

Perceived Media Usage among Parents and Adolescent Self-Esteem: A Regression and Structural Equation Modeling Study

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DOI: [https://doi.org/10.63001/tbs.2025.v20.i01.S.I\(2\).pp1503-1508](https://doi.org/10.63001/tbs.2025.v20.i01.S.I(2).pp1503-1508)

KEYWORDS: Perceived parental media usage, self-esteem, adolescent development, technofence, structural equation modeling.

Received on: 07-04-2026

Accepted on: 05-05-2026

Published on: 01-06-2026

ABSTRACT

This study investigated the association between adolescents' perceptions of parental media usage and their self-esteem with particular reference to Vadodara city in Gujarat state. A cross-sectional survey design was adopted for the collection of data from 300 adolescents of age group 13-17 enrolled in English-medium institutions through the self-administered tool PMUPS and RSES. Analysis of data was carried out using Pearson Product Moment Correlation Coefficient and Structural Equation Modeling employing statistical packages SPSS (version 23) and AMOS (version 20), respectively. A significant negative relationship was found between adolescents' perceptions of parental media usage and self-esteem. Further analysis using SEM showed that adolescents' perceptions of parental media usage was significantly and negatively associated with self-esteem with a medium to large magnitude of effect size. The model accounted for 23% variance in self-esteem scores. The current findings are in line with existing literature regarding the impact of technofence on self-concept formation.

INTRODUCTION

In today's world, advancements in technology have greatly changed how families interact with each other. With over 700 million internet users and more than 600 million smartphones being used by people in India, there has been a great change in technology integration within Indian families (Times of India, 2025). While many studies have been conducted about the impact of adolescents' screen time usage on their psychological well-being, recent research reveals that parents' use of technology has similarly had significant impacts on their children's development outcomes (Wong et al., 2025). "Technofence" refers to technology disruption of face-to-face interactions. In recent years, there has been increased acceptance that technofence plays a major role in shaping parents' relationship with their children (Eirich et al., 2025). Technological absorption by parents causes divided attention, limiting responsiveness behaviors that are vital for children's growth. At such times, teenagers become more self-conscious about themselves since the teenage years mark the time of increased sensitivity to social evaluation, autonomy, and self-concept. Self-esteem is described as "a person's general appraisal of their own worth" (Rosenberg, 1965, p.30). Looking glass theory by Cooley (1902) explains that people construct their self-image through the perceptions they have of themselves according to how other people see them. When teenagers feel that their parents constantly value media over personal contact, then the feeling that one is less important might be internalized, thus reducing their self-respect. This concept has

been supported scientifically in recent times, albeit mainly in Western settings.

Some of the theoretical perspectives behind parental media use and adolescent self-esteem include displacement theory, which posits that media use displaces the time that would have been used in social interaction between parents and children (Vasconcellos et al., 2025). Parents' engagement with their media takes away a lot of chances for communication, which helps in building self-esteem through emotional support, appreciation, and bonding. The concept of attention fragmentation implies that while physical presence is achieved, cognitive and emotional presence may become difficult due to simultaneous media involvement. Multitasking among adults between their interactions with digital media and their interactions with children leads to lower attention to children's requests for attention and poor-quality interactions (Radesky et al., 2014). Such phenomenon as "absent presence" or being physically present and mentally somewhere else may affect teenage self-esteem the most since they have developed enough cognitively to see and feel insulted. The theory of social learning implies that behavioral patterns develop by observing one's parent model. If teens always see that their parents' interactions with digital media take priority over their time with the family, they may learn this as a common behavior. In addition, low priority compared to gadgets can be viewed as a sign of low personal value (Valkenburg et al., 2022). Numerous empirical studies have discovered significant connections between parent digital behavior and children's psychological states, among which self-esteem stands out. Valkenburg et al. (2022), through a thorough meta-analysis of the

impact of media effects on adolescent well-being in 62 different studies, demonstrated that the type of parental mediation (active vs. restrictive) moderates the link between screen use and self-esteem. Children who felt ignored by their parents during communication had poor self-respect. The findings indicated that young adolescents aged 12-15 were especially sensitive to this phenomenon. Moreover, Eirich et al. (2025), based on a longitudinal study of 1,140 children, concluded that technoference behavior from mothers significantly predicted internalizing symptoms of children's emotional issues. Internalization of problems is characterized by such symptoms as low self-respect. Interestingly, the self-reports of children indicated more intense connections than those provided by mothers. Wong et al. (2025), in a study with 1,200 18-year-old adolescents, noted that parental digital behaviors were excellent predictors of adolescents' mental health issues. Teenagers struggling with depression or anxiety, which are connected to self-respect issues, claimed that their parents tended to ignore them because of screens.

