




Depression among pupils of specialized high schools in the Mekong delta

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Abstract

Major depressive disorder among high school pupils is emerging as a significant mental health concern in the context of modern education, particularly in specialized high schools, academic environments characterized by high-intensity demands and elevated social expectations. Pupils in these settings are not only exposed to common developmental stressors associated with adolescence, but also experience heightened vulnerability due to performance pressure and constant social comparison with high-achieving peers. The present study aimed to examine the prevalence and associated factors of depressive symptoms among pupils enrolled in specialized high schools in the Mekong Delta region of Vietnam. A quantitative research design was employed, utilizing the Patient Health Questionnaire-9 (PHQ-9). Based on a sample of 350 pupils, findings indicated that 32.9% exhibited depressive symptoms ranging from mild to severe levels. Statistically significant associated variables included female gender, high parental expectations, insufficient rest, and perceived social isolation. These findings provide critical empirical evidence supporting the need to develop and implement school-based mental health interventions that are individualized, contextually responsive, and sensitive to the unique psychosocial dynamics of pupils in specialized academic settings.

Keywords: Depression, High school pupils, Specialized schools, Mekong delta, School mental health

Introduction

Student mental health, especially during adolescence, a period characterized by dramatic biological, psychological, and social changes, is becoming a priority area in modern education. In specialized high schools, where pupils are constantly exposed to pressure to achieve and high expectations from family, school, and society, mental health problems such as depression are at risk of developing or worsening if not detected and intervened in promptly. According to the biopsychosocial stress model, depression in adolescents may be the result of interactions between biological vulnerabilities (such as neurotransmitter imbalances), psychological and social stress events (academic pressure, parental expectations, peer relationships), and an unsupportive school environment (Gunnar & Quevedo, 2007) [3].

An overview of recent studies shows that the prevalence of depression among high school pupils is alarming in many countries. However, specific data for pupils in specialized schools, who are considered to have high academic ability but also have many potential psychological risks due to their achievement orientation, are still quite limited, especially in the Mekong Delta region. Determining the level of depression and related risk factors in this group of pupils is necessary not only for early detection but also to serve the development of prevention and intervention programs that are clinically appropriate and appropriate to the local cultural and educational context.

In this context, cognitive behavioral therapy (CBT) and acceptance commitment therapy (ACT) approaches are effective in intervening in school depression, helping pupils

identify and correct distorted cognitive patterns, develop positive coping skills, and enhance their ability to accept their inner experiences and act according to their values (Hayes *et al.*, 2011; Stallard, 2019) [5,9]. Integrating these evidence-based psychological intervention models into school curricula, especially in highly competitive environments such as specialized schools, is a preventive and therapeutic strategy that has long-term implications for the comprehensive development of pupils.

Theoretical basis

Concept of depression in school-age children

Depression in school-age children is a common mental disorder, classified in the group of mood disorders, with the basic characteristics of prolonged sadness, loss of interest in favorite activities, along with many manifestations of physical, emotional and cognitive disorders. This is a phenomenon that cannot be ignored, as it directly affects the learning process, social communication, and comprehensive development of pupils.

According to the Diagnostic and Statistical Manual of Mental Disorders, DSM-5-TR (APA, 2022), depression in adolescents has manifestations that are not entirely similar to those in adults. Symptoms in pupils can manifest as irritability, withdrawal, poor academic performance, eating and sleeping disorders, or even thoughts of self-harm. Early recognition and differentiation of depression from other psychological changes of puberty are essential to avoid confusion in intervention.

In pupils of specialized high schools, depression is not only the result of personal factors but also the result of the specific

learning environment. High expectations from family, school, and oneself make the pressure to compete become the cause of promoting feelings of failure, low self-esteem, and loss of direction - key factors leading to depression if not supported promptly.

Main theoretical models

Cognitive-Behavioral Theory (CBT)

The Cognitive-Behavioral Theory developed by Beck (1976) argues that negative automatic thoughts cause depression, distorted thinking patterns such as catastrophizing, negative interpretations, or self-blame. These types of thinking cause pupils to underestimate themselves, feel incompetent or useless, and thus fall into a vicious cycle of negative emotions and avoidance behavior.

