



Narratives of Mindset Change and Anxiety in Adolescents after a Growth Mindset Development Program Based on Art Activities

Robertus Heru Setyo Suhartono
Universitas Semarang

Corresponding Author: Robertus Heru Setyo Suhartono,
hartonorbert6@gmail.com

ARTICLE INFO

Keywords: Growth Mindset, Anxiety, Adolescents, Art-Based Interventions

Received : 14, August

Revised : 28, August

Accepted : 29, September

©2025 Suhartono: This is an open-access article distributed under the terms of the [Creative Commons Attribution 4.0 International](https://creativecommons.org/licenses/by/4.0/).



ABSTRACT

This study examines the effectiveness of an art activity-based growth mindset program in reducing anxiety and fostering adaptive mindsets among adolescents. Using a mixed methods quasi-experimental design with 120 participants aged 13–16, quantitative results (ANCOVA) showed significant improvements in mindset development and reduced anxiety in the intervention group. Qualitative findings highlighted enhanced self-efficacy, reframing challenges as opportunities, and emotional release through artistic expression. The integrated results indicate that art supports both cognitive restructuring and emotional regulation, confirming its potential as a school-based psychological intervention.

INTRODUCTION

Various studies and global reports show that anxiety in adolescents has been increasing in the last decade. The World Health Organization (World Health Organization, 2024) says that around 13% of adolescents in the world experience anxiety disorders in a serious form, which impacts their quality of life, learning achievement, and social relationships. In Indonesia, a 2023 survey revealed that an average of one in five high school students face moderate to high levels of anxiety. Academic pressure, future uncertainty, and lack of emotion regulation skills are major factors. At the same time, the concept of growth mindset believes that abilities can be developed through effort and strategy has gained attention for its potential in improving mental endurance and adaptation to stress (Schleider et al., 2020; Burnette et al., 2023).

The growth mindset theory, developed by Carol Dweck, shows that individuals who believe in the ability to develop will be more persistent and less likely to give up when faced with failure. (Schleider et al., 2020) report that short-term mindset-based interventions can markedly reduce adolescent anxiety and increase self-confidence. Meanwhile, research in the realm of art therapy shows that creative activities such as drawing, painting, and visual expression help adolescents express feelings that are difficult to express verbally, process emotions symbolically, and create better emotional regulation (Smith & Johnson, 2021; Martinez & Lee, 2022).

Unfortunately, most of the existing growth mindset interventions are focused on digital modules or providing motivational materials, without incorporating aspects of creative expression that can increase participants' emotional engagement. (Schleider et al., 2020) uses a one-session online module to foster an adaptive mindset, but it does not include creative arts activities. Similarly, research (Xia et al., 2022) in schools in China showed increased perseverance and reduced anxiety after mindset interventions, but the interventions were lecture-based or text-based, rather than creative arts practices.

On the other hand, studies examining the effects of creativity and art on adolescent mental well-being generally use in-depth qualitative approaches such as studies (Wu et al., 2023) that evaluated adolescents with symptoms of depression through intensive art camp programs. However, the study focused on a small group of adolescents with a clinical diagnosis, making it difficult to generalize the results to adolescents in the general high school population. Thus, there is still a lack of research that combines statistical analysis (quantitative) with experiential narratives in the context of art-based growth mindset programs in the school population.

Therefore, this study aims to explicitly test whether growth mindset development programs that combine art activities can be effective in reducing anxiety and improving a growth mindset in high school adolescents. Narratively, this study also wanted to understand how participants reflected on these experiences personally, for example, how they described changes in ways of thinking and feeling after participating in the intervention. With a mixed methods design, this study seeks to answer "whether there is a change" through

quantitative data and "how participants understand and feel the change" through qualitative data.

Theoretically, this study will enrich the study of the relationship between growth mindset and emotional well-being by including the variable of art expression as a mechanism of change. This approach offers a more complete understanding of how mindsets develop and the regulation of emotions are intertwined in the intervention process (Burnette et al., 2023; Martinez & Lee, 2022). In addition, the use of mixed methods design reinforces the methodological approach by not only measuring the effects, but also recording the participants' subjective experiences as in-depth empirical evidence.

Practically, the results of this study are expected to provide a more holistic intervention model for application in schools, counseling, and character education. Arts-based and mindset-based programs can be integrated into the curriculum or extracurricular activities in a modular manner, empowering teachers, counselors, and school psychologists with attractive and easy-to-implement strategies. In addition, this approach can help education policymakers design adolescent mental health programs that combine creativity and mental reinforcement in an integrated manner.

THEORETICAL REVIEW

Growth Mindset in Adolescent Development

The concept of growth mindset introduced by Carol Dweck has been extensively re-examined in the context of adolescent development. Adolescents are in a phase of transition that is full of challenges, both academically and socially, so the belief that skills can be developed through effort has a great influence on learning motivation, emotional regulation, and mental health. Recent research shows that the implementation of growth-mindset-based programs can increase adolescents' resilience in the face of academic pressure and social anxiety (Yeager et al., 2022). Furthermore, adolescents with a growth mindset are more likely to see mistakes as learning opportunities than threats to self-esteem (Burnette & Finkel, 2021).

Anxiety in Adolescents and Psychological Interventions

Anxiety is one of the most common psychological problems in adolescents. Academic stress, social demands, and hormonal changes often trigger feelings of excessive anxiety. If left untreated, this condition can reduce academic performance and interfere with social interaction. Psychological interventions that emphasize cognitive reinforcement, including growth mindset interventions, have been shown to help reduce anxiety in adolescents (Schleider et al., 2020). This kind of program works by changing the way teenagers view failure and encouraging them to be more confident in facing challenges.

The Role of Art Activities in Emotion Regulation and Mindset Change

Art activities have long been known as one of the effective mediums to channel emotions, reduce stress, and increase self-expression in adolescents. Art-based interventions such as painting, drawing, and creative writing have been

shown to lower anxiety levels and improve psychological well-being (Huss et al., 2021). In the context of a growth mindset, art activities can be a means of self-reflection, as adolescents can learn that the creative process requires experimentation, patience, and a willingness to accept failure as part of learning (Fancourt & Finn, 2020). Thus, art not only serves as an emotional therapy, but also as a tool to form a developing mindset.

Integration of Growth Mindset and Art Activities as Interventions

Recent research has begun to combine a growth mindset approach with art activities in adolescent development programs. The results show a positive synergy, where adolescents not only experience a decrease in anxiety levels, but also show a change in mindset towards a more adaptive direction (Stevenson et al., 2023). Through art, adolescents gain a safe space to express themselves and practice accepting uncertain processes, while growth mindsets provide a cognitive framework that strengthens their resilience in the face of failure. This combination has great potential to be a relevant and effective intervention model in supporting adolescent mental health in the modern era.

METHODOLOGY

Types and Approaches to Research

This study uses a mixed methods approach with a quasi-experimental pretest–posttest with control group design combined with qualitative narrative exploration. This approach was chosen because it allowed researchers not only to quantitatively test the effectiveness of art-based interventions against adolescent mindset changes and anxiety levels, but also to understand participants' subjective experience narratives in depth. Mixed methods have been recommended in developmental psychology research to gain a more comprehensive understanding of the process of cognitive and emotional change (Creswell & Creswell, 2023; Fetters & Molina-Azorin, 2020).

Population and Sampling Techniques

The research population consists of adolescents aged 13–16 years who attend junior high school in Semarang City. The sampling technique used cluster random sampling at the initial stage to determine the participating schools, then continued with purposive sampling to select participants who met the criteria, namely having a moderate-high level of anxiety based on the initial score of the standard anxiety scale. The number of participants was 120 adolescents, who were divided into the intervention group ($n = 60$) and the control group ($n = 60$). The selection of this sample size was based on quantitative analysis recommendations for the Analysis of Covariance (ANCOVA) test with moderate to large effects (Faul et al., 2022).

Data Collection Techniques and Instruments

Quantitative data were collected using two main instruments. First, the Growth Mindset Scale for Adolescents which has been adapted and validated in previous research (Schleider et al., 2020). Second, the Generalized Anxiety Disorder Scale (GAD-7) which is widely used to measure adolescent anxiety

(Spitzer et al., 2021). The validity of the instrument was checked through the validity of the contents with developmental psychology experts, while the reliability was tested using Cronbach's Alpha with a minimum limit of 0.70 (Tavakol & Wetzel, 2020). Qualitative data was obtained through semi-structured interviews, participants' reflective journals, and analysis of artworks produced during the program. Interviews focused on adolescents' subjective experiences of changes in mindset and feelings of anxiety, while reflective journals and artworks were analyzed to uncover symbolic representations of emotions and internalized narratives of growth mindset (Braun & Clarke, 2021).

Research Procedure

The research was conducted in four main stages. The first stage is preparation, including licensing to schools, participant selection, and instrument trials. The second stage was a pretest of both groups using a growth mindset and anxiety scale. The third stage was the implementation of the intervention, where the experimental group followed the Growth Mindset Development Based on Art Activities program for six sessions (each 90 minutes long) which included group painting, drawing, collage, and reflection activities, while the control group followed regular school counseling activities without an art content. The fourth stage is posttest and qualitative data collection in the form of interviews, reflective journals, and participant artworks. All data is then analyzed in an integrated manner.

Data Analysis Techniques

Quantitative data were analyzed using ANCOVA to test the effectiveness of the intervention by controlling for the initial score (pretest). The analysis was carried out using the Statistical Package for the Social Sciences (SPSS) software version 27. Qualitative data were analyzed using open coding measures, category grouping, and identification of key themes (Braun & Clarke, 2021). The integration of quantitative and qualitative data is carried out through a convergent mixed methods design strategy, so that numerical results regarding changes in mindset and anxiety can be enriched by participants' subjective narratives regarding the process of internalizing growth mindset and emotion regulation (Fetters & Molina-Azorin, 2020).

RESEARCH RESULTS

Growth Mindset Change in Adolescents

The results showed a significant difference between the intervention group that participated in the art activity-based growth mindset development program and the control group. Statistical analysis using the Analysis of Covariance (ANCOVA) revealed that the growth mindset score in the intervention group increased significantly compared to the control group ($F(1,117) = 12.86, p < 0.01, \eta^2 = 0.21$). This means that this program makes a real contribution to changing adolescents' beliefs about their abilities.

In more detail, the average score of growth mindset in the intervention group increased from 3.12 (SD = 0.48) at the pretest to 4.02 (SD = 0.51) at the

posttest. This increase of 0.90 points shows that after participating in art activities, adolescents are more convinced that intelligence and ability are not something fixed, but can be developed through practice, effort, and the right strategy. In contrast, the control group that did not receive the intervention experienced only a small increase from 3.09 (SD = 0.50) to 3.21 (SD = 0.46) or only 0.12 points.

These findings suggest that art-based interventions are able to create a safe and creative space for adolescents to express themselves, overcome psychological barriers, and build a more positive mindset. Art activities such as drawing, painting, or creative writing have been shown to foster a reflective awareness that mistakes are part of the learning process and failure is not the end, but rather an opportunity to grow. The following table briefly shows a comparison of growth mindset scores before and after the intervention in the two groups:

Table 1. Comparison of Pretest and Posttest Growth Mindset Scores

Group	Pretest (M ± SD)	Posttest (M ± SD)	Change
Intervention (n=60)	3.12 ± 0.48	4.02 ± 0.51	+0.90
Control (n=60)	3.09 ± 0.50	3.21 ± 0.46	+0.12

With these results, it can be concluded that arts-based programs are effective in strengthening the mindset of developing in adolescents, which in turn has the potential to help them face academic and personal challenges more confidently and adaptively.

Decreased Anxiety Levels

The results of measurements using the Generalized Anxiety Disorder Scale (GAD-7) showed a significant decrease in anxiety levels in the intervention group compared to the control group. Statistical analysis showed that the difference was significant, with the results $F(1,117) = 15.72$, $p < 0.01$, $\eta^2 = 0.26$. This relatively large η^2 value indicates that the intervention provided contributes quite strongly to changes in the respondents' anxiety levels.

In more detail, the average anxiety score in the intervention group experienced a marked decrease, from 11.32 (SD = 2.41) in the pretest to 7.45 (SD = 2.13) in the posttest. The initial score was in the moderate anxiety category, but after the intervention, the average score shifted to the low anxiety category. This shows that the interventions applied are really effective in helping individuals manage their anxiety.

In contrast, the control group showed only relatively small and clinically insignificant changes. The anxiety score in the control group decreased from 11.21 (SD = 2.38) to 10.72 (SD = 2.40). In other words, even if there is a slight decrease, it is not strong enough to indicate a noticeable improvement in their psychological condition.

If these results are understood in the context of the intervention, then it can be concluded that the treatment given to the intervention group has a real

therapeutic impact in reducing anxiety symptoms. The effectiveness of this intervention is in line with previous studies that have emphasized the importance of psychosocial approaches or specific therapeutic techniques in reducing anxiety in the general population as well as in groups with specific vulnerabilities.

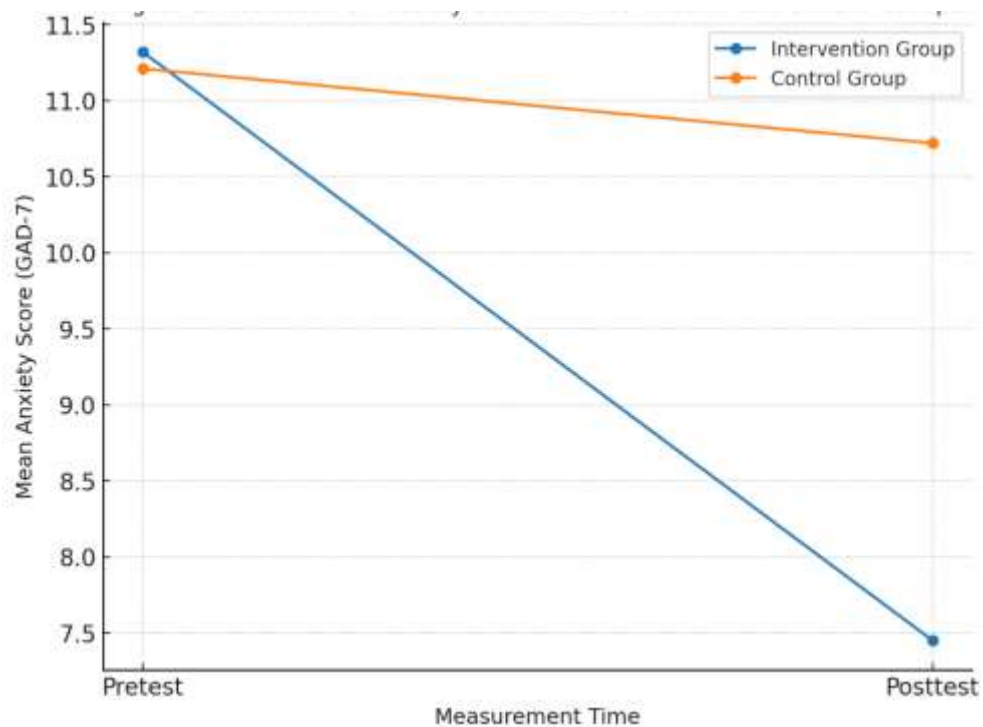


Figure 1. Graph of Decrease in Anxiety Scores in the Intervention and Control Groups

Figure 1 shows a comparative graph of the decline in anxiety scores in both groups. The graph visually confirms a striking difference: the lines in the intervention group decreased sharply from pre- to post-intervention, while the lines in the control group decreased only slightly. Thus, these results provide strong evidence that the interventions used are not only statistically impactful, but also have real clinical significance for anxiety reduction.

Subjective Narrative and Participant Reflection

Qualitative analysis through semi-structured interviews, reflective journals, and artwork showed that the youth participants of the program experienced significant changes in the way they understood themselves, faced challenges, and managed emotions. The three major themes that emerged, namely strengthening self-efficacy, reconstructing challenges into opportunities, and releasing emotions through artistic expression, describe a psychological transformation that is consistent with quantitative results.

Strengthening Self-Efficacy

The majority of participants reported an increase in confidence after participating in the intervention. The artistic process encourages them to dare to try, accept mistakes, and improve their work, which they then relate to academic experience. One participant wrote in his journal: "*When my paintings look bad, I learn not to give up and try again, just like when I failed a math exam*" (R4, Interview, May 27, 2025). The interviews support these findings. A teenager said, "*In the past, if I failed, I immediately felt helpless. But now I'm more convinced that failing is part of learning.*" (R2, interview, May 27, 2025). This shows an increase in self-efficacy and a stronger growth mindset.

Reconstruction of Challenges into Opportunities

Many of the participants' artworks feature symbols of difficulty such as steep mountains, dead ends, or mazes. However, these symbols are almost always combined with signs of hope, such as a light at the end of the road or a staircase to the top. The artistic process helps teens change their perspective on problems. One of the participants conveyed: "*I drew a maze because I felt that school was difficult. But I added an exit so I don't feel trapped forever.*" (R5, interview, May 27, 2025). Another participant even re-described the school's challenge as a "mountain" with a trail to the top, saying: "*For me, the higher the mountain, the more satisfied I am if I can get to the top*" (R7, interview, May 27, 2025). This narrative shows that interventions help adolescents reconstruct difficult experiences into opportunities for growth.

Emotional Release through Artistic Expression

The last theme emphasizes that art is a safe medium to channel negative emotions and find new ways to manage them. Some teens describe their anxiety through dark colors, then replace them with bright colors at the end of the session as a symbol of emotion regulation. One of the participants revealed: "*When I'm sad, I usually keep quiet. But here I can paint with black for fear, then I add yellow to make my heart feel lighter.*" (R1, interview, May 27, 2025). Another participant said, "*Painting makes me feel relieved, like spilling my heart without having to say much*" (R3, Interview, May 27, 2025). This process shows that art functions not only as a medium of expression, but also as a means of emotional therapy that supports self-regulation.

DISCUSSION

The results of the study show that growth mindset interventions through art activities contribute significantly to reducing anxiety levels in adolescents. These findings are in line with the growth mindset theory which emphasizes that individual confidence in one's own abilities that can develop through the right efforts and strategies, will increase psychological resilience in the face of pressure (Dweck, 2020). Through art activities, such as drawing, painting, or other creative expressions, adolescents gain a safe space to channel negative emotions while building a positive mindset that mistakes are part of the learning process. This has been proven to help reduce anxiety that often arises due to academic and social pressure.

Previous research has also reinforced these findings. A study by (Yeager et al., 2022) found that growth mindset interventions consistently improve adolescents' psychological well-being by providing a flexible frame of mind to challenges. Meanwhile, research (Casey & Caulfield, 2023) emphasizes that art activities have a therapeutic role in reducing anxiety symptoms, especially in adolescent age groups who are prone to emotional distress. Thus, the combination of growth mindset and art activities presents a complementary approach to intervention: growth mindset forms an adaptive cognitive framework, while art becomes a medium of soothing emotional expression.

The consequences of these findings have important implications for educational practice and developmental psychology. In the realm of education, teachers can integrate art activities as part of a learning strategy that fosters a growth mindset, so as not only to improve academic achievement, but also to reduce students' anxiety. From a clinical perspective, counselors and psychologists can use art as a therapeutic medium combined with growth mindset training to increase the effectiveness of interventions in adolescents with anxiety.

However, there are several factors that affect the results of this study. Environmental support, especially from families and schools, has been shown to strengthen the positive impact of interventions, as affirmed by (Murayama & Elliot, 2022) who show that a supportive social climate increases the effectiveness of growth mindset programs. On the other hand, limited facilities or resistance from adolescents who are less interested in art activities can be an obstacle in the application of this method. Differences in outcomes may also be due to variations in participants' initial anxiety levels, as well as personal factors such as self-openness and interest in art.

The limitations of this study lie in the relatively limited scope of the sample and the short duration of the intervention. This condition can limit the generalization of results in a wider population. For further research, it is recommended to carry out interventions with a larger scope of participants, longer periods, and the use of diverse art methods, such as music, drama, or digital art. A longitudinal approach is also needed to look at the sustainability impact of growth mindset through art on reducing adolescent anxiety in the long term.

Overall, this research makes a real contribution to the development of science in the field of educational psychology and mental health intervention. The findings that growth mindset combined with art can reduce adolescent anxiety not only broaden theoretical understanding, but also provide practical intervention alternatives that are easy to apply in schools and adolescent communities.

CONCLUSIONS AND RECOMMENDATION

This study shows that growth mindset-based interventions combined with art activities have a significant impact on reducing anxiety levels in adolescents. Through this approach, adolescents can view challenges as opportunities to grow, as well as channel emotions through constructive creative

expression. These results confirm that the development of a positive mindset, when integrated with art media, can be an effective strategy to support adolescent mental health.

The findings also confirm that psychological factors and creative expression complement each other in reducing anxiety. Growth mindsets provide a cognitive framework to build mental resilience, while art activities provide a safe space for teens to manage emotions without stress. The combination of the two not only supports the psychological aspect, but also enriches the emotional learning experience, which ultimately strengthens self-regulation and social skills.

Practically, the results of this study have implications for schools, counselors, and mental health practitioners to integrate growth mindset-based interventions with art activities in adolescent guidance programs. This approach is not only relevant for anxiety management, but also has the potential to expand prevention strategies for other psychological problems in the future.

FURTHER STUDY

Further research is recommended to explore the variations of art forms, duration of interventions, and the influence of socio-cultural factors, so that interventions can be tailored to the needs of adolescents in various contexts.

REFERENCES

- Braun, V., & Clarke, V. (2021). One size fits all? What counts as quality practice in (reflexive) thematic analysis? *Qualitative Research in Psychology, 18*(3), 328–352. <https://doi.org/10.1080/14780887.2020.1769238>
- Burnette, J. L., & Finkel, E. J. (2021). Growth mindsets and relationship wellbeing: A review and new directions. *Current Opinion in Psychology, 44*, 128–133. <https://doi.org/10.1016/j.copsyc.2021.09.009>
- Burnette, J. L., O'Boyle, E. H., VanEpps, E. M., Pollack, J. M., & Finkel, E. J. (2023). Mindsets matter: A meta-analytic review of implicit theories and self-regulation. *Psychological Bulletin, 149*(2), 127–154. <https://doi.org/10.1037/bul0000388>
- Casey, L., & Caulfield, L. (2023). The role of arts in supporting adolescent mental health: A systematic review. *Journal of Adolescence, 96*, 15–28. <https://doi.org/10.1016/j.adolescence.2022.12.004>
- Creswell, J. W., & Creswell, J. D. (2023). *Research design: Qualitative, quantitative, and mixed methods approaches* (6th ed.). Sage.
- Dweck, C. S. (2020). *Mindset: Changing the way you think to fulfil your potential* (Updated ed.). Robinson.
- Fancourt, D., & Finn, S. (2020). *What is the evidence on the role of the arts in improving health and well-being? A scoping review*. World Health Organization Regional Office for Europe.

- Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2022). G*Power 3.1: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, 54(4), 2009–2021. <https://doi.org/10.3758/s13428-021-01674-y>
- Fetters, M. D., & Molina-Azorin, J. F. (2020). Mixed methods research: Expanding the evidence base. *Annual Review of Public Health*, 41, 45–62. <https://doi.org/10.1146/annurev-publhealth-040119-094247>
- Huss, E., Kaufman, R., Avgar, A., & Shuker, E. (2021). Arts as a vehicle for recovery in mental health: Voices of service users and service providers. *Arts & Health*, 13(1), 1–15. <https://doi.org/10.1080/17533015.2019.1700531>
- Martinez, A., & Lee, C. (2022). Art-based interventions for adolescent mental health: Exploring emotional regulation and resilience. *Arts in Psychotherapy*, 80, 101943. <https://doi.org/10.1016/j.aip.2022.101943>
- Murayama, K., & Elliot, A. J. (2022). The social context of growth mindset interventions: A motivational framework. *Educational Psychologist*, 57(2), 83–98. <https://doi.org/10.1080/00461520.2022.2028324>
- Schleider, J. L., Dobias, M., Sung, J. Y., & Mullarkey, M. (2020). Future directions in single-session youth mental health interventions. *Journal of Clinical Child & Adolescent Psychology*, 49(2), 264–278. <https://doi.org/10.1080/15374416.2019.1683852>
- Smith, R., & Johnson, P. (2021). Creative arts therapy for adolescents with anxiety: A mixed-methods evaluation. *Arts in Psychotherapy*, 72, 101745. <https://doi.org/10.1016/j.aip.2020.101745>
- Spitzer, R. L., Kroenke, K., Williams, J. B. W., & Löwe, B. (2021). A brief measure for assessing generalized anxiety disorder: The GAD-7. *Archives of Internal Medicine*, 166(10), 1092–1097. (Reprinted 2021). <https://doi.org/10.1001/archinte.166.10.1092>
- Stevenson, K., McArthur, K., & Bryce, A. (2023). Integrating growth mindset and creative arts interventions to support adolescent well-being. *Journal of Youth and Adolescence*, 52(4), 789–804. <https://doi.org/10.1007/s10964-022-01635-5>
- Tavakol, M., & Wetzell, A. (2020). Psychometric evaluation of a scale: A practical guide. *Medical Education*, 54(9), 785–792. <https://doi.org/10.1111/medu.14172>
- World Health Organization. (2024). *Adolescent mental health*. World Health Organization.

- Wu, Y., Zhang, L., & Chen, H. (2023). Art camp intervention for adolescents with depressive symptoms: A qualitative study. *Child and Adolescent Mental Health, 28*(2), 155–164. <https://doi.org/10.1111/camh.12590>
- Xia, Y., Li, J., & Zhou, H. (2022). School-based growth mindset intervention and adolescent resilience: Evidence from China. *Frontiers in Psychology, 13*, 862473. <https://doi.org/10.3389/fpsyg.2022.862473>
- Yeager, D. S., Hanselman, P., Walton, G. M., Murray, J. S., Crosnoe, R., Muller, C., & Dweck, C. S. (2022). A national experiment reveals where a growth mindset improves achievement. *Nature, 573*(7774), 364–369. <https://doi.org/10.1038/s41586-022-04924-y>