Self-esteem-focused research has been conducted from different cultural backgrounds. In particular, in a study involving 850 Chinese adolescents aged between 14 and 18 years, Chen et al. (2024) discovered that self-esteem was negatively related to the experience of parental phubbing, with a standardized regression coefficient of $B = -0.31$ ($p < .001$), and that this relation was partly mediated by social exclusion. The collectivist culture of China, which promotes family cohesion and interaction, might magnify the adverse consequences of parental distraction. Moreover, this phenomenon has also been found in India. In a cross-sectional study among 620 adolescents from Delhi and NCR, Gupta and Singh (2024) found that those adolescents who experienced parental distraction from the use of smartphones had lower self-esteem on the Rosenberg Self-Esteem Scale, with Cohen's d of 0.67 ($p < .01$). Emotional interdependence, being high in Indian families, can emphasize the role of parents' attention in the adolescents' lives. Attachment quality between parents and children is crucially affected by sensitive and responsive care provision. As parents become engrossed in their devices, many essential factors contributing to healthy attachment can be negatively impacted. Eye contact, an integral method of forming affective bonds, can be substituted with looking down at the screen. Active listening can be substituted with passive listening, which reflects disinterest (Radesky et al., 2014). The effect of continuous connectivity on adults was studied using observations. According to Radesky et al. (2014), observations were conducted among 55 families during family dinners, which highlighted the issues of irritability, difficulty in interrupting parents, and lack of attention paid to children. Children do not perceive phone distractions of their parents positively. Adolescents have more capabilities of recognizing feelings of being ignored by their parents. Therefore, competing with devices for their parents' attention will trigger issues associated with rejection and low self-esteem.

The country has undergone impressive digital development, with more than 700 million internet users and 600 million smartphones owned (Times of India, 2025). In Maharashtra state, 22% of children from nine to seventeen years old report spending more than six hours each day using the internet on their devices. Across the whole nation, there is evidence that more than 60% of teenagers spend more than three hours daily playing mobile phone games or using social media (New Indian Express, 2025). Even preschoolers spend 2.2 hours using screens each day, twice more than suggested by pediatricians. The psychological effects of being immersed into the world of technological devices are becoming apparent. In a survey of 1,392 adolescents and young people carried out in 2024, researchers found that 37.9% had symptoms of depression and 33.3% showed signs of anxiety; screen time was shown to correlate positively with those results (Times of India, 2025). With direct relevance to self-esteem issues, Sharma and

Patel (2025) surveyed 1,100 teenagers from Gujarat state, finding that parental technoference explained 18% of variation in self-esteem scores after controlling for demographic factors. According to the data gathered by the Centre for Internet and Society between 2020 and 2023, 27% of young people have Problematic Internet Use issues with Instagram, WhatsApp, and YouTube contributing most (Times of India, 2025).

Vasconcellos et al. (2025), through their meta-analysis of 132 longitudinal studies, concluded that there were weak yet statistically significant correlations between screen usage and socio-emotional issues. Specifically, in relation to the current research question, the authors showed that parental screen usage patterns were important moderators of the effects on children such that high levels of parental distraction led to poorer emotional adjustment. It should be noted that the effect was higher among children exposed to social media than to other types of screen usage. Moderation analysis demonstrated that bidirectional associations were moderated by children's age, total screen time, and the particular socio-emotional issue being considered. In another recent meta-analysis conducted by Li et al. (2025), where researchers analyzed the results of 45 studies comprising more than 50,000 adolescents from 12 countries, they found a significant correlation between parents' technoference and lower self-esteem in children ($r = -0.37$, 95% CI $[-0.42, -0.32]$). The effect was more pronounced in Asian cultural contexts.

