



Strengths-Based Positive Schooling Interventions: a Scoping Review

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Abstract

Positive schooling is the positive psychological movement that calls for the incorporation of student well-being as a focus of the learning environment. A strength-based approach to positive schooling employs character strengths as a pathway to positive change and well-being. The scoping review aimed to systematically review and map the strength-based positive schooling interventions that have been conducted thus far on adolescent students. It has been performed using the five-stage theoretical framework proposed by Arksey and O'Malley. The present scoping review has identified 13 such studies, and examined the program design, outcomes, and theoretical underpinnings. Despite mixed intervention results, this paper highlights that strength-based positive schooling interventions produce promising positive outcomes in student well-being and positive emotions. The study also identified a need for evidence of the long-term effectiveness of these interventions, whole-school approaches, and theory building in positive schooling and education.

Keywords Positive schooling · Character strengths · Scoping review · Positive psychology · Strengths-based

Since the field of positive psychology emerged as a formal sub-discipline of psychology at the turn of the century (Seligman and Csikszentmihalyi 2000), there has been substantial research that has delved into positive psychological states and emotions (e.g., resilience; Ryff and Singer 2003), theory building (e.g., broaden and build theory; Fredrickson 2001), and associated application and intervention (Seligman et al. 2005). A promising area of research is strengths-based positive schooling interventions. This area of positive psychological application was born of the question of whether or not well-being should and can be taught in schools (Seligman et al. 2009). There is strong evidence from a number of studies to suggest that the answer is a resounding affirmative (Proctor et al. 2011; Seligman et al. 2009; Shoshani and Steinmetz 2014).

Positive psychology emerged to counteract the lack of focus on the more positive aspects of psychological wellness

and happy living. After all, mental health is not the mere absence of mental illness, but is characterized by positive emotions in concert with positive functioning—flourishing (Keyes 2002). Research findings show that adolescent mental illness is on the rise (Gunnell et al. 2018; Mojtabai et al. 2016). In light of such findings, a conceptualization of mental health as flourishing and optimal functioning is particularly important. In a report by the Federal Interagency Forum on Child and Family Statistics (2017), one in eight adolescents fall prey to depression. A significant number of mental health issues begin by the age of 14 (U.S. Department of Health and Human Services 2017), which highlights the vulnerability of the adolescent population, and the need for intervention and prevention. In another study, 11% of all surveyed adolescents reported poor life satisfaction, with another 7% registering “terrible” or “unhappy” living (Huebner et al. 2000). These findings call for effortful measures and intervention in order to attain individual flourishing and thriving.

Positive psychological interventions and practices can be the answer to leading a flourishing life. Sin and Lyubomirsky (2009) comprehensively define positive psychological interventions as “[...] treatment methods or intentional activities that aim to cultivate positive feelings, behaviors, or cognitions”. Positive emotions and mental states are not only the product of successful outcomes in various life domains, but they are also the cause of it (Lyubomirsky et al. 2005a).

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This can be explained by the broaden-and-build theory (Fredrickson 2001), which proposes that positive emotions broaden thinking and actions to new possibilities, which in turn helps build physical, psychological, and social resources, thus promoting well-being.

Character strengths have a pivotal role to play in the well-being and life outcomes of individuals. The Values in Action framework of character strengths identifies twenty-four strengths, such as curiosity, zest, love, and teamwork, that are universally (and morally) valued aspects of personality that contribute to optimal development across one's lifespan (Park and Peterson 2009; Park 2004). Not only do character strengths engender happiness and enable positive outcomes, but they also protect against the negative consequences of stress and trauma (Park and Peterson 2009) by acting as buffers. Positive school outcomes like school success, leadership, school adjustment, and prosocial behavior are also associated with strengths. Thus, character strengths can act as a mechanism by which to promote positive youth development. Strengths-based positive psychology interventions, a subset of positive psychology interventions, are aimed at the identification, use, and development of strengths (Biswas-Diener et al. 2011). Development of strengths involves increasing proficiency, frequency, and regulation of strengths use.

Schools and higher educational institutions are the ideal locations to carry out strength-based interventions for adolescents and young adults. Firstly, schools are where adolescents spend a majority of their time on a daily basis. As outlined above, adolescence is a crucial developmental stage during which positive support would contribute significantly towards the prevention of poor mental health and the promotion of positive outcomes. Secondly, the immediate environment of an individual plays a vital role in the cultivation of happiness and associated outcomes (Csikszentmihalyi and Schneider 2001). Positive institutions provide such an environment, by inculcating practical life skills while helping members develop a wholesome sense of self (Menegazzo et al. 2015). Positive schooling is an avenue ripe for the development of such an environment. It is an approach to learning characterized by care, trust, and respect for diversity, combined with the development of skills and resources to reach individual student goals (Snyder and Lopez 2007). Positive schooling has a three-fold focus on equipping students with the tools necessary for conventional success, while also acting as a vehicle to improve psychological, social, and subjective well-being, and reducing social, emotional, and behavioral difficulties (Seligman et al. 2009).

