecation around campus and employed a teacher who controlled classes with a stick, leading to concerns that the school atmosphere was not conducive for a program requiring a sense of safety and equality. However, interest and motivation among personnel at these schools drove a strong desire for program selection despite adverse conditions.

During implementation, motivated and interested teachers overcame many challenges. With even one motivated teacher at a given school, it was possible to overcome issues with other teachers, principals, competing government time requests, lack of space, and/or student or teacher absenteeism. For example, one teacher noted during an advisory group meeting:

> The most difficult part for me was that I had to attend 30 days [government teacher] training…. For the whole month, I was in training and when I came back to school, not a single session had been conducted by other teachers at my school. Most of the teachers were on leave and with the other two male teachers, I had to handle approximately 600 students. But even then, I started sessions and completed up to 9th session. It was very difficult for me to take out time for sessions as the principal also went on leave and she gave all of her responsibilities to me. And due to the huge number of students, we had to face problems in

making sitting arrangements for children…but somehow I managed to take nine sessions because I was determined to do it.

Five schools had a medium level of initial interest, which often indicated mixed teacher and principal opinions. For example, sometimes the principal was interested, but teachers were not, or teachers articulated interest but gave nonverbal cues of disinterest. At one school, for instance, teachers showed interest but expressed concern about lack of time to conduct the program, with little willingness to problem-solve.

The two selected institutions with low interest were more complex. In one school, the principal initially expressed interest and promised two teachers who would be willing and able to conduct the program, but those teachers were absent from school during the initial visit (suggesting potential teacher absenteeism during sessions). Similarly, in the other selected school with low initial interest, the principal was absent from school during initial site visits. When the program began he was still hard to locate and had little awareness about the program.

Over time, teacher motivation and interest tended to change. The curriculum's concepts were new for teachers; as such, though teachers generally grasped concepts better over time, some teachers more readily took on concepts while others were slower to engage. Generally, teachers became more motivated and interested after the first few sessions began to show them positive changes in themselves (e.g., teaching quality) and students (e.g., participation and attendance).

MTs provided teachers with low initial motivation and interest intensive handholding and mentorship during the first few sessions, at which point motivation and interest began to increase and MTs reported teacher performance also began to improve. During training and support sessions, MTs found that providing examples and exercises relating concepts to teachers' lives – rather than just to students' lives, as sessions are designed – was particularly effective in improving interest and motivation.

Some teachers did, however, begin with low initial interest and motivation and remained that way throughout. These teachers were also those for whom the other major themes identified – teacher reliability, fidelity to intervention, student interaction and facilitative abilities, and teacher reflectivity – were problematic.

Teacher Reliability

During implementation, unpredictable schedules and teacher/administrator absenteeism were major issues. For instance, one school often closed at lunchtime despite a full-day schedule; nearly all schools had teachers regularly called away on non-academic government business (e.g. assisting with elections or vaccination clinics); other schools had teachers with sporadic attendance due to lack of dedication or accountability. As one teacher explained:

> There were a lot of government programs running simultaneously in schools like distribution of school uniforms, scholarships, and so on. We are aggressively involved by the school administration in those tasks…. Seeing all these problems, I can say that conducting session during that time was very difficult.

Only two selected schools had high teacher reliability and conducted sessions on a regular schedule. One school had high teacher reliability largely due to a single highly-involved teacher who told the advisory group that he would "take responsibility for all of the groups and motivate other teachers." This was the only school where teachers started sessions on their own; other schools required extensive MT prompting and assistance to begin sessions. Five schools had medium teacher reliability, with a mix of regularity and occasional irregularity in the session schedule.

Seven schools had low teacher reliability, which was linked to teacher absenteeism and in some cases, dishonesty about program progress. For example, one teacher reported conducting a certain session to MTs, but teachers from the same school in the advisory group noted that the session had not actually been given. Sometimes teachers said they forgot about conducting sessions and promised to improve. At one institution, three teachers were trained but only one ever conducted sessions.

Fidelity to intervention

As with any intervention, generating desired results depends on fidelity of delivery. Qualitative observations indicated that three schools showed high fidelity to the intervention, seven had a medium level, and four had a low level. Schools characterized by high fidelity had teachers who consistently followed session structure, used a facilitative rather than a didactic style, and embodied the principles of the program, including presence, openness, and equality. Residential trainings, refresher trainings, and one-on-one MT visits were reported useful in helping teachers to maintain fidelity.

Fidelity was hampered by lack of teacher knowledge of the curriculum or lack of teacher interest. Some teachers came to sessions unprepared, without the manual, and were uncertain of the session sequence. Other times, distractions like interpersonal issues among teachers or receiving phone calls interfered.

