RESEARCH ARTICLE

Prevalence and associated factors of depression among Korean adolescents

Je-Yeon Yun1,2☯, Halin Chung3☯, Jin-ah Sim3, Young Ho Yun3,4,5*  
1 Seoul National University Hospital, Seoul, Republic of Korea, 2 Yeongeon Student Support Center, Seoul National University College of Medicine, Seoul, Republic of Korea, 3 Department of Biomedical Science, Seoul National University College of Medicine, Seoul, Republic of Korea, 4 Department of Family Medicine, Seoul National University Hospital, Seoul, Republic of Korea, 5 Department of Biomedical Informatics, Seoul National University College of Medicine, Seoul, Republic of Korea  
☯ These authors contributed equally to this work.  
* lawyun08@gmail.com

Abstract

This study aimed to identify factors significantly associated with recent depressive mood with respect to health-related behavioral patterns at the individual level, perceived safety in the school environment, and willingness to share concerns with family and social networks. Self-reported responses to questions regarding recent feelings of depression, health-related behaviors in physical, psychological, and spiritual subdomains, school refusal and perceived safety at school, and perceived social support were obtained from 1,991 in-school adolescents (mean [SD] age = 15.3 [1.7] years; male/female = 936/1055). Multivariate logistic regression analyses were used to identify explanatory factors significantly associated with recent depression, defined as feelings of sadness or hopelessness for more than 2 weeks (during the last 12 months) that interfered with everyday functioning. Of the 1,991 students, 271 (13.6%) reported recent depression. Multivariate logistic regression analyses revealed higher odds of recent depression in adolescents with frequent thoughts of school refusal (odds ratio [95% confidence interval] = 3.25 [2.44–4.32]) and those who engaged in regular physical exercise (1.57 [1.19–2.07]), whereas a positive mindset (0.65 [0.49–0.86]), perceived safety at school (0.62 [0.47–0.82]), and perceived social support from one's mother (0.54 [0.40–0.72]) were associated with lower odds of recent depression. Taken together, our findings suggest that parents and teachers should talk regularly with adolescents about recent life (dis)satisfaction and stressors, particularly when they report frequent thoughts of school refusal. Perceived social support would increase perceived safety on school grounds and make it easier for teenagers to share their concerns with parents, thereby reducing the risk for depressive symptoms. School-based programs that promote a positive mindset would be helpful in preparing students for the challenges of adulthood.
Introduction

Depression in adolescence

Mental health problems including internalizing psychopathologies such as depressive mood and anxiety may develop during adolescence [1]. Importantly, depression during adolescence could affect the trajectory of personality development and academic achievement, which in turn may impair social functioning during adulthood [2, 3]. Furthermore, the lack of appropriate treatment for depression and suicidality in adolescents and young adults increases the likelihood of mood disorders later in life [4, 5]. However, parents and schoolteachers often do not recognize the early signs of depression in adolescents and the need for stress management in daily activities [6, 7].

Behavioral routine of daily living and depression

Previous studies have reported correlations between increased risk of depression and substance use (i.e., alcohol, tobacco, and cannabis) [8], deliberate food restriction for weight control [9], and obesity. By contrast, protective factors against depression include daily consumption of vegetables and fruit [10], regular sleep, and frequent participation in sports and high-intensity physical activity [11]. Furthermore, a well-balanced lifestyle that enables work–life balance [12], prosocial activities focused on helping others [13], and religious activities to clarify the meaning of life [14] may be helpful in reducing the risks of burnout and depression.

Stress-related cognitive style and depression

Previous studies have reported positive correlations between increased risk for adolescent depression and the use of avoidant–maladaptive coping strategies (e.g., worry, self-blame, distraction, disengagement, tension reduction, and escape from negative emotions through substance misuse) [8, 15] and emotional–impulsive decision making in the face of stressful daily life events. By contrast, modifiable protective factors against depression include lifestyle factors such as prosocial involvement in a family context [16] and adaptive coping strategies (e.g., focusing on the positive, problem solving, and seeking social support) that stem from a positive mindset [8, 15]. Notably, many previous studies have posited the importance of a positive mindset (e.g., self-efficacy [17, 18], optimism [19], acceptance [20], resilience [21], and gratitude [22, 23]) in helping patients and caregivers to cope with debilitating medical illnesses such as chronic obstructive pulmonary disease, Parkinson’s disease, and multiple sclerosis [19–21, 24, 25]; in fostering healthy development in children facing physical disability after trauma [17]; and in enhancing academic achievement [25, 26], elite sports performance [18], and creative art work [27]. Moreover, the presence of a positive mindset, such as that reflected in resilience, was associated with greater positive affect and reduced depression in community-dwelling middle-aged adults [28].

School refusal and perceived safety at school in adolescence

Given the amount of time adolescents spend at school, the school environment and school-related activities may be the greatest source of protection against, or the greatest source of, distress for adolescents [29, 30]. Indeed, school refusal (self-motivated refusal to attend school and/or difficulty remaining in class for the full day) [31] might not be simply a maladaptive behavior [32]. Rather, it may often be a warning sign of severe distress and negative emotional states including anxiety and depressive mood that markedly impair social and daily functioning [33]. Better understanding of the importance of school refusal as a possible warning sign of...
depressive symptoms and clarification of lifestyle- or environment-related factors that can affect the risk of adolescent depression, will enable parents and teachers to recognize emotional distress and help adolescents who refuse to attend school.

**Study aim and hypothesis**

The long list of behavioral factors that positively or negatively affect the risk for depression in adolescents shown above may leave parents, teachers, and adolescents themselves confused about the best first steps to take in recognizing emotional distress [7, 34] and strengthening stress resilience [35]. Accordingly, the current study used self-reports from school-attending adolescents (N = 1,991) to identify the most significant factors associated with feelings of sadness or hopelessness (for more than 2 weeks in the last 12 months) that interfered with daily life functioning. We hypothesized that the odds of recent experiences of depressive mood among in-school adolescents may be associated with distress about school attendance [33]; perceived level of safety at school [36]; one’s own lifestyle related to physical [37, 38], psychological [39–42], and spiritual [43, 44] sub-domains of health; and perceived social support that enables adolescents to share their concerns with others and get help [45–47].

