

## REVIEW

# School-based strategies to prevent depression in adolescents: An integrative review

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## ABSTRACT

**Background:** Adolescents are vulnerable to psychological disorders due to rapid physical, cognitive, and psychosocial changes. Depression affects 20% of adolescents worldwide, making it a leading cause of disability. Schools are the ideal places for preventative strategies for school-aged children.

**Aim:** To provide a synthesis of effective school-based strategies to prevent depression in adolescents in Qatar.

**Methods:** The integrative review framework developed by Whittemore and Knafl was utilized to guide this review. The CINAHL, MEDLINE, and Academic Search Complete databases were systematically searched for peer-reviewed primary studies published between 2016 and 2022. Ten articles were included after considering inclusion and exclusion criteria. The quality of the included studies was assessed using the Mixed-Methods Appraisal Tool (MMAT). The Population Health Promotion Model guided the data analysis and presentation of results.

**Results:** The implementation of school-based strategies at individual and family levels is effective in preventing depression in adolescents. At the individual level, the focus is on creating a supportive environment and developing personal skills (social, behavioural regulation, emotional regulation, cognitive regulation, resilience, and coping). At the family level, the focus is on creating a supportive environment and developing personal skills (parental and social).

**Conclusion:** Prevention of depression in adolescents requires multidisciplinary school-based strategies that must focus on creating a supportive environment and developing the personal skills of students and their families. National and organizational policies should be developed in support of multidisciplinary school-based strategies to prevent depression in adolescents.

**Key Words:** Depression, Adolescent, School nurse, Students, Prevention, Intervention

## 1. INTRODUCTION

An individual's mental health is defined by the ability "to achieve optimal psychological functioning by gaining a sense of identity and self-worth, by building and developing sound family and peer relationships and achieving competence in psychological and social functioning." (p7)<sup>[1]</sup> An individual's well-being is impacted by his or her state of mental

health because it affects how the individual thinks, feels, and behaves.<sup>[2]</sup> Biological, social, and psychological factors determine a person's mental health and function within a community.<sup>[3]</sup> People who are in good mental health can think clearly, make decisions wisely, and deal with the challenges of daily life effectively.<sup>[1]</sup> Mental health not only promotes positive behaviour but also healthy relationships.

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Good mental health is essential for a happy and fulfilling life whereas poor mental health can lead to a wide range of problems for both individuals and society.<sup>[4]</sup>

Depression affects students, families, and communities.<sup>[5]</sup> Darraj et al.<sup>[4]</sup> showed that mental health problems, including depression and anxiety, commonly affect adolescents. The prevalence of depression among adolescents worldwide is estimated to be up to 20%.<sup>[4]</sup> Adolescents in the Middle East are reported to suffer from depression at higher rates than global averages; however, the prevalence varies by country, region, and cultural background.<sup>[4]</sup> When compared to other Middle Eastern countries and other countries around the world, Qatar has relatively high rates of depression among adolescents with 34.5% of adolescents affected by depression.<sup>[6]</sup>

Schools play a pivotal role in preventing depression among adolescents as schools are an essential and integral part of their lives. According to Stephan and Connors,<sup>[7]</sup> only schools can reach most school-age children and adolescents regularly and systematically around the world because students spend a significant part of daily life at schools. Furthermore, it is the school's primary responsibility to ensure the health of all students. According to the World Health Organization (WHO),<sup>[8]</sup> students at risk for depression can get supportive care from schools. Schools have an important role in the identification of students at risk for depression or students with behavioural or emotional difficulties.<sup>[7]</sup> This important role extends to referrals for relevant assessment and intervention.<sup>[7]</sup> However, a notable gap exists between adolescents' mental health needs and the available health services in school settings.<sup>[9]</sup> This review aims to explore and provide a synthesis of appropriate school-based strategies to prevent depression in adolescents in Qatar.

## 2. BACKGROUND

Mental health status is a spectrum and can change throughout a person's life. People can live happier and more productive lives by investing in mental health care and creating a support system for themselves. An individual's mental health is determined by whether he or she can achieve optimal psychological functioning, maintain secure relationships with friends and family, and cultivate psychological and social skills. Mental health has a direct correlation with physical health. Poor mental health can increase the risk of chronic diseases, whereas good mental health can improve physical health.<sup>[3]</sup> In good mental health, people are capable of thinking clearly, making wise decisions, and coping with daily challenges.

While there are several types of mental health disorders, the

most common disorders among the general population are anxiety and depression.<sup>[1]</sup> Depression is the most prevalent mental health disorder and is associated with morbidity and mortality.<sup>[5]</sup> Depression is defined as an illness when feelings of sadness, irritability, loneliness, hopelessness, and guilt persist and interfere with the ability to function.<sup>[10]</sup> The general symptoms of depression are sadness, lack of energy, and loss of interest in activities.<sup>[4]</sup> It is possible to prevent and treat depression effectively, but untreated and severe depression can increase the risk of self-harm and suicide.<sup>[11]</sup>

### 2.1 Depression in adolescents

Adolescence is a critical time in the development of healthy mental wellness as adolescents experience a variety of physical, social, psychological, and emotional changes.<sup>[12]</sup> Recently, the number of mental health disorders has significantly increased as the world fought the Coronavirus pandemic.<sup>[1]</sup> In Saudi Arabia, 52.1% of secondary school students suffer from depression with 38.2% of those being male.<sup>[4]</sup> In Qatar, the rates of depression among adolescents are high compared to other countries worldwide,<sup>[12]</sup> which could be related to the absence or lack of supportive resources. Several factors contribute to depression, including parental separation or divorce, the death of a loved one, academic failure, or physical ailments.<sup>[13]</sup> Many mental health problems in adolescence are due to depression and are associated with social and educational underachievement, smoking and substance misuse, self-harm, and suicidal ideas.<sup>[14]</sup> On the other hand, factors, such as social skills, cognitive regulation, and behavioural regulation can be considered factors that prevent depression in adolescence.<sup>[12]</sup> Therefore, adolescents need to enhance their social, problem-solving, coping, and emotional management skills to maintain their mental well-being.<sup>[12]</sup> However, many young people do not receive help or advice during this critical period of development,<sup>[15]</sup> which results in persistent psychological problems in adulthood.<sup>[14]</sup> Adolescents' mental health is particularly affected by social exclusion, discrimination, stigma, educational difficulties, risk-taking behaviours, poor physical health, and violations of human rights.<sup>[4]</sup>

### 2.2 Impact of depression

In addition to affecting mood, depression may impact academic performance and social relationships, potentially resulting in isolation among young people.<sup>[16]</sup> Depressive symptoms are associated with decreased school and work performance, impaired general social and cognitive functioning, and substance use in adolescents.<sup>[17]</sup> As a result, students with depression may experience lower energy levels, difficulties paying attention, lack of dependability, and lower mental abilities, which ultimately negatively affect their grades.<sup>[4]</sup>

