

A Positive Psychology Intervention in a Hindu Community: The Pilot Study of the Hero Lab Curriculum

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Abstract India has high rates of mental health issues among its youth and low-income communities experience a disproportionate amount of depression and suicide. Positive psychology, the act of promoting well-being, could be used as a tool to promote wellness and help improve the mental health of youth living in slum areas of India. A pilot positive psychology program, “The Hero Lab”, was conducted in a migratory slum in Worli, Mumbai, with trained Hindu community leaders implementing the interventions toward at-risk Hindu youth. The curriculum’s impact showed statistical improvement ($p < 0.001$) in happiness (General Happiness Scale from 11.24 ± 1.56 to 19.08 ± 3.32), grit (Grit Survey from 2.23 ± 0.34 to 3.24 ± 0.67), empathy (Toronto Empathy Questionnaire from 24.92 ± 3.27 to 41.96 ± 8.41), and gratitude (Gratitude Survey from 16.88 ± 3.47 to 27.98 ± 6.59). While a pilot study, the Hero Lab curriculum demonstrates that positive psychology interventions may be an important tool in improving mental health in at-risk children.

Keywords Positive psychology · Mental health · Hinduism

Introduction

India has the highest suicide rate in the world for youth between the ages of 15 and 29, with a ratio of 35.5 deaths for every 100,00 people (World Health Organization 2011). As of 2011, there were 34 government funded mental health hospitals; meaning, 0.3 psychiatrists for every 100,000 people, and 0.06 % of the annual healthcare budget channeled toward

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mental health in all of India (World Health Organization 2011). The severe lack of mental healthcare resources may largely be attributed to the stigmatization of mentally ill individuals in India (Vijayakumar et al. 2008). Until 2014, suicide was criminalized by Sect. 309 of the Indian Penal Code, and survivors were punishable with up to a year of imprisonment and fines. Those who suffer from mental illness are very often culturally disgraced, and this coupled with a lack of public dialogue and understanding about mental health has led to weak mobilization efforts to identify at-risk individuals and provide affordable and accessible care (Vijayakumar et al. 2008).

In low-income communities, there is a high prevalence of risk factors for mental illnesses including, but not limited to, violence, unemployment, alcoholism, and substance abuse (Gururaj et al. 2004). Some of these risk factors can be formally identified in children through the Adverse Childhood Experiences (ACE) survey (Centers for Disease Control and Prevention 2016) and have been found to be strong risk factors for both mental and physical illness, as well as the leading causes of death in adulthood (Felitti et al. 1998). An ACE score of ≥ 4 (score based out of ten) increases a child's risk of certain diseases: chronic pulmonary disease by 390 %, hepatitis by 240 %, depression by 460 %, and suicide attempts by 1120 % (Miller-Karas 2015). In India, low-income youth tend to have high ACE scores (Escueta et al. 2014), with mental health issues worsened by deep cultural stigmas and poor education (Gaiha et al. 2014). When youth experience negative events they cannot control, they start to believe that most other events in their lives are also uncontrollable and begin to exhibit signs of clinical depression (Seligman and Csikszentmihalyi 2000).

Faith and culture can shape the perception of mental health and illness (Komiti et al. 2006). Non-Western cultures may not align with the Western theories on psychology and psychiatry. Hinduism is both a faith but also a philosophy, with emphasis on knowledge, sacrifice, and service to others that culminate in renunciation (Chekki 1996). Hinduism values mutual dependence in that community well-being is stressed above individual well-being (Juthani 2001). In regards to mental health, Hindu concepts cannot be separated from the beliefs about physical and spiritual health; thus, the faith reflects a holistic system of ideas toward human nature.

Positive psychology, the science of well-being and human flourishing, has gained traction in the past several years as a powerful, preventive tool against mental illness (Slade 2010). By actively promoting well-being, positive psychology focuses on building individual human strengths and valued subjective experiences (Seligman and Csikszentmihalyi 2000). For instance, studies have shown that actively practicing gratitude increases social support and reduces stress and depression over time (Wood et al. 2008), and positive emotions and thoughts are strong predictors of happiness that reduce automatic negative thoughts that can lead to depression (Lightsey 1994). Resilience also had a significant correlation with lower rates of depression (Mak et al. 2011), and cultivating character strengths like zest, hope, and love can contribute to fulfillment and greater life satisfaction (Park et al. 2004). Further, the United Nations 2015 World Happiness report has shown that there is neuroscientific evidence that building positive emotion, resilience, empathy, and mindfulness can measurably change the wiring of the brain (United Nations 2015).