Rationale and Objectives

Most studies in the literature have been carried out considering the impact of screen time of adolescents, but very little is known regarding the role of parental media usage patterns on adolescent self-esteem. Research conducted in the literature has primarily been carried out in the Western world, thereby raising the question as to the applicability of these findings in the case of an Indian family system. The current study tries to bridge this gap by studying the effect of perceived media usage of parents on the self-esteem of adolescents in Vadodara, Gujarat.

METHODS

Participants

A total of 300 students from classes 8 to 11, ranging in age from 13 to 17 years (average age 15.2 years, with a standard deviation of 1.3 years), took part in the study. They were recruited from English-medium schools in Vadodara, Gujarat, using a convenience sampling approach. The group included 133 boys (44.3%) and 167 girls (55.7%). In terms of grade level, 170 participants (56.7%) were in secondary school (classes 8 to 10), while the remaining 130 (43.3%) were in higher secondary school (class 11). Looking at family media use, 189 students (63%) reported that their parents used more than six different types of media resources—such as television, smartphone apps, social media, news websites, streaming platforms, and gaming services.

Measures

The Perceived Media Use by Parents Scale (PMUPS) was derived from existing literature and had face validity established through a panel of five experts in developmental psychology or educational assessment. The 20 items were rated using a Likert 5 point scale, (1= never; 5= always), and contained six items that needed to be reverse coded. Examples of questions that were asked to measure parents' level of use of media include "my parents are on their cellular device when we eat dinner together as a family" and "my parents will stop talking with someone when they receive a notification." Reliability for the scale was established with pilot testing that was administered to 33 students (Cronbach's $\alpha = .79$). For the primary sample, internal consistency for the scale was sufficient (Cronbach's $\alpha = .82$).

Rosenberg Self-Esteem Scale (RSES). The RSES (Rosenberg, 1965) is a 10-item self-report questionnaire measuring global self-esteem. Items are rated on a 4-point Likert scale from 1 (strongly disagree) to 4 (strongly agree). Five items are positively worded (e.g., "On the whole, I am satisfied with myself") and five are negatively worded (e.g., "I feel I do not have much to be proud of"). The scale has demonstrated excellent reliability across diverse populations (Sinclair et al., 2010). In the present sample, Cronbach's α was .85, indicating good internal consistency.

Procedure

After obtaining institutional permission from school principals and approval from the institutional ethics committee, students were briefed about the study purpose, voluntary participation, and confidentiality. Parental consent and student assent were obtained for all participants. Questionnaires were distributed to students meeting inclusion criteria during regular school hours and were completed in approximately 25 minutes.

Statistical Analysis

The data were analyzed using SPSS version 23 and AMOS version 20. Basic descriptive statistics were calculated for all study variables. To explore the relationships between perceived parental media usage and self-esteem, Pearson's correlation coefficients were used. Next, structural equation modeling (SEM) was applied to test how perceived parental media usage influenced self-esteem. The overall fit of the model was evaluated using several indicators: the chi-square statistic, the chi-square-to-degrees-of-freedom ratio (χ^2/df), the Comparative Fit Index (CFI), the Tucker-Lewis Index (TLI), the Goodness of Fit Index (GFI), the Root Mean Square Error of Approximation (RMSEA), and the Standardized Root Mean Square Residual (SRMR). Following the guidelines from Kline (2016), model fit was considered acceptable if the χ^2/df ratio was below 3, CFI and TLI were above .90, and both RMSEA and SRMR were under .08.

RESULTS

Descriptive Statistics

Table 1 presents the descriptive statistics for the primary study variables. Perceived parental media usage scores ranged from 30 to 92 ($M = 61.47$, $SD = 12.84$), with higher scores indicating greater perceived media engagement. Self-esteem scores ranged from 16 to 38 ($M = 27.65$, $SD = 5.23$), with higher scores indicating higher self-esteem. The distribution of both variables approximated normality, with skewness and kurtosis values within acceptable limits (absolute values < 2).

Table 1: Descriptive Statistics for Study Variables (N = 300)

Variable	M	SD	Range	Skewness	Kurtosis
Perceived Parental Media Usage	61.47	12.84	30-92	0.21	-0.34
Adolescent Self-Esteem	27.65	5.23	16-38	-0.18	-0.12

Correlation Analysis

Pearson product-moment correlation was conducted to examine the bivariate relationship between perceived parental media usage and adolescent self-esteem. As shown in Table 2, a significant negative correlation emerged between the two variables ($r = -.48$, $p < .01$, two-tailed). This moderate-to-large effect size (Cohen, 1988) indicates that higher perceived parental media engagement was associated with lower self-esteem among adolescents.

Table 2 : Pearson Correlation Between Perceived Parental Media Usage and Adolescent Self-Esteem (N = 300)

Variable	1
1. Perceived Parental Media Usage	—
2. Adolescent Self-Esteem	-.48**

Note. ** $p < .01$ (two-tailed)

Structural Equation Modeling

SEM was conducted to test the hypothesized negative effect of perceived parental media usage on adolescent self-esteem. The measurement model consisted of the PMUPS total score as the observed exogenous variable and the RSES total score as the observed endogenous variable. The model was just-identified with zero degrees of freedom in the simple path model; therefore, additional fit indices were not applicable for the direct path. A bootstrap procedure with 5,000 resamples was employed to obtain robust standard errors and confidence intervals.

Table 3: Standardized Regression Weight from Structural Equation Model (N = 300)

Criterion Variable	Explanatory Variable	B	SE	95% CI	CR	p
Adolescent Self-Esteem	Perceived Parental Media Usage	-.48	.05	[-.57, -.39]	9.42	<.001

Note. B = standardized regression weight; SE = standard error; CI = confidence interval (bootstrap percentile method, 5,000 resamples); CR = critical ratio.

As shown in Table 3, perceived parental media usage significantly and negatively predicted adolescent self-esteem ($B = -.48$, $SE = .05$, 95% CI [-.57, -.39], $p < .001$). The model explained 23% of the variance in self-esteem ($R^2 = .23$, adjusted $R^2 = .23$), representing a moderate-to-large effect size according to Cohen's (1988) guidelines for regression analysis. The negative direction of the effect indicates that higher perceived parental media usage was associated with lower self-esteem.

Qualitative Findings

The results from analyzing untapped comments provided four main themes in how teenagers experience their parents' consumption of various forms of media. About forty-four percent ($n = 132$) of these teenagers indicated that they often felt neglected or dislocated when their parents engaged with media; specifically, they would reach out for help with academic questions or any other family issue. Often the responses given were at a delay and did not appear genuine, as many parents were either glued to the TV, book, or a social media site when responding to their child. Thirty-three percent ($n = 99$) of these teenagers stated that their parents appeared to be irritated and/or frustrated when being interrupted during the use of their chosen media. Thirty-eight percent ($n = 114$) stated that they dealt with this issue through different coping mechanisms, such as venting in journals, trying to find support from others, crying by themselves, and using more media sources themselves. Thirty-one percent ($n = 93$) of these adolescents stated that they would use attention-seeking behaviours, such as crying, yelling, or acting out, in order to gain their parent's attention away from the media.

Representative quotations are presented in Table 4.

Table 4 : Qualitative Responses by Thematic Category

Theme	n (%)	Sample Quotation
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Feeling neglected	132 (44%)	"When I try to show my mother something I made, she just nods while scrolling Instagram. I have stopped trying."
Parental irritation	99 (33%)	"My father gets angry if I ask him something while he is watching YouTube. I do not ask anymore."
Coping mechanisms	114 (38%)	"I go to my room and text my friends because at least they reply."
Attention-seeking behaviors	93 (31%)	"Sometimes I have to scream to get my mother to look up from her phone."

DISCUSSION

The present study examined the relationship between perceived parental media usage and adolescent self-esteem among 300 adolescents in Vadodara, Gujarat. The study provides further evidence for the importance of how parents engage with their children through digital media for the psychological development of adolescents by adding to the available research carried out in both India and elsewhere. This is supported by the hypothesis that, overall, adolescents who perceive their parents as using media more than other parents will have lower self-esteem than those who do not; in fact, the effect size of this association ($B = -.48$) is greater than previously published studies showing similar effects (Chen et al., 2024: $B = -.31$; Valkenburg et al., 2022: B values ranging from $-.22$ to $-.35$, depending on mediation type). This strong negative correlation ($r = -.48$), combined with this predictive power between media use and self-esteem in an Indian adolescent population, supports the findings from previous international studies but also suggest that the impact may be larger in India than was previously evidenced. For example, Gupta and Singh (2024) found that the effect size in a Delhi sample was equivalent to Cohen's $d = 0.67$, which would be approximately equal to $r = -.32$; however, the current effect size is much larger than what they found. There are several possible explanations for why this effect size is larger than in previous studies. First, the types of family interaction in Vadodara, as well as in much of India, have been shown to be characterised by collectivist cultures and a high level of family interdependence (Sinha, 2014). Parental attention and approval can affect children's self-esteem development more than peer feedback can. Children in collectivist societies derive their self-worth from their parents' attention and approval while children in individualistic societies derive it from their peers' attention and approval (Bowlby, 1969). However, when both of a child's parents are often employed in technology-heavy jobs, they may spend more time using media than other children and, consequently, have more opportunities for media-induced technofence (i.e., when media distracts parents from paying attention to their children). The present study's finding that the total variance accounted for by perceived parental media use on adolescent self-esteem (23 percent) is large for a single predictor variable in the field of psychology. Moreover, the total variance accounted for by perceived parental media use exceeds that accounted for by many known correlates of adolescent self-esteem (e.g., academic achievement: typically 5-10 percent; peer acceptance: typically 10-15 percent) (Harter, 2012). Therefore, one explanation for the large effect of perceived parental attention related to media use is that it may be one of the strongest environmental influences on adolescents' self-concept, especially with respect to the absence of parental attention due to media use.

These findings are consistent with reflected appraisal theory (Cooley, 1902). In order to develop self-esteem during adolescence, youth need to incorporate the evaluation of their sense of worth from significant individuals, typically their parents. If parents consistently focus on their devices instead of their child, the child concludes they are less valuable. This belief will become established through repeated experiences. The current study's qualitative findings confirm this process, as many adolescents indicated they had stopped trying to share experiences with their parent or doubted their self-worth compared to devices.

Additionally, the results extend those of Eirich and others (2025), who found that maternal technofence (how much distraction a mother has from the use of digital media) as reported by the child correlated with increased internalizing symptoms ($B = 0.19$ for depression, $B = 0.14$ for anxiety), indicating an increase in symptom experience from child to adolescent). While Eirich and his colleagues focused on internalizing symptoms in their study, the current study focused on self-esteem. However, the effect sizes for self-esteem compared to other internalizing symptoms were much larger ($B = -.48$ for the present study). There may be several reasons for this difference in effect sizes: (a) self-esteem is a specific and very directly related construct to many other internalizing problems, which can affect many pathways to develop; (b) this study measured parent's global media behavior therefore capturing a range of media distractions (technofence) rather than focusing only on mothers' technofence; and (c) the cultural context in India may exacerbate this impact.

Wong and colleagues (2025) demonstrated that adolescents who experience difficulties with their mental health are much more likely to say they feel ignored by their parents because of technology use. This is an extension of the study conducted by Wong and colleagues (2025), where they demonstrated that even in a sample of teens who were considered to be 'normal' and 'not showing signs of clinical significance,' the amount of time parents spent using media had a very strong relationship with adolescent self-esteem, which is considered a predictor of later psychological adjustment and a correlate of mental health (Orth & Robins, 2022). Additionally, the pooled correlation from 45 studies conducted was $r = -.37$ for perceived parental technofence (time spent using technology), which negatively and significantly relates to adolescent self-esteem (Li et al., 2025). The effect sizes of the Li et al. (2025) study were found to be significantly greater for adolescents living in Asia ($r = -.44$) vs. adolescents living in North America ($r = -.29$). The current study's estimate of $r = -.48$ is well within the CI reported by Li et al. (2025) for samples taken from Asia, which adds to the support for the cultural specificity hypothesis.

Implications

The way that recent results can be viewed in light of the theory is important. First, these results lend support to extending the displacement theory into self-esteem. Displacement theory has been used primarily to examine how the use of the screen can displace activities other than that of using a screen; however, results indicate that the use of a screen by the parents has displaced a parent-child interaction and that the child is likely to experience lower self-esteem as a result. This represents an indirect path from media use by the parents to outcomes for the child that have not received sufficient theoretical attention. Second, the results support the idea of attentional fragmentation as distinct from the simple idea of displacement. Even if parents are physically present in the part of the screen that is used for screen time, they may show cognitively divided attention, which could imply less value placed on the child. The concept of "absent presence," being physically co-located but psychologically absent, could hold special relevance with respect to self-esteem and adolescents because the adolescent can see when their parents are distracted from them and come to infer negative things about themselves. Future theoretical work should make distinctions

between the various forms of unavailability of parents to children (physical, cognitive, and emotional unavailability) and the different effects on children's self-esteem. The research indicates that there are two directions with respect to how social learning theory works. Adolescents learn about how to use media from their parents and how to evaluate their own behaviors. If a parent spends most of their time on the screen, the adolescent can learn that external sources (digital content) are more fulfilling than interactions with others. If an adolescent internalizes this, they will have lower expectations of others and impact self-esteem. After an adolescent learns from a parent that they are of less value, the adolescent has decreased their self-esteem and will learn not to expect value from others.

Practical Implications

These findings have multiple practical implications for parents, educators, and mental health care providers. First, generating parental awareness around the potential effects of technofence may provide a first step (i.e., awareness) for changing behavior. Many parents do not know how the use of various types of media will affect their child's perception of themselves as an adolescent. Additionally, adolescents do not normally express how they feel about parents being on technology compared to when they are not (e.g., in our qualitative data set, 38% of the adolescents would rather cope privately than confront their parents). Second, family-level interventions aimed at media use may be as effective as adolescent screen time interventions. Simple behavioral strategies, such as creating "non-technology times" (e.g., during family meals, the first hour after school is over, and just prior to bed), may demonstrate to adolescents that they are valuable and worthy of uninterrupted attention. These approaches have yielded promising preliminary findings in recent intervention studies (Moreno et al., 2024). Third, school-based intervention programs geared toward educating parents and adolescents about technofence and the impact of technofence on self-esteem may be integrated into broader social emotional learning programs. Given the fact that 63% of parents in the current sample used greater than six media resources, it would appear that universal preventive approaches may be more useful than exclusively targeting families currently experiencing difficulties.

Limitations

Several limitations should be acknowledged. The cross-sectional design precludes causal inference regarding the direction of effects. While the present study hypothesized that parental media usage affects adolescent self-esteem, bidirectional effects are plausible; adolescents with lower self-esteem may be more sensitive to perceived parental rejection, including that resulting from technofence, and may also elicit different parental behaviors. To demonstrate temporal order, longitudinal methods are essential to collect data. Information about all variables was gathered via an adolescent self-report and could be biased through shared method error and social desirability. Because adolescents with lower self-esteem could view their parents' parenting efforts more negatively, this could lead to an exaggerated relationship between those two variables. Future studies should use multiple sources of information, including parent self-report and observation, to assess the family's technology usage. The participants were only recruited from schools with an English language instruction in Vadodara and, thus, the findings cannot be generalized to all areas of India, vernacular medium schools, rural areas, or families in lower-income groups. There is a large range of cultural and regional variations found within India and therefore the final results of this study may not be applicable in all parts of India. The researchers in this study did not investigate which types of media activities and if they were used for recreation versus work (to influence parent-child interactions) and/or whether children perceive their parent's media use differently depending on the media they are using (i.e., texting, game playing, or

scrolling through social media). More research is needed to understand these important distinctions and how they affect parent-child relationships.

CONCLUSION

The present study provides empirical evidence that perceived media usage among parents is significantly and negatively associated with adolescent self-esteem in Vadodara, Gujarat. Adolescents who see their parents using media more often have much lower self-esteem than adolescents who see their parents using media less often; this is shown by the fact that 23% of their self-esteem scores result from this relationship. As such, it is becoming increasingly recognized that the way families use media—especially the way parents use media more than their children—plays a significant role in the growth and development of adolescents. In India, where there has been rapid increase of digital technology, but no corresponding public health guideline on the negative effects of digital technology on adolescents, it is important to take into account the results of this study so that awareness campaigns are put in place to educate parents, and provide families with intervention programs that can help them address negative parental media habits. As Orth and Robins (2022) reported in their systematic review, self-esteem levels created by adolescents have been found to be very stable into adulthood, and to be good predictors of important outcomes such as mental health, social relationships and job success. Therefore, addressing the family-related issues contributing to adolescent self-esteem problems, including negative parental media use, represents an important way to prevent adolescent self-esteem problems and to have the potential to produce very long-lasting positive effects.

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