Additionally, depression affects quality of life, which increases the risk of suicide and death.<sup>[13]</sup> While depression affects adolescents' physical, psychological, and emotional well-being when it is not treated in the early stage, early detection of students with depression and referral to mental health services reduces the progression of depression.<sup>[18]</sup>

### 2.3 Role of schools

Educators and administrators have started to understand that schools are not only places of academic achievement and learning but also places where the mental health and well-being of students are shaped.<sup>[15,18]</sup> Because most students' active hours are at school, school-based delivery is a viable option for proactive, preventative approaches to student mental health and well-being.<sup>[5,18]</sup> Currently, the prevention programs in Qatar mostly target students' physical health with the exception of the mental health referral program. Contrarily, schools around the world implement many prevention programs for children and adolescents. These strategies can be impactful at different levels of prevention. At a primary level, depression can be prevented by improving the academic performance of students and by employing mental health professionals in schools, such as nurses, social workers, psychologists, and counsellors.<sup>[19,20]</sup> At a secondary level, the identification of depressed students in schools is a basic and necessary step; therefore, trained staff are needed for screening students. At a tertiary level, finding treatment options, such as cognitive therapy, is vital.<sup>[21]</sup> However, the implementation of many depression prevention interventions has been based on creating a universal program rather than focusing solely on depressed students.<sup>[5]</sup> Mental health promotion programs in schools facilitate students' psychological development, and they target adolescents regardless of their predisposition for mental health issues.<sup>[22]</sup>

### 2.4 Primary Health Care Corporation

The Primary Health Care Corporation (PHCC) in Qatar focuses on mental healthcare by delivering comprehensive healthcare in the community. According to Al-Harashsheh et al.,<sup>[11]</sup> PHCC chooses important values such as leadership, collaboration, inclusion, diversity, teamwork, respect, and empowerment, so clients can take greater ownership of their mental health and wellness needs. Nurses specially trained in preventive care, health assessment, and referral procedures are employed by PHCC to serve students. A school nurse provides school health services and programs for students and school staff. However, no management process or guideline is available to help school nurses and school administration manage the high level of depression in adolescents in Qatar. This review aims to explore and discover

appropriate school-based strategies to prevent depression in adolescents in Qatar.

## 3. METHODOLOGY

Strategies that prevent depression in adolescents were found using Whittemore and Knaf's integrative literature review framework. Whittemore and Knaf<sup>[23]</sup> argued that integrative review is the most comprehensive review method which allows for a better understanding of a phenomenon through the inclusion of experimental and non-experimental research. Whittemore and Knaf's<sup>[23]</sup> framework consists of five stages: problem identification, literature search, data evaluation, data analysis, and the presentation of results.

### 3.1 Problem identification

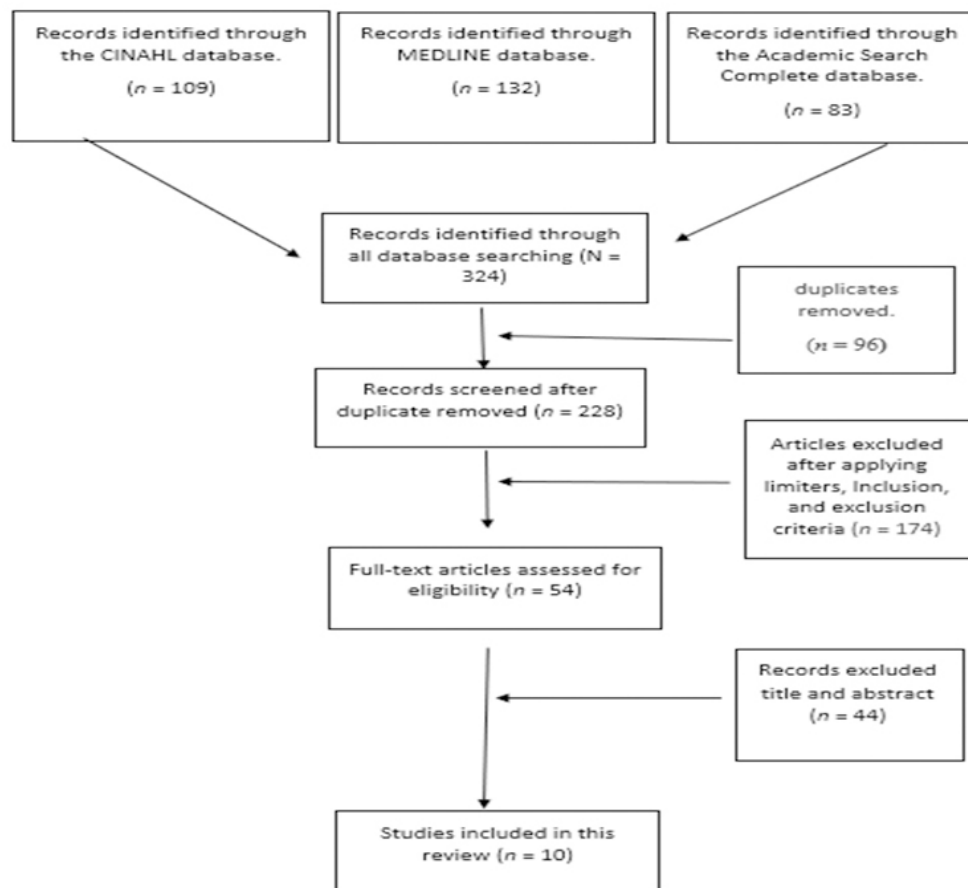
Depression affects 34.5% of adolescents in Qatar.<sup>[6]</sup> According to the WHO,<sup>[8]</sup> schools are ideal locations for children and adolescents to develop positive attitudes and establish healthy lifestyles. However, in Qatar, school administration and nurses lack a process or guideline for managing depression in adolescents, which has resulted in a lack of information in schools about how to prevent depression or support depressed students.

### 3.2 Literature search

An expert librarian assisted with the literature search for this review, using the Cumulative Index of Nursing and Allied Health Literature (CINAHL), Medical Literature Analysis and Retrieval System Online (MEDLINE), and Academic Search Complete databases. The keywords included *depress\**, *adolescen\**, *“school-aged children,”* *teenager\**, *teens*, *student*, *students*, *“middle-school\*,”* *“high-school\*,”* *“young adult\*,”* *“school nurs\*,”* *“school health service\*,”* *“preventive health care,”* *“primary prevention,”* *prevent\**, *“early intervention\*,”* and *control*. The findings of the search were broadened or narrowed using the Boolean operators AND and OR. The limiters were publication date between 2016 and 2022, peer review, and English language. A total of 324 articles were identified for possible inclusion after applying the limiters. Covidence systematic review software was used to remove 96 duplicate articles, resulting in 228 articles. The titles and abstracts of the remaining articles were screened according to the inclusion and exclusion criteria (see Table 1), resulting in the elimination of 174 articles. After a full-text review, 44 of the remaining 54 articles were excluded because they did not discuss prevention for depression in adolescents in schools. Thus, ten articles were considered relevant for inclusion in this review (see Figure 1).