Despite all of the recent dialogue and evidence around the role of positive psychology in improving mental health, few interventions have been tailored toward low-income populations, especially those in India where some of the highest rates of mental illness and suicide exist (Hussain et al. 2016). Therefore, we have implemented a pilot study using positive psychology as an intervention for at-risk Hindu children living in a low-income area of India and evaluated variables known to correlate with positive mental health

outcomes (e.g., empathy, general happiness, grit, gratitude). Further, given the emphasis of Hinduism on community well-being and the holistic approach toward health, we thought it would be beneficial to utilize Hindu community leaders who would emphasize their faith at the same time emphasizing positive psychology ideas. We trained Hindu community leaders to incorporate a faith-based approach with positive psychology interventions aimed at the at-risk youth. We hypothesize that a positive psychology intervention will have a significant impact on these variables and thus provide a strong potential for mental health well-being in vulnerable youth.

Methods

Study Population

The pilot program was conducted in a migratory slum in Worli, Mumbai. A migratory slum is defined as an area where families live in tents on the street, with polythene sheets as roofs, open drains as toilets, and no access to electricity or sanitation (World Bank: Sanitation). The residents of the Worli community in Mumbai are all Hindu migrants from

Table 1 Examples of activities from Stage 1 of the Hero Lab curriculum

Positive psychology area	Examples
Character strengths	Performance and skits Finding local heroes
Gratitude	Gratitude visit Gratitude letters Gratitude journals Video-based storytelling
Mindfulness	Differentiate food savoring over short and long duration Youth storytelling
Empathy	Community photography excursion Community family interviews Student-to-student interviews Design thinking
Optimism	Performance and skits Motivational interviewing Documentaries Finding local heroes
Savoring	Testing sensory perceptions of taste, smell, and hearing Relating specific instances that help facilitate savoring—sharing good news, positive memory building, self congratulation, and prioritizing people, work, and events.
Grit and Resilience	Games Local storytelling Community capstone project
Active constructive response	Storytelling Games Local Simulations
Meaning and purpose	Community service capstone project Life summary (writing autobiographies and eulogies)

the Surendranagar and Rajkot villages of the Indian state of Gujarat. The average income of each family in the Worli slum is between 6000 and 10,000 rupees a month, with about six people per household. This equates to about \$90–\$150 a month, or about 50–83 cents a day per individual, placing most of residents under the extreme poverty line of less than \$1.25 a day (World Bank: Poverty). While the male to female ratio is roughly even, women are the primary earners in the household. All children were allowed to participate in the initiative; however, an Adverse Childhood Experiences survey was conducted by all participants before formally enrolling in the curriculum. The ACE survey can be found online (Centers for Disease Control and Prevention 2016). This initiative was approved by the “The Hero Lab”, a non-profit organization. Written informed consent was obtained from each child’s parents in accordance with the Helsinki II Declaration (Carlson et al. 2004).

The Hero Lab Curriculum

The Hero Lab’s Stage 1 curriculum is a 6-month interactive program rooted in positive psychology interventions focused on themes that promote well-being (e.g., grit, empathy, hope). Table 1 lists examples of interventions from the curriculum. The lessons lead to a student-led project, in which participants exercise their strengths and skills in a design-thinking process to ideate, prototype, and launch a project in their neighborhood. Classes were held 5 days a week in Worli for 6 months on a large tarp in front of participant’s homes. The curriculum was taught by a trained community leader of the same background in regards to faith (Hindu), language, and geography (same community).

Data Collection and Objectives

Once enrolled into the curriculum, but prior to its intervention, students were administered the eight following surveys by a Hindi-speaking team member to assess their baseline levels of well-being on specific psychological metrics: the General Happiness Scale, the Meaning in Life Questionnaire (MLQ) for Search (Search for Meaning in Life) and MLQ Presence (Presence of Meaning in Life), the Gratitude Survey, the 12-Item Grit Scale, the Toronto Empathy Questionnaire (TEQ), the Life Orientation Test (LOT-R) for measuring optimism and pessimism, and the Curiosity and Exploration Inventory (CEI-II). The surveys were administered orally due to low literacy levels and literal language translation issues. Copies of the surveys are available online and available upon request.

