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RESEARCH ARTICLE

Low Self-Esteem and the School Environment: A Comparative Study of the Risk Factors Among Adolescents

Samarth Kasaraneni, Trayi Yada, Samuel Xiao

Providence Day School, 5800 Sardis Road, Charlotte, NC, 28270, USA; samarth.kasaraneni@gmail.com

ABSTRACT: Adolescence marks some of the most formative and crucial years of an individual's life. Consequently, during this period, many adolescents are prone to changes in their social and emotional well-being. With a majority of adolescents spending a considerable portion of their time in school, their academic setting plays a pivotal role in shaping their identity. During this period, low self-esteem is a common mental health issue that often goes unspoken about. The purpose of this study is to address common risk factors that affect an adolescent's self-esteem and compare them across school settings. The risk factors were divided into two groups: academic-based risk factors and social-based risk factors. To accomplish the goal of this study, a survey link was made public and shared with students in schools (public and independent) across five states (North Carolina, South Carolina, Ohio, Illinois, and Arizona). In total, we collected responses from exactly 400 students by placing a cap on the responses after we reached a certain threshold. Adolescents attending independent schools tended to be more inclined towards the academically based risk factors, whereas adolescents attending public schools were inclined towards the social-based risk factors.

KEYWORDS: Social and Behavioral Science, Educational Psychology, School Environment, Adolescent Mental Health, Self-Esteem.

Introduction

Adolescence, typically occurring in individuals between ages 10 and 19, is defined as a rapid period of physical growth and intellectual development.[1] Consequently, high school years serve as a crucial, formative time for young teenagers to mature into adolescents. Beyond simply defining the identity of the individual, however, adolescence also marks the crucial years during which teenagers begin developing their mental health and emotional stability.[2] During this period, self-esteem, commonly defined as the totality of an individual's thoughts and feelings regarding themselves, is paramount in either corroborating or hindering the emotional development of the young adolescent.[3] From a holistic view, self-esteem has the potential to influence aspects of adolescents' lives beyond just their emotions, encompassing both academic performance and social comfort.[4] Students with higher self-esteem are often better equipped to cope with stress, build healthy relationships, and maintain emotional resilience in times of hardship. On the other hand, low self-esteem can be characterized as a lack of confidence in oneself and difficulty recognizing one's own worth.[5] Low self-esteem, if left unaddressed, can develop into negative thoughts and potentially harmful ideations for the maturing adolescent.[6] With a majority of young adolescents spending a considerable portion of their time in school, the academic environment that they are exposed to has a significant role in determining their emotional and physical development, as the effects of daily interactions accumulate over time and shape the individuality and beliefs of the adolescent.[7]

However, when adolescents lack adequate support or face persistent academic or social pressure, they can be subject to diminished self-esteem and fragile mental health.[8] As a result, the type of school an adolescent attends (public or independent) can have a considerable impact on their future well-being and overall self-esteem.[9] Whether through differences in resources, access to professionals, class sizes, teaching styles, or social environments, public schools and independent schools tend to vary in ways that may influence adolescent self-esteem. Consequently, it is the students who face the brunt of these differences. These differing school environments can introduce both risk and protective factors that may influence students' self-esteem by shaping their academic pressure, sense of social belonging, and access to mental health support. Protective factors are conditions that may decrease the likelihood of a negative outcome or act as a buffer to the symptoms of the condition.[10] Risk factors, on the other hand, are conditions that may increase the likelihood of a negative outcome: in this case, low self-esteem.[10] Schools, irrespective of being public or independent, typically offer at least one type of mental health service to their students.[11] Because we have attended both public and private schools and have formed close friendships with peers in both school settings, we developed an interest in examining the underlying differences between the school environments and their corresponding effects on students' mental health. Whether it is through offering mentorship or having spaces for social support, most schools provide basic safety nets for students. Even so, the unspoken reality is that many high school adolescents, on average, quietly suffer from low self-esteem due to a variety of factors.[12] That is the purpose of this study: to analyze how risk factors for low self-esteem vary between students attending public and independent schools.

Although studies have already been done regarding overall teen mental health in school, there have been a very limited number of comparative studies to date examining the risk factors for low self-esteem between students attending public vs.

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independent schools. We hypothesize that students attending either type of school will experience similar proportions of academically related risk factors for low self-esteem, whereas students attending public schools will experience higher proportions of social-related risk factors for low self-esteem than their peers in independent schools. The results of this research can help parents, educators, and policymakers better understand the mental health aspect of school and its potential underlying effects on students.