**Table 1.** Inclusion and exclusion criteria

Inclusion criteria	Exclusion criteria
<ul style="list-style-type: none"> <li>• School-aged adolescents (10–19 years old)</li> <li>• School nurses, school counselors, school psychologists, families, and teachers</li> <li>• Focus on depression</li> <li>• School setting</li> <li>• English language</li> <li>• Peer-reviewed between 2016 and 2022</li> <li>• Primary research studies</li> </ul>	<ul style="list-style-type: none"> <li>• Children (below 10 years old)</li> <li>• Adults (above 19 years old)</li> <li>• Nurses other than school nurses</li> <li>• Hospital or community settings</li> <li>• focus on other mental disorders</li> <li>• Not in a school setting</li> <li>• Non-English language</li> <li>• Published before 2016 and not peer-reviewed</li> <li>• Non-primary research studies</li> </ul>



**Figure 1.** Literature search flow diagram

**3.3 Data evaluation**

Critical appraisal of the 10 articles was conducted using the Mixed Method Appraisal Tool (MMAT) version 2018. The MMAT is used to evaluate the quality of qualitative, quantitative, and mixed-method studies as well as other types of research.<sup>[24]</sup> The MMAT is made up of two main steps: (a) two general screening questions and (b) new criteria within five categories of research.<sup>[24]</sup> If both questions in the first step are answered “yes,” the appraisal continues to the sec-

ond stage to evaluate the methodology of the study. The MMAT discourages calculating an overall score but advises providing a more detailed presentation to inform the quality of the included studies in each criterion.<sup>[25]</sup> According to this critical appraisal, the quality of the 10 articles included was good.

**3.4 Data analysis**

Data analysis is the process of extracting, ordering, coding, categorizing, and summarizing information from primary

sources.<sup>[26]</sup> Whittemore and Knaf's<sup>[23]</sup> data analysis process includes data reduction, data display, data comparison, and conclusion drawing and verification. A theoretical or philosophical perspective can facilitate the analysis process. The Population Health Promotion Model (PHPM) guided the analysis of data in this review. The PHPM provides a comprehensive framework for approaching population health. In this approach, health promotion strategies can be implemented through actions on the Socio-Ecological Determinants of Health (SEDoH).<sup>[27]</sup>

The PHPM suggests that decisions must target three main dimensions to create effective interventions: health determinants, comprehensive active strategies, and multiple levels of involvement.<sup>[27]</sup> According to Kushner and Jackson,<sup>[28]</sup> the health determinants dimension explains how SEDoH influences a population's health status and WHAT should be acted upon. In this dimension, a broad range of factors is considered, including education, income, social status, social support networks, physical environments, work conditions, biology, and genetics as well as healthy child development and personal health practices, coping skills, and health services. The comprehensive strategies dimension explains HOW to act to have the highest impact on the population. The focus of the strategies should be on creating a supportive environment, developing personal skills, strengthening community action, building healthy public policy, and reorienting health services. The multiple levels of involvement dimension suggests with WHOM these actions should be taken. This model suggests the actions should be with individuals, families, and communities.<sup>[27]</sup>

### 3.4.1 Data reduction

In the data reduction phase, the data are categorized based on chronology, setting, evidence types, characteristics of the samples, or predetermined conceptual groups.<sup>[23]</sup> Data reduction involves extracting and coding data using spreadsheets and matrices to organize, simplify, and abstract the data.<sup>[23]</sup> Organizing the data in a manageable way facilitates comparison between the primary sources.<sup>[23]</sup> In this stage, data was extracted and summarized in an extraction table based on the purpose of this review and the PHPM framework.

### 3.4.2 Data display

Data display allows interpretation and discussion based on matrices, graphs, charts, and networks.<sup>[23]</sup> Using these patterns as a starting point, the relationships inside and across sources can be understood by creating a display of the data around a particular variable.<sup>[23]</sup> In this review, data was organized following the PHPM framework at the individual level and the family level.

### 3.4.3 Data comparison

The process of data comparison involves noticing similarities among codes, patterns, and/or themes to further interpretation and comparison.<sup>[23]</sup> In the data comparison stage of this review, the primary and secondary authors as well as an expert psychologist thematically grouped and coded the data. Figure 2 and Figure 3 show the strategies for adolescents and parents to decrease depression.

### 3.4.4 Conclusion drawing and verification

This phase guides the authors to describe the relationship between the data.<sup>[23]</sup> In this stage, details are integrated into broader generalizations, simplifying the interpretation.<sup>[23]</sup> The main strategies for adolescents and their families were found to be those that focus on developing personal skills and creating a supportive environment (see Figures 4 & 5).

## 4. RESULTS

This review included 10 primary studies that explored school-based strategies for the prevention of depression in adolescents. These studies had quantitative designs and were conducted across five continents: Europe (n = 4), Australia (n = 2), North America (n = 2), Africa (n = 1), and Asia (n = 1). However, we did not find any articles from the Gulf region. Adolescents in the studies were between 12 to 19 years old while the sample size was between 15 and 1,826 participants. The PHPM was used to present the findings regarding the school-based strategies for the prevention of depression in adolescents. This review found interventions were at two levels: individual and family. Individual students were the focus of nine studies,<sup>[3,28-35]</sup> while only one study<sup>[16]</sup> provided information on interventions targeting both students and families.

### 4.1 Individual level

#### 4.1.1 Socio-ecological determinants of health

The SEDoH at the individual level where action should be taken to prevent depression in adolescents includes social support networks as well as personal health practices and coping skills. In this review, Resilient Families<sup>[16]</sup> and Integrative Community Therapy (ICT)<sup>[28]</sup> programs were found to focus on social support networks to reduce depression in adolescents. This review found six programs focused on personal health practices and coping skills that help to decrease depressive symptoms in adolescents, including Positive Psychology Intervention (PPI),<sup>[3]</sup> Unified Protocols for Transdiagnostic Treatment of Emotional Disorders in Adolescents (UP-A),<sup>[31]</sup> Op Volle Kracht (OVK),<sup>[33]</sup> Coping Skills Program,<sup>[34]</sup> Handle Stress Workshop,<sup>[29]</sup> and CBT Stress Management Program.<sup>[29,31,33,35]</sup>