The primary objective was to see whether through a positive psychology curriculum, the students would be able to implement a project that shows their determination toward improving their community and its future. Secondary objectives were to see if the variables highlighted by the aforementioned surveys were impacted by the positive psychology intervention.

Statistical Analysis

The results of the surveys are represented in the form of mean \pm standard deviation. A Student paired *t* test was performed to assess for statistical significance of the intervention; a *p* value of <0.05 was viewed as significant. Coefficient of variations are reported where applicable. A cost-effective analysis was conducted in order to evaluate the relative costs of the program to its outcomes.

Results

Fifty participants were enrolled in the Hero Lab's Stage 1 curriculum. Table 2 lists the demographics of the participants. Their age range was 8–14 years with a mean age of 12.9 ± 3.30 years. Of the 50 participants, 35 (70 %) were males. The average ACE score of the youth in the program was a 6.1 ± 2.1 .

The Hero Lab's curriculum was implemented between January 2015 and June 2015. As for the primary objective, the program resulted in a student-led, community service capstone project 2 months later. The participants of the Hero Lab's curriculum organized a cleanliness-themed event for India's Independence Day (August 15, 2015). In brief, this student-led project resulted in the children dividing into smaller groups to write and perform a skit on the health hazards that arise from a lack of cleanliness and the importance of keeping the streets clean. The students choreographed and performed a dance to go along with their skit. Further, the participants engaged with local donors to have food donated for the event. The project culminated in the students speaking on the importance of Indian Independence and how their community should be inspired by history to take meaningful action locally. Over 150 people from Worli attended the event.

As for the secondary objectives, Table 3 lists the results of the eight surveys, before the curriculum and after the capstone project (a 9 month gap). There was a statistical improvement in all of the eight surveys. The grit variable had the largest improvement from baseline ($\Delta 0.06$ in coefficient of variation), while the Life Orientation Test (an evaluation of optimism for the future) saw the smallest change from baseline ($\Delta 0.01$). Figure 1 graphs the before and after coefficient of variations for each survey.

Stage 1 of the program cost 1500 US dollars to implement: 1200 US dollars went toward training and salarizing a community leader to teach the curriculum, and 300 US dollars went toward supporting basic event costs associated with the youth capstone Independence Day event project. The basic event costs included banners, renting photo/video equipment, and extra food support. Given 50 students took part in the program, this amounts to 30 US dollars per student impacted by the positive psychology intervention. Further, 150 community members were also directly influenced by the curriculum, though no objective measures were obtained from them.

Table 2 Demographics of participants of the Hero Lab Curriculum from the migratory slum in Worli, Mumbai

Number of participants	50
Age (years)	12.9 ± 3.30
Females (%)	15 (30 %)
Males (%)	35 (70 %)
Languages (%)	Hindi (100 %) Gujarati (100 %) Marathi (15 %)
Religion	Hindu (100 %)
ACE score	6.1 ± 2.1

Where applicable, results are presented as mean \pm standard deviation

ACE adverse childhood experience (≥ 4 (score based out of ten) increases a child's risk of certain diseases, such as mental health and suicide)

Table 3 Results from the surveys before and after the positive psychology intervention

Survey type	Scored out of	Baseline	CV	After	CV	<i>p</i> value
GHS	28	11.24 ± 1.56	0.14	19.08 ± 3.32	0.17	<0.001
MLQ-S	35	15.56 ± 2.69	0.17	22.80 ± 4.32	0.19	<0.001
MLQ-P	35	16.18 ± 2.49	0.15	23.30 ± 4.40	0.19	<0.001
Gratitude survey	6–42	16.88 ± 3.47	0.21	27.98 ± 6.59	0.24	<0.001
Grit survey	5	2.23 ± 0.34	0.15	3.24 ± 0.67	0.21	<0.001
TEQ	64	24.92 ± 3.27	0.13	41.96 ± 8.41	0.17	<0.001
LOT-R	50	22.34 ± 3.19	0.14	24.16 ± 3.85	0.15	0.01
CEI-II	50	19.74 ± 4.02	0.20	31.54 ± 7.99	0.25	<0.001