**Materials and methods**

**Participants**

Data were collected between August 2014 and January 2015 in a cross-sectional survey for the validation and field-testing of the Korean version of the School Health Score Card (SHSC) [48]. With cooperation of the Korean Association of Secondary Education Principals, 30 schools (15 middle schools and 15 high schools) from a diverse range of provinces in the Republic of Korea participated in the study. Following a detailed description of the study purpose and procedure, 2,800 students provided informed consent and completed a five-part self-report questionnaire (S1 and S2 Texts): Part 1 assessed level of satisfaction with one’s own health condition and health-related behavior, Part 2 assessed physical and behavioral health-related factors and perceived safety of the school environment, Part 3 assessed psychological health-related factors, Part 4 assessed social health-related factors (people to discuss concerns with), and Part 5 assessed awareness and prior experience with health-enhancement programs in school (see ‘Measures’ below for detailed information on the items included in Parts 1–4).

Our study included the subset of participants who responded to all of the items in the Parts 1–4, (Part 5 data were not included in our study) without omission or error responses. Therefore, the final analyses included 1,991 students from 30 schools (mean [SD] age, 15.3 [1.7] years; male/female, 936/1055). The Institutional Review Board of Seoul National University College of Medicine approved this study (IRB No. E-1407-127-597). Informed consent was obtained from all participants after the procedure was fully explained. As this was a minimal-risk study, the requirement for written consent from the individual participants was waived by the board. All procedures were performed in accordance with the ethical standards of the Seoul National University Hospital Institutional Review Board on Human Experimentation and the Helsinki Declaration of 1975, as revised in 2008.

**Measures**

Data were obtained using self-report questionnaires (please refer to Supporting Information) completed by 1,991 adolescent students; 17 items regarding health-related behaviors (7 items) [49, 50], school refusal and perceived safety at school (4 items) [51], and perceived social support (6 items) [51] were used to identify the most strongly associated factors that could explain
recent feelings of depression, defined in terms of a ‘Yes’ (= depressed) or ‘No’ (= non-depressed) response to the item “Have you had feelings of sadness or hopelessness for more than 2 weeks (in the last 12 months) that interfered with your daily functioning?”] [52–54].

First, responses to seven items about health-related behaviors [49, 50], categorized by physical (1) regular physical exercise of moderate intensity and >150 min per week, 2) healthy eating habits, and 3) lifestyle balanced between study and rest, psychological (4) positive mindset and 5) proactive lifestyle, and spiritual (6) make time for helping others and 7) maintain faith and religious activities subdomains, were retrieved. The regular physical exercise question required a ‘Yes’ (0) or ‘No’ (1) binary response. The ordinal responses to the remaining questions were converted into binary values (‘Have been practicing more than 6 months’ [1] and ‘Have been practicing less than 6 months’ [2] were converted to ‘Have been practicing’ [0]; and ‘Planning to start within 1 month’ [3], ‘Planning to start within 6 months’ [4], and ‘No plan to practice in the future’ [5] were converted to ‘Not started yet’ [1]), and these later underwent stepwise multiple linear regression.

Second, four items addressing school refusal/perceived safety at school [51] were as follows: 1) being able to ask for help when needed, 2) awareness of risky areas in the school zone, and belief that the school grounds are free from 3) bars and 4) gambling venues. The ordinal responses were converted into binary values for use in a subsequent stepwise multiple linear regression analyses (‘Do not know’ [1], ‘Totally false’ [2], and ‘False’ [3] became ‘False’ [1]; and ‘True’ [4] and ‘Totally true’ [5] became ‘True’ [0]). One variable selected from Part 4 (psychological health-related factors) that concerned frequent thoughts of school refusal was converted from ordinal responses to binary values (‘Totally disagree’ [1] and ‘Slightly true’ [2] were re-coded as ‘No’ [0]; and ‘Agree’ [3] and ‘Strongly agree’ [4] were re-coded as ‘Yes’ [1]).

Third, six items regarding perceived social support [51] assessed respondents’ perception of the ease of being able to discuss their concerns with 1) their father, 2) their mother, 3) siblings, 4) friends of the same sex, 5) friends of the opposite sex, or 6) teachers at school. The initial ordinal responses were converted into binary values (‘Not applicable’ [1], ‘Not possible’ [2], and ‘No’ [3] became ‘No’ [1]; and ‘Yes’ [4] and ‘Very much so’ [5] were re-coded as ‘Yes’ [0]) for inclusion as candidate explanatory variables in subsequent multiple logistic regression analyses.

**Statistical analyses**

Based on their response to the question about feelings of sadness or hopelessness for more than 2 weeks, participants were classified as ‘depressed’ (n = 271) or ‘non-depressed’ (n = 1,720), and these two groups were compared in terms of demographic characteristics (age and body mass index) using independent t-tests (P < (0.05/4) = 0.013), and associations between group membership (depressed versus non-depressed) and sex (male or female) or level of school attendance (middle school or high school) were calculated using chi-square tests (P < (0.05/4) = 0.013). Simple logistic regression analyses were used to calculate the associations of the 17 items (see the ‘Measures’ section above) addressing health-related behaviors (7 items) [49, 50], school refusal/perceived safety at school (4 items) [51], and perceived social support (6 items) [51] with recent experiences of depression [52–54] (Table 1). Items that showed significant associations with recent depressive feelings (P < 0.05) were used as candidate explanatory variables in the subsequent multivariate logistic regression analyses (with variable selection methods for ‘forward: LR’ and ‘backward: LR’). Adjusted ORs of each final explanatory variable for recent depression were estimated from the final multivariate regression model. All statistical analyses were performed using IBM SPSS Statistics version 24 (IBM Corp., Armonk, NY, USA).
Results

Of the 1,991 adolescents who participated in the study, 271 (13.6%) reported recent (in the last 12 months) sadness or hopelessness for more than 2 weeks that interfered with daily life functioning. We found no significant differences in age, sex, body mass index, or school level (middle school vs. high school) between depressed \((n = 271)\) and non-depressed \((n = 1,720)\) adolescents \(P < (0.05/4) = 0.013; \) Table 1).

Simple logistic regression analyses revealed that the odds of recent feelings of depression were increased in adolescents with frequent thoughts of school refusal (crude OR \([95\% \text{ confidence interval} ] = 4.12 [3.15–5.39]) and in those who engaged in regular physical exercise \((1.30 [1.00–1.68])\). By contrast, physical health-related behaviors such as healthy eating habits \((0.69 [0.53–0.89])\) and maintaining a balanced lifestyle between study and rest \((0.68 [0.53–0.88])\) were associated with a reduced risk of depression.