Incentive for schools to act as caretakers and cultivators of student well-being can be derived from research findings. Positive emotions encourage better learning through the broaden-and-build process, and lead to more creative and holistic thinking (Seligman et al. 2009). After having controlled

for grades, income, and other confounding factors, adolescents who are happy go on to earn significantly more than their unhappy counterparts 15 years later (Diener et al. 2002). Thus, happy adolescents earn more than their unhappy counterparts. Besides this, the goal of education is to produce responsible and successful citizens (Cohen 2006). While most schools currently utilize an analytical and results-oriented approach to reaching this goal, there is room for a more inclusive approach that facilitates moral, social, and emotional development. As Seligman outlines in his seminal paper on positive education (Seligman et al. 2009), well-being programs at school can promote strengths and skills valued by parents, and enhance student well-being and behavior, while simultaneously encouraging the conventional goals of engagement in learning and achievement.

School-based positive psychology interventions integrate existing educational practices with the positive psychology approach to promote student well-being and academic performance (Waters 2011; Shoshani and Steinmetz 2014). Therefore, we understand them to firstly, be carried out within school systems, either with classes or on a whole-school level. Secondly, as Sin and Lyubomirsky (2009) outlined in their definition of positive psychology interventions, they are aimed at promoting positive feelings, cognitions, and behaviors, as opposed to addressing problem behaviors, like bullying or truancy. Although positive schooling programs have features overlapping with socioemotional learning programs, they diverge in the program approach and competencies that are addressed. Social and emotional learning programs adopt a developmental perspective, where the process is characterized by age-appropriate developmental tasks (Denham 2018), and the focus remains on social and emotional skill development. Positive schooling programs use a positive psychological lens and address a broader range of competencies, such as character strengths, hope, resiliency, and more (Shoshani and Steinmetz 2014). Strengths-based positive schooling programs, as described above, use character strengths as their vehicle of change. Specific program topics in these programs may include explicitly teaching character strengths themselves, or topics like goal setting (Shoshani et al. 2016), which are taught through the exercising of character strengths.

Previous reviews have examined positive psychological interventions and school-based positive psychology interventions (Gander et al. 2012; Waters 2011). However, there has been little consensus on strengths-based positive schooling interventions, and for adolescents in particular, despite the fact that adolescence is a distinct developmental stage and a critical period for psychopathology. While attempting to synthesize and compare results from such interventions conducted thus far to address this gap, we decided to undertake a scoping review of strengths-based positive schooling interventions.

The goal of this scoping review is to map the existing literature on strength-based positive schooling interventions

for adolescents in order to comprehensively convey findings and outcomes, compare methodology across studies, and draw conclusions about policy and intervention implications.

The Arksey and O'Malley's framework (2005) was used to conduct the present scoping review. The framework recommends a five-stage process, consisting of (i) identifying the research question; (ii) identifying relevant studies; (iii) study selection; (iv) charting the data; and (v) collating, summarizing, and reporting the results.

Identifying the Research Question The researchers sought to examine the aspects and strategies used in strengths-based positive schooling interventions for adolescents that made them successful and led to sustained positive development. The following research questions were developed to capture a wide range of studies that would adhere to our topics of interest:

1. What research designs were used in the studies of strengths-based positive schooling interventions with adolescents?
2. What are the outcomes of strengths-based positive schooling interventions?
3. What are the conceptual frameworks underpinning strengths-based positive schooling interventions?

Methods

Identifying Relevant Studies We developed a search strategy based on the research questions and definition of the key concepts of interest (Arksey and O'Malley 2005). The framework recommends using a method that would allow for the location of "in-depth and broad" results. Thus, we identified search terms that would capture studies related to strengths-based positive schooling interventions for middle school, high school, and undergraduate students. A subject expert in scoping reviews was consulted to refine the search terms and suggest search strategies. Boolean operators were used to narrow, broaden, and combine search results. The final search string (Table 1) was converted and used in different databases, namely EBSCO, JSTOR, PubMed, Google Scholar, ProQuest, and ScienceDirect, to scope for relevant literature.

Table 1 Key search terms

Search terms

TI (positive OR strengths OR character) AND (education OR intervention OR program) AND ((school OR class, classroom OR university OR college) OR (student OR child OR youth OR adolescent OR undergraduate))

Reviews and reference sections of relevant papers were also hand searched to identify suitable studies.

Inclusion and exclusion criteria helped to compile a well-curated set of studies for review. The eligibility criteria were applied in an iterative process, both at the outset as well as during later stages (e.g., during detailed examination of full paper). Since positive psychology was introduced as a science only in 2000 (American Psych citation), with related research gaining momentum subsequently (Seligman et al. 2005), we decided to include research published post-2000. Table 2 shows a complete list of inclusion and exclusion criteria.

Study Selection A total of 1071 articles were initially identified using the predetermined search string. The identified items were narrowed down using the help of citation software, EndNote, and by applying the PRISMA statement (Moher et al. 2009). Many of the identified records were duplicates found across the different scientific directories. A total of 299 duplicates were found and eliminated from the list. Following this, using a keyword filter, 665 studies were excluded. In the next stage, individual study titles were screened for suitability, after which only 161 records remained. These were then screened using abstracts and full papers. At the end of the study selection process, a total of 13 articles were remaining.