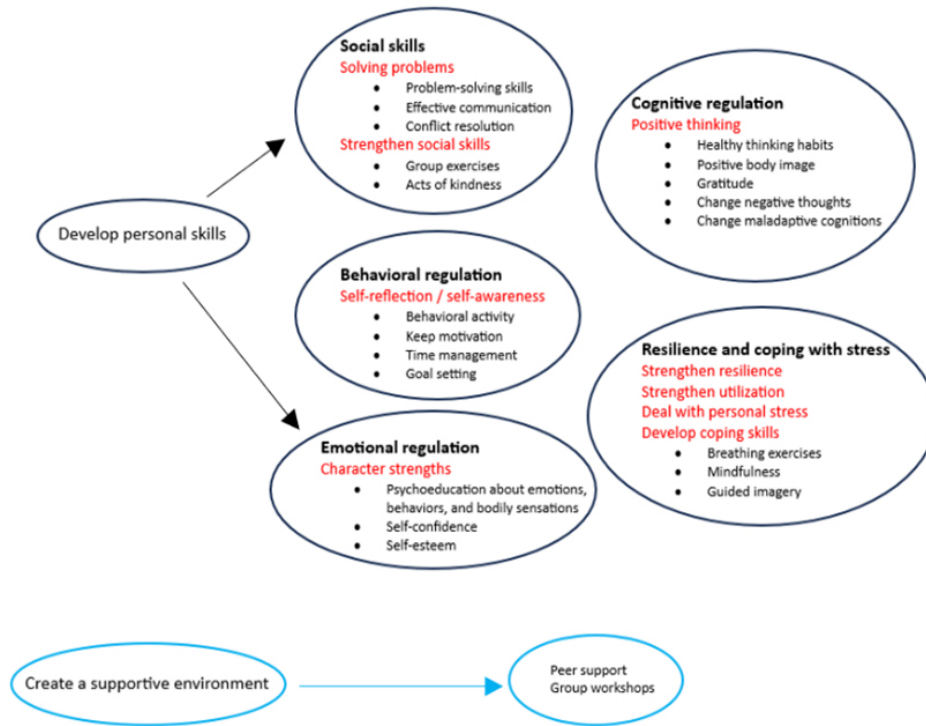


Figure 2. Strategies for adolescents to decrease depression

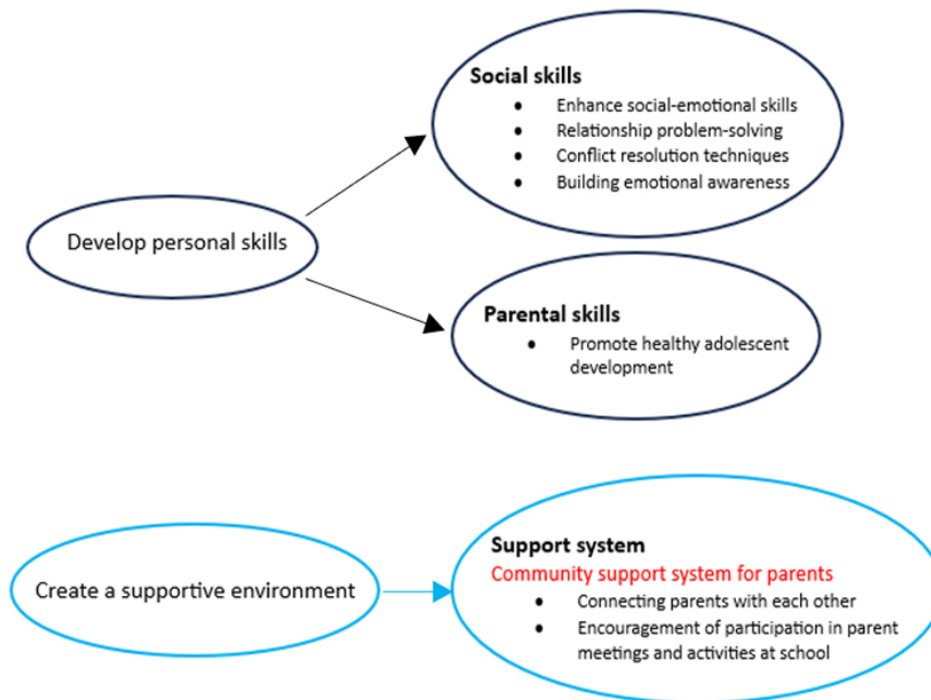
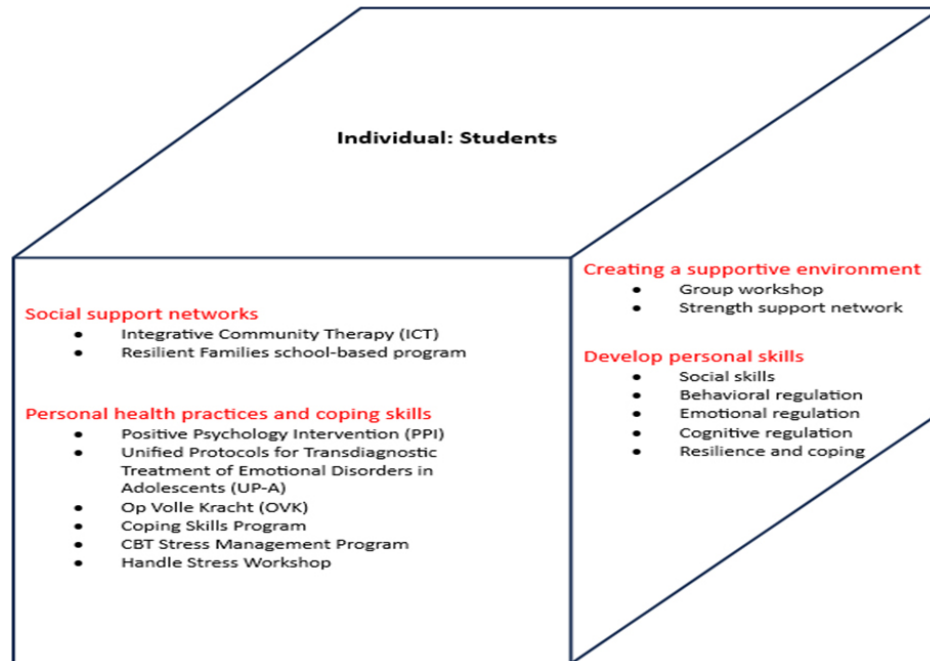
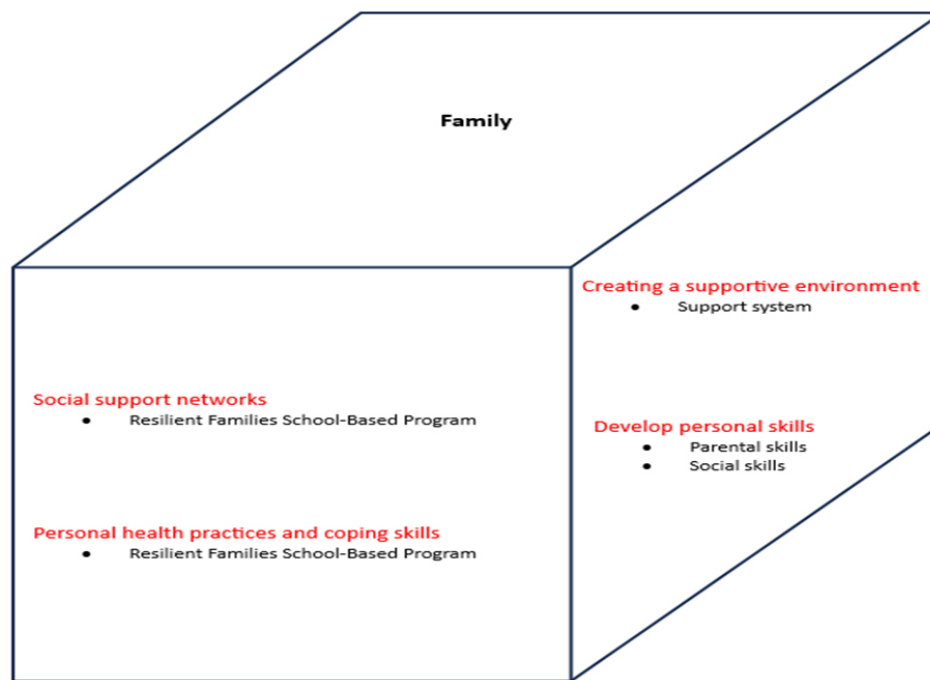