The four schools with low fidelity had teachers who rarely used facilitation skills, did not encourage students to interact, and would sometimes teach different concepts than those in the curriculum. In one school, teachers could not remember concepts and were perfunctory in facilitating a session during MT observation. The following excerpt from MT notes describes the session: "They started the session…then she [the facilitator] forgot each of the steps of what she needed to explain…. She read [the manual] line by line...." In another school, teachers tricked students into attending by encouraging them to come to school under false pretenses, creating distrust. Behavioral problems and an absentee principal also contributed to low fidelity.

Student interaction and teachers' facilitative abilities

Teacher facilitative ability and student interaction are distinct but related. Although a teacher with good facilitation skills may encourage student interaction, this is not always true. For example, even when facilitative ability was low, student interaction was sometimes medium or high because students' interest overcame the teacher's style. Conversely, even teachers with strong facilitative abilities occasionally had students who failed to participate.

There were five schools with high student interaction and three with high teacher facilitative ability. Examples illustrative of high student interaction include: in a session about identifying one's character strengths, although one of the two teachers was disengaged, students actively participated in, enjoyed, and engaged with session content. In another school, during a session about goal-setting, a teacher used experiences from her own life as examples, resulting in all students actively participating and sharing.

Despite planning for groups of 15 students each, sometimes teachers combined groups or more students were present than expected. This unpredictability sometimes led to groups so large that even though most students were participating and wanted to participate more, time was limited.

Teachers with high facilitative ability were observed shifting demeanors from their typical classroom styles to being friendlier and politer, asking more reflective questions, and helping students solve problems. When this worked well, it changed the nature of teacher/student interactions. As highlighted by a teacher in the advisory group:

> The most positive part of the program is that the relationship between teachers and students changed completely. Children became friendly with us and if they come across any problem, they share it very openly without hesitation…. On the first day of the session we were known to them as teachers only, but as we moved on with sessions, children started taking us as facilitators.... Most of the children didn't use to speak in the class but that got completely changed in the session. I felt much better as a facilitator than a teacher.

Each aspect of MT training and support was reported to be useful in supporting teachers' evolution from didactic to facilitative teaching styles: intensive residential trainings introduced concepts and theories, refresher trainings provided small group discussion and skill practice, and one-on-one or small group sessions helped troubleshoot specific concerns.

Schools at the medium level in both categories were often characterized by a mismatch of teachers, with some teachers with good facilitative abilities and others with little interest or ability. Alternatively, such schools sometimes had students who were excited to participate but teachers were doing much of the talking.

In cases of low student interaction, students were not listening, not participating, and disengagement emerged from disconnection. Sometimes teachers used words students did not understand. Misunderstanding, teacher lack of commitment to student interactions, and lack of student interest characterized low levels in both student interactions and teacher facilitative abilities.

Finally, some reports seemed contradictory; for example, at one school, a teacher consistently struggled to get students to listen and – from MT observations – left them confused. However, in an exit interview, a student noted that this teacher, "shouts in class but here she treats us as friends." This student reflection may indicate that even when teacher facilitative ability was perceived by MTs as low, it may have been better than their classroom styles.

Teacher reflectivity

Teachers' abilities to reflect on their own experiences was also an important aspect of learning to facilitate the curriculum, as teachers who internalized resilience concepts were better able to impart concepts among students. A high level of reflectivity was characterized by self-examination and assessment with authenticity and accuracy, which was present in three schools. One teacher noted: "At a personal level, this program has been very effective for me. Using assertive communication in day-to-day life has made a big difference…. This program has helped me to improve my strengths." Students in this teacher's group also noted how comfortable they were sharing personal issues and how well they understood concepts.

Often the highly reflective teachers were able to identify changes in themselves and their students. As one teacher noted to the advisory group:

> Earlier I did not take this [program] seriously. We used to behave like student and teacher, but when we started sitting on the mat and taking the sessions as a group, the students became very open and vocal to me. At a personal level, I would say that I used to speak with anyone in a loud voice, but after joining this program, I started working on this problem and I try to speak softly and politely with anyone.

Regarding this teacher, a student noted, "I felt fear from sir in the classroom, but here [during sessions] I do not fear anything." Another student added, "In classroom he used to beat us and also scold when we do not understand something. Here [in sessions] he does not beat or scold."

Six schools had teachers with medium reflectivity and three had teachers with low reflectivity. Medium levels were often characterized by difficulty detecting authenticity. For example, one teacher showed average interest in the program and was often absent from sessions she was supposed to facilitate still reflected feeling closer to students. This teacher said, "I used to be stubborn from the beginning of my career—I used to fight with Auto-Rickshaw drivers on small issues, but now I am able to control myself." This reflection, paired with this teacher's performance and attitude, made it difficult to understand whether the teacher was being inauthentic, or whether the teacher was simply expressing an experienced change that was not observable.