In the context of specialized school pupils, where the pressure to achieve is high, small mistakes can be exaggerated in thinking, leading to disappointment and self-negation. Many pupils fall into a state of constant stress, fear of failure, and feel that they will never meet expectations, despite achieving high results. This shows the suitability of the CBT model in explaining the manifestations of depression in this group of pupils.

The Stress-Vulnerability Interaction Model

The Stress-Vulnerability Model (Monroe & Simons, 1991) explains that each individual has a different level of biological and psychological "vulnerability". When faced with environmental stressors such as exam pressure, family conflict, or social isolation, individuals with high vulnerability are more likely to develop depression.

Especially in specialized schools, pupils, a highly competitive academic environment that creates constant pressure that lasts for many years of study. If pupils lack emotional regulation skills and lack support from family or friends, the risk of depression will increase significantly. This model points out the importance of reducing pressure and increasing psychological adaptability for pupils.

Ecological theoretical framework and school mental health

Beck *et al.* (2009)^[1], ecological system theory places people in a network of hierarchically structured relationships from the individual to the social, including: the microsystem (family, friends), the mesosystem (school), the ecosystem (media, policy), and the macrosystem (cultural values). Depression in pupils cannot be understood from an individual perspective alone, but must be placed in the context of interactions of the entire environmental system.

In the Mekong Delta, many specific factors such as low income, parental migration, and a shortage of school psychologists have contributed to an increased risk of psychological disorders in pupils, especially depression. The ecosystem in which pupils live and study lacks stability and comprehensive support, which is the foundation for creating psychological cracks.

Recently, WHO and UNICEF have emphasized the implementation of the "Mental Health-Promoting Schools" model as a sustainable solution. This model includes integrating social-emotional education into the curriculum,

training teachers in early identification of mental health problems, and building a network of emotional support for pupils.

Specialized schools and the double-edged risk of "school excellence"

Specialized schools, although considered a national talent training model, are environments where mental health problems can easily arise if not well controlled. Pupils here are often surrounded by high expectations from teachers, parents, and themselves, while having little opportunity to express their emotions, accept failure, or be understood mentally.

Phenomena such as impostor syndrome, exam anxiety, or hidden depression often occur but are easily overlooked. When pupils who were once the best in their old environment move to a new environment full of "superheroes," feelings of falling behind, self-doubt, or confusion about their abilities can arise, leading to emotional disorders.

Suldo *et al.* (2008) call this "performance-related stress", a state in which pupils constantly compare themselves to others and are overwhelmed by the pressure to succeed. Without appropriate psychological support and emotional education systems, specialized school models can become environments that can potentially trigger depression.

Cultural context: mental health in Vietnam

In Vietnam, mental health in pupils remains a sensitive topic, rarely discussed publicly, and covered by social prejudices. Many parents and teachers do not consider depression a real illness, often labeling it as "weakness", "lack of will", or "pretending". This mentality makes many pupils afraid to share not receive early treatment, and they are at risk of the disease becoming more serious over time.

In the Mekong Delta region, studies show that the rate of pupils suffering from academic pressure and psychological stress has tended to increase rapidly in recent decades, especially in highly competitive schools. The situation of parents working far away, lacking the presence to take care of their children mentally, also increases insecurity and loneliness - fertile ground for school depression (Mai, 2020)^[8].

In addition, the lack of school psychologists and specific policies on psychological counseling in specialized high schools are also a reason why school depression is difficult to detect early and intervene effectively. These factors create a unique socio-cultural picture that needs to be seriously considered in all efforts to prevent and intervene in depression in pupils.

Research methods

Research design

The study was conducted using a quantitative approach, using a cross-sectional descriptive design combined with correlation analysis. The cross-sectional descriptive design was used to describe the current situation, including the rate and levels of depression in pupils at a specific time. Correlation analysis was used to examine the relationship between depressive symptoms and other factors (e.g., academic pressure, parental expectations, peer relationships, etc.).

Research subjects

350 pupils were selected from three specialized high schools in A Giang province, Can Tho city, and Dong Thap province. The allocation of the number of surveys to each school was carried out using the proportional stratified sampling method, based on the relative enrollment size of each school to ensure representativeness for the whole. Specifically, the number of samples was allocated as follows: Specialized High School in Can Tho (n = 137), Specialized High School in A Giang Province (n = 122), and Specialized High School in Dong Thap Province (n = 91).