The excluded studies proved ineligible for the current study due to several reasons. A large number of records found were irrelevant to the topic at hand. Other common reasons for exclusion included study population, the lack of a strength-based design, non-intervention studies, or studies that did not have a school-based premise. Conference proceedings, editorials, and conceptual papers were also excluded, as outlined in the study criteria. The view also excluded studies with a more specific focus such as anti-bullying, anti-racism, or life coaching programs. The process of article selection is delineated in Fig. 1.

Data Charting The fourth stage of the Arksey and O'Malley framework (2005) is the charting of data, which is likened to a narrative review. In this stage, a systematic approach was followed based on the research questions to summarize the information in the selected studies. The following information was collected—author information, year of study, location of study, study design, population and sample size, intervention design, and main findings. Table 3 displays the summarized information.

Summarizing and Reporting Results The fifth stage is to summarize and report the results of the scoping review. The following sections contain the gist and synthesis of the study findings.

Results

As per the framework suggested by Arksey and O'Malley (2005), the final stage of the scoping review is the collation,

Table 2 Inclusion and exclusion criteria

Inclusion	Exclusion
Research published in 2000–2018	
Original published research or theses/dissertations	Reviews, opinion or discussion pieces, and editorials
Study focus on Students in schools and higher education institutions	
Intervention study	Correlational studies, prevalence studies, and other non-intervention studies
Population of children and adolescents enrolled in middle and high schools or higher education institutions	Population of preschool or elementary school children
Published in peer-reviewed journals, theses/dissertation databases	

summarization, and reporting of results. The scoping review yielded a total of 13 studies. The studies were conducted with adolescents in eight different countries—four in the USA, two each in Australia and Israel, and one each in Britain, China, Mexico, Portugal, and Spain. This section presents the information synthesized through the review. As per the research questions outlined above, the intervention designs, outcomes, and conceptual frameworks used in strengths-based positive schooling intervention programs are reported.

What Research Designs Were Used in the Studies of Strengths-Based Positive Schooling Interventions with Adolescents?

In-depth Design Quasi-experimental research design is commonly used in studies of school-based positive schooling interventions. The notable exceptions to this are three studies,

two of which used a randomized controlled intervention method (1, 10), and the other, which was a whole-school case study (13) describing the various interventions implemented at the school. All studies using the experimental method included a pre- and post-test, as is usual in intervention studies. However, one study (3), along with the pre and post, used daily aggregate measures. While most studies also included a control group, three did not (9, 10, 13). The long-term effect of the intervention and sustenance of positive change was measured using follow-up measures in almost all studies, except 5 (1, 4, 6, 8, 13). Follow-up measures were collected for as long as 1 or 2 years after the completion of the intervention in some studies (5, 10, 11, 12).

Most studies had only one intervention and one control group, but there were three studies with departures from this standard design. In one study (2), a 2×2 design was used to examine the placebo effect of positive psychology

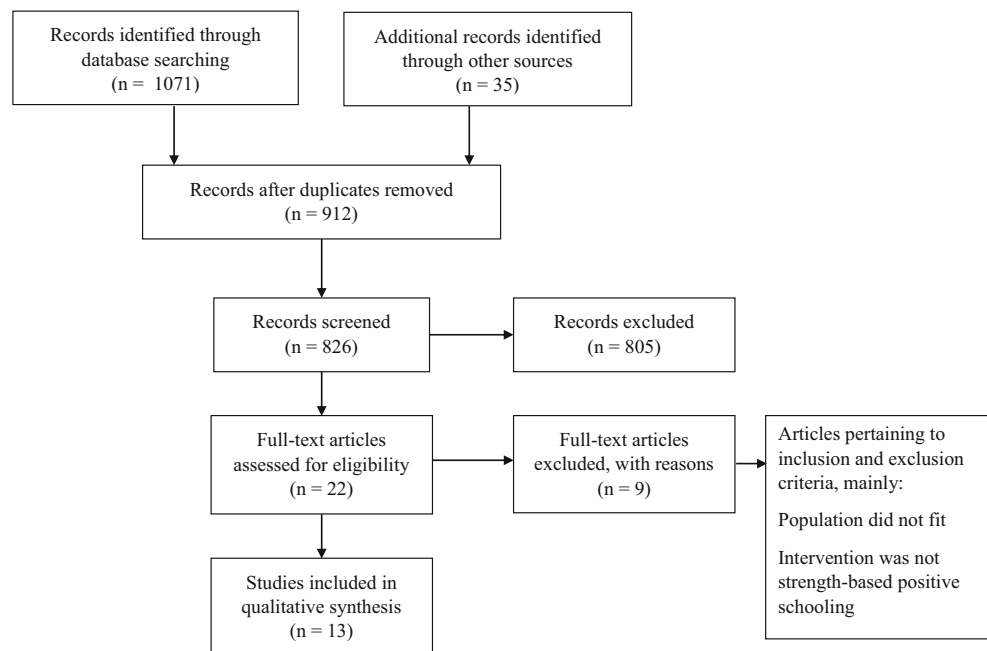
Fig. 1 PRISMA flow diagram for article selection