GHS General Happiness Scale, *MLQ-S* Meaning in Life Questionnaire for Search, *MLQ-P* Meaning in Life Questionnaire for Presence, *TEQ* Toronto Empathy Questionnaire, *LOT-R* Life Orientation Test, *CEI-II* Curiosity and Exploration Inventory, *CV* coefficient of variation. Results are displayed as mean ± standard deviation

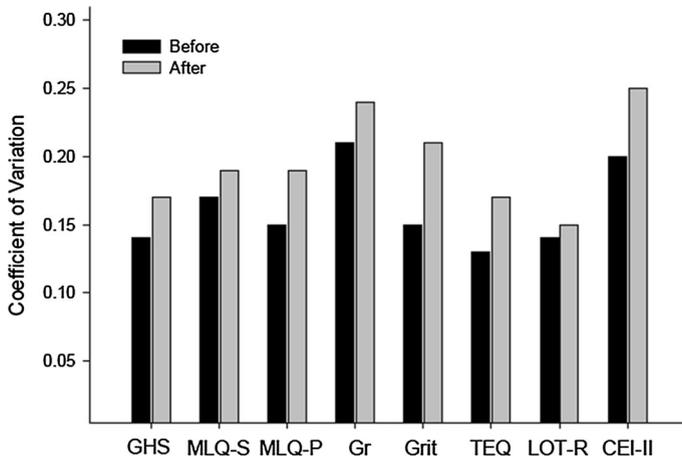


Fig. 1 Changes in coefficient of variation before and after the implementation of the positive psychology intervention of the Hero Lab Curriculum. *GHS* General Happiness Scale, *MLQ-S* Meaning in Life Questionnaire for Search, *MLQ-P* Meaning in Life Questionnaire for Presence, *Gr* Gratitude Survey, *Grit* Grit Survey, *TEQ* Toronto Empathy Questionnaire, *LOT-R* Life Orientation Test, *CEI-II* Curiosity and Exploration Inventory

Discussion

The results from The Hero Lab's Stage 1 curriculum provide valuable insight into how positive psychology interventions in low-income communities can increase holistic well-being. The intervention in Worli, Mumbai was free for community members and low-cost for the non-profit to implement, the only major expenditures being financially supporting the community leader to teach, and supporting curriculum material costs.

Prior studies have demonstrated the need to build multi-dimensional well-being initiatives that promote optimism and hope in children. For instance, Shafii et al. (1985) found

that 85 % of youth between the ages of 12 and 19 expressed suicidal intent prior to taking their lives. Beck et al. (1985, 1990) found that a sense of hopelessness was a key variable in predicting suicide as demonstrated by a 10-year prospective study on a follow-up of patients who took the Hopelessness Scale. Kuo et al. discovered in a large community sample of over 3000 participants that hopelessness predicted suicidal thoughts, attempts, and completed suicide over a follow-up of 13 years (22). Adjusting for the presence of substance abuse disorders and depression, the study found that those who expressed hopelessness were 11.2 times more likely to complete suicide over this time period (Kuo et al. 2004). A key focus of the Hero Lab Stage 1 curriculum was building hope and optimism by giving at-risk youth agency to identify and solve personal and communal problems, and prospect positively about their futures. The curriculum resulted in statistically significant changes in hope and optimism as shown through the LOT-R survey (22.34 ± 3.19 – 24.16 ± 3.85 , $p = 0.01$).

There are several positive psychology interventions showcasing success in boosting well-being. The Penn Resiliency Program, conducted among at-risk youth who reported a higher than average number of symptoms of either depression or family conflict, found that those who underwent the resilience-building intervention reported lower levels of moderate to severe depressive symptoms over a follow-up of 2 years compared to a control group (Goldstein and Brooks 2013). Another longitudinal study found that those who engaged in positive service in the community experienced deeper happiness, life satisfaction, self-control, self-esteem, and better physical health (Thoits and Hewitt 2001). Cultivating meaningful relationships with adults in the community has been shown to reduce negative, psychological effects on low-income youth (Fantuzzo et al. 2004). The Hero Lab Stage 1 curriculum emphasized community, which in turn resulted in the capstone project, while implementing its positive psychology interventions.