Tools

PHQ-9 scale to assess the level of depression. Questionnaire of variables: Gender, class, extra-curricular time, parental expectations, sleep status, and friendships. Data analysis: Descriptive statistics, Chi-Square test, regression.

Research Results

Current status of depression rate in pupils of specialized schools in the Mekong Delta

Table 1: Distribution of depression level in pupils of specialized schools in the Mekong Delta (n = 350)

Order	Depression Level	Frequency (n)	Ratio (%)
1	No Depression	235	67.14
2	Mild Depression	65	18.57
3	Moderate Depression	36	10.29
4	Severe Depression	14	4.00
Total		350	100

Comparison of depression among specialized high schools in the Mekong Delta

Table 2: Comparison of Depression Ratio (%) among schools

Order	Depression Level	Specialized High School in Can Tho city (n=137)	Specialized High School in A Giang province (n=122)	Specialized High School in Dong Thap province (n=91)	Total (n=350)
1	Severe Depression	4.38	4.10	3.30	3.92
2	Moderate Depression	10.95	9.84	9.89	10.23
3	Mild Depression	19.71	18.85	16.48	18.35
4	Total Depression	35.04	32.79	29.67	32.50
5	No Depression	64.96	67.21	70.33	67.50
Total		100.00	100.00	100.00	100.00

Based on the survey results of 350 pupils at three specialized high schools in three localities in the Mekong Delta (Can Tho city, A Giang province and Dong Thap province), the proportion of pupils with signs of depression was divided into three levels: severe depression, moderate depression and mild depression. The data showed notable differences between groups and provinces.

Specifically, the proportion of pupils with signs of severe depression at Can Tho city specialized schools was 4.38%, in A Giang province it was 4.10%, and in Dong Thap province it was 3.30%. On average, severe depression accounted for 3.92%. Although accounting for the lowest proportion, this is the most worrying group because it is directly related to negative behaviors such as self-harm or suicidal thoughts, and is often difficult to detect in the school environment without a professional psychological assessment.

The results from the survey show a remarkable picture of the mental health of pupils in 3 specialized high schools. Overall, 32.86% of pupils in the study sample showed signs of depression at different levels. This figure is not only statistically significant but also an important indicator of the pressures that specialized pupils are facing.

Compared with similar studies in Vietnam, the rate of 32.90% in this study is higher than the results of Phan Dieu Mai (2020) [8], who showed that the rate of high school pupils with signs of depression was 20.10% (including 13.30% mild, 5.80% moderate and 1.0% severe). However, this result is within the spectrum of findings of many other studies in Vietnam, showing variations depending on the location and measurement tools (Mai, 2020) [8].

For example, a survey study conducted in inner-city high schools in Ho Chi Minh City by the Center for Health Education Communication (Ho Chi Minh City Department of Health) in collaboration with the Ho Chi Minh City Center for Training and Development of Health Staff showed a rate of 21.00% (Mai, 2020) [8], a study by the Institute of Psychology (2000) showed that 22.5% of pupils in Hanoi showed signs of anxiety and depression (Mai, 2020) [8], and in particular, a cross-sectional study conducted on 1,260 high school pupils from September to December 2011 at 3 high schools in Can Tho city showed that up to 41.10% of pupils were at risk of depression (Mai, 2020) [8]. This shows that the figure of 32.86% is a reasonable result and reflects an alarming situation.

Meanwhile, the proportion of pupils with moderate depression was 10.95% (Can Tho), 9.84% (A Giang), and 9.89% (Dong Thap), respectively, with the average rate of the entire sample being 10.23%. This group is at risk of progressing to a severe level if not intervened upon promptly. Symptoms in this group often include prolonged fatigue, difficulty concentrating, decreased academic performance, and avoidance of social interaction. The group of pupils with mild depression accounted for the highest proportion of the three levels: 19.71% in Can Tho, 18.85% in A Giang, and 16.48% in Dong Thap. The average of the entire sample was 18.35%. Although mild depression often has few immediate consequences, this is a stage that can predict early psychological instability and can transform into higher levels if there is no appropriate support strategy from family, school, and school psychologists.