Table 3 Summary of Included Studies

Study No.	Author	Year	Location	Intervention	Study design and sample	Main findings
1	Burekhardt et al.	2015	Australia	6-week online positive program on positive psychological domains with interactive exercises and an offline workbook	RCT with control group; Pre and post measures N = 572	Results indicated that Bite Back did not lead to any significant improvement in mental health outcomes compared to the control condition.
2	Duan, Ho, Tang, Li, and Zhang	2014	China	6-week program (weekly class) with topics on character strengths and other PP concepts	Quasi-experimental 2 (informed vs. not informed - placebo) × 2 (intervention vs. control) assignment design; Pre, post, and follow-up measures N = 360	Main effect of group (i.e., intervention) was significant, irrespective of whether or not they were informed. Condition × group interaction effect not significant.
3	Froh, Sefick, and Emmons	2008	USA	Treatment conditions—gratitude and hassles. Gratitude—What are you grateful for? Five things everyday Hassles—What hassles occurred yesterday? Five things everyday	Quasi-experimental design with 2 treatment conditions and no-treatment control; Pre, post, and follow-up measures N = 221	Gratitude has both immediate and long-term effects on positive psychological functioning.
4	Louis	2011	USA	4-week program (weekly classes) with two strengths conditions: 1. Talent identification condition 2. Strengths development condition	Experimental w two treatment conditions and two waitlist control; pre and post measures N = 288	Strengths development seems to have had no effect. Talent identification seems to have had increased fixed mindset as opposed to a growth mindset.
5	Marques, Lopez, and Pais-Ribeiro	2011	Portugal	5-week program (weekly class) on hope to help students to conceptualize clear goals, produce numerous range of pathways to attainment, summon the mental energy to maintain the goal pursuit, and reframe seemingly insurmountable obstacles as challenges to be overcome.	Quasi-experimental design with matched control group; pre, post, and follow-up measures N = 62	Strength-based intervention (i.e., hope) brings about significant improvement in constructs such as hope, self-worth, and life satisfaction.
6	Marrero, Carballeira, Martín, Mejias, and Hernández	2016	Spain	12-week program (weekly class) on positive psychology combined with cognitive behavioral therapy	Convenience sample with treatment and control group; pre and post measures N = 48	The intervention was found to promote social support.
7	Oppenheimer, Fialkov, Ecker, and Portnoy	2014	USA	5-day program that incorporated facets of positive psychology, namely the exploration of character strengths	Quasi-experimental treatment and control group based on student academic performance; pre, post, and follow-up measures N = 70	Participants in the intervention group reported an overall increase in well-being from the start to the conclusion of the intervention (time 1 to time 2). The scores of participants in the intervention group did not remain elevated at the 3-month follow-up.
8	Proctor et al.	2011	Britain	6-month program with 24 lessons on each character strength with in-class activities, open	Quasi-experimental design with treatment and control; pre and post measures N = 319	Students who participated in character strengths-based exercises had higher life satisfaction than students who did not participate in the exercises, after

Table 3 (continued)

Study No.	Author	Year	Location	Intervention	Study design and sample	Main findings
9	Romo-González et al.	2013	Mexico	discussion, and real-world home-work activities 3-week program (daily classes) to improve individuals' understanding of the meaning of their lives and the worthiness of positive values, behaviors and beliefs, as well as inducing a sense of respect for themselves, the others and for their environments.	Treatment group without control; pre, post, follow-up measures N = 30	controlling for baseline life satisfaction, age, gender, school, and year. Program resulted in improvement in happiness and well-being, and academic performance.
10	Seligman, Ernst, Gillham, Reivich, and Linkins	2009	USA	25–25 sessions on character strengths and application over one academic year	RCT; pre, post, and follow-up measures N = 347	Increased students' reports of enjoyment and engagement in school. Teachers reported greater strengths related to learning and school engagement. Academic performance increased for up to 2 years. Parent and teacher reported increased social skills. Did not improve students' reports of their depression and anxiety symptoms, character strengths, and participation in extra-curricular activities.
11	Shoshani, Steinmetz, and Kanat-Maymon	2016	Israel	Alternate weekly classes based on the PERMA model	Quasi-experimental design with waitlist control; pre, post, and follow-up measures N = 2517	Intervention groups exhibited increases in their emotional SWB, peer relations, emotional engagement, cognitive engagement, and GPA scores. There was no significant change in life satisfaction.
12	Shoshani and Steinmetz	2014	Israel	Alternate weekly classes based on the PERMA model	Quasi-experimental design with waitlist control; pre, post, and follow-up measures N = 1167	The intervention group showed significant positive changes for psychological distress, depression symptoms, anxiety symptoms, and interpersonal sensitivity, self-esteem, self-efficacy, and optimism. No significant effect for life satisfaction.
13	White and Waters	2015	Australia	Embedded character strengths and positive psychology in English Literature classes, leadership, sports, counseling, and a positive education curriculum.	Case study design of entire school N = 1299	Reports preliminary positive effects in all domains of intervention.

interventions by manipulating whether or not participants were informed of the purpose of the intervention. In another study (3), besides the positive psychology intervention and control group, researchers created a third group that received a “hassles intervention,” with the intention of providing a suitable comparison to the positive psychology intervention group. A similar method was followed in study no. 4, where there were two intervention groups, with different approaches to the intervention. Although almost all the studies used random assignment to create these groups, three studies divided the groups based on convenience (6, 8, 9).