Many Hindu populations, particularly in lower-income communities, attribute mental illness to karma (destiny) and choose not to seek professional help as they have accepted their condition as fate, or that *nazar* (the evil eye) causes cognitive dysfunction through supernatural causes (Juthani 2001; Betty 2005). Both patients and caregivers in these communities tend to seek treatments that align with their own beliefs, for example, spiritual healers, instead of visiting medical doctors (Dwyer 2003). Given India's high rate of mental health issues coupled with its dearth of mental health providers, low-income Hindu communities stand to be even more impacted by mental health issues. However, given the significant emphasis on the community's well-being over an individuals, this concept was utilized to link the positive psychology intervention with Hinduism: the teachers were from the community and the positive psychology interventions were taught in the community. Thus, a fundamental difference between these two perspectives (community by Hinduism and individual by positive psychology) was able to be utilized in an approach that sought to improve the well-being of the community's youth overall.

As highlighted above, one unique approach taken by the Hero Lab intervention was to implement the initiative in front of the children's homes, as opposed to in a school or building away from the community. This meant the curriculum was taught in the presence of family. This was crucial to the success of the curriculum because youth were learning to identify their signature strengths and build resilience, gratitude, hope, and purpose with their daily reality in the backdrop, not away from it. Students who graduated into the Stage 2 curriculum, equipped with the strengths, values and mindsets to contribute to their own happiness and their community's happiness, are currently using design thinking to launch and lead three major projects: an English and storytelling program for local youth, a community cleanup campaign, and art classes for kids in the neighborhood to have a

medium for self-expression. The success of the youth-organized capstone project and the ideas now being launched in the Stage 2 program are testaments to how teaching at-risk communities to not just learn, but to apply positive psychology, can reinforce teachings and contribute to greater social capital, neighbourhood cohesion, and deeper connections between self and community.

Limitations and Future Directions

There are several limitations to this study. First, the skills and mindsets cultivated in the program need to be realized and applied over longer periods of time, and there is always a possibility given the volatile environments of these communities that strengths and values can be undone if they are not reinforced. However, this was taken into account by designing three stages of curricula for youth, such that once they finish one curriculum, they graduate into the next to continue building, but more importantly applying these soft-skills for well-being. The Stage 2 curriculum continues teaching positive psychology through design thinking and the Stage 3 curriculum focuses on building resilience in an entrepreneurial capacity by training local-level changemakers to launch their own social ventures. Second, this was a small sample size, and not a true representation of all the demographics and cultures of India. Thus, it would be useful in determining whether this curriculum can be implemented with the same success across slum communities with different types of adverse childhood experiences and diverse racial, religious, and economic makeups. To explore this, the Stage 1 curriculum is currently being taught in three other slums in Mumbai with a population ranging from 500 people to 700,000. A third limitation is understanding how this intervention translates into mental health outcomes in adulthood, which ongoing studies will explore. Fourth, it is unclear what part of the curriculum had the most impact on the participants, especially since it was implemented at the homes of the children. Regardless, the Hero Lab intervention as well as the location of the curriculum seemed to have played a significant role in improving specific elements of mental health in the participants. Finally, this was a small study ($n = 50$) and therefore needs a larger number of participants and greater community involvement in order to achieve substantial results, especially results that are sustained over time.

Conclusion

To date, positive psychology research has focused extensively on upper-middle class populations in developed economies. Though this trend is slowly shifting with non-profits and independent educators pioneering interventions in low-income schools and populations, there is a real and significant need for a more robust exploration in these settings. The intervention in Worli, Mumbai shows how positive psychology can be a low-cost, powerful tool to build the strengths, subjective values, and strong sense of meaning and purpose required to promote well-being and shield at-risk youth from depression. This study also reveals that when a positive psychology intervention is ingrained in community life, there is more buy-in from locals, and teachings can be applied directly to social impact and community upliftment. Further, long-term studies should explore how faith and positive psychology interventions correlate with reduced incidents of mental illness in low-income settings on at-risk children.

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Compliance with Ethical Standards

Conflict of interest The authors declare that they have no conflict of interest.

Research Involving Human Participants and/or Animals This study did not involve any non-human subjects. All human participants were provided with appropriate information in accordance with approved human research ethics and consent protocols.

Informed Consent Informed consent was obtained from all individual participants included in the study.

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