When synthesizing the levels of depression, the proportion of pupils identified as having signs of depression (from mild to severe) was 35.04% in Can Tho, 32.79% in A Giang and 29.67% in Dong Thap. The average rate for the entire sample was 32.50%, meaning that nearly 1/3 of the total number of pupils surveyed had signs of depression at different levels. This is a worrying rate, exceeding the average according to some international studies on school mental health and shows that school depression is no longer an isolated phenomenon, but a common problem that requires comprehensive prevention and intervention mechanisms. The proportion of pupils without signs of depression at the time of the survey was 64.96% in Can Tho, 67.21% in A Giang and 70.33% in Dong Thap. The average for the entire sample was 67.50%. Although this is a dominant rate, it is not enough to eliminate concerns about a school mental crisis, because nearly a third of pupils are still in a state of latent or obvious psychological trauma.

Through analysis, it can be seen that pupils at Can Tho City's specialized schools have higher rates of depression at all levels than the other two provinces. This may be related to the more intense level of academic competition, higher social pressure and parental expectations, or a lack of emotional support

channels. In contrast, pupils in Dong Thap have a relatively lower rate of depression, especially in the severe and moderate depression groups. However, caution is still needed when interpreting, because contextual factors, socio-economic conditions, school culture, and pupils' ability to recognize emotions can also affect the survey results.

The above figures show that school depression is not an isolated phenomenon, but is becoming more common in specialized educational environments, where pupils are under great pressure regarding expectations, achievements, and perfection. The presence of a high rate of mild depression requires the education sector to promptly implement primary prevention measures, including: social-emotional education, enhancing personal emotional capacity, reducing exam pressure, and building a friendly, positive school culture.

For pupils with moderate and severe depression, there needs to be a personalized intervention model, combining school psychologists, parents, homeroom teachers, and specialized health systems. Delays in detection and support can lead to serious physical and mental consequences and have long-term effects on pupils' futures.

Causes of depression in specialized high schools in the Mekong Delta

Table 3: Chi-Square test between depression level and some independent variables

Order	Variables	Chi-Square (χ^2)	p-value	Statistical Significance
1	Gender (M/F)	8,45	0,015	Significant
2	Number of extra classes/week	10,22	0,006	Significant
3	Parents' expectations	6,91	0,032	Significant
4	Time of sleep/day	9,63	0,008	Significant
5	Feelings of social isolation	11,87	0,003	Significant

To determine the relationship between personal and social factors and depression in pupils, the study conducted a Chi-Square (χ^2) test with a confidence level of 95% ($\alpha = 0.05$). The analysis results presented in the table show that all variables have a statistically significant relationship with depression, as the p-values are all less than 0.05. Specifically:

Gender: The value of $\chi^2 = 8.45$, $p = 0.015 < 0.05$, shows that there is a statistically significant relationship between gender and the level of depression. This shows that the difference in depression rates between male and female pupils is significant. According to previous studies, females tend to fall into depression more easily due to physiological, psychological characteristics and emotional coping ability. However, specific conclusions about the direction need to be strengthened by further analysis (e.g., crosstab analysis or logistic regression).
 Number of extra classes/week: With a value of $\chi^2 = 10.22$ and $p = 0.006$, it can be affirmed that the frequency of extra classes has a significant effect on the likelihood of depression in pupils. Increasing the number of extra classes means reducing the time for rest, and increasing the pressure to achieve, which are all factors that have been shown to increase the risk of mood disorders in pupils.

Parental expectations: The value of $\chi^2 = 6.91$ and $p = 0.032$ shows that the level of parental expectations is closely related

to school depression. When expectations exceed pupils' ability to adapt, especially in competitive academic environments such as specialized schools, pupils are prone to anxiety, low self-esteem, and loss of control, leading to depression. This result is consistent with the stress-vulnerability model.

Sleep duration/day: $\chi^2 = 9.63$ and $p = 0.008$ showed that lack of sleep was significantly associated with depression. Sleep plays an important role in emotional recovery, hormone regulation, and maintaining healthy cognition. Pupils who sleep less than 6 hours/day are often at higher risk of depression due to prolonged stress and mental fatigue (Roberts *et al.*, 2009).