Figure 3. Parental strategies to decrease depression in adolescents



**Figure 4.** Main strategies at the individual level within the Population Health Promotion Model<sup>[27]</sup>



**Figure 5.** Main strategies at the family level within the Population Health Promotion Model<sup>[27]</sup>

**4.1.2 Strategies**

Creating a supportive environment and developing personal skills are the focal points of the school-based strategies for the prevention of depression in adolescents. The creation of a supportive environment was related to reducing depressive symptoms in adolescents. Strategies for creating a supportive

environment include peer support<sup>[28]</sup> and providing group workshops.<sup>[16,28,32]</sup>

Strategies for developing personal skills were focused on the enhancement of social skills, cognitive regulation, behavioral regulation, emotional regulation as well as resilience and coping skills. Enhancement of social skills was re-

lated to the improvement of depressive symptoms in adolescents<sup>[3,28–32,34,35]</sup> through a focus on problem-solving skills<sup>[16,29–32,34]</sup> and strengthening social skills.<sup>[28]</sup> Adolescents were also taught effective communication skills<sup>[30,32,35]</sup> and conflict resolution techniques<sup>[16,28]</sup> to enhance their problem-solving skills. Enhanced problem-solving skills helped adolescents in solving relationship problems and dealing with family expectations.<sup>[29,34]</sup> In addition, social skills were strengthened through group exercise workshops<sup>[32]</sup> and encouraging acts of kindness in school.<sup>[3]</sup>

Improvement in cognitive regulation was associated with decreased depression in adolescents.<sup>[3,30,31,33–35]</sup> Positive thinking was found to be the main factor for the improvement of cognitive regulation.<sup>[30,34]</sup> To improve the positive thinking skills of adolescents, they were taught how to develop healthy thinking habits,<sup>[30]</sup> such as positive body image,<sup>[35]</sup> gratitude-enhanced thinking,<sup>[3]</sup> changing negative thoughts,<sup>[34]</sup> and changing maladaptive cognitions.<sup>[33]</sup> Behavioral regulation was enhanced through the improvement of depressive symptoms in adolescents,<sup>[30,31]</sup> primarily through self-reflection or self-awareness.<sup>[30]</sup> Self-reflection or self-awareness was enhanced by teaching adolescents how to reflect on their behavioural activity and keep motivated<sup>[29–31]</sup> through time management<sup>[30]</sup> and goal setting.<sup>[30]</sup> The development of emotional regulation helped to decrease depressive symptoms in adolescents.<sup>[3,28,31,35]</sup> Strength of character was found to be the major factor that improved emotional regulation,<sup>[3]</sup> which was strengthened by offering psychoeducation about emotions, behaviour skills, and body sensations<sup>[3,31]</sup> as well as strategies to improve self-confidence<sup>[28]</sup> and build positive self-esteem.<sup>[35]</sup> Reducing depressive symptoms was found to improve adolescents' resilience and ability to cope with stress.<sup>[28,29,34]</sup> Adolescents in this review were taught ways to strengthen their resilience,<sup>[28]</sup> utilize their strength,<sup>[3]</sup> and develop coping skills<sup>[35]</sup> to enhance their ability to deal with stress. The development of coping skills was attained through breathing exercises,<sup>[30,31]</sup> mindfulness,<sup>[30]</sup> and guided imagery.<sup>[30]</sup>

## 4.2 Family level

### 4.2.1 Socio-ecological determinants of health

The SEDoH at the family level where action could be taken to prevent depression in adolescents were social support networks as well as personal health practices and coping skills for parents.<sup>[16]</sup> This review found the Resilient Families School-Based Program targeting parents to be an effective program to reduce depression in adolescents.

### 4.2.2 Strategies

Creating a supportive environment and developing personal skills were the main strategies at the family level which

help to prevent depression in adolescents. The creation of a supportive environment was related to the reduction of symptoms of depression in adolescents.<sup>[16]</sup> The most significant factor in the enhancement of support systems was found to be establishing a community support system for parents.<sup>[16]</sup> Strategies for building a community support system include connecting parents with each other and encouraging parents' participation in parent meetings and activities at school.<sup>[16]</sup> Strategies for developing personal skills were directed at the improvement of parental and social skills. Improvement in parental and social skills was related to the reduction of depressive symptoms in adolescents.<sup>[16]</sup> The main parental skill improved in the literature was teaching ways of promoting healthy adolescent development.<sup>[16]</sup> The main focus of improving social skills in families was found to be the enhancement of the social-emotional skills of parents. To enhance these skills, parents were taught relationship problem-solving skills, conflict-resolution techniques, and building emotional awareness.<sup>[16]</sup>

## 5. DISCUSSION

This integrative review aimed to explore school-based strategies to prevent depression in adolescents and to provide empirical evidence to guide the development of education sessions for school nurses, school staff, and families who encounter these students in the state of Qatar. However, we did not find any research conducted in Qatar or the Gulf region. As a result, our findings surpass our aim and can apply to other regions of the world. The findings of this integrative review will help the school health team in PHCC develop guidelines for preventing depression in schools. The suggested strategies are based on universal programs, so the guidelines should focus on all students in all schools as a preventative measure rather than focusing only on depressed students. This approach could also help in reducing the negative effects of stigma and peer pressure. The focus of guidelines should be on two strategies: creating a supportive environment and developing personal skills at the individual and family levels.