Table 1. Estimated effects of demographic and clinical characteristics on experiencing depressive mood \((n = 1,991)\).

| Depressive = Feelings of sadness or hopelessness for more than 2 weeks (in the last 12 months) that interfered with daily life. | Depressed \((n = 271)\) | Non-depressed \((n = 1,720)\) | Unadjusted OR \((95\% \text{ CI})/ \chi^2 \text{ score} \) | P-value (Wald test/t-test) | Use in the multivariate logistic regression (forward LR/backward LR) |
|---|---|---|---|---|---|
| Age, mean (SE) | 15.5 (1.6) | 15.2 (1.7) | \(t(1989) = 2.13\) | 0.033 | NA |
| Sex (%), M/F | 117/154 | 819/901 | \(\chi^2(1) = 1.86\) | 0.173 | NA |
| Body mass index | 21.1 (3.7) | 20.7 (3.1) | \(t(334.46) = 1.44\) | 0.15 | NA |
| Level of school, middle school/high school | 106/165 | 792/928 | \(\chi^2(1) = 4.54\) | 0.033 | NA |

Part 1: Health-related behaviors: physical, psychological, and spiritual

| Physical: regular physical exercise (moderate intensity and >150 min/week) \([Y/N]\) | 124/147 | 678/1042 | 1.296 \([1.002–1.678]\) | 0.048 | O |
| Physical: healthy eating habits \([Y/N]\) | 124/147 | 944/776 | 0.693 \([0.536–0.897]\) | 0.005 | O |
| Physical: lifestyle balanced between study and rest \([Y/N]\) | 108/163 | 846/874 | 0.685 \([0.527–0.889]\) | 0.004 | O |
| Psychological: positive mindset \([Y/N]\) | 141/130 | 1163/557 | 0.519 \([0.401–0.673]\) | <0.001 | O |
| Psychological: proactive lifestyle \([Y/N]\) | 132/139 | 1042/678 | 0.618 \([0.478–0.799]\) | <0.001 | O |
| Spiritual: make time for helping others \([Y/N]\) | 115/156 | 777/943 | 0.895 \([0.691–1.159]\) | 0.4 | × |
| Spiritual: maintain faith and religious activities \([Y/N]\) | 91/180 | 567/1153 | 1.028 \([0.784–1.349]\) | 0.842 | × |

Part 2: School refusal/perceived safety at school

| Frequent thoughts of school refusal \([Y/N]\) | 125/146 | 296/1424 | 4.119 \([3.145–5.394]\) | <0.001 | O |
| Perceived level of safety on the school grounds: able to ask for help \([Y/N]\) | 148/123 | 1280/440 | 0.414 \([0.318–0.538]\) | <0.001 | O |
| Perceived level of safety on the school grounds: have information about risky areas \([Y/N]\) | 122/149 | 838/882 | 0.862 \([0.666–1.115]\) | 0.257 | × |
| Perceived level of safety on the school grounds: free from bars and gambling venues \([Y/N]\) | 143/128 | 1099/621 | 0.631 \([0.488–0.817]\) | <0.001 | O |

Part 3: Perceived social support (people with whom concerns are discussed)

| Perceived availability of father for discussing concerns \([Y/N]\) | 136/135 | 1129/591 | 0.527 \([0.407–0.683]\) | <0.001 | O |
| Perceived availability of mother for discussing concerns \([Y/N]\) | 178/93 | 1432/288 | 0.385 \([0.291–0.510]\) | <0.001 | O |
| Perceived availability of siblings for discussing concerns \([Y/N]\) | 138/133 | 1030/690 | 0.695 \([0.538–0.899]\) | 0.006 | O |
| Perceived availability of friends of the same sex for discussing concerns \([Y/N]\) | 216/55 | 1515/205 | 0.531 \([0.382–0.739]\) | <0.001 | O |
| Perceived availability of friends of the opposite sex for discussing concerns \([Y/N]\) | 124/147 | 780/940 | 1.017 \([0.786–1.315]\) | 0.9 | × |
| Perceived availability of schoolteachers for discussing concerns \([Y/N]\) | 115/156 | 994/726 | 0.538 \([0.415–0.698]\) | <0.001 | O |

https://doi.org/10.1371/journal.pone.0223176.t001
and a lifestyle balanced between study and rest (0.69 [0.53–0.90]); psychological health-related factors including a positive mindset (0.52 [0.40–0.67]) and proactive lifestyle (0.62 [0.48–0.80]); perceived school zone safety, including the ability to ask for help (0.42 [0.32–0.54]) and a school environment free from bars and gambling venues (0.63 [0.49–0.82]); and perceived availability of father (0.53 [0.41–0.68]), mother (0.39 [0.29–0.51]), siblings (0.70 [0.54–0.90]), friends of the same sex (0.53 [0.38–0.74]), or school teachers (0.54 [0.42–0.70]) were associated with a decreased risk for recent experiences of depression (P < 0.05; Table 1).

Multivariate logistic regression analyses with these 14 candidate variables (obtained from simple logistic regression analyses with P < 0.05; refer to the paragraph above and Table 1) revealed an increased risk of recent depressive feelings in adolescents who reported frequent thoughts of school refusal (adjusted OR = 3.25 [2.44–4.32]) and in those who engaged in regular physical exercise (1.57 [1.19–2.07]), whereas the health-related behaviors of positive mindset (0.65 [0.49–0.86]), perceived school zone safety including the ability to ask for help (0.62 [0.47–0.82]), and perceived availability of mother for support (0.54 [0.40–0.72]) were associated with a decreased risk for recent depression (Table 2). The multivariate logistic regression models were the same regardless of the variable selection method applied (forward LR or backward LR) and had significant goodness of fit (Hosmer–Lemeshow test = 0.394 > 0.05; percentage of correct classification = 86.4% >70%; area under the receiver operating characteristic curve for classifying group membership = 0.71 [0.68–0.75]).

Discussion

Summary

We used a self-report questionnaire dataset obtained from school-attending adolescents (N = 1,991) to identify factors significantly associated with the recent experience of depressive mood that interfered with daily living. Of the 1,991 students, 271 (13.6%) answered ‘yes’ to a single item asking about feelings of sadness or hopelessness for more than 2 weeks (in last 12 months) that interfered with everyday functioning. Although a diagnosis of depression cannot be based on this single item but must be confirmed through clinical evaluation by a certified psychiatrist, use of this single item might be more suitable for initial detection of recent experiences of depression in a community population [52–55]. Multivariate logistic regression analyses revealed higher odds of recent depression in adolescents with frequent thoughts of school refusal (odds ratio [95% confidence interval] = 3.25 [2.44–4.32]) and in those who engaged in regular physical exercise (1.57 [1.19–2.07]), whereas a positive mindset (0.65 [0.49–0.86]), perceived school zone safety (0.62 [0.47–0.82]), and perceived social support from one’s mother (0.54 [0.40–0.72]) were associated with lower odds of recent depression.