Feeling of social isolation: With a value of $\chi^2 = 11.87$ and $p = 0.003$, this variable has the strongest association with depression among the surveyed factors. Feeling isolated from the school community or lacking social connection often leads to loneliness, emptiness, and decreased self-esteem - the core components of school depression. This is also consistent with the reference system of ecological theory, which emphasizes the role of the social interaction environment in pupils' mental development.

The results from the Chi-Square test emphasize the role of factors related to gender, academic burden, family pressure, sleep health, and social connection in the formation and

maintenance of depressive symptoms in specialized school pupils. These factors are not only meaningful in risk screening

but also key targets for designing multi-level interventions, combining individual, family, and school therapy.

Table 4: Logistic regression results of predictors of depression (depression yes/no)

Order	Predictor Variable	OR (Odds Ratio)	95% CI	p-value	Meaning
1	Gender (Female)	1,80	1,15, 2,82	0,011	Significant
2	Tuition ≥ 3 sessions/week	2,05	1,25, 3,34	0,004	Significant
3	High parental expectations	1,65	1,02, 2,68	0,041	Significant
4	Sleep < 6 hours/day	2,21	1,33, 3,68	0,002	Significant
5	Feelings of social isolation	2,67	1,54, 4,61	$< 0,001$	Significant

In order to determine the independent factors affecting the risk of depression in pupils, the study applied binary logistic regression analysis with the dependent variable being depression status (yes or no). The results table presented below provides the odds ratio (OR), 95% confidence interval (95% CI), and p-value of each independent variable. All variables were statistically significant ($p < 0.05$), indicating a reliable association with the risk of depression. Specifically:

Gender (female): OR = 1.80; 95% CI: 1.15–2.82; $p = 0.011$. The analysis showed that female pupils were 1.80 times more likely to have depression than male pupils, and this difference was statistically significant. The confidence interval did not include 1 (1.15–2.82), indicating that the results were stable and reliable. This is consistent with previous international studies, which confirmed that females tend to be more emotionally vulnerable and prone to depression, especially during adolescence due to the impact of hormones, society, and gender expectations.

Frequency of tutoring 3 or more sessions/week: OR = 2.05; 95% CI: 1.25–3.34; $p = 0.004$. The results showed that pupils with 3 or more tutoring sessions per week were 2.05 times more likely to suffer from depression than pupils with fewer tutoring. The 95% confidence interval (1.25–3.34) and $p < 0.01$ showed that this relationship was statistically significant. This demonstrates that prolonged academic pressure, excessive workload, and reduced leisure time are significant risk factors for school depression. This finding is consistent with the findings of Suldo *et al.* (2008), in which the level of extracurricular learning was strongly associated with the level of psychological distress.

High parental expectations: OR = 1.65; 95% CI: 1.02–2.68; $p = 0.041$. Pupils who perceived their parents as having too high expectations were 1.65 times more likely to be depressed than those who did not have such expectations. With $p = 0.041$ and confidence interval (1.02–2.68), this result just reached the threshold of statistical significance, and at the same time reflects a common problem in the Vietnamese school

environment, which is the phenomenon of parents placing great emphasis on achievements, causing pupils to feel pressured, disappointed and easily fall into a state of self-blame and self-deprecation when they do not meet expectations. This is consistent with the stress–vulnerability model, in which family expectations are considered a factor that triggers mood disorders.

Sleeping less than 6 hours per day: OR = 2.21; 95% CI: 1.33–3.68; $p = 0.002$. Lack of sleep is a significant and obvious factor: pupils who sleep less than 6 hours per day are 2.21 times more likely to have depression than those who sleep enough (over 6 hours). The 95% confidence interval (1.33–3.68) indicates a stable result, and the very low p value (0.002) reinforces the high level of confidence. This is consistent with neuroscience and psychology studies, in which sleep plays a role in regulating the central nervous system, supporting emotional processing and enhancing cognitive function. Sleep deprivation increases fatigue, negative arousal and emotional dysregulation – the basis of depression.