## 5.1 Individual level

### 5.1.1 Creating a supportive environment

Creating a supportive environment includes group workshops to improve support from peers. Improved support from peers reduces depressive symptoms in adolescents. This finding is in agreement with previous studies. According to Young et al.,<sup>[37]</sup> peer support decreases depressive symptoms in students. In addition, Dishion et al.<sup>[38]</sup> found that adolescents, families, and peers are important when developing personalized interventions to prevent problem behaviours and adjustment issues.



### 5.1.2 Developing personal skills

Developing personal skills includes strategies that focus on the enhancement of social skills, cognitive regulation, behavioural regulation, emotional regulation, and resilience as well as coping skills. These strategies help adolescents prevent depression and reduce depressive symptoms. The findings of this review are similar to those of earlier studies. Moeller and Seehuus<sup>[39]</sup> and Carrion et al.<sup>[40]</sup> found that social skills play an important role in reducing depression in students. Spence et al.<sup>[41]</sup> found that problem-solving helps adolescents to reduce depression. According to Ha et al.,<sup>[42]</sup> positive problem-solving and conflict resolution help in lowering depressive symptoms. Belcher et al.<sup>[43]</sup> found that monitoring and modulating cognition, emotion, and behaviour self-regulation help to reduce and prevent symptoms associated with depression. Young et al.<sup>[37]</sup> stated that the development of emotional regulation helped adolescents to reduce depressive disorders. Similarly, Van Beveren et al.<sup>[44]</sup> showed that emotional awareness was a good strategy for reducing depressive symptoms. However, Possel et al.<sup>[45]</sup> claimed that there were no significant differences between their training and control groups after a school-based prevention program focusing on cognition, emotion, and behaviour therapy.

## 5.2 Family level

### 5.2.1 Creating a supportive environment

Creating a supportive environment at the family level acts as a support system for the improvement of depressive symptoms in adolescents. Similarly, Arnold and Baker<sup>[16]</sup> stated that communication and cooperation with parents helped to reduce depression in adolescents. Family environmental factors have also been found to have a significant improvement in depression in students.<sup>[45]</sup> According to Van Harmelen et al.,<sup>[47]</sup> positive family environments reduce adolescents' depressive symptoms. Lewis et al.<sup>[48]</sup> found that known risk factors for adolescent depression may be significantly addressed through family-based interventions.

### 5.2.2 Developing personal skills

Strategies for developing personal skills are directed at the improvement of parental and social skills. This review found strategies that help in developing personal skills are directed at the improvement of parenting and social skills for families to reduce adolescents' depression. The results of this integrative review correspond well with those of earlier studies. Karaer and Akdemir<sup>[49]</sup> found that improvement in parental attitudes, social support, and emotional regulation helped to decrease depression in adolescents. Yap et al.<sup>[50]</sup> found that strategies for parenting play a critical role in preventing adolescent depression. Developing positive perceptions has

also been identified as a coping strategy for adolescents and families to reduce depression.<sup>[51]</sup>

## 5.3 Strengths and limitations

This integrative review has several strengths and limitations. The systematic approach provided by Whitemore and Knaff's integrative review framework is the major strength of this study. The support of three reviewers for all steps of the review and an expert librarian in the literature search are assets. Another strength is the use of the Covidence systematic review tool to screen the articles. In addition, all articles were primary studies, peer-reviewed, and published between 2016 and 2022. The use of a reliable and credible tool to critically appraise the included articles adds to the credibility of this review. An expert psychologist's support during the final stage of analysis was also an asset. The major limitation of this study was the absence of studies focused on strategies to prevent depression in adolescents in Qatar or the Gulf region. Moreover, the search strategy limited the search to English-language studies, which may have excluded studies published in other languages that addressed strategies to reduce depression in adolescents. In addition, no qualitative studies were found for this review.

## 5.4 Implications for practice and recommendations

This integrative review should be considered the first in Qatar to explore effective school-based strategies to prevent depression in adolescents. Through an increased understanding of health determinants, PHCC can provide more sensitive care to adolescents and their families in reducing depression in Qatar. This approach will guide future strategies to focus on the community and policy levels which will address the root causes of depression. Determinants of health and other strategies inside the PHPM are important for optimal health at the population level. Therefore, future research should focus on understanding the impact of other levels of society on the prevention of depression in adolescents. More research is needed to fill knowledge gaps about depression in adolescents by focusing on all levels of the PHPM. In addition, the Ministry of Health needs to add the promotion of mental health to the existing policy for schools. An education program and guidelines should be developed for the improvement of mental health in schools especially for adolescents. Finally, counselling, support, and guidance services should be available in schools to support the mental health of adolescents.

## 6. CONCLUSION

An exploration of the appropriate school-based strategies to prevent depression in adolescents was the focus of this integrative review. The findings indicate that universal school-

based strategies must focus on creating a supportive environment and improving personal development for students and their families. These strategies require a multidisciplinary approach. To achieve this goal, these strategies require the development of national and organizational policies. This review provides a foundation for stakeholders in creating an effective program in schools to prevent depression in adolescents. Further research is needed to explore the effectiveness of these strategies in Qatar.

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Not applicable.

## AUTHORS CONTRIBUTIONS

SA contributed to the design, framework, data analysis, writing, and editing of the review. Dr. AT contributed to the review's design, data evaluation and analysis, drafting, and revision. MM was responsible for the design and drafting of the manuscript. DF made substantial contributions to the design, drafting, and revision of the review. SA contributed substantially to the design of the review and the literature search.

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## INFORMED CONSENT

Not applicable.

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## DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

## DATA SHARING STATEMENT

No additional data are available.

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## REFERENCES

- [1] Al Harasheh S, Nazeer A, Saxena S, et al. Child and adolescent mental health. 2020. Available from: <https://2020.wish.org.qa/app/uploads/2020/11/WISH-2020-Child-and-Adolescent-Mental-Health-revisions-Policy-Document-ENG.pdf>
- [2] Ince MA. I'm worried about depression-what should I know? JAMA Internal Medicine. 2019; 179(11): 1612. PMID:31479146. <https://doi.org/10.1001/jamainternmed.2019.0637>
- [3] El-Abbassy A, Salam A, EL Berry KI, et al. Positive psychology intervention for promoting mental health, life satisfaction and happiness level among adolescents. Systematic Reviews in Pharmacy. 2020; 11(10): 996-1008.
- [4] Darraj H, Mahfouz MS, Sanosi RA, et al. The effects of an educational program on depression literacy and stigma among students of secondary schools in Jazan City, 2016: a cluster-randomized controlled trial study protocol. Medicine. 2018; 97(18): 1-4. PMID:29718901. <https://doi.org/10.1097/MD.00000000000009433>
- [5] Mendelson T, Tandon D. Prevention of depression in childhood and adolescence. Child and Adolescent Psychiatric Clinics of North America. 2016; 25(2): 201-18. PMID:26980124. <https://doi.org/10.1016/j.chc.2015.11.005>
- [6] Al-Kaabi N, Selim N, Singh R, et al. Prevalence and determinants of depression among Qatari adolescents in secondary schools. Family Medicine and Medical Science Research. 2017; 6(3): 1000219. <https://doi.org/10.4172/2327-4972.1000219>
- [7] Stephan S, Connors E. School nurses' perceived prevalence and competence to address student mental health problems. Advances in School Mental Health Promotion. 2013; 6(3): 174-88. <https://doi.org/10.1080/1754730X.2013.808889>
- [8] World Health Organization. Adolescent and young adult health. 2022. Available from: <https://www.who.int/news-room/fact-sheets/detail/adolescents-health-risks-and-solutions>
- [9] Weist MD, Rubin M, Moore E, et al. Mental health screening in schools. Journal of School Health. 2007; 77(2): 53-8. PMID:1722155. <https://doi.org/10.1111/j.1746-1561.2007.00167.x>
- [10] American Academy of Child & Adolescent Psychiatry. Depression in Children and Teens. 2013. Available from: [https://www.aacap.org/AACAP/Families\\_and\\_Youth/Facts\\_for\\_Families/FFF-Guide/The-Depressed-Child-004.aspx](https://www.aacap.org/AACAP/Families_and_Youth/Facts_for_Families/FFF-Guide/The-Depressed-Child-004.aspx)

- [11] Michael K, George M, Splett J, et al. Preliminary outcomes of a multi-site, school-based modular intervention for adolescents experiencing mood difficulties. *Journal of Child & Family Studies*. 2016; 25(6): 1903-15. <https://doi.org/10.1007/s10826-016-0373-1>
- [12] Al-Muhannadi M, Al-Karbi K, Amran H, et al. Prevalence and co-occurrence of major depression and generalized anxiety disorders among adolescents in Qatar. *World Family Medicine*. 2021; 19(8): 42-6. <https://doi.org/10.5742/MEWFM.2021.94094>
- [13] Morgan KI, Townsend MC. *Davis advantage for psychiatric mental health nursing*. 10<sup>th</sup> ed. F. A. Davis; 2020.
- [14] Haddad M, Pinfold V, Ford T, et al. The effect of a training programme on school nurses' knowledge, attitudes, and depression recognition skills: the QUEST cluster randomised controlled trial. *International Journal of Nursing Studies*. 2018; 83: 1-10. PMID:29684829. <https://doi.org/10.1016/j.ijnurstu.2018.04.004>
- [15] Hart LM, Cox GR, Lees L. Teaching mental health first aid in the school setting: a novel approach to improving outcomes for common adolescent mental disorders. *Current Opinion in Pediatrics*. 2018; 30(4): 478-82. PMID:29771757. <https://doi.org/10.1097/MO.P.0000000000000639>
- [16] Arnold J, Baker C. The role of mental health nurses in supporting young people's mental health: a review of the literature. *Mental Health Review Journal*. 2018; 23(3): 197-220. <https://doi.org/10.1108/MHRJ-09-2017-0039>
- [17] Singh N, Minaie MG, Skvare DR, et al. Impact of a secondary school depression prevention curriculum on adolescent social-emotional skills: evaluation of the resilient families program. *Journal of Youth & Adolescence*. 2019; 48(6): 1100-15. PMID:30805853. <https://doi.org/10.1007/s10964-019-00992-6>
- [18] Seidler A, Spanos S, Calear A, et al. School-based depression and anxiety prevention programs: an updated systematic review and meta-analysis. *Clinical Psychology Review*. 2021; 89: 102079. PMID:34571372. <https://doi.org/10.1016/j.cpr.2021.102079>
- [19] Desrochers JE, Houck GM. *Depression in children and adolescents: guidelines for school practice*. National Association of School Nurses; 2013.
- [20] Allison VL, Nativio DG, Mitchell AM, et al. Identifying symptoms of depression and anxiety in students in the school setting. *The Journal of School Nursing*. 2013; 30(3): 165-72. PMID:23924516. <https://doi.org/10.1177/1059840513500076>
- [21] Jordan K, Harris H, Reese K, et al. A qualitative exploration of school nurse continuing education needs. *The Journal of School Nursing*. 2021; 0(0). PMID:34873960. <https://doi.org/10.1177/10598405211064146>
- [22] Bastounis A, Callaghan P, Banerjee A, et al. The effectiveness of the Penn Resiliency Programme (PRP) and its adapted versions in reducing depression and anxiety and improving explanatory style: a systematic review and meta-analysis. *Journal of Adolescence*. 2016; 52(1): 37-48. PMID:27494740. <https://doi.org/10.1016/j.adolescence.2016.07.004>
- [23] Whittemore R, Knafk K. The integrative review: updated methodology. *Journal of Advanced Nursing*. 2005; 52(5): 546-53. PMID:16268861. <https://doi.org/10.1111/j.1365-2648.2005.03621.x>
- [24] Hong Q, Fàbregues S, Bartlett G, et al. The Mixed Methods Appraisal Tool (MMAT) version 2018 for information professionals and researchers. *Education for Information*. 2018; 34(4): 285-91. <https://doi.org/10.3233/EFI-180221>
- [25] Hong QN, Gonzalez-Reyes A, Pluye P. Improving the usefulness of a tool for appraising the quality of qualitative, quantitative, and mixed methods studies, the Mixed Methods Appraisal Tool (MMAT). *Journal of Evaluation in Clinical Practice*. 2018; 24(3): 459-67. PMID:29464873.
- [26] Ravenna J, Cleaver K. School nurses' experiences of managing young people with mental health problems. *The Journal of School Nursing*. 2016; 32(1): 58-70. PMID:26656230. <https://doi.org/10.1177/1059840515620281>
- [27] Hamilton N, Bhatti T. *Population health promotion: an integrated model of population health and health promotion*. 1996. Retrieved from Public Health Agency of Canada website: <http://www.phac-aspc.gc.ca/ph-sp/php-ppsp/index-eng.php>
- [28] Kushner KE, Jackson M. Health and wellness. In: Astle BJ, Dugleby W, editors. *Canadian fundamentals of nursing*. 6th ed. Milton: Elsevier Canada; 2019. 1-17 p.
- [29] Alves I, Felipe B, Moreira D. Integrative community therapy - interventional strategies in the reduction of depression symptoms in adolescents: a quasi-experimental study. *International Journal of Mental Health Nursing*. 2021; 30(51): 142636. PMID:34142419. <https://doi.org/10.1111/inm.12900>
- [30] Brown JSL, Blackshaw E, Stahl D, et al. School-based early intervention for anxiety and depression in older adolescents: a feasibility randomised controlled trial of a self-referral stress management workshop programme ("DISCOVER"). *Journal of Adolescence*. 2019; 71(1): 150-61. PMID:30738219. <https://doi.org/10.1016/j.adolescence.2018.11.009>
- [31] Carr KL, Stewart MW. Effectiveness of school-based health center delivery of cognitive skills building intervention in young, rural adolescents: potential applications for addiction and mood. *Journal of Pediatric Nursing*. 2019; 47: 23-9. PMID:31022629. <https://doi.org/10.1016/j.pedn.2019.04.013>
- [32] Escalera J, Chorot P, Sandín B, et al. An open trial applying the unified protocol for transdiagnostic treatment of emotional disorders in adolescents (UP-A) adapted as a school-based prevention program. *Child & Youth Care Forum*. 2019; 48(1): 29-53. <https://doi.org/10.1007/s10566-018-9471-0>
- [33] Garmy P, Clausson EK, Berg A, et al. Evaluation of a school-based cognitive-behavioral depression prevention program. *Scandinavian Journal of Public Health*. 2019; 47(2): 182-9. PMID:29226799. <https://doi.org/10.1177/1403494817746537>
- [34] Poppelaars M, Tak Y, Aschoff A, et al. A randomized controlled trial comparing two cognitive-behavioral programs for adolescent girls with subclinical depression: a school-based program (Op Volle Kracht) and a computerized program (SPARX). *Behaviour Research and Therapy*. 2016; 80: 33-42. PMID:27019280. <https://doi.org/10.1016/j.brat.2016.03.005>
- [35] Singhala M, Munivenkatappab M, Kommub J, et al. Efficacy of an indicated intervention program for Indian adolescents with sub-clinical depression. *Asian Journal of Psychiatry*. 2018; 33: 99-104. PMID:29549819. <https://doi.org/10.1016/j.ajp.2018.03.007>
- [36] Tomyn J, Fuller-Tyszkiewicz M, Richardson B, et al. A comprehensive evaluation of a universal school-based depression prevention program for adolescents. *Journal of Abnormal Child Psychology*. 2016; 44(8): 1621-33. PMID:26873012. <https://doi.org/10.1007/s10802-016-0136-x>
- [37] Young S, Sandman F, Craske M. Positive and negative emotion regulation in adolescence: links to anxiety and depression. *Brain Sciences*. 2019; 9(4): 76. PMID:30934877. <https://doi.org/10.3390/brainsci9040076>
- [38] Dishion TJ, Mun CJ, Ha T, et al. Observed family and friendship dynamics in adolescence: a latent profile approach to identifying "mesosystem" adaptation for intervention tailoring. *Prevention Sci-*

- ence. 2019; 20(1): 41-55. PMID:29968007. <https://doi.org/10.1007/s11121-018-0927-0>
- [39] Moeller W, Seehuus M. Loneliness as a mediator for college students' social skills and experiences of depression and anxiety. *Journal of Adolescence*. 2019; 73(1): 1-13. PMID:30933717. <https://doi.org/10.1016/j.adolescence.2019.03.006>
- [40] Carrion R, Carballido B, Villardon L. Children and adolescents mental health: a systematic review of interaction-based interventions in schools and communities. *Frontiers in Psychology*. 2019; 10: 918. PMID:31068881. <https://doi.org/10.3389/fpsyg.2019.00918>
- [41] Spence S, Barrett P, Turner C. Psychometric properties of the spence children's anxiety scale with young adolescents. *J Anxiety Disord*. 2003; 17(6): 605-25. PMID:14624814. [https://doi.org/10.1016/S0887-6185\(02\)00236-0](https://doi.org/10.1016/S0887-6185(02)00236-0)
- [42] Ha T, Overbeek G, Cillessen H, et al. A longitudinal study of the associations among adolescent conflict resolution styles, depressive symptoms, and romantic relationship longevity. *Journal of Adolescence*. 2012; 35(5): 1247-54. PMID:22682890. <https://doi.org/10.1016/j.adolescence.2012.04.009>
- [43] Belcher B, Zink J, Azad A, et al. The roles of physical activity, exercise, and fitness in promoting resilience during adolescence: effects on mental well-being and brain development. *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging*. 2021; 6(2): 225-37. PMID:33067166. <https://doi.org/10.1016/j.bpsc.2020.08.005>
- [44] Van Beveren ML, Goossens L, Volkaert B. How do I feel right now? Emotional awareness, emotion regulation, and depressive symptoms in youth. *Eur Child Adolesc Psychiatry*. 2019; 28: 389-98. PMID:30069654. <https://doi.org/10.1007/s00787-018-1203-3>
- [45] Possel P, Horn A, Groen G, et al. School-based prevention of depressive symptoms in adolescents: a 6-month follow-up. *Journal of the American Academy of Child & Adolescent Psychiatry*. 2004; 43(8): 1003-10. PMID:15266195. <https://doi.org/10.1097/01.chi.0000126975.56955.98>
- [46] Yu Y, Yang X, Yang Y, et al. The role of family environment in depressive symptoms among university students: a large sample survey in China. *PLoS One*. 2015; 10(12): e0143612. PMID:26629694. <https://doi.org/10.1371/journal.pone.0143612>
- [47] Van Harmelen L, Gibson L, Clair C, et al. Friendships and family support reduce subsequent depressive symptoms in at-risk adolescents. *PLOS ONE*. 2016; 11(5): e0153715. PMID:27144447. <https://doi.org/10.1371/journal.pone.0153715>
- [48] Lewis AJ, Bertino MD, Skewes J. Adolescent depressive disorders and family-based interventions in the family options multicenter evaluation: study protocol for a randomized controlled trial. *Trials*. 2013; 14: 384. PMID:24220547. <https://doi.org/10.1186/1745-6215-14-384>
- [49] Karaer Y, Akdemir D. Parenting styles perceived social support and emotion regulation in adolescents with internet addiction. *Comprehensive Psychiatry*. 2019; 92: 22-7. PMID:31003724. <https://doi.org/10.1016/j.comppsy.2019.03.003>
- [50] Yap MBH, Pilkington PD, Ryan SM, et al. Parenting strategies for reducing the risk of adolescent depression and anxiety disorders: a Delphi consensus study. *Journal of Affective Disorders*. 2014; 156: 67-75. PMID:24359862. <https://doi.org/10.1016/j.jad.2013.11.017>
- [51] Colomba MV, Santiago ES, Rosselló J. Coping strategies and depression in Puerto Rican adolescents: an exploratory study. *Cultural Diversity and Ethnic Minority Psychology*. 1999; 5(1): 65-75. PMID:15603240. <https://doi.org/10.1037/1099-9809.5.1.65>