Table 2. Multivariate logistic regression (with forward LR/backward LR applied for variable selection from candidate variables in Table 1): Estimated effects of health-related behaviors, school refusal/perceived safety at school, and perceived social support on recent depression.

| Part 1: Health-related behaviors: physical, psychological, and spiritual | b | Adjusted OR (95% CI) based on multivariate logistic regression | P-value (Wald test) |
|---|---|---|---|
| Physical: regular physical exercise (moderate intensity and >150 min/week) | 0.449 | 1.566 (1.187–2.067) | 0.002 |
| Psychological: positive mindset | −0.435 | 0.648 (0.489–0.858) | 0.002 |

| Part 2: School refusal/perceived safety at school | | | |
|---|---|---|---|
| Frequent thoughts of school refusal | 1.179 | 3.250 (2.444–4.324) | <0.001 |
| Perceived level of safety on the school grounds: able to ask for help | −0.479 | 0.620 (0.466–0.824) | 0.001 |

| Part 3: Perceived social support (people with whom concerns are discussed) | | | |
|---|---|---|---|
| Perceived availability of mother for discussing concerns | −0.624 | 0.536 (0.397–0.724) | <0.001 |

https://doi.org/10.1371/journal.pone.0223176.t002
School refusal: A possible indicator of adolescent depression

The most significant finding of our study is that frequent thoughts of school refusal are critical warning signs of adolescent depression. School refusal (self-motivated refusal to attend school and/or difficulty remaining in class for the full day) may be associated with loss of motivation for school attendance, the absence of social connectedness, sustained distress at school, social phobia or separation anxiety, and depressive mood [31–33, 56, 57]. Depressed individuals whose condition has not been identified likely suffer from diverse symptomatology and more severe functional impairment than their peers who have been diagnosed and are under proper psychiatric treatment [58]. Therefore, attentive detection of warning signs for depression, such as school refusal and insomnia, at an earlier stage, followed by referral to a physician for proper clinical treatment and efforts to identify and reduce the principal stressors, such as peer bullying at school, might be critical [58, 59].

More regular physical activity in adolescent depression

In the current study, higher odds for recent depression were shown among school-attending adolescents who participated in regular physical activity of moderate intensity. By contrast, other cross-sectional studies have reported an association between regular physical exercise and fewer depressive symptoms in adults [60, 61] and reduced risk of self-mutilating behavior in adolescents [62]. Furthermore, confounding clinical features such as the individual’s tendency toward anxiety [63], the degree of self-efficacy [64], the compulsive nature of exercise [65], pressure for better performance among elite sports players [66], and the nature of sedentary behaviors (passive vs. mentally active) in daily living [67] could affect the pattern of the relationship between regular physical exercise and depressive symptoms. Physical activity and adolescent mental health interact in a bidirectional way [68]. Previous studies that applied physical activity programs as an intervention for adolescents have mainly examined the effects on weight control and did not focus on the impact of regular physical exercise on mental health [69]. Thus, further longitudinal studies are required to elucidate the profile and direction of influences between regular physical activity and depression in school-attending adolescents.

Positive mindset as a stress resilience factor in adolescence

A positive mindset could be defined as a cognitive–emotional–behavioral style that approaches stressors in one’s life with an optimistic outlook, accepting reality as it is and making the most of the potentially bad situations with resilience, self-esteem, and self-efficacy [19, 70, 71]. Our finding that a positive mindset was associated with reduced risk for depressive mood in school-attending adolescents is consistent with a recent large-population study of more than 10,000 participants worldwide, which found that the strength of stress resilience (one’s ability to positively adapt and manage stressful experiences using diverse coping strategies) was negatively correlated with depressive mood severity [72]. Another study found that stress resilience mediated the effects of social support on depressive mood [73]. A balanced attributional style for positive events may underlie the lower risk for depressive mood in middle school students who tend to have greater self-esteem than in high school students [74]. Moreover, well-developed stress resilience in late adolescence is associated with a reduced risk for bipolar disorder in adulthood [75]. Furthermore, a study in high-risk adolescents and young adults with depression and suicidal ideation found that increased use of a positive mindset, such as positive reframing, and decreased use of negative cognitive styles, such as self-blame and disengagement, lowered the risk for suicide at baseline and 4 months after the intervention [40]. Because stress resilience can be modified, an ongoing randomized controlled study to modify negative cognitive style by disrupting a selective bias toward negative information and thoughts is needed to investigate
whether enhanced stress resilience is a cost-effective [76] method for reducing depressive symptoms in adolescents [77].

Perceived social support and sharing concerns with parents
We found that the degree of perceived ease in sharing one’s concerns with their mother was significantly associated with fewer reports of depressive mood in school-attending adolescents. Our finding is consistent with that of a previous study, which found the quality of communication with a parent (mother for girls and father for boys) had effects on depression and suicidal ideation in adolescents [78]. Similarly, a recent longitudinal investigation of the social interaction–depressive mood association using growth curve modeling found an association between adolescent–parent communication (with father for boys and with mother for girls) and a decrease in depressive symptoms as the adolescents reached early adulthood [79]. Moreover, female willingness to communicate with their parents is markedly related to sexual behavior in girls and the use of emergency contraceptive pills during adolescence [80]. With regard to the treatment of depressive symptoms, sustained emotional warmth from both parents has been shown to reduce significantly the severity of depressive symptoms experienced by male and female children and adolescents [81]. School-based programs targeting parent–student dyads or triads that focus on parental stress management skills [82] and emotionally attuned communication based on cognitive empathy [83, 84], offered during school vacations or on weekends, may help promote meaningful adolescent–parent communication.

Study limitations
Our study had several limitations. First, the cross-sectional study design does not allow causal inferences to be made between the intensity of perceived depressive mood and environmental, interpersonal, and individual cognitive factors. Second, use of one self-reporting item cannot be regarded as an equal substitute for clinical diagnosis based on a face-to-face interview by a trained physician. Third, as our study population consisted of middle school and high school students, we urge caution in generalizing our findings to adolescents who do not attend school.