Feelings of social isolation: OR = 2.67; 95% CI: 1.54–4.61; $p < 0.001$. This was the most influential variable in the regression model. Pupils who felt socially isolated were 2.67 times more likely to be depressed than pupils who felt connected to their peers, teachers or school community. The confidence intervals were wide (1.54–4.61) but did not include 1, and $p < 0.001$ indicated strong statistical significance. Social isolation, a form of “silent” psychological trauma, has profound effects on pupils’ self-esteem, self-acceptance, and sense of belonging, which are closely linked to their mental health.

All factors analyzed showed independent and statistically significant associations with the risk of school depression, with social isolation, sleep deprivation, and academic stress being the strongest predictors. These findings suggest a comprehensive approach to interventions, ranging from social-emotional education (SEL), sleep and lifestyle support, to balanced school policies and positive family communication.

Table 5: Causes of depression by gender, sleep, and social isolation

Order	Variable	Comparison Group	Depression rate (%)
1	Gender	Male	23,50
		Female	39,20
2	Sleep	Enough sleep (≥ 7 hours)	18,20
		Sleep < 6 hours/day	40,60
3	Feelings of Social Isolation	No isolation	34,50
		With isolation	30,10

The survey results in Table 5 show that: Gender: Female pupils have a significantly higher rate of depression than male pupils. Sleep: Pupils who sleep less than 6 hours/day have a rate of depression nearly twice as high as pupils who sleep enough. Feelings of social isolation: Pupils who feel socially isolated have a significantly higher risk of depression.

The data show that the rate of depressive symptoms in female pupils is significantly higher than that in male pupils (the rate of depression, including all three levels, in female pupils is 39.20% compared to 23.50% in male pupils; $p < 0.05$). This result is consistent with previous studies in the field of adolescent mental health, which have shown that female pupils tend to experience more negative affectivity and are more susceptible to factors related to social relationships, role expectations, and self-image.

Clinically, this difference may reflect women's greater sensitivity to environmental stressors, or their tendency to internalize psychological conflicts, which manifest as depressive symptoms. Intervention programs targeting female pupils should focus on improving self-esteem, emotional regulation, and building a secure social support system in the school environment.

When analyzed by grade level, 10th graders had a higher rate of non-depression than 11th and 12th graders. Depression tended to increase with school age, with the highest rate of depression in 12th grade (41.50%). This may be related to exam pressure, career orientation, and increased internal conflicts during the identity formation stage.

From a psychological developmental perspective, the 12th grade stage corresponds to the Eriksonian "identity vs. role confusion" stage, where individuals must make critical decisions in the context of unequal psychological resources. The lack of programs to support career orientation and coping skills is a common weakness in specialized school environments, which focus too much on academic results.

An in-depth analysis showed that pupils with good social relationships, adequate sleep, and emotional sharing in the family had a significantly lower probability of depression. These factors were identified as protective factors in many models predicting depression in adolescents.

Pupils who slept ≥ 7 hours/night had a depression rate of only 18.20% compared to 40.60% in the group sleeping < 6 hours.

Pupils who reported having relatives or friends to share stress with had a 2.1 times lower risk of depression than those who did not.

The level of participation in extracurricular activities was negatively correlated with the level of depression ($r = -0.31$, $p < 0.01$).

These results confirm the role of social support networks, healthy lifestyle habits, and the presence of safe emotional connections in preventing and reducing the level of depression in specialized high school pupils.

Intervention solutions for depression in specialized high school pupils in the Mekong Delta

Discussion

The study recorded that the rate of pupils with depression in specialized high schools in the Mekong Delta region reached 32.9%, exceeding the national average threshold according to the Ministry of Health report in 2023 (20-25%). This is a noteworthy indicator of the mental health status of pupils in a highly selective educational environment. Analysis of related factors showed that female pupils, those who regularly took extra classes ≥ 3 times/week, slept less than 6 hours/day, felt high expectations or lacked social connection, were all at significantly higher risk of depression.

From a clinical psychology perspective, the above factors reflect the accumulation of school, social and personal stress, in which the role of sleep, family expectations, and social isolation are noteworthy, three factors with high predictive coefficients and consistent with models of depression risk in adolescents. At the same time, protective factors such as adequate sleep, social support network, and level of participation in extracurricular activities also showed a significant effect in reducing the risk of mood disorders.