In cases of low teacher reflectivity, some teachers did not reflect at all, focusing on blaming other teachers or principals for program challenges. Students participating in groups with teachers with low reflectivity also noted feeling less open. As one student in a group with teachers with low reflectivity noted, "I didn't feel like I was listened to and I [only] feel a small change in my relationship with teachers." This student went on to express that she still saw them as teachers rather than facilitators, and felt uncomfortable sharing personal experiences.

Discussion

This study aimed to 1) describe key characteristics of teacher behaviors, skills, and attitudes throughout the process of training and supporting government schoolteachers to facilitate the Youth First Resilience

Curriculum, a MSWB promotion program and 2) based on these characteristics; identify key leverage points that could improve this process.

In regards to the first aim, we found that some teachers and schools showed relatively high levels of interest/motivation, reliability, fidelity, student interaction and teacher facilitative abilities, but also that there was great variation within the sample. It is encouraging, however, that these findings emerged in the first government schoolteacher-led implementation; it is likely that more teachers and schools will become successful after subsequent implementations in each school. Improvements are also likely due to future process changes made based on lessons from this study.

In regards to the second study aim, we describe here three primary leverage points that could help facilitate future school-based scale-up, following from our findings: factors for successful site assessment, supporting teacher interest and motivation, and responding to teacher skill level trajectories.

Factors for successful site assessment and program initiation
We aimed to select schools where the program had a reasonable possibility of success. The site selection process rated personnel interest/motivation and infrastructural features such as number of classrooms. No school received uniformly high marks, allowing for sample variation. Although infrastructure challenges were real, results suggested personnel motivation and interest were more important than school infrastructure to the program's success. However, there was an infrastructural baseline below which sessions were not feasible (e.g., if a school had one classroom for hundreds of students, this would preclude finding space for sessions). Beyond ensuring minimum infrastructure requirements, however, personnel motivation and interest were likely most important to successful program implementation.

Thus, instead of considering infrastructure and personnel interest/motivation as factors that equally discriminate between LMIC schools likely to do well in MSWB promotion programs vs. schools likely to do poorly, these factors should be considered steps. Step one in identifying schools likely to do well would be clearing minimum infrastructure requirements; remaining steps would maximize personnel interest and motivation.

It follows that increasing personnel interest/motivation prior to or upon program outset could be a key leverage point for program success. Although interest/motivation could be increased in many ways, findings suggest two methods hold promise: First, intensive sensitization activities before or upon initial engagement with schools; second, increasing government's sense of shared program ownership. Findings suggest that teachers and principals generally became increasingly interested in the program and motivated to participate as they understood the program better and began to see changes in the students. Thus, sensitization activities conducted prior to program orientations and trainings that increase exposure to concepts and stories of student/teacher change could increase personnel interest/motivation. Findings also suggested that teachers often prioritized other government work over conducting the program; thus, increasing government ownership over such programs such that they become part of the government mandate could greatly increase interest and motivation.

Ascertaining to what extent sensitization and government partnership can improve teacher motivation/interest, and by extension, program success, is an important area of future research. Further research is additionally required to quantify the exact minimum infrastructure baseline, and how to measure personnel interest/motivation during site selection.

Supporting teacher performance via motivation and interest

In addition to teacher motivation/interest providing key leverage for site selections and at project outset, intentionally supporting teacher motivation/interest throughout sessions represents another key leverage point for a successful program.

Disentangling factors linked to teacher quality and performance has proven difficult in many settings; for instance, differences such as teacher education, experience, or certifications often have unpredictable relationships with teacher performance and student outcomes (Rivkin, Hanushek, & Kain, 2005). This study revealed a similar pattern: qualifications such as teacher education levels or certifications were less related to teacher performance than teacher interest/motivation.

Although assessing teacher motivation during site selection was important to identify schools more likely to succeed, interest and motivation did change over time, suggesting that assessing interest and motivation should be continual. Developing interest and motivation assessments that can be conducted at large scale and tracked easily and efficiently throughout all program phases could therefore increase scalability.

Interpreting this phenomenon, innovation diffusion theories are useful, in which innovations diffuse through an S-shaped curve. A relatively small number of 'early adopters' may adopt innovations initially. Adoption begins to spread through what is often called a 'contagion effect', mirroring the exponential spread of disease (Meade & Islam, 2006). Eventually, when most people in a population have adopted the innovation, the spread begins to slow as fewer people remain who have yet to adopt (Meade & Islam, 2006). Thus, in conducting a MSWB promotion program such as this, in which so much of the content and pedagogy is new to teachers, teacher interest and motivation may follow a similarly S-shaped diffusion curve, and teacher performance may follow.