Conclusions
Taken together, our findings suggest that parents and schoolteachers should talk regularly with adolescents about recent life (dis)satisfaction and stressors, particularly when teens report frequent thoughts of school refusal. Perceived social support would increase perceived safety on school grounds (i.e., students can find teachers and get help) and make it easier for young people to share their concerns with parents, thereby reducing the risk for depressive symptoms. School-based programs that promote a positive mindset would be helpful in preparing students for the diverse challenges of adulthood.

Supporting information
S1 Text. Self-reporting questionnaire (English version).
(DOC)

S2 Text. Self-reporting questionnaire (Korean version).
(DOC)

Author Contributions
Conceptualization: Je-Yeon Yun, Halin Chung, Jin-ah Sim, Young Ho Yun.
Data curation: Je-Yeon Yun, Halin Chung, Jin-ah Sim.
Formal analysis: Je-Yeon Yun.
Funding acquisition: Young Ho Yun.
Investigation: Je-Yeon Yun, Halin Chung.
Methodology: Je-Yeon Yun.
Resources: Je-Yeon Yun, Halin Chung, Jin-ah Sim, Young Ho Yun.
Supervision: Young Ho Yun.
Validation: Je-Yeon Yun.
Visualization: Je-Yeon Yun.
Writing – original draft: Je-Yeon Yun.
Writing – review & editing: Je-Yeon Yun, Halin Chung, Jin-ah Sim, Young Ho Yun.

References
1. Patalay P, Fitzsimons E. Development and predictors of mental ill-health and wellbeing from childhood to adolescence. Social psychiatry and psychi atric epidemiology. 2018; 53(12):1311–23. Epub 2018/09/28. doi: 10.1007/s00127-018-1604-0. PMID: 30259056.
2. Wilson S, Hicks BM, Foster KT, McGue M, Iacono WG. Age of onset and course of major depressive disorder: associations with psychosocial functioning outcomes in adulthood. Psychological medicine. 2015; 45(3):505–14. Epub 2014/07/11. doi: 10.1017/S0033291714001640. PMID: 25007761; PubMed Central PMCID: PMC4289461.
3. Zhang W, Zhang L, Chen L, Ji L, Deater-Deckard K. Developmental changes in longitudinal associations between academic achievement and psychopathological symptoms from late childhood to middle adolescence. Journal of child psychology and psychiatry, and allied disciplines. 2018 Epub 2018/05/10. doi: 10.1111/jcpp.12927. PMID: 29741777.
4. Gustavson K, Knudsen AK, Nesvag R, Knudsen GP, Vollset SE, Reichborn-Kjennerud T. Prevalence and stability of mental disorders among young adults: findings from a longitudinal study. BMC psychi atry. 2018; 18(1):65. Epub 2018/03/14. doi: 10.1186/s12888-018-1647-5. PMID: 29530018; PubMed Central PMCID: PMC5848432.
5. Nrugham L, Holen A, Sund AM. Prognosis and psychosocial outcomes of attempted suicide by early adolescence: a 6-year follow-up of school students into early adulthood. The Journal of nervous and mental disease. 2015; 203(4):294–301. Epub 2015/03/15. doi: 10.1097/NMD.000000000000281. PMID: 25768349.
6. Stein K, Fazel M. Depression in young people often goes undetected. The Practitioner. 2015; 259 (1782):17–22, 2–3. Epub 2016/06/04. PMID: 27254891.
7. Kim C, Choi H, Ko H, Park CG. Agreement Between Parent Proxy Reports and Self-Reports of Adolescent Emotional Distress. The Journal of school nursing: the official publication of the National Association of School Nurses. 2018:1059840518792073. Epub 2018/08/07. doi: 10.1177/1059840518792073. PMID: 30079804.
8. Cairns KE, Yap MB, Pilkinson PD, Jorm AF. Risk and protective factors for depression that adolescents can modify: a systematic review and meta-analysis of longitudinal studies. Journal of affective disorders. 2014; 169:61–75. Epub 2014/08/27. doi: 10.1016/j.jad.2014.08.006. PMID: 25154536.
9. Ferreiro F, Seoane G, Senra C. A prospective study of risk factors for the development of depression and disordered eating in adolescents. Journal of clinical child and adolescent psychology: the official journal for the Society of Clinical Child and Adolescent Psychology, American Psychological Association, Division 53. 2011; 40(3):500–5. Epub 2011/05/03. doi: 10.1080/15374416.2011.563465. PMID: 21534061.
10. Hoare E, Hockey M, Ruusunen A, Jacka FN. Does Fruit and Vegetable Consumption During Adolescence Predict Adult Depression? A Longitudinal Study of US Adolescents. Frontiers in psychiatry. 2018; 9:581. Epub 2018/11/30. doi: 10.3389/fpsyt.2018.00581. PMID: 30483164; PubMed Central PMCID: PMC6243081.
11. Briere FN, Yale-Souliere G, Gonzalez-Sicilia D, Harbec MJ, Morizot J, Janosz M, et al. Prospective associations between sport participation and psychological adjustment in adolescents. Journal of...
School refusal, communication with caregivers, and positive mindset in adolescent depression.

epidemiology and community health. 2018; 72(7):575–81. Epub 2018/03/16. doi: 10.1136/jech-2017-209656. PMID: 29540466.

12. Shanafelt TD, Hasan O, Dyrbye LN, Sinsky C, Satele D, Sloan J, et al. Changes in Burnout and Satisfaction With Work-Life Balance in Physicians and the General US Working Population Between 2011 and 2014. Mayo Clinic proceedings. 2015; 90(12):1600–13. Epub 2015/12/15. doi: 10.1016/j.mayocp.2015.08.023. PMID: 26653297.

13. Dore BP, Morris RR, Burr DA, Picard RW, Ochsner KN. Helping Others Regulate Emotion Predicts Increased Regulation of One's Own Emotions and Decreased Symptoms of Depression. Personality & social psychology bulletin. 2017; 43(5):729–39. Epub 2017/09/15. doi: 10.1177/0146167217695558. PMID: 28903637.

14. Roh HW, Hong CH, Lee Y, Oh BH, Lee KS, Chang KJ, et al. Participation in Physical, Social, and Religious Activity and Risk of Depression in the Elderly: A Community-Based Three-Year Longitudinal Study in Korea. PLoS One. 2015; 10(7):e0132838. Epub 2015/07/15. doi: 10.1371/journal.pone.0132838. PMID: 26172441; PubMed Central PMCID: PMC4501682.

15. Ma TL, Chow CM, Chen WT. The moderation of culturally normative coping strategies on Taiwanese adolescent peer victimization and psychological distress. J Sch Psychol. 2018; 70:89–104. Epub 2018/10/21. doi: 10.1016/j.jsp.2018.08.002. PMID: 30340705.