Methods

To accomplish the goal of this study, a survey link was made public and shared with students in schools (public and independent) across five states (North Carolina, South Carolina, Ohio, Illinois, and Arizona). We opted to craft our own survey instead of proceeding with a standardized survey, as we could build on top of our prior research analyzing the most important risk factors of low self-esteem for adolescents. Additionally, through this approach, we could delve into a deep comparative analysis of these specific risk factors. In the survey, the following questions were asked:

I. Grade level
- A. 9th
- B. 10th
- C. 11th
- D. 12th

II. Which type of school do you attend?
- A. Public
- B. Independent

III. Which US state are you from?
- A. _____

IV. Low self-esteem can be characterized as a lack of confidence in oneself and difficulty recognizing one's own worth. Have you experienced a period of low self-esteem (spanning anytime between multiple days to over several years) in your life?
- A. Yes
- B. No

V. If you answered "*Yes*" to the previous question, please select all of the risk factors that you believe have been associated with your low self-esteem. If you answered "*No*" to the previous question, you do not need to respond to this.
- A. Perfectionism / High Expectations
- B. Chronic Stress
- C. Harsh Criticism
- D. Social Rejection
- E. Unstable Home Environment
- F. Social Media

In total, we collected responses from exactly 400 students by placing a cap on the responses after we reached a certain threshold. Specifically, we got 50 responses from each of the following subgroups: 9th graders in public school, 10th graders in public school, 11th graders in public school, 12th graders in public school, 9th graders in an independent school, 10th graders in an independent school, 11th graders in an independent school, 12th graders in an independent school. To spread the study, we initially shared our research survey with a subset of students and later relied on individuals spreading the survey to their peers. No personal information, such as the respondents' names, addresses, or emails, was collected to preserve confidentiality. Once we reached 50 responses from each of these subgroups, we stopped collecting more responses to keep the sample size even across all of the subgroups.

Results and Discussion

From the sample of 400 students surveyed, 389 (97.25%) students responded by stating that they have currently/recently experienced lowered self-esteem during a given period of time.

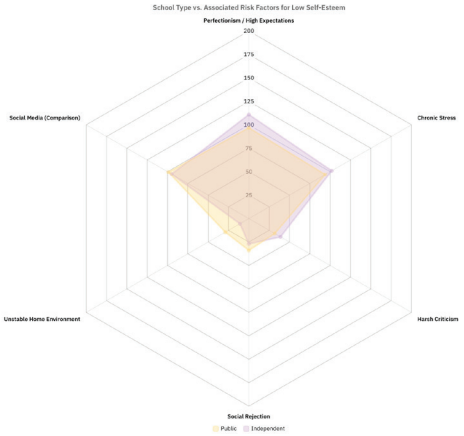

Figure 1: Radar plot showing the distribution of selected risk factors among the 389 students who reported having experienced a period of low self-esteem. This is intended to highlight the differences between potential stressors across the two different school environments. The yellow data points visible on the axes refer to the frequency of public-school students selecting each risk factor. Likewise, the purple data points visible on the axes refer to the frequency of independent-school students selecting each risk factor.

Among those 389 survey respondents who reported having experienced a period of low self-esteem, their responses regarding perceived risk factors associated with lowered self-esteem are presented in Figure 1. The respondents were grouped in this graph based on their associated school type. This general overview highlights the trend that among high school adolescents attending independent schools, the students tended to express higher academically related risk factors, including perfectionism, chronic stress, and harsh criticism, as evidenced by the purple data points being located farther away from the center than the yellow points for these factors. On the other hand, adolescents attending public schools were predisposed to more socially based stressors for low self-esteem, such as social rejection, an unstable home environment, and constant comparison via social media use, as indicated by the yellow data points being farther away from the center than the purple data points for these axes.

Table 1A: List of all the frequencies for each selected risk factor in a public school setting. The number of students who reported having experienced a period of low self-esteem from each subgroup is placed in parentheses (e.g., 9th Grade (50)). It is also important to note that all of the values in a given row may not add up to the value in the parentheses, as students were allowed to select multiple risk factors and not just one.