It is important to note that two studies (11, 12) were conducted using the same intervention program at different sites and times, providing additional evidence on the validity and effectiveness of the intervention program. Further, three studies (11, 12, 13) used a school-wide approach. Few studies included parents as key stakeholders in the program (5, 10).

Delivery of Intervention Only one study (1) used an online program to deliver the intervention. All other interventions were implemented directly with students with two-way student-facilitator interaction. Facilitators of the interventions were either school teachers or members of the research team themselves. In most studies where the teachers led the intervention program with students, they received specialized training to do so (3, 4, 11, 12, 13). In other studies, the intervention was carried out by the researchers themselves (7), psychology doctoral students (5), or positive psychology expert therapists (6).

With respect to administration of individual intervention sessions, most studies held the intervention within school hours, during one of the timetabled periods (3, 2, 4, 8, 10, 11, 12). However, two studies held the session outside scheduled hours, one during an extra class after school (5), and another during the intersemester period (9). In the case study involving a whole-school approach (13), the intervention was woven into existing classes, and included an extra timetabled period devoted to a positive education curriculum.

Intervention Duration and Frequency The positive psychology interventions reviewed herein were conducted for anywhere between 1 week (7) and 1 year (10, 12). Classes were held on a daily (3, 7, 9) or weekly (4, 5, 6, 8) basis, although some studies mention only the total length of the intervention. Notably, one study (11) used a method in which sessions were held every alternate week, with teachers (who facilitated student sessions) attending sessions in the weeks in between. Intervention sessions (where mentioned) ranged from a length of 50 to 90 min.

Session Topics and Teaching Methods Topics addressed in the school-based positive schooling interventions reviewed in this paper can be broadly divided into four types. The majority of

studies (1, 2, 5, 6, 7, 10, 11, and 12) used content that covered a wide range of positive psychological topics like happiness, optimism, character strengths, and more. Few studies focused entirely on one single theme—three studies had sessions dealing only with character strengths (4, 8, 13), and one intervention solely used a gratitude exercise (3). Interestingly, one study used an entirely different approach to their intervention. This study (9) used concepts and activities such as deep ecology, meditation and breathing, and visualization to promote wellness and strengths.

Except for two studies (3, 9) which used only exercises in their intervention, all additional studies used a combination of conceptual learning, classroom activities, and homework. Self-reflection, writing exercises, and single or group work are some staple activities used in these interventions.

Treatment Integrity Measures Most studies did not address the issue of treatment integrity. In fact, of the studies under review only five (1, 3, 4, 8, 12) addressed or assessed treatment fidelity. These assessments included random visits by the researcher or support team (3, 12), teacher reports of lesson administration (8, 12), detailed intervention plans (4), and frequency of lessons completed by students (1).

What Are the Outcomes of Strengths-Based Positive Schooling Interventions?

Effectiveness Various dependent variables like life satisfaction, optimism, depressive symptoms, etc. were used to measure the outcomes of the interventions and their effectiveness over time (outlined in more detail as follows). Some studies reported significant positive changes after the intervention (1, 3, 5, 6, 7, 8, 10), while others did not (4). In studies which reported included follow-up tests of effectiveness, there were mixed results. Two studies (2, 10) revealed both long-term and short-term effectiveness, while in others, although immediate (i.e., at post-test) effectiveness was present, it tapered off (7, 9). Here, “long-term” was considered as follow-up measures recorded at more than 4 months. A few studies reported effect sizes, and had small to medium (3, 6, 11, 12) effects. One study in particular (6) reported significant changes within the intervention group after treatment, but this change was not significant when compared to the control group.

Related Outcome Variables and Results The studies included in this review used several outcome variables to measure the effectiveness of their program. Most studies used a combination of positive (e.g., well-being, optimism) and negative measures (e.g., depression, anxiety), although some used only positive measures (2, 4, 7, 8, 11). The most common positive psychological measures used in the various studies were life satisfaction (1, 2, 3, 5, 6, 8, 11, 12) and well-being (3, 6, 7, 9, 11). Except for some measures like academic achievement

(measured using grades), the remaining were self-report measures.

When we compare studies, there are mixed results concerning life satisfaction. Four of the eight studies that measured the variable showed no change (1, 6, 11, 12), while the rest showed positive changes (2, 3, 5, 8). However, there were no negative consequences on life satisfactions through the interventions. Increased levels of life satisfaction sustained over time for three of these studies (2, 3, 5).