If this diffusion occurs in introducing MSWB promotion programs in LMIC schools, this could lead to important teacher training innovations. For example, capitalizing on the contagion effect, it may be effective for early-adopter teachers to conduct components of training for peers, or to create venues in which motivated teachers can share experiences with peers. Identifying and leveraging early-adopter teachers could help accelerate scale-up activities across wider administrative denominations, such as at district or state levels.

Responding to varied teacher skill trajectories

Analyses revealed varied teacher facilitation skills and skill development trajectories. This variation is consistent with teacher quality studies in higher income countries showing widespread teacher skill differences between and within schools (Haycock, Lankford, & Olson, 2004; Rivkin et al., 2005). As

differences in teacher skill occur naturally in any setting, as this program or similar MSWB promotion programs scale, it is critical that efficient, scalable systems are developed to 1) identify teacher skill differences, and 2) respond quickly and effectively with appropriate support and training.

In most cases, teacher skill improvements were related to MT training and support, after which teachers became more interested/motivated to improve their sessions, leading to improved skills and performance. Residential trainings, refresher trainings, and one-on-one/small group sessions all seemed useful. Teachers who gained good facilitation skills were better able to engage students during the program, with students and teachers reporting improved relationships and abilities to internalize concepts.

Findings suggest that it is possible to help teachers with poor facilitation skills to improve dramatically, and that this skill improvement may in turn change student-teacher relationships and student understanding. However, given the multitude of teacher skill trajectories (e.g., some begin with strong skills and waver part-way through, others worsen over time without intervention, others begin with poor skills and improve quickly while others improve gradually), a one-size-fits-all support and training strategy is likely ineffective.

During this trial, MTs were empowered to choose the exact timing, intensity and type of training and support provided based on the situation. This was a useful strategy on this small scale but will need to be adjusted to retain flexibility within efficient structures as the program scales. For instance, structures and tools should be built to efficiently assess and track teacher skills throughout the program (such as a clear system of benchmarks and milestones managed within an easy-to-use database system for MTs), which can subsequently feed into MT decision-making about how to support and train teachers. These tools should be complemented with tools and structures to quickly assess and track teacher motivation/interest, as described above. Furthermore, these tools should be developed to be replicable and user-friendly to supervisors of various skill levels as programs scale.

Limitations

First, by design, results and conclusions from this study are qualitative. Quantifying observed behaviors, attitudes and abilities is an important area of future research. Additionally, although results are likely generalizable to other school-based MSWB promotion programs in other LMICs given the many shared conditions in LMIC schools and MSWB promotion programs, future research should confirm these results elsewhere.

Second, characterizations within each study theme of 'low', 'medium' and 'high' (for instance, teachers with 'high' vs. 'low' facilitative abilities) were relative within our sample. Thus, these characterizations are limited in their interpretive value; for example, 'low' teacher facilitative abilities in our sample may actually be 'high' teacher facilitative abilities compared to other classes in the same schools.

Finally, although we chose to focus on factors contributing to the success of MSWB promotion programs related to teachers' daily experiences, many factors at other levels also contribute to the success of such programs (e.g., the wider education system and policies, program management strategies, or student literacy levels). Although beyond the scope of this manuscript, these institutional, system and student-level

characteristics should also be examined at program outset to ensure successful scale-up of MSWB promotion programs. It is also important that future research clearly describe these other challenges and identify potential solutions in addition to the leverage points identified here.

Conclusion

This study fills knowledge gaps surrounding conducting school-based MSWB promotion programs for youth in LMICs by providing detailed descriptions of processes and challenges encountered in training Bihar, India's government schoolteachers to conduct the Youth First Resilience Curriculum, a MSWB promotion program, and extrapolating a set of key leverage points that could facilitate success with an eye towards scale-up. This study addresses commonalities across many resource-constrained settings, such as varying teacher skill levels, motivation, and infrastructure challenges, and proposes potential methods to manage these challenges. Many MSWB promotion program studies focus on student outcomes, but it is important to complement this work with implementation data such as this to inform improved research, practice and policy.

Results showed that it is possible to train teachers to conduct a MSWB promotion program in a LMIC setting. Results also showed, however, that it is important to anticipate potential challenges such as wide variation in teacher motivation, interest, and abilities. Key leverage points identified include factors for successful site assessment and program initiation, supporting teacher motivation and interest, and responding to varied teacher skill levels, all of which are critical to program success and scale-up.

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