



## Research Article

# Fixed Versus Growth Mindset in Childhood and Subsequent Depression Risk

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### Abstract

Depression continues to devastate a growing number of lives globally. More than 350 million people worldwide suffer from the symptoms of depression. While medications and psychotherapy help many, more solutions are urgently needed. Exploring how childhood experience shapes risk for depression may help us to craft more effective prevention programs. Developmental research has suggested that, counter intuitively, a history of being labeled smart in childhood may be psychologically problematic for some individuals. However, this study found that unlike labeling by parents and teachers, smart labeling by peers did not seem to have a negative impact.

### Introduction

Depression continues to devastate a growing number of lives globally. More than 350 million people worldwide suffer from the symptoms of depression [1]. While medications and psychotherapy help many, more solutions are urgently needed. Exploring how childhood experience shapes risk for depression may help us to craft more effective prevention programs. Developmental research has suggested that, counter intuitively, a history of being labeled smart in childhood may be psychologically problematic for some individuals. Dweck and others have suggested that adults' praising children for their intelligence and labeling them smart may inadvertently compromise their subsequent achievement and emotional wellbeing [2-4]. Children so labeled can develop various problems, including difficulties with confidence, resilience in the face of failure, and desire to face challenges. Multiple researchers have corroborated Dweck's initial findings indicating that negative consequences may stem from being labeled smart (smart labeling) in childhood.

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Intelligence labeling in childhood originates from various sources, including parents, teachers, and friends. Previous empirical work has investigated the impact of labeling by teachers and parents. Because the impact of such labeling may vary across sources, the current study explored how a history of smart labeling by peers may affect later emotional and social wellbeing in young adulthood.

In framing her opposition to smart labeling of children, Dweck noted two common beliefs regarding praise of children [2-5]. First, that praising a child's intellect will increase their desire and their motivation to continue learning, and second, that a student's intellectual ability is the main determinant of academic achievement within schools. Dweck's empirical findings challenge these beliefs and suggest that they may actually compromise children's development.

Success feedback from adults that emphasizes praise for being "smart" leads many students to view their intellect as something that is fixed, static, or unchangeable. Students with this fixed mindset regarding their intelligence typically seek activities likely to confirm their high intelligence identity (preferring familiar and only moderately challenging tasks), and avoid activities that might threaten it (those they might not succeed at) [5,6]. Furthermore, tasks requiring effort may be avoided due to the fact that the need to apply effort challenges the conviction that because they are "smart" all things should come easily to them and leads to the dispiriting conclusion that they are "dumb" [2].

Alternatively, feedback from adults that instead emphasizes praise for effort and hard work can foster a growth mindset. With a growth mindset, students view their intelligence as malleable and something that requires work for its growth. Empirical demonstrations of the plasticity of the brain and studies showing that determination and resilience can foster higher achievement support the validity of a growth mindset [7,8].

These growth mindset students are more likely to accept challenging tasks because they view failure as a learning opportunity that will foster their intellectual development [9]. Among these children effort is viewed as a positive thing because it represents the path to progress and improvement.

Several studies have revealed developmental advantages associated with a growth mindset when compared to a fixed mindset, raising questions about the advisability of labeling children "smart". Zeng, Hou, and Peng investigated the benefits of a growth mindset among primary to middle school age children [10]. A sample of 1260 children demonstrated that the development of high levels of growth mindset was associated with higher psychological well-being and school engagement, as well as enhanced resilience. Several empirical studies have suggested that praising students' intelligence gives them a brief burst of pride, but can create an array of psychological vulnerabilities as well as defensiveness [3,11-13].

Dweck has suggested that a fixed mindset may contribute to learned helplessness. She argues that if a student with a fixed mindset

attempts a problem that is too difficult for them, they will likely give up instead of trying to figure out the problem. They will not look for other ways to solve an issue and they become very passive. Since learned helplessness has been associated with depression, several investigators sought to examine whether interventions aimed at enhancing a growth mindset would reduce the risk of depression [2-4].

One session of instruction designed to change one's mindset from fixed to growth was found to reduce depressive symptoms [14]. Schleider & Weisz later demonstrated that a single session of growth mindset training significantly enhanced perceived control and recovery from stress [15,16]. The success of these interventions supports Dweck's advocacy of practices that promote a growth mindset in children. However, it does not necessarily confirm the belief that avoiding smart labeling is always desirable.

Not all empirical findings have been consistent with Dweck's opposition to smart labeling. For example, a study conducted by Kerr, Colangelo, and Gaeth examined the attitudes that gifted students had towards being labeled as gifted [17]. Although the results revealed some experience of tensions with peers, few adverse psychological effects emerged. Their series of open-ended questions showed that many students saw the label as quite beneficial, feeling that their giftedness provided educational opportunities and gave them room to grow and mature as people.

Schroder, Moran, Donnellan, and Moser induced growth or fixed mindsets and then had participants complete a task during electroencephalogram recording [18]. They found the growth mindset enhanced attention to task relevant stimuli while the fixed growth enhanced attention to responses. The results indicate that both fixed and growth mindsets facilitate different aspects of cognitive functioning.

Chambliss, Gow, Budny, Garcia, Damato, Gould, and Hartl found that a history of being labeled "smart" by teachers and parents reduced two of 21 depression symptoms, however it did not elevate self-esteem [19]. Their other results challenged some of Dweck's assertions. For example, those with a history of being labeled "smart" by adults generally reported that this increased both their confidence and academic risk-taking. Women who reported being labeled "smart" by adults as children were more likely than similarly labeled men to report that the label increased their academic risk-taking. An independent samples t-test comparing individuals with a history of being labeled "smart" by adults and those without such a history revealed a significant difference in likelihood of taking difficult courses in college. These results challenge Dweck's theory that being labeled "smart" discourages academic risk-taking.

The current study investigated the relationship between a history of being labeled smart by friends, depression and the impact on young adulthood social and emotional development. Previous literature has indicated that praising children for their intelligence can have adverse consequences. These findings were obtained by studies exploring smart labeling mainly by adults (parents and teachers), rather than peers. To address this gap in the literature, the current study assessed the relationship between having a history of being labeled "smart" in childhood by peers and young adults' later experience of depressive symptoms.

## Method

The sample consisted of 398 participants, male (153), female (237), and undeclared (8) undergraduate college students. Participants ages ranged from 17 to 22 years ( $M=18.93$ ,  $SD=0.96$ ). These participants were administered several self-report measures, including items assessing their history of being labeled "smart" by mother, father, teachers, and friends.

All participants completed the Beck Depression Inventory (BDI-II), Rosenberg Self-Concept Scale, the Mini Markers Five Factors Personality Scale (MMFFPS), the Adult Relationship Questionnaire, and the Schutte Self-Report Emotional Intelligence Test (SSEIT) [20-23].

## Results

Correlational analyses confirmed the expectation that children's experience of being labeled smart varied across different sources. While a history of being labeled smart by peers was significantly ( $p<0.001$ ) associated with being so labeled by mothers ( $r=0.36$ ), fathers ( $r=0.33$ ), and teachers ( $r=0.25$ ), the magnitude of each of these correlations accounted for less than 13% of the variance. Perhaps unsurprisingly, labeling by mothers and fathers was more substantially correlated ( $r=0.62$ ).

Independent samples t-tests were conducted to compare depression levels (BDI-II scores) in individuals receiving the label of smart from their friends and the depression levels of those who were not labeled smart by their friends. Out of 391 participants, 260 (49.5%) reported that they had been called smart by their peers, and 131 reported that their peers had not. Depression scores on the BDI-II test were significantly lower among individuals who were labeled smart by their friends ( $t=2.62$ ,  $df=383$ ,  $p<0.01$ ). Two independent samples t-tests were conducted to compare scores on two individual items of the BDI-II of participants with a childhood history of being routinely labeled smart and those without such a history [20]. The first t-test revealed that students not labeled smart had higher feelings of failure than those labeled smart by friends ( $t=3.747$ ,  $df=229.59$   $p<0.001$ ). The second t-test measuring worthlessness in those labeled smart by friends and those not labeled smart by friends found no significant results. Figures 1 and 2 represent these findings.

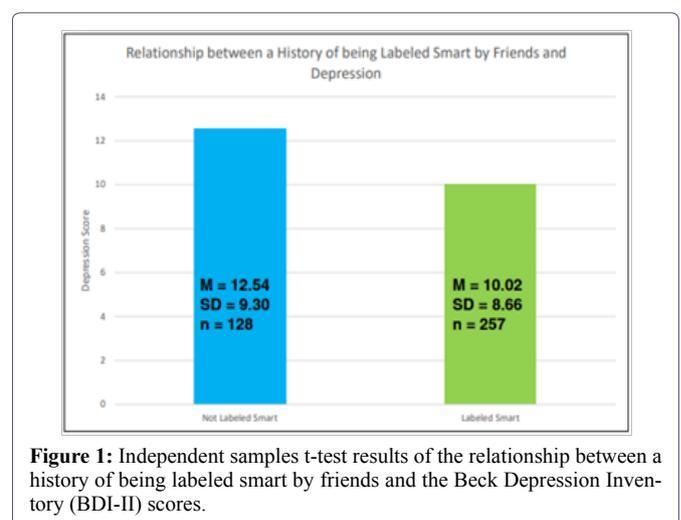
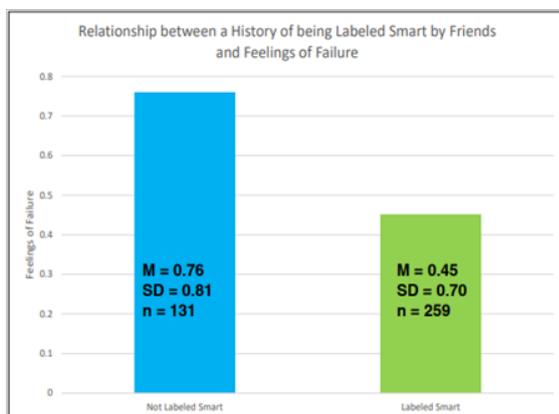
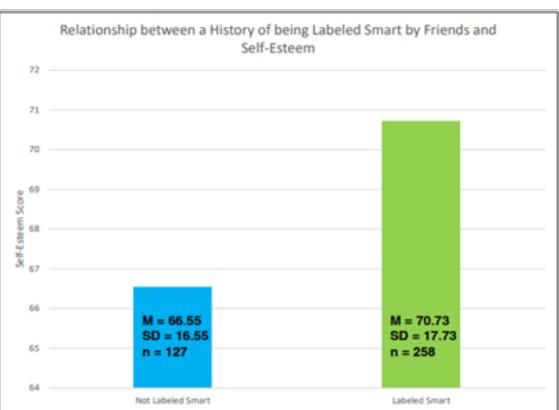


Figure 1: Independent samples t-test results of the relationship between a history of being labeled smart by friends and the Beck Depression Inventory (BDI-II) scores.



**Figure 2:** Independent samples t-test results of the relationship between a history of being labeled smart by friends and the Beck Depression Inventory (BDI-II) item scores.

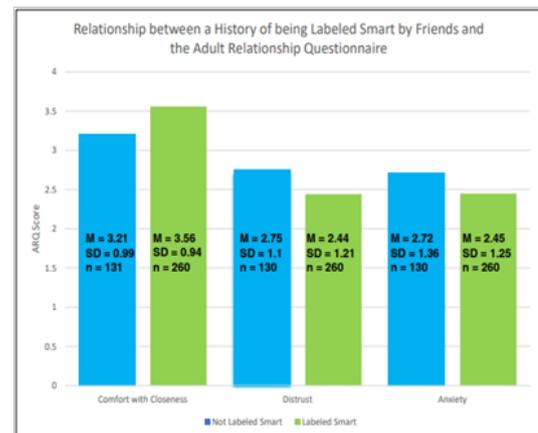
Independent samples t-tests were conducted to compare self-esteem levels (Rosenberg's Self Concept Scale (1965)) in individuals receiving the label of smart from their friends and the self-esteem levels of those who were not labeled smart by their friends. Self-esteem scores were significantly higher among individuals who were labeled smart by their friends ( $t=2.22$ ,  $df=383$ ,  $p=0.03$ ). Figure 3 represents the findings.



**Figure 3:** Independent samples t-test results of the relationship between a history of being labeled smart by friends and Rosenberg Self-Concept Scale scores.

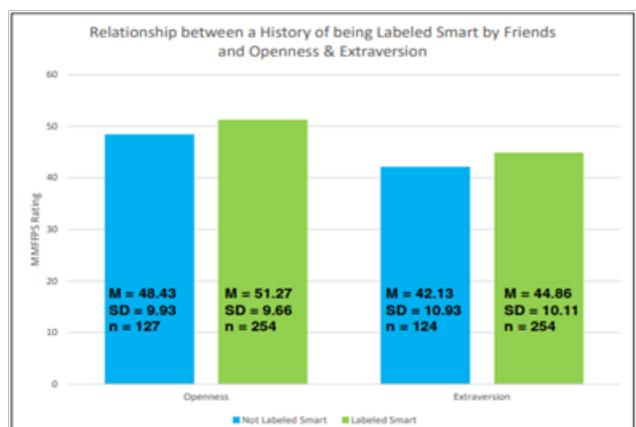
Independent samples t-tests were conducted using participants who were called smart by their friends and those who were not, on the Adult Relationship Questionnaire [22]. Significant group differences were found on three out of the four subscales. An independent samples t-test revealed a significant difference in the anxiety scores of those participants who were labeled smart and those who were not ( $t=1.95$ ,  $df=388$ ,  $p=0.05$ ). Being labeled smart by friends yielded lower anxiety levels than not being labeled smart by friends. An independent samples t-test revealed a significant difference between the levels of distrust in those participants who were labeled smart than those who were not ( $t=2.40$ ,  $df=388$ ,  $p=0.01$ ). Those labeled smart by friends reported lower distrust levels than those not labeled smart by friends. An independent samples t-test revealed a significant

difference with closeness scores of those participants who were labeled smart than those who were not ( $t=3.43$ ,  $df=389$ ,  $p=0.001$ ). Being labeled smart by friends yielded higher comfort with closeness than not being labeled 'smart' by friends. Figure 4 represents these findings.



**Figure 4:** Independent samples t-test results of the relationship between a history of being labeled smart by friends and the Adult Relationship Questionnaire scores.

Five independent t-tests were conducted for the Big 5 personality traits through the Mini Markers Five Factors Personality Scale (MMFFPS) to assess differences for individuals with a history of being labeled smart by friends. The results indicated that the personality traits of Openness and Extraversion differ as a function to having a history being labeled as smart by friends, while the other three traits did not. The independent t-test results showed that there was a higher level of openness among those who had been labeled smart by friends ( $t=2.68$ ,  $df=379$ ,  $p=0.008$ ) than those who were not labeled smart by friends. The results of an independent t-test showed that those labeled smart by friends had a higher rate of extraversion ( $t=2.40$ ,  $df=376$ ,  $p=0.017$ ) than those who were not labeled smart by friends. Figure 5 represent these findings.



**Figure 5:** Independent samples t-test results of the relationship between a history of being labeled smart by friends and the Mini Markers Five Factors Personality Scale (MMFFPS) scores.

An independent t-test was conducted to compare emotional intelligence levels (SSEIT) to assess differences between people who had a history of being labeled smart by their peers as opposed to those who were not, on measures of emotional intelligence [23]. Those who have a history of being labeled smart by their friends have higher levels of confidence ( $t=2.50$ ,  $df=178.946$ ,  $p=0.013$ ), higher levels of trustworthiness ( $t=2.58$ ,  $df=169.22$ ,  $p=0.01$ ), higher levels of ebullience ( $t=2.33$ ,  $df=219.09$ ,  $p=0.02$ ), better self-presentation ( $t=2.65$ ,  $df=174.18$ ,  $p=0.01$ ), higher levels of positive ingenuity ( $t=2.08$ ,  $df=169.45$ ,  $p=0.04$ ), higher emotional ingenuity ( $t=2.60$ ,  $df=226.62$ ,  $p=0.01$ ), and lower fear of failure ( $t=2.51$ ,  $df=224.62$ ,  $p=0.01$ ). Figure 6 represents these findings.

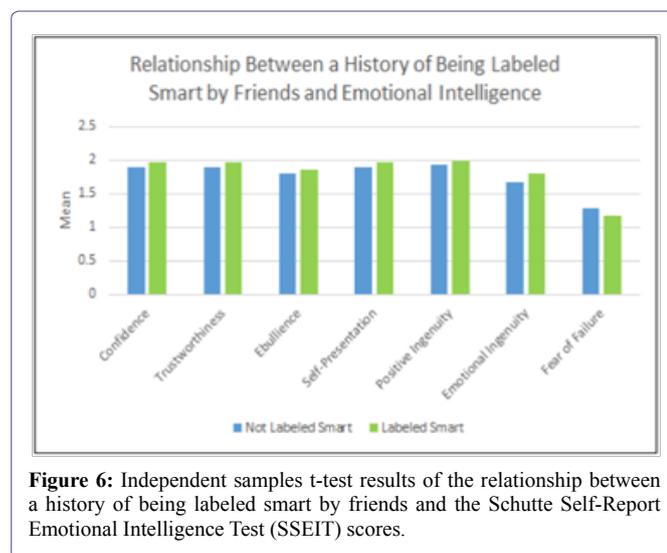


Figure 6: Independent samples t-test results of the relationship between a history of being labeled smart by friends and the Schutte Self-Report Emotional Intelligence Test (SSEIT) scores.

## Discussion and Conclusion

This investigation was based on research conducted by Dweck indicating that smart labeling by parents and teachers could paradoxically create an emotional and social burden for children who were so labeled [2-4]. The current study sought to contribute to the existing literature on smart labeling by examining the previously unexamined impact of smart labeling by peers on children's social and emotional well-being. Our results suggest that unlike labeling by parents and teachers, smart labeling by peers does not seem to have a negative impact. On measures of depression (BDI-II), self-esteem (Rosenberg Self-Concept scale), personality (MMFFPS), Emotional Intelligence (SSEIT), and attachment style (ARQ), a history of being labeled smart by peers generally yielded consistently favorable long term outcomes.

Parental labeling may be viewed as less trustworthy than peer labeling, because children may assume that their devoted and aspiring parents are biased. Teachers' labeling may be viewed as more subjective, ephemeral, and likely restricted to scholastic performance, perhaps leading to greater anxiety and defensive attitudes on the part of students labeled smart by their teachers. On the other hand, friends may be considered to be more reliable and credible sources of labels, as they have no expectations of their friends to achieve academically, nor will they cease a friendship in response poor grades. As a result, being labeled as smart by one's peers may have more positive psychological effects than being so labeled by parents and teachers.

Limitations of this study included restricted sampling and reliance on retrospective accounts of childhood labeling. To assess the generalizability of these findings, future research should use more broadly representative participants by expanding sampling beyond an undergraduate population. A prospective design based on more contemporaneous reports of labeling experience in childhood would also help validate these conclusions.

The correlational design of this study limits our ability to draw firm causal conclusions. The smart labels offered by peers may have been veridical, and as a result, the superior later functioning of the children labeled smart in childhood by their friends could be attributable to their intellectual advantages. However, arguing against this concern is the fact that in this sample teachers' smart labeling was not associated with the same array of subsequent psychological advantages [19,24].

Alternatively, more psychologically well-adjusted participants may be more likely to recall and report a history of having been called smart by their friends. The correlation between being labeled smart by friends and being so labeled by teachers was only moderately positive and only somewhat higher for parents. If adult success distorted retrospective recollections of being labeled smart, one would expect less variability across sources.

Taken collectively, these findings challenge the simple notion that being labeled smart in childhood is always psychologically destructive. For some, a history of being seen by peers as highly intelligent may actually be psychologically protective and reduce the risk of anxiety and depressive symptoms. In addition, this study suggests that the source of the smart label appears to make an important difference in shaping the legacy of this experience. Labeling by adults appears to have effects quite different from those associated with peers' smart labeling. This knowledge may help guide our efforts to develop more effective strategies for preventing depression.

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