

Does emotion regulation moderate the relationship between self-esteem and social desirability?

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SUMMARY

Childhood (the period during grades 3 through 5; ages 8–10) and adolescence (the period during grades 6 through 8; ages 11–13) are pivotal periods when emotional and social skills necessary for well-being are developed. Specifically, factors such as self-esteem, social desirability, and emotion regulation can significantly affect the mental health of children and adolescents. Previous research has shown potential relationships and correlations with these variables in adult study populations; however, no research has investigated this relationship in children and adolescents. Therefore, this study explored the moderating effect of emotion regulation on the relationship between self-esteem and social desirability by conducting secondary analyses on a de-identified data set. The original study was the development and refinement of a vignette-based emotion regulation assessment designed for school use. It was conducted between November 2020 and November 2021. Based on the sociometer theory, we hypothesized that emotion regulation would affect the strength or direction of the relationship between self-esteem and social desirability in children and adolescents. Results of this study indicated that children and adolescents with higher levels of self-esteem showed greater levels of social desirability and that emotion regulation did not moderate this relationship, refuting the sociometer theory. The findings of this study emphasize the importance of self-esteem and social desirability among adolescents. Therefore, adults should foster a more supportive environment to help adolescents and children develop better skills for their self-esteem. In addition, these results can be applied through therapeutic interventions to help adolescents improve their self-esteem.

INTRODUCTION

Adolescence is a pivotal period for mental health development when social and emotional skills are developed for overall mental well-being (1). One aspect in particular, self-esteem, is a key component of adolescent mental health and is defined as an individual's perception and evaluation of their self-image, capabilities, and achievements (2, 3). Studies have shown the impact of self-esteem on adolescent functioning and well-being, including aggression, academic engagement, illegal substance use, sexual intercourse, risk engagement,

decision making abilities, depression, and anxiety (4-10). In addition, studies have found that self-esteem impacts the well-being of children, as children with low self-esteem are more likely to engage in aggressive and violent behavior (11-12). Many studies also indicate a link between low self-esteem and other psychological problems in children, while high self-esteem was related to better academic achievement among adolescents (13). The sociometer theory, proposed by Leary and colleagues (1995), is one of the prominent theories about the nature and function of self-esteem (14). It argues that self-esteem controls the degree of social acceptance and inclusion an individual experiences within their social groups. Individuals with high self-esteem may feel more socially accepted, causing them to be less reliant on seeking validation from others and better able to display their authentic self (15). On the other hand, individuals with low self-esteem may have a perception of lower social acceptance, leading them to attempt to fit in with others by changing themselves to receive validation from others (15). Based on the sociometer theory, our study examines the effects of self-esteem on adolescent social desirability, the inclination of individuals portraying themselves in a manner they believe is socially acceptable in order to gain social approval and acceptance. Based on the sociometer theory, this study examines the effects of self-esteem on child and adolescent social desirability, which is the tendency to present themselves in a manner that they believe will be favored by others to gain social approval and acceptance, though it might not be their true desire (16).

Children and adolescents with high social desirability may change their behavior in order to gain approval and be favored by others, which can lead to a disconnection from authentic selves and a reliance on external validation (17). Social desirability may also bias experimental and survey research findings (17). For example, past studies have found that social desirability negatively predicted self-reported deviant behavior performed towards peers and experienced from peers among children (18). Research has also found that social desirability was significantly related to children being less participative and leads them to be concerned with others' evaluations (19). Furthermore, previous research has found that self-esteem is a potential predictor of social desirability in adult samples and that the correlation between self-esteem and social desirability was moderate for adult populations (20, 21). However, no research has investigated if self-esteem is associated with social desirability among adolescents and children as posited by the sociometer theory.

This study further explores the moderating effect of emotion regulation on the relationship between self-esteem and social desirability. A variable or factor that moderates a relationship affects the strength or direction of the relationship it is moderating (22). Emotion regulation is the ability of

individuals to control or manage negative emotions and it plays a significant role in adolescent well-being, providing an essential adaptive value for mental health, academic achievement, and social relationships (23, 24). Emotion regulation is critical for numerous factors for children, including academic achievement, school readiness, and overall well-being, and includes strategies and methods to cope with negative emotions, a key socio-emotional skill that allows flexibility in emotionally evocative situations. (25–28). Additionally, difficulties with emotion regulation are a transdiagnostic factor for adolescent psychopathology, including anxiety and depression and are a risk factor for child psychopathology (29, 30). Adolescents and children with higher emotion regulation ability may better cope with social challenges, such as rejection, which reduces their need to present themselves in a socially desirable way, as proposed by the sociometer theory (31). On the other hand, adolescents and children with lower emotion regulation ability may have more symptoms of social anxiety, which heightens their need to present themselves in a socially desirable manner (32). Therefore, emotion regulation may moderate the impact of self-esteem on social desirability among adolescents and children.

By understanding the role of self-esteem on social desirability, mental health researchers and practitioners can better understand how children and adolescents' self-esteem affects their need for social validation and how it may impact their social interactions. For instance, mental health counselors and educators can use this knowledge to teach and foster knowledge and skills that enable adolescents to express their true selves and develop high self-esteem. Such knowledge and skills may include emotion regulation, if it is a contributing factor to adolescent mental health.

Understanding the interplay between self-esteem, social desirability and emotion regulation can therefore contribute to existent literature on child and adolescent mental health. To investigate these factors, this study includes children in grades 3–5 (ages 8–10) and adolescents in grades 6–8 (ages 11–13). This is based on the grade level range in educational psychology, where grades 1–5 are primary schoolers and grades 6–12 are secondary schoolers, as well as developmental stages in development psychology, where ages 8–10 are late childhood and ages 11–13 are early adolescence. The purpose of this study is to address the following two research questions: (1) Is the level of self-esteem associated with the level of social desirability in children and adolescents and (2) does emotion regulation moderate this relationship? Based on the sociometer theory, we hypothesized that emotion regulation would moderate the relationship between self-esteem and social desirability in children and adolescents. To investigate our hypothesis, we conducted secondary analyses on data from a previous study on the development and refinement of a vignette-based emotion regulation assessment designed for school use that was conducted between November 2020 and November 2021 (39). Overall, the results of our study found that children and adolescents with higher levels of self-esteem showed greater levels of social desirability, refuting the sociometer theory. Emotion regulation did not significantly moderate the relationship between self-esteem and social desirability in children or adolescents, although it significantly predicted social desirability. These findings emphasize the importance

of nurturing adolescent mental health and well-being, specifically their self-esteem, ability to regulate emotions, and social desirability. Adult figures such as educators, parents, and mental health professionals should support children in helping them have better self-confidence.

RESULTS

This study presents secondary, novel analyses of a large de-identified dataset, which was approved by the Institutional Review Boards of Yale University. The original study was the development and refinement of a vignette-based emotion regulation assessment designed for school use, conducted between November 2020 and November 2021. Measures used in this study were the Children's Social Desirability Scale - Short Version (CSD-S), the Self-Perception Profile for Children and Adolescents (SPP), and the Children's Emotion Management Scales (CEMS) (33, 34).

Regression was conducted through a linear regression test to examine the first research question on whether self-esteem is associated with social desirability in children (grades 3–5; ages 8–10) and adolescents (grades 6–8; ages 11–13). Overall, results indicated that self-esteem was a significant predictor of social desirability in both children and adolescents. For children, self-esteem accounted for 10% ($R^2 = 0.10$) of the variance in social desirability, $F(1,1124) = 129.57$, $p < 0.001$. Specifically, self-esteem positively predicted social

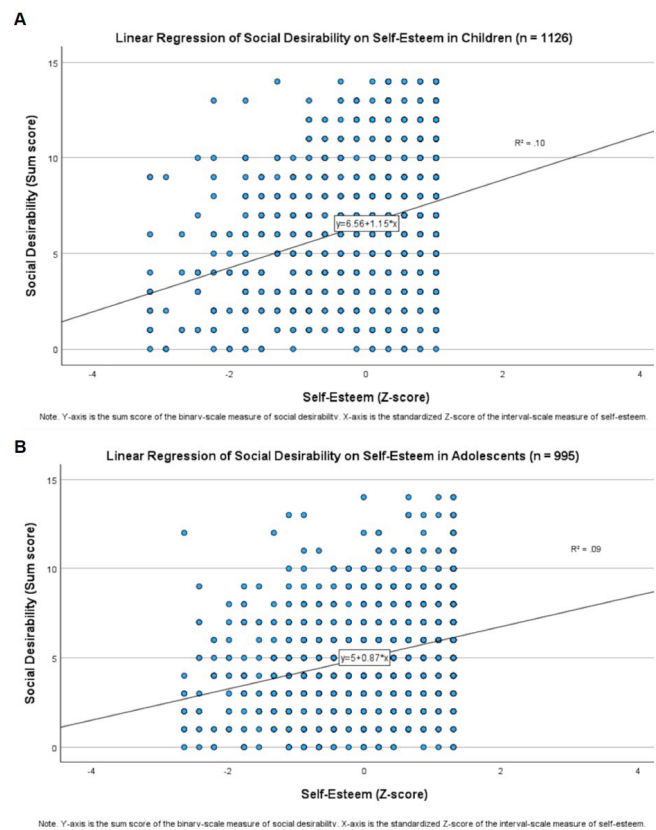


Figure 1: Regression scatterplot on the linear regression between social desirability and self-esteem in children and adolescents. A) Linear regression with SPSS showed that self-esteem was a positive predictor of social desirability in children ($p < 0.001$). **B)** Linear regression with SPSS showed that self-esteem was a positive predictor of social desirability in adolescents ($p < 0.001$).

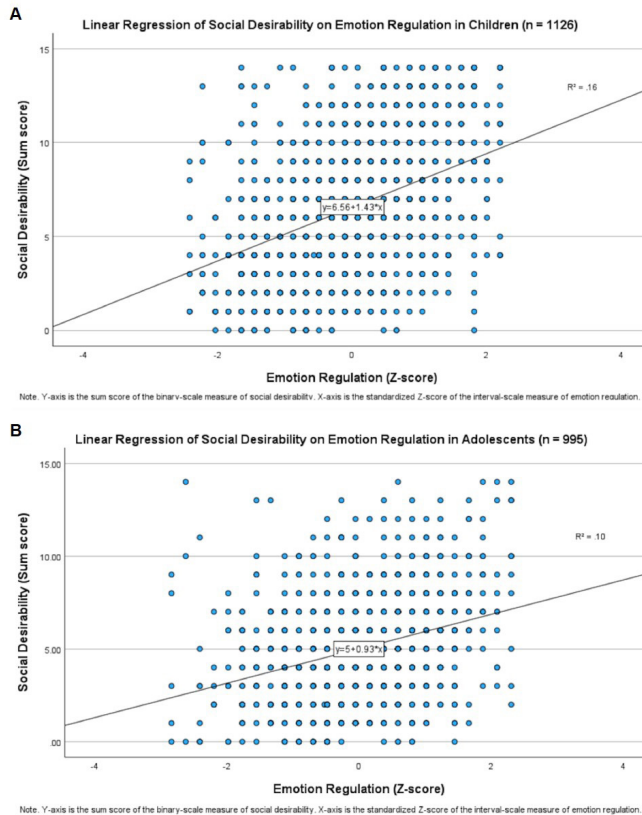


Figure 2: Regression scatterplot on the linear regression between social desirability and emotion regulation in children and adolescents. **A)** Linear regression with SPSS showed that emotion regulation was a positive predictor of social desirability in children ($p < 0.001$). **B)** Linear regression with SPSS showed that emotion regulation was a positive predictor of social desirability in adolescents ($p < 0.001$).

desirability ($\beta = 0.32$, $SE = 3.40$, $p < 0.001$, **Figure 1A**) in children. For adolescents, self-esteem explained 9% ($R^2 = 0.09$) of the variance in social desirability, $F(1,993) = 95.58$, $p < 0.001$. Specifically, self-esteem positively predicted social desirability ($\beta = 0.30$, $SE = 0.12$, $p < 0.001$, **Figure 1B**) in adolescents.

Moderation was conducted using the SPSS version 29 linear regression test to examine the second research question on whether emotion regulation moderates the relationship between self-esteem and social desirability in children and adolescents. Both predictors were group-mean centered (separately for children and adolescents) before computing the interaction term. Group-mean centering is the process of subtracting the respective group mean for predictor variables. This process is done to reduce collinearity between the two predictor variables which are subsequently multiplied to create an interaction term when estimating a moderated multiple linear regression model. Overall, results indicated that emotion regulation was a significant positive predictor of social desirability in both children ($\beta = 0.33$, $t = 11.48$, $p < 0.001$, **Figure 2A**) and adolescents ($\beta = 0.23$, $t = 7.15$, $p < 0.001$, **Figure 2B**). For children, self-esteem and emotion regulation together explained 16% ($R^2 = 0.16$) of the variance in social desirability, $F(3, 1122) = 94.03$, $p < 0.001$. For adolescents, self-esteem and emotion regulation together

explained 10% ($R^2 = 0.10$) of the variance in social desirability, $F(3, 991) = 52.04$, $p < 0.001$. However, the interaction effect was not significant for children ($\beta = 0.54$, $t = 1.95$, $p = 0.05$, **Figure 3**) or adolescents ($\beta = 0.51$, $t = 1.70$, $p = 0.09$, **Figure 3**). This indicates that emotion regulation was not a significant moderator of the relationship between self-esteem and social desirability for both children and adolescents.

DISCUSSION

Given the importance of emotion regulation, social desirability, and self-esteem in child and adolescent mental health and well-being, the present study explored the potential moderating effects of emotion regulation on the relationship between self-esteem and social desirability in both children and adolescents. As proposed by the sociometer theory, self-esteem is a psychological gauge that determines the degree to which one feels socially accepted. Emotion regulation may moderate this relationship based on whether an individual is able to adaptively cope with their emotions, which diminishes their need to present themselves in a socially desirable manner.

Overall, through statistical analysis, we found that self-esteem positively predicted social desirability in children and adolescents. In addition, emotion regulation also positively predicted social desirability in children and adolescents, but did not moderate the relationship between self-esteem and social desirability. To the best of our knowledge, this is the first study evaluating if emotion regulation moderates the relationship between self-esteem and social desirability as posited by the sociometer theory. Our findings further emphasize the importance of social and emotional factors among adolescents and provide a steppingstone into adolescent mental health research. In addition, our findings are similar to previous research, as it has been found that self-esteem is a potential predictor of social desirability in adult samples (20). However, as previous research has not looked into the moderating effect of emotion regulation on the relationship between self-esteem and social desirability in adolescents and children, we have filled a gap in the literature with this study.

The findings of this study showed that children and adolescents with higher levels of self-esteem showed greater levels of social desirability, refuting the sociometer theory. It is possible that children and adolescents perceive and evaluate their self-image, capabilities, and achievements based on

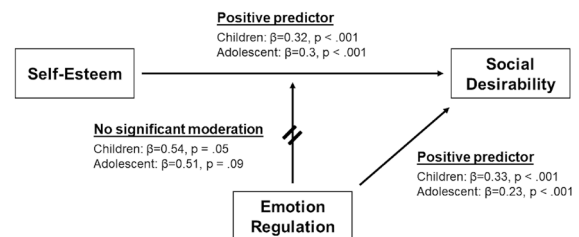


Figure 3: Diagram of the moderating effect of emotion regulation on the relationship between self-esteem and social desirability in children and adolescents. Linear regression and moderation analysis with SPSS showed that self-esteem and emotion regulation were significant predictors of social desirability in children and adolescents ($p < 0.001$), but emotion regulation was not a significant moderator between self-esteem and social desirability in children or adolescents.

social standards, hence those with higher self-esteem may feel a need to present themselves in a manner that will be desirable or favorable to others based on social norms. In addition, those with higher self-esteem may fear social rejection to a greater extent because it can threaten or make it difficult to maintain their high levels of self-esteem.

The findings of this study also showed that emotion regulation did not significantly moderate the relationship between self-esteem and social desirability in children or adolescents, so our findings did not support our initial hypothesis based on the sociometer theory. While self-esteem plays a prevalent role in how adolescents present themselves socially, their ability to regulate emotions does not affect the direction or strength of this relationship (i.e., no moderation effects). However, future studies should investigate whether emotion regulation may mediate (explain the underlying mechanism) the relationship between self-esteem and social desirability (35, 36).

Our study findings may be valuable to parents, educators, and mental health professionals to improve children and adolescents' well-being. Previous research has found that self-esteem impacts the well-being of children and high self-esteem is related to better academic achievement among adolescents, while low self-esteem can lead to other psychological problems in children, making it evident that adults should foster a more supportive and nurturing environment to ensure adequate self-esteem (11–13). In addition, emotional support for children and adolescents in developing better self-esteem should be utilized, as previous research has found that a supportive school environment can affect a child's self-esteem and social support can improve adolescents' self-evaluation, help form good self-image, and positively help their self-esteem (37, 38). At the same time, attempts to foster higher self-esteem can also enhance social desirability, which can be either beneficial or detrimental depending on the context.

Children and adolescents with high self-esteem tended to ascribe socially desirable traits to themselves (39). Engaging in high levels of socially desirable attitudes and behaviors can contribute to general self-worth. However, underlying social desirability is a need for acceptance and approval by others. Children and adolescents with high social desirability may regulate their self-esteem through favorable evaluations from others (40). High social desirability may not be adaptive when children and adolescents are overly concerned about the impressions they are making and overly anxious about pleasing others to enhance or protect their self-esteem. This is coined as defensive self-esteem, which describes individuals whose self-concept is based on external evaluations of others (41). Therefore, this balance between fostering and managing social desirability should be carefully considered with the development and mental health of children and adolescents.

Limitations for this study include reliance on self-report questionnaires, which are subjected to the honesty and self-awareness of participants and can lead to potential biases. Children and adolescents may not have the insight into their own thoughts, emotions, or behaviors and/or seek to make a good impression. In addition, the sample only includes children and adolescents of specific age (grades 3–8) and demographic (e.g., mostly White, Hispanic/Latino, Black/African American) groups, and may not be generalizable to all children and adolescents in the United States. Future studies

could look at developmental differences across childhood, early adolescence (grades 6–8), and late adolescence (grades 9–12). Moreover, the study did not consider the potential influences of ecological/contextual factors, such as family, community, and culture. Future research should include more diverse samples based on age, gender, race/ethnicity, socioeconomic status, geographic location, and cultural backgrounds to increase the generalizability of findings. In addition, future research can investigate longitudinal data to track the development of social desirability, self-esteem, and emotion regulation from childhood to adolescence. Future research should also utilize different methods (e.g., other types of reports such as interviews) to triangulate data and better understand the relationship between self-esteem and social desirability from a mixed method approach.

MATERIALS AND METHODS

Participants

This study involved 2,139 American students in grades 3 through 8 across 16 different schools in Arizona, Connecticut, Hawaii, Illinois, and Massachusetts within the United States (44). Gender distribution was 46% female, 49% male, and 2% non-binary (44). Racial/ethnic distribution was 4% American Indian or Alaska Native, 7% Asian, 22% Black or African American, 28% Hispanic/Latinx, 2% Middle Eastern or North African, 1% Native Hawaiian or Pacific Islander, 33% White, and 14% Bi/Multiracial. Grade level distribution was 17% third grade, 19% fourth grade, 17% fifth grade, 15% sixth grade, 15% seventh grade, and 17% eighth grade (44). Note that this study identified and excluded students with high survey satisficing to increase the quality of data. Survey satisficing is when participants fail to put forth their best efforts in responding to a survey, which can degrade data quality. Participants with high survey satisficing are more likely to rush through surveys, ignore or skip instructions, and use other effort-saving shortcuts. For this study, participants who made minimal effort to answer survey questions accurately (i.e., correct response rate of less than 85% on comprehension or directed response items) or completed the surveys too quickly (i.e., less than 50% of the median survey completion rate) were hence screened out.

Measures

Social Desirability

The Children's Social Desirability Scale - Short Version (CSD-S) is a 14-item self-report measure of social desirability for children and adolescents (45). It includes socially desirable but statistically infrequent behaviors (e.g., *Do you always listen to your parents?*) and socially undesirable but statistically frequent behaviors (e.g., *Have you ever felt like saying unkind things to a person?*). Each item is rated on a binary scale (1 = yes, 0 = no), with one point for each answer keyed as socially desirable. Higher scores on the CSD-S indicate a greater tendency to answer in a socially desirable manner.

Self-Esteem

The Self-Perception Profile for Children and Adolescents (SPP) is a self-report measure of self-concept for children and adolescents (40). Only the 6-item Global Self-Worth subscale is used in this study. It assesses self-esteem (e.g., *Some kids are very happy being the way they are, but other kids wish*

they were different – which kids are more like you?). Each item is rated using a structured alternative response format on a 4-point scale from 1 (lowest level of perceived competence or adequacy) to 4 (highest level of perceived competence or adequacy), with higher scores reflecting greater self-esteem.

Emotion Regulation

The Children's Emotion Management Scales (CEMS) are a group of self-report measures of emotion regulation (in response to sadness, worry, and anger) for children and adolescents (41). Only the Coping subscale of each measure (12 items across measures) is used in this study. It assesses constructive ways of managing sadness (e.g., *When I'm sad, I do something totally different until I calm down*), worry (e.g., *I talk to someone until I feel better when I'm worried*), and anger (e.g., *I try to calmly deal with what is making me feel mad*). Each item is rated on a 3-point Likert scale from 1 (hardly ever) to 3 (often), with higher scores indicating more frequent use of adaptive coping strategies.

Procedures

The study presents secondary, novel analyses of a large de-identified dataset, which was approved by the Institutional Review Boards of Yale University. The original study was the development and refinement of a vignette-based emotion regulation assessment designed for school use, conducted between November 2020 and November 2021 (42). All measures were narrated and administered online via Qualtrics. Most students completed the measures in groups while physically in school or remotely from home during non-instructional time (e.g., advisory periods, social emotional learning blocks) facilitated by educators. Some students in grades 6–8 completed the measures independently, on their own time, via a link distributed by the school. All participants were assigned a unique numeric identifier to ensure confidentiality.

Statistical Analyses

Regression was conducted using the Statistical Package for the Social Sciences (SPSS) version 29 linear regression test to examine the first research question on whether self-esteem is associated with social desirability in children and adolescents. Moderation was conducted using the SPSS version 29 linear regression test to examine the second research question on whether emotion regulation moderates the relationship between self-esteem and social desirability in children and adolescents.

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