Solutions

On that basis, the study proposes a system of intervention solutions based on a multi-level approach, including:

Strengthening the specialized school counseling system, organizing periodic psychological assessments, and early detection of high-risk pupils.

Applying evidence-based therapy models such as CBT and ACT to school programs, combining group therapy and case intervention.

Accompanying families through communication activities, educating parents about mental health and managing positive expectations.

Improving sleep hygiene, balancing study and life, through adjusting schedules, health education and enhancing psychological recovery activities.

Strengthening social cohesion in schools, developing peer support groups, extracurricular activities oriented to personal values, and training teachers on early detection capacity.

Intervention solutions are not only aimed at pupils with depression but also have widespread preventive value in the community of specialized school pupils, a group of subjects with both high learning capacity and psychological vulnerability due to the environment of fierce expectations and competition. The synchronous implementation of these solutions contributes to building a humane learning environment, comprehensively developing intelligence and emotions, and improving the quality of education in a sustainable direction.

Summary of results and system of intervention solutions for depression in specialized school pupils

Table 6: Summary of results and system of intervention solutions for depression in specialized school pupils

Order	Factors	Description	Proposed solutions
1	Female gender	Higher rates of depression in female pupils (OR = 1.80)	Design gender-sensitive interventions, improve self-esteem, and regulate emotions
2	≥ 3 extra classes/week	Increased risk of depression due to academic overload (OR = 2.05)	Reduce learning load, adjust schedules, and support effective learning skills
3	Lack of sleep (< 6 hours/day)	Lack of sleep increases risk of depression (OR = 2.21)	Educate on sleep hygiene, promote the habit of sleeping 7-8 hours/day
4	High expectations from parents	Increased anxiety and internal pressure (OR = 1.65)	Communicate with parents, build a model of parent-school cooperation
5	Feelings of social isolation	Strongest predictor (OR = 2.67)	Develop peer groups, social networking activities, group therapy
6	Adequate sleep	Protective factors reduce risk of depression	Encourage healthy lifestyles, reasonable rest
7	Support from relatives	2.1 times lower risk of depression compared to non-pupils	Family counseling, increase emotional connection, share with adults
8	Participation in extracurricular activities	Negative correlation with depression ($r = -0.31$)	Organize regular extracurricular activities, orient personal values

Conclusions and recommendations

Conclusions

Depressive disorders among specialized high school pupils in the Mekong Delta are emerging as a worrying mental health problem, reflecting the accumulation of many individual, family and school environment risk factors. Research data have shown that the rate of pupils with depressive symptoms exceeds the national average, with notable predictors including: female gender, academic pressure, high parental expectations, lack of sleep, and feelings of social isolation. These findings confirm the urgent need to implement systematic, individualized and contextualized school psychological interventions for specialized high school pupils.

Recommendations

From the perspective of clinical practice and school psychology, the research team proposes the following intervention directions:

Strengthening emotional regulation and stress management skills education programs, integrated into the main or extracurricular programs, to equip pupils with healthy coping mechanisms against school pressure. It is necessary to build and strengthen specialized psychological counseling rooms at each school, ensuring sufficient capacity to conduct periodic screening, early detection of risky cases and initial intervention for common disorders such as depression and anxiety. The school psychological counseling system at specialized schools, with a team of human resources trained in adolescent clinical psychology, ensures the capacity for screening, consultation and early intervention. Integrate Mental Health Education into the curriculum. Organize seminars and workshops to equip pupils with knowledge about emotional recognition, stress management skills, and healthy coping strategies based on evidence-based therapeutic models such as CBT and ACT. Review school schedules, reduce unnecessary extra hours to ensure pupils have enough time to rest, recover psychologically, and participate in extracurricular activities, an

important protective factor, towards building a balanced schedule between studying, resting, and recovering psychologically. Develop peer support models, clubs, and extracurricular activities to enhance social cohesion and combat feelings of isolation. At the same time, it is necessary to educate about “sleep hygiene” to improve the quality and duration of sleep for pupils, one of the key protective factors. Strengthening coordination between schools and families through communication and parent education programs, helping to adjust learning expectations to a reasonable level. Building close communication and cooperation channels, parent workshops, helping parents to have a correct awareness of mental health, adjusting expectations and moving from a controlling role to accompaniment, emotional support for their children.

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