16. Schwendemann HE, Kuttler H, Mossle T, Blitzer EM. Cross-sectional relationship of perceived familial protective factors with depressive symptoms in vulnerable youth. BMC psychiatry. 2018; 18(1):36. Epub 2018/02/09. doi: 10.1186/s12888-018-1618-x. PMID: 29415711; PubMed Central PMCID: PMC56804045.

17. King G, Seko Y, Chiarello LA, Thompson L, Hartman L. Building blocks of resiliency: a transactional framework to guide research, service design, and practice in pediatric rehabilitation. Disability and rehabilitation. 2018; 1–10. Epub 2018/11/15. doi: 10.1080/09638288.2018.1515266. PMID: 30426782.

18. Sklett VH, Loras HW, Sigurdsson H. Self-Efficacy, Flow, Affect, Worry and Performance in Elite World Cup Ski Jumping. Frontiers in psychology. 2018; 9:1215. Epub 2018/08/02. doi: 10.3389/fpsyg.2018.01215. PMID: 29605743.

19. Broadbent FJ, Swalwell JM. "I can do more than I thought I could": exploring the online blogs from the Sailing Sclerosis Oceans of Hope journey. Disability and rehabilitation. 2018; 209656. PMID: 29786519.

20. Kang MY, Ellis-Hill C. How do people live life successfully with Parkinson’s disease? Journal of clinical nursing. 2015; 24(15–16):2314–22. Epub 2015/05/06. doi: 10.1111/jocn.12819. PMID: 25939827.

21. Harolds JA. Quality and Safety in Healthcare, Part XLVII: Resilience and Burnout. Clinical nuclear medicine. 2019; 44(5):394–6. Epub 2018/10/10. doi: 10.1097/RLU.00000000000002303. PMID: 30300205.

22. Siros FM, Wood AM. Gratitude uniquely predicts lower depression in chronic illness populations: A longitudinal study of inflammatory bowel disease and arthritis. Health psychology: official journal of the Division of Health Psychology, American Psychological Association. 2017; 36(2):122–32. Epub 2016/10/28. doi: 10.1037/hea0000436. PMID: 27786519.

23. Van Dusen JP, Tiamiyu MF, Kashdan TB, Elhai JD. Gratitude, depression and PTSD: Assessment of structural relationships. Psychiatry research. 2015; 230(3):867–70. Epub 2015/12/03. doi: 10.1016/j.psychres.2015.11.036. PMID: 26626947.

24. Sigurgeirsdottir J, Hallarodsdottir S, Arnardottir RH, Gudmundsson G, Bjornsson EH. COPD patients’ experiences, self-reported needs, and needs-driven strategies to cope with self-management. International journal of chronic obstructive pulmonary disease. 2019; 14:1033–43. Epub 2019/06/14. doi: 10.2147/COPD.S201068. PMID: 31190788; PubMed Central PMCID: PMC6559673.

25. Zeng G, Chen X, Cheung HY, Peng K. Teachers’ Growth Mindset and Work Engagement in the Chinese Educational Context: Well-Being and Perseverance of Effort as Mediators. Frontiers in psychology. 2019; 10:839. Epub 2019/05/07. doi: 10.3389/fpsyg.2019.00839. PMID: 31057463; PubMed Central PMCID: PMC6462247.

26. Kannangara CS, Allen RE, Waugh G, Nahar N, Khan SZN, Rogerson S, et al. All That Glitters Is Not Grit: Three Studies of Grit in University Students. Frontiers in psychology. 2018; 9:1539. Epub 2018/09/14. doi: 10.3389/fpsyg.2018.01539. PMID: 30210389; PubMed Central PMCID: PMC6123604.

27. Intasao N, Hao N. Beliefs About Creativity Influence Creative Performance: The Mediation Effects of Flexibility and Positive Affect. Frontiers in psychology. 2018; 9:1810. Epub 2018/10/16. doi: 10.3389/fpsyg.2018.01810. PMID: 30319505; PubMed Central PMCID: PMC6165896.

28. Arewasikpon A, Sturgeon JA, Zautra AJ. Sharing Positive Experiences Boosts Resilient Thinking: Everyday Benefits of Social Connection and Positive Emotion in a Community Sample. Am J Community Psychol. 2019; 63(1–2):110–21. Epub 2018/10/09. doi: 10.1002/ajcp.12279. PMID: 30295327; PubMed Central PMCID: PMC6405300.
29. O'Connor CA, Dyson J, Cowdell F, Watson R. Do universal school-based mental health promotion programmes improve the mental health and emotional wellbeing of young people? A literature review. Journal of clinical nursing. 2018; 27(3-4):e412–e26. Epub 2017/09/20. doi: 10.1111/jocn.14078. PMID: 28926147.

30. Weare K, Nind M. Mental health promotion and problem prevention in schools: what does the evidence say? Health Promot Int. 2011; 26. https://doi.org/10.1093/heaprom/dar075 PMID: 22079935

31. Ingul JM, Klöckner CA, Silverman WK, Nordahl HM. Adolescent school absenteeism: modelling social and individual risk factors. Child and Adolescent Mental Health. 2012; 17(2):93–100. https://doi.org/10.1111/j.1475-3588.2011.00615.x

32. Knollmann M, Reissner V, Hebebrand J. Towards a comprehensive assessment of school absenteeism: development and initial validation of the inventory of school attendance problems. European child & adolescent psychiatry. 2018. Epub 2018/07/26. doi: 10.1007/s00787-018-1204-2. PMID: 30043236.

33. González C, Kearney CA, Jimenez-Ayala CE, Sanmartín R, Vicent M, Ingles CJ, et al. Functional profiles of school refusal behavior and their relationship with depression, anxiety, and stress. Psychiatry research. 2018; 269:140–4. Epub 2018/08/28. doi: 10.1016/j.psychres.2018.08.069. PMID: 30149271.

34. Auerbach RP, Mortier P, Bruffaerts R, Alonso J, Benjet C, Cuijpers P, et al. WHO World Mental Health Surveys International College Student Project: Prevalence and distribution of mental disorders. J Abnorm Psychol. 2018; 127(3):623–38. Epub 2018/09/14. doi: 10.1037/abn0000362. PMID: 30211576; PubMed Central PMCID: PMC6193834.

35. Fenwick-Smith A, Dahlberg EE, Thompson SC. Systematic review of resilience-enhancing, universal, primary-school-based mental health promotion programs. BMC Psychology. 2018; 6(1):30. https://doi.org/10.1186/s40359-018-0242-3 PMID: 29976252.