Public	Perfectionism / High Expectations	Chronic Stress	Harsh Criticism	Social Rejection	Unstable Home Environment	Social Media (Comparison)
9th Grade (50)	18	14	6	11	7	20
10th Grade (48)	23	22	6	10	8	27
11th Grade (47)	26	25	11	7	7	26
12th Grade (48)	30	33	9	6	7	26

Table 1B: List of all the frequencies for each selected risk factor in an independent school setting. The number of students who reported having experienced a period of low self-esteem from each subgroup is placed in parentheses (e.g., 10th Grade (47)). It is also important to note that all of the values in a given row may not add up to the value in the parentheses, as students were allowed to select multiple risk factors and not just one.

Independent	Perfectionism / High Expectations	Chronic Stress	Harsh Criticism	Social Rejection	Unstable Home Environment	Social Media (Comparison)
9th Grade (50)	22	14	9	10	3	20
10th Grade (47)	26	22	8	7	1	24
11th Grade (50)	31	32	12	6	3	26
12th Grade (49)	32	34	10	4	4	25

Tables 1A and 1B show a more detailed breakdown of each of the risk factors by grade level for a given school type. This data served as the basis for the radar plot (Figure 1) as well as for the relative frequency graphs (Figures 2, 3, 4, and 5).

Comparative Analysis Across School Types:

In order to compare the difference in perceived risk factors across school types, chi-square analyses were utilized.

Table 2: Analysis of each of the risk factors across school types. X^2 signifies how much an observed value differs from an expected value.[13] The p-value is used to deduce whether or not a result is statistically significant. $p < 0.05$ indicates that a result is statistically significant; $p > 0.05$ indicates that a result is not statistically significant. As indicated by the table, the only risk factor that is statistically significant is living in an unstable home environment.

	Chi-Square Analysis	
	X^2	p-value
Perfectionism	1.34	0.247
Chronic Stress	0.31	0.578
Harsh Criticism	0.51	0.474
Social Rejection	0.81	0.367
Unstable Home Environment	9.35	0.002
Social Media	0.21	0.648

As shown in Table 2, the p-scores revealed non-statistically significant results across five of the six risk factors. Even so, a statistically significant difference was derived from the risk factor of an unstable home environment ($p = 0.002$); thus, it can be concluded that students who listed living in an unstable home environment as a potential stressor were significantly more likely to come from a public school than an independent school. Furthermore, although it is difficult to affirmatively state that students from a certain school type are inclined towards the risk factors of perfectionism, chronic stress, harsh criticism, social rejection, or social media use, coming from an unstable home environment poses an unequal risk for students attending public schools.

To continue, examining the risk factors most favored across both school types, perfectionism stands out as the most frequently selected, with 53.5% of the 389 students reporting it as at least one potential stressor. Following perfectionism, chronic stress and comparison via social media use were the next most frequently selected stressors, with each risk factor garnering 50.4% and 49.9% selection, respectively. After these three risk factors, a sharp decline becomes visible in the selection rate for the last three. Harsh criticism follows as the next most selected risk factor, with 18.3% of adolescents selecting it. Lastly, social rejection and living in an unstable home were reported by 15.7% and 10.3% of the high school adolescents.

Comparative Analysis Across Grade Levels:

As previously stated, although chi-square analyses did not provide statistically significant results across all potential risk factors, visible trends, as shown in Figures 2, 3, 4, and 5, can still be observed across grade levels and school types. Firstly, as the grade level of students progressed higher (9th through 12th), adolescents, irrespective of which type of school they attended, had a stronger inclination to associate perfectionism and chronic stress as potential stressors for low self-esteem. To exemplify this, 36% of the 9th graders attending public school who reported having experienced a period of low self-esteem in their lives selected perfectionism as a stressor for low self-esteem. Upon observation of 10th, 11th, and 12th graders attending public schools, 48%, 55%, and 63% of students, respectively, selected perfectionism as a potential stressor for low self-esteem. This same increasing pattern can be found among students attending independent schools reporting perfectionism as a potential risk factor for low self-esteem, as well as for students of both school types reporting chronic stress.

In general, across all four grade levels, the risk factors of perfectionism, chronic stress, and comparison via social media use were consistently selected with the highest proportions as potential stressors for low self-esteem. When comparing the relative frequency bars in Figure 2 to those of the other figures, the overall proportion of high school freshmen selecting potential risk factors for low self-esteem is lower compared to students in other grades. Furthermore, when comparing the proportion of students who selected academic-based stressors as potential risk factors for low self-esteem, juniors (Figure 4), regardless of school type, reported higher proportions than freshmen (Figure 2) and sophomores (Figure 3). Specifically, the proportion of students selecting perfectionism, chronic stress, and harsh criticism as potential risk factors for low self-esteem gradually increased in students through grade levels. The one exception to this trend can be found for the risk factor of harsh criticism among independent school freshmen and sophomores, for whom proportions of 0.18 and 0.17 were selected, respectively.

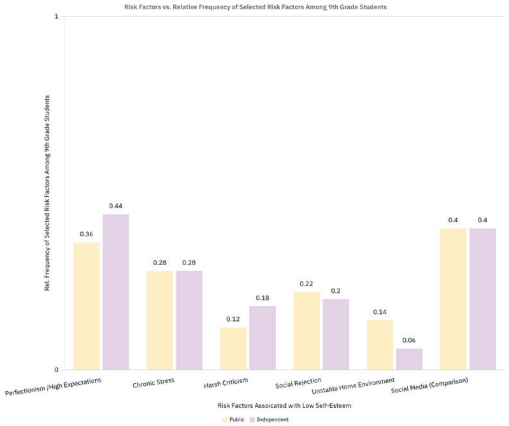

Figure 2: Relative frequency graph for each of the risk factors affecting 9th graders in public and independent school settings. Each of the bars is relative to the number of 9th graders in the associated school setting who reported having a period of low self-esteem in their lives. The yellow bars represent the relative frequencies for public school students, and the purple bars represent the relative frequencies for independent school students.

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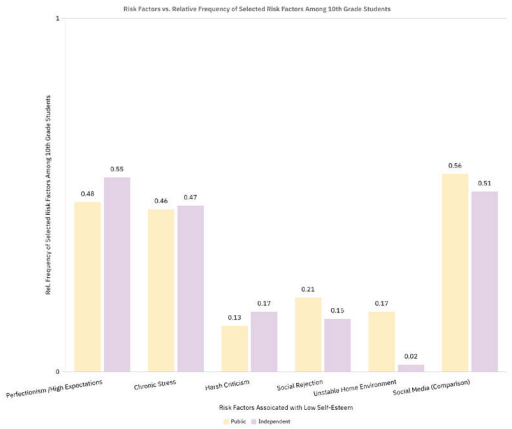

Figure 3: Relative frequency graph for each of the risk factors affecting 10th graders in public and independent school settings. Each of the bars is relative to the number of 10th graders in the associated school setting who reported having a period of low self-esteem in their lives. The yellow bars represent the relative frequencies for public school students, and the purple bars represent the relative frequencies for independent school students.

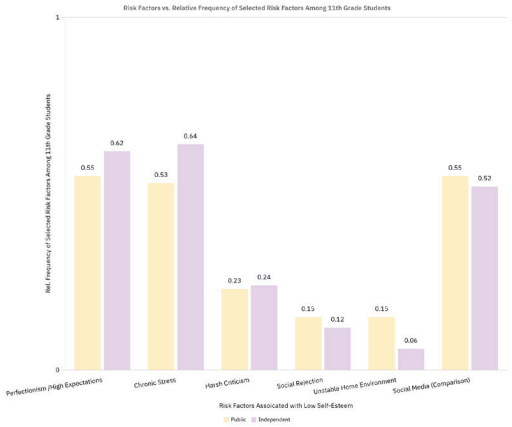

Figure 4: Relative frequency graph for each of the risk factors affecting 11th graders in public and independent school settings. Each of the bars is relative to the number of 11th graders in the associated school setting who reported having a period of low self-esteem in their lives. The yellow bars represent the relative frequencies for public school students, and the purple bars represent the relative frequencies for independent school students.

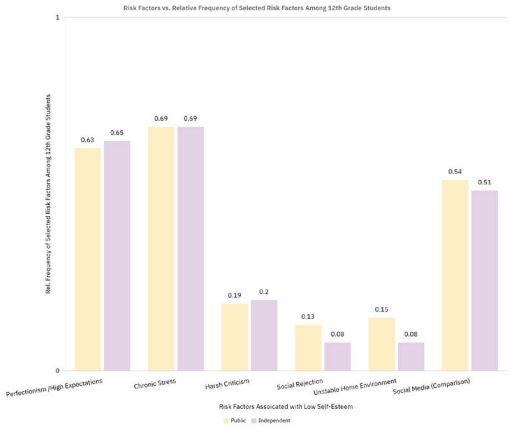

Figure 5: Relative frequency graph for each of the risk factors affecting 12th graders in public and independent school settings. Each of the bars is relative to the number of 12th graders in the associated school setting who reported having a period of low self-esteem in their lives. The yellow bars represent the relative frequencies for public school students, and the purple bars represent the relative frequencies for independent school students.

Two visible differences between the relative frequency graphs of selected risk factors across juniors and seniors are that seniors (Figure 5) reported higher proportions of perfectionism and chronic stress than juniors (Figure 4). Conversely, seniors reported lowered proportions of harsh criticism, social rejection, and comparison via social media. Furthermore, similar to the overall pattern of higher proportions of independent school students associating themselves with academic-based risk factors and higher proportions of public school students associating themselves with social-based risk factors, the same trend follows with the seniors, as evidenced in Figure 5. The sole exception is that equal proportions of seniors across school types selected chronic stress as a potential risk factor for low self-esteem.

Additionally, with regard to social media use as a form of comparison, the percentage of high school adolescents in 10th, 11th, and 12th grade reporting it as a potential stressor for low self-esteem varied between 51% and 56%, irrespective of the school type.

Lastly, another valuable observation that can be deduced from the given data is that academically related risk factors (including perfectionism, chronic stress, and harsh criticism) were selected at a higher rate than social-based stressors (including social rejection, living in an unstable home environment, and comparison via social media use). Specifically, given the proportions of students selecting each factor, the three academically oriented risk factors averaged to 40.7%, whereas the socially oriented risk factors averaged to 25.3%, signifying that students more frequently reported academically induced stressors as potential risk factors for low self-esteem than socially based ones.

■ Conclusion

In summary, considering the importance of adolescence on individuals and their overall mental health, high school years mark some of the most formative and pivotal years of a student's life. Consequently, if provided with adequate care and attention, adolescents will be much more likely to develop long-term emotional stability and heightened self-esteem. Fortunately, a majority of schools offer some form of mental health support through either counseling or having social support spaces. However, what often goes unnoticed in academic settings are the hidden battles that many students fight, whether it is against themselves or external pressures. School presents young adolescents with challenges that many have to learn to overcome. As revealed through the data in this research, for example, a large portion of students confront lowered self-esteem levels, with school environments playing a considerable role in these outcomes.

There are a few major trends that can be utilized to help shape potential measures in school environments. To begin, recognizing that academic pressures such as perfectionism and chronic stress increase throughout an adolescent's journey to high school is valuable. This understanding helps highlight the need for early support interventions focused on stress management and potential after-school teacher help sessions. Furthermore, realizing that social media could serve as a plat-

form for persistent comparison against others can be crucial in identifying potential lifestyle changes for an adolescent. The consistent use of social media and its deleterious side effects on self-esteem, irrespective of school type, demonstrates the constant and persistent impact of social media exposure on teens and developing adolescents. These findings align with pre-existing literature stating that adolescent self-esteem is strongly shaped by the stressors that they are most frequently exposed to, such as academic pressures and social comparison. By implementing soft regulations against social media use, adolescents can be trained to limit constant comparison and shift their focus to themselves rather than to others. Lastly, with regard to the risk factor of residing in an unstable home environment, this is a scenario that schools and their administrators should be more vigilant about. While they have no direct power in being able to influence an adolescent's current household situation, they can underscore the implementation of support programs at school that offer emotional guidance to adolescents facing these scenarios. More broadly, this study contributes to the growing body of research supporting that varying academic and social settings across school types contribute differently to an adolescent's emotional development.

In short, a school's impact on adolescents is undeniable: it prepares students for their futures and plays a critical role in the development of an individual's emotional and social well-being.14 While this study revealed several meaningful trends regarding adolescent self-esteem across school settings, future research involving broader populations and the establishment of causation across different risk factors could further strengthen understanding of how school environments influence student mental health. Despite the obstacles and challenges that a maturing adolescent may face, by recognizing the differing patterns of academically and socially related stressors between public and independent school students, counselors and caregivers can be more vigilant and work to connect with the individual to support them through the journey of adolescence while standing as pillars of support along the way.

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■ Authors

Samarth Kasaraneni is currently a senior at Providence Day School in North Carolina. He hopes to pursue a degree in neuroscience and enter the medical field as a neurosurgeon, with a particular interest in addressing healthcare disparities within underserved communities.

Sam Xiao is currently a senior at Providence Day School, NC. He hopes to pursue a degree in Biomedical Engineering and enter the medical field as an oral surgeon.

Trayi Yada is currently a senior at Providence Day School in North Carolina. She aspires to earn a combined JD/MD degree and pursue a career as a medical lawyer, aiming to work at the intersection of healthcare, law, and advocacy.

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