Constructs used to measure well-being varied across studies—measures of happiness, subjective well-being, or psychological well-being were most frequently used. However, all except one study (6) resulted in enhanced well-being at the end of the program. Long-term effectiveness differed, with two studies reporting increases (3, 11) and with two others (7, 9) showing a decrease in well-being at long-term follow-up, although they were still above those at baseline. Other positive psychological variables such as optimism (3, 6, 12), gratitude (3, 6), self-esteem (6, 12), and hope (5) were also measured, among others. Student optimism increased and was sustained over time for the large part (3, 12), with only one program registering no change (6). Gratitude significantly increased at both post-test and follow-up when used as the primary intervention variable (3), but this was not the case when the intervention employed a variety of topics (6), under which condition there was no alteration. Levels of self-esteem did not vary after one program (6), while for another, there were both short-term and long-term improvements (12). Feelings of hope also increased at short- and long-term evaluation.

Concerning measures of negative psychological constructs, the most common were anxiety (1, 10, 12) and depression (1, 10). Few studies measured symptoms of poor mental health (5, 12). Results with respect to these aspects of well-being are not very promising. Only one study showed a decrease in anxiety (12), one in mental health symptoms (12), and one in negative affect (3). The rest of the studies resulted in no change in these outcome variables. Although all studies reviewed in this paper were school-based interventions, little over a third of the studies included any measure of school-related well-being or engagement (3, 5, 9, 10, 11). Four studies tracked changes in academic achievement over time (5, 9, 10, 11). Almost all studies reported positive changes in school-related student well-being and academic achievement. Only one study (13) reported qualitative opinions of the students and teachers who participated in the intervention. They were largely positive. Four studies used a separate measure to identify character strengths (1, 7, 10, 13). Most other studies relied on self-reflection to identify student strengths.

Sample Characteristics Studies recorded a wide range of socio-demographic variables such as age, gender, socioeconomic status, and family details. Most studies reported no differences

or relationships between sociodemographic variables and outcomes measures or intervention effectiveness. However, three studies (6, 11, 12) reported differences in sample characteristics. One study reported gender differences in intervention effectiveness—only girls changed over time in environmental mastery and self-acceptance. On the other hand, for life satisfaction, there was a decrease for boys, and an increase for girls.

Another study (11) reported baseline differences in gender. Boys reported fewer negative emotions, more positive emotions, and lower school engagement compared to girls. Further, those below the poverty line also exhibited lesser positive emotions, social relations, and cognitive engagement in school, and higher levels of negative emotions. In the same study, however, those below the poverty line did exhibit some positive changes after the intervention, although there was not a significant interaction between this variable and the condition. In another study that used the same intervention design (12), poverty and single-parent households emerged as risk factors for depressive symptoms and optimism, which increased and decreased respectively across a period of 2 years. Further, boys displayed a smaller increase in general distress, interpersonal sensitivity, self-esteem, and optimism, when compared to girls, across time. However, they also presented a more significant increase in self-efficacy.

What Are the Theoretical Frameworks Underpinning Strengths-Based Positive Schooling Interventions? Relying on a solid theoretical background makes for a sound research design. For this reason, and to understand the basis of strength-based positive schooling interventions, we examined the theories influencing these studies. As is to be expected in strength-based interventions, a large number of studies used the character strengths framework (2, 4, 7, 8, 9, 10, 13). While actual sessions differed in whether they focused on strengths and virtues alone (8) or taught associated principles (2), they were all built on the same foundation. Two studies focused on specific virtues such as hope and gratitude, and developing strengths through them (3, 5). Other studies used a variety of positive psychological theories such as the PERMA model (11, 12) or positive education (9). Few studies drew inspiration from positive psychological concepts as a whole (6, 10, 1), while some used a mixture of the above theories (9, 10) and cognitive behavioral therapy in conjunction with positive psychotherapy concepts (6).

Discussion

The present scoping review of strength-based positive schooling interventions has attempted to provide a comprehensive summary and comparison of the various programs. Programs mostly use the quasi-experimental research design, which is

typical of intervention studies. Conclusive evidence is required regarding long-term effectiveness, as most studies included only short-term follow-ups and not long-term ones. Most programs are delivered to students by teachers, and these appear to be the most effective (as assessed by a combination of follow-up measures and effect sizes), thus providing support for continued participation and training of teachers in positive education programs. Although there are some significant methodological issues with studies of positive schooling interventions, we can cautiously conclude that they show promise in their ability to bring about positive outcomes. In this section, we discuss the results of the scoping review along with methodological suggestions for future research.

The strength-based positive schooling interventions reviewed in this paper have been carried out in nine different countries, with a majority conducted in North America. There is a necessity to test and validate such interventions with diverse ethnicities and populations across the globe. The class range of samples included in these studies ranged from middle school to university (undergraduate students).

Design Several studies used a control comparison group as well as follow-ups. Both these aspects are important features of experimental and intervention research and used to understand the true effect of the intervention (Boslaugh 2008). Control groups present an appropriate counterfactual to the intervention group, while also increasing the internal validity of results (Crano et al. 2015; Shaughnessy et al. 2011). Follow-up measurements are necessary to grasp the long-term effectiveness of interventions (Babbie 2004). They are crucial for strength-based positive schooling interventions in particular, given that the science of such interventions is still in its nascent stages and we know little about its long-term effectiveness.

Within the quasi-experimental design used in a majority of the studies included in this review, random assignment occurred at the classroom level. Two studies used randomized controlled assignment of individual participants, increasing the scientific rigor of the studies. Although complete randomized controlled designs are considered the gold standard of intervention studies (Campbell and Stanley 1966; Kunz et al. 2007), this may not be feasible in the case of school-based programs. Since schools have large numbers of students on campus at a given time, this method may disrupt existing structures and practices in the school. Despite the limitation, most studies have produced positive effects, lending strength to the use of this method of assignment in school programs.

Few studies incorporated the input of key stakeholders in the design and application of interventions. Those that did, however, revealed some positive changes. While this by no means provides robust evidence for stakeholder involvement in these interventions, it is essential to explore the incorporation of parent, teacher, and student views in these

interventions, as research shows that they play a significant role in the well-being of the student. Teacher well-being (Spill et al. 2011), attitudes and behavior (Ulug et al. 2011), and the student's perception of teacher behavior (Gehlbach et al. 2012; Rimm-Kaufman and Sandilos 2012) can influence student-teacher relationships. This can in turn impact the learning process (Skinner and Greene 2008), student well-being (Maulana et al. 2013), and educational outcomes (Asiyai 2014; Gelhback et al. 2012; O'Hara and McNamara 2001). Parent attributes and parent-child relationships have a similarly large impact on academic outcomes and social development (Pianta et al. 1997; El Nokali et al. 2010).

We must also note the scant evidence found for whole-school interventions. Whole-school designs include positive psychology training for teachers and staff, a positive approach in school management policies, and making positive psychology visible through changes in the physical school environment (Shoshani and Steinmetz 2014; Shoshani et al. 2016; Waters 2011). While such an approach to strength interventions can be costly, time consuming, and laborious in its day-to-day management, there is nevertheless a need to research this avenue. This is especially important because all school-based interventions are created with the eventual goal of scaling up.

Treatment integrity data are very important in school-based and teacher-implemented interventions due to the high level of variability that can occur in classrooms (Frey 2018). Information on treatment fidelity, a multidimensional measure of adherence, quality, and exposure to the intervention (Sanetti and Kratochwill 2014), will help researchers link the use of the intervention to the outcomes of the research. Without this, it would be difficult to conclude that the intervention was responsible for bringing about change in the dependent variable. Despite this, most strength-based positive schooling interventions have not included any measure of treatment fidelity in their studies. Since most studies have mixed results, this data would be useful when determining the reasons for why the intervention did or did not work. Of the studies that included treatment fidelity data, we observed that treatment adherence varied across studies (although few studies provided actual numbers) and results were similarly mixed. For instance, in one study (Burckhardt et al. 2015), average adherence (approximately 50%) led to no change in the treatment outcomes, whereas in another study (Proctor et al. 2011), although adherence was low, the results were positive.

Implementation Teachers with no prior training facilitated many of the studies covered in this review. All interventions following this method also reported favorable results. It is possible that owing to the existing relationship that teachers have with their students smoothed the intervention process, eliminating the need to build rapport and trust (Hamre and Pianta 2006). Further, teachers are also better suited for this

role as they may act as key players in continuing to reinforce the learnings from the intervention even after its formal conclusion (Seligman et al. 2009).

Sessions A majority of the studies in this scoping review used a combination of theory and application in their sessions. Where detailed, almost all studies followed a design where different positive psychological concepts were taught explicitly, along with classroom exercises and homework activities. Such a design is logically sound, as it is vital for students to grasp concepts such as flow, hope, or meaning, before they can actively develop them in their own lives. Two studies in particular used a five step method for each session - stories, exercises, discussion, writing, action. We must make special note of the use of stories, which several studies used, with most showing positive results. Stories are a powerful tool for learning and personal development (McEwan and Egan 1995), and their effective use in these programs strengthen the rationale for using them in such school-based interventions.

Frequency and Effectiveness of Sessions It is difficult to reach any conclusion about the most effective duration of strength-based positive schooling interventions, as there are mixed results. Notably, however, most studies used a weekly design, which gives participants ample time to incorporate and internalize positive concepts and practices in their daily lives.

All studies that revealed both short-term and long-term effectiveness of intervention used a mixture of positive psychological concepts in their sessions, which suggests that there may be a need to include other aspects of positive psychology within school-based interventions. Such concepts enable students to make stronger connections to real life events and applicability.

Dosage and Outcomes Taking a more in-depth look at outcomes with respect to intervention durations and topics, longer interventions showed no change in life satisfaction. On the other hand, shorter, more intensive interventions, such as those held daily or weekly for several weeks, showed positive changes. With respect to session topics, there is little difference between those that showed a positive change in life satisfaction and those that did not. It is difficult to square up these differences, pointing to a need to further research into what works in interventions to increase life satisfaction. One of the studies reviewed here (Shoshani et al. 2016) suggests that some of the difficulty may be explained by the abstract and general nature of life satisfaction and its measures, which often ask respondents to reflect on average levels of life satisfaction of their entire life, as opposed to a specific, shorter period.

When it comes to well-being measures, although most studies reported beneficial changes, these upward trajectories

were not maintained over time. We may ascribe this recession to the genetically determined set point of happiness that individuals have (Lyubomirsky et al. 2005b), and hedonic adaptation (Lyubomirsky 2011). Further research is necessary in this area for conclusive results. As one study explained, we must determine whether there is a ceiling effect for happiness or whether unlimited positive change is possible.

With respect to negative mental health such as depression or anxiety, only two of the five studies that measure this end of the wellness spectrum reported meaningful results. Such areas of mental health require targeted and more intensive programs, in contrast to the one-size-fits-all nature of most school-based interventions reviewed here.

A qualitative exploration is required to understand the mechanisms underlying change and the reasons for the effectiveness (or lack thereof) of the interventions (Creswell 2003; Gallo and Lee 2015). One of the studies recommended the specific use of qualitative methods (Louis 2011) to understand the nature of participants' experiences as they learn about, identify, and develop their strengths.

Our review revealed that few studies incorporated measures of school-related well-being or achievement. School-related well-being is a key ingredient that will impact a student's overall welfare. Future studies must seek to bridge this gap, especially given the fact that positive education aims not only at emotional and psychological well-being, but also aims to be beneficial towards school-related productivity and well-being (Seligman et al. 2009).

Positive Psychological Frameworks It is difficult to draw a consensus concerning the theoretical underpinnings of strength-based positive schooling interventions, given the variety of theories used to inform the interventions. It is true that the tenets of positive psychology influence all positive schooling interventions. Seligman et al. (2009) and Snyder and Lopez (2007) have proposed different but similar definitions and models of positive schooling and education.

However, there is a need for more research on these interventions that would help validate robust models of positive schooling. It is crucial to take a microscopic view of the process of change to unbox the mechanisms at play within a positive schooling intervention. Further, a robust theoretical framework will provide future researchers with a firm contextual grounding from which to approach the project, compare and contrast results from different projects, and provide a lens from which to understand and generalize results (Adom et al. 2018; Grant and Osanloo 2014; Ravitch and Carl 2016).

Conclusion

This scoping review has reviewed 13 papers involving strength-based positive schooling interventions. The evidence

drawn from these studies shows promise for the implementation of such interventions in academic environments, and can provide valuable input for practitioners, researchers, teachers, and school administrators alike. Student well-being and strengths can be potentially enhanced using a strength-based approach within a structured curriculum that focuses on the identification, development, and practical application of individual strengths. It is evident from our findings that there is no set theoretical model for strength-based positive schooling, which calls for future theory-driven research in this area. Future research must also inspect school-related outcomes to test the holistic effectiveness of such interventions.

Implications

At the end of the scoping review, we identified some gaps in existing literature and avenues for exploration in future research. Future researchers in this area may include a qualitative component to their research to understand the subjective experience of participants.

Most strength-based positive schooling interventions appear unable to maintain high levels of positive change and outcomes. Thus, there is a necessity to conduct longitudinal studies that will determine more conclusively the trajectory of impact for different programs and populations. Studies that have maintained positive outcomes in the long-term may be replicated to see if the results hold. Furthermore, positive practices and program curriculums that will produce long-term effectiveness need to be identified, which will assist practitioners and school administrators in choosing the most appropriate program curriculum for their school.

There is as of yet no comprehensive model of positive schooling that elucidates the theory of change that students undergo before they begin to flourish or thrive. In relation to long-term effectiveness (or lack thereof in most programs), as pointed out by Marrero et al. (2016), future research must look into a possible ceiling effect of happiness, and whether unlimited positive outcomes is possible regardless of how happy or unhappy a participant feels at the beginning of the intervention.

There is a marked lack of whole-school interventions, or examination of school-related well-being measures in strength-based positive schooling interventions. A systems approach with a holistic and comprehensive change in the students' learning environment is required.

There have been few positive schooling interventions designed for targeted causes or diverse populations—a gap that future research must seek to bridge. Culturally informed interventions for different populations may help maximize the positive outcomes of positive schooling programs. Further, special programs for students suffering from poor mental health may help them achieve overall well-being.

Limitations

The purview of the present scoping review did not include working papers, unpublished works, white papers, or theses. We included studies published after the year 2000 alone. Programs conducted on preschool and primary students were not incorporated into this review. These criteria may have resulted in a few omissions. The paper reviewed positive schooling interventions based on a character strengths framework. Future reviews may look into interventions that used other positive psychological constructs. Further, the present study lacks comparative evaluation or a measure of robustness of the studies that are more typical of different types of reviews.

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Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

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