36. Lorenzo-Blanco EI, Unger JB, Oshri A, Baezconde-Garbanati L, Soto D. Profiles of bullying victimization, discrimination, social support, and school safety: Links with Latino/a youth acculturation, gender, depressive symptoms, and cigarette use. The American journal of orthopsychiatry. 2016; 86(1):37–48. Epub 2016/01/12. doi: 10.1037/or0000113. PMID: 26752445; PubMed Central PMCID: PMC5041296.

37. Kvam S, Kleppe CL, Nordhus IH, Hovland A. Exercise as a treatment for depression: A meta-analysis. Journal of affective disorders. 2016; 202:67–86. Epub 2016/06/03. doi: 10.1016/j.jad.2016.03.063. PMID: 27259219.

38. Khalid S, Williams CM, Reynolds SA. Is there an association between diet and depression in children and adolescents? A systematic review. The British journal of nutrition. 2016; 116(12):2097–108. Epub 2017/01/18. doi: 10.1017/S0007114516004359. PMID: 28093091.

39. Fergus TA, Valentinier DP, McGrath PB, Gier-Lonsawy S, Jencius S. The cognitive attentional syndrome: examining relations with mood and anxiety symptoms and distinctiveness from psychological inflexibility in a clinical sample. Psychiatry research. 2013; 210(1):215–9. Epub 2013/06/25. doi: 10.1016/j.psychres.2013.04.020. PMID: 23790980.

40. Horwitz AG, Czyz EK, Berona J, King CA. Prospective Associations of Coping Styles With Depression and Suicide Risk Among Psychiatric Emergency Patients. Behavior therapy. 2018; 49(2):225–36. Epub 2017/01/18. doi: 10.1017/S0007114516004359. PMID: 28093091.

41. Pearson RM, Fernyhough C, Bentall R, Evans J, Heron J, Joinson C, et al. Association between maternal depressogenic cognitive style during pregnancy and offspring cognitive style 18 years later. The American journal of psychiatry. 2013; 170(4):434–41. Epub 2013/01/16. doi: 10.1176/appi.ajp.2012.12050673. PMID: 23318526; PubMed Central PMCID: PMC3640292.

42. Platt B, Waters AM, Schulte-Koerne G, Engelmann L, Salemink E. A review of cognitive biases in youth depression: attention, interpretation and memory. Cognition & emotion. 2017; 31(3):462–83. Epub 2016/01/20. doi: 10.1016/j.cogem.2016.01.015. PMID: 27259219.

43. Bennett KS, Shepherd JM. Depression in Australian women: the varied roles of spirituality and social support. Journal of health psychology. 2013; 18(3):429–38. Epub 2012/06/09. doi: 10.1177/1359105312443400. PMID: 22679264.

44. Hiebler-Ragger M, Falthansl-Scheinecker J, Birnhuber G, Fink A, Unterrainer HF. Facets of Spirituality Diminish the Positive Relationship between Insecure Attachment and Mood Pathology in Young Adults. PLoS One. 2016; 11(6):e0158069. Epub 2016/06/24. doi: 10.1371/journal.pone.0158069. PMID: 27336471; PubMed Central PMCID: PMC4919040.

45. Patwardhan I, Mason WA, Savolainen J, Chmelka MB, Miettunen J, Jarvelin MR. Childhood cumulative contextual risk and depression diagnosis among young adults: The mediating roles of adolescent alcohol use and perceived social support. Journal of adolescence. 2017; 60:16–26. Epub 2017/07/28. doi: 10.1016/j.adolescence.2017.07.008. PMID: 28750265; PubMed Central PMCID: PMC5684695.

46. Shahar G, Henrich CC. Perceived family social support buffers against the effects of exposure to rocket attacks on adolescent depression, aggression, and severe violence. Journal of family psychology: JFP;
49. Yun YH, Sim JA, Park EG, Park JD, Noh DY. Employee Health Behaviors, Self-Reported Health Status, and Association With Absenteeism: Comparison With The General Population. J Occup Environ Med. 2016; 58(9):932–9. Epub 2016/08/12. doi: 10.1097/JOM.0000000000000830. PMID: 27513170.

50. Yun YH, Sim JA, Jung JY, Noh DY, Lee ES, Kim YW, et al. The association of self-leadership, health behaviors, and posttraumatic growth with health-related quality of life in patients with cancer. Psycho-oncology. 2014; 23(12):1423–30. Epub 2014/05/23. doi: 10.1002/pon.3582. PMID: 24844184.

51. Kim JJ, Shin SM, An J, Lee HW. Development of Questionnaires and Tools of School Health Indicators in Korea: Based on Standardization. Seoul, Republic of Korea: Ministry of Education, Science and Technology, 2012.

52. Lee YJ, Lee SI, Han K. Influence of parental stress, depressed mood, and suicidal ideation on adolescents’ suicidal ideation: The 2008–2013 Korean National Health and Nutrition Examination Survey. Journal of affective disorders. 2019; 246:571–7. Epub 2019/01/04. doi: 10.1016/j.jad.2018.12.097. PMID: 30605875.

53. Moon JH, Kong MH, Kim HJ. Low Muscle Mass and Depressed Mood in Korean Adolescents: a Cross-Sectional Analysis of the Fourth and Fifth Korea National Health and Nutrition Examination Surveys. J Korean Med Sci. 2018; 33(50):e320. Epub 2018/12/12. doi: 10.3346/jkms.2018.33.e320. PMID: 30534032; PubMed Central PMCID:PMC6281954.

54. Kwon S, Park JH, Kim WS, Han K, Lee Y, Paik NJ. Health-related quality of life and related factors in stroke survivors: Data from Korea National Health and Nutrition Examination Survey (KNHANES) 2008 to 2014. PLoS One. 2018; 13(4):e0195713. Epub 2018/04/11. doi: 10.1371/journal.pone.0195713. PMID: 29634768; PubMed Central PMCID:PMC5992928.

55. Turon H, Carey M, Boyes A, Hobden B, Dilworth S, Sanson-Fisher R. Agreement between a single-item measure of anxiety and depression and the Hospital Anxiety and Depression Scale: A cross-sectional study. PLoS One. 2018; 14(1):e0210111. Epub 2019/01/05. doi: 10.1371/journal.pone.0210111. PMID: 30608969; PubMed Central PMCID:PMC6319715.

56. Kearney CA. School absenteeism and school refusal behavior in youth: a contemporary review. Clinical psychology review. 2008; 28(3):451–71. Epub 2007/09/28. doi: 10.1016/j.cpr.2007.07.012. PMID: 17720288.

57. Munkhaugen EK, Torske T, Gjevik E, Naerland T, Pripp AH, Diseth TH. Individual characteristics of students with autism spectrum disorders and school refusal behavior. Autism: the international journal of research and practice. 2013; 17(7):546–8. Epub 2015/07/26. doi:07.2015/jcpsp.546548. PMID: 26208566.

58. Flyckt L, Hassler E, Lotfi L, Krakau I, Nilsson GH. Clinical cues for detection of people with undiscovered depression in primary health care: a case-control study. Primary health care research & development. 2014; 15(3):324–30. Epub 2013/08/21. doi: 10.1017/s146342361317748619. PMID: 29241346.

59. Sohn M, Oh H, Lee SK, Potenza MN. Suicidal Ideation and Related Factors Among Korean High School Students: A Focus on Cyber Addiction and School Bullying. The Journal of school nursing : the official journal of the Division of Family Psychology of the American Psychological Association (Division 43). 2016; 30(1):163–8. Epub 2015/12/23. doi: 10.1037/fam0000179. PMID: 26690329.

60. Lun KW, Chan CK, Ip PK, Ma SY, Tsai WW, Wong CS, et al. Depression and anxiety among university students in Hong Kong. Hong Kong medical journal = Xianggang yi xue za zhi. 2018; 24(5):466–72. Epub 2018/09/25. doi: 10.12809/hkmj176915. PMID: 30245480.

61. Khanzada FJ, Soomro N, Khan SZ. Association of Physical Exercise on Anxiety and Depression Amongst Adults. Journal of the College of Physicians and Surgeons—Pakistan: JCPSP. 2015; 25(7):546–8. Epub 2015/07/26. doi: 07.2015/jcpsp.546548. PMID: 26208566.

62. Boone SD, Brausch AM. Physical Activity, Exercise Motivations, Depression, and Non-suicidal Self-Injury in Youth. Suicide & life-threatening behavior. 2016; 46(5):625–33. Epub 2016/03/13. doi: 10.1111/sltb.12240. PMID: 26970091.

63. Broman-Fulks JJ, Abraham CM, Thomas K, Canu WH, Nieman DC. Anxiety sensitivity mediates the relationship between exercise frequency and anxiety and depression symptomology. Stress and health: journal of the International Society for the Investigation of Stress. 2018; 34(4):500–8. Epub 2018/05/24. doi: 10.1002/smi.2810. PMID: 29790648.
School refusal, communication with caregivers, and positive mindset in adolescent depression

64. Kangas JL, Baldwin AS, Rosenfield D, Smits JA, Rethorst CD. Examining the moderating effect of depressive symptoms on the relation between exercise and self-efficacy during the initiation of regular exercise. Health psychology: official journal of the Division of Health Psychology, American Psychological Association. 2015; 34(5):556–65. Epub 2014/08/12. doi: 10.1037/hea0000142. PMID: 25110850; PubMed Central PMCID: PMC4827250.

65. Dittmer N, Voderholzer U, von der Muhlen M, Marwitz M, Fumi M, Monch C, et al. Specialized group intervention for compulsive exercise in inpatients with eating disorders: feasibility and preliminary outcomes. Journal of eating disorders. 2018; 6:27. Epub 2018/09/15. doi: 10.1186/s40337-018-0200-8. PMID: 30214803; PubMed Central PMCID: PMC6131908.

66. Du Preez EJ, Graham KS, Gan TY, Moses B, Bail C, Kuah DE. Depression, Anxiety, and Alcohol Use in Elite Rugby League Players Over a Competitive Season. Clinical journal of sport medicine: official journal of the Canadian Academy of Sport Medicine. 2017; 27(6):530–3. Epub 2017/01/21. doi: 10.1097/JSM.0000000000000411. PMID: 28107218.

67. Hallgren M, Owen N, Stubbs B, Zebbari Z, Vancampfort D, Schuch F, et al. Passive and mentally-active sedentary behaviors and incident major depressive disorder: A 13-year cohort study. Journal of affective disorders. 2018; 241:75–85. Epub 2018/09/01. doi: 10.1016/j.jad.2018.08.020. PMID: 30170310.

68. Pascoe MC, Parker AG. Physical activity and exercise as a universal depression prevention in young people: A narrative review. Early intervention in psychiatry. 2018. 10/12. doi: 10.1111/eip.12737. PMID: 30302925.

69. Militeilo LK, Kelly S, Melynk BM, Smith L, Petosa R. A Review of Systematic Reviews Targeting the Prevention and Treatment of Overweight and Obesity in Adolescent Populations. The Journal of adolescent health: official publication of the Society for Adolescent Medicine. 2018. Epub 2018/10/14. doi: 10.1016/j.jadohealth.2018.07.013. PMID: 30314864.

70. Joormann J, Quinn ME. Cognitive processes and emotion regulation in depression. Depression and anxiety. 2014; 31(4):308–15. Epub 2014/03/29. doi: 10.1002/da.22264. PMID: 24668775.

71. Crum AJ, Akinola M, Martin A, Fath S. The role of stress mindset in shaping cognitive, emotional, and physiological responses to challenging and threatening stress. Anxiety, stress, and coping. 2017; 30(4):379–95. Epub 2017/01/26. doi: 10.1080/10615806.2016.1275585. PMID: 28120622.

72. Masten AS. Ordinary magic. Resilience processes in development. The American psychologist. 2001; 56(3):227–38. Epub 2001/04/24. https://doi.org/10.1037/0003-066x.56.3.227 PMID: 11315249.

73. Braitlovskaja I, Schoenfeld P, Zhang XC, Bieda A, Kochetkov Y, Margral J. A Cross-Cultural Study in Germany, Russia, and China: Are Resilient and Socially Supported Students Protected Against Depression, Anxiety, and Stress? Psychol Rep. 2018; 121(2):265–81. Epub 2017/08/25. doi: 10.1177/0033294117727745. PMID: 28836915.

74. Rueger SY, George R. Indirect Effects of Attributional Style for Positive Events on Depressive Symptoms Through Self-Esteem During Early Adolescence. Journal of youth and adolescence. 2017; 46(4):701–8. Epub 2016/06/25. doi: 10.1007/s10964-016-0530-2. PMID: 27339368.

75. Hiyoshi A, Sabet JA, Sjoqvist H, Melinder C, Brummer RJ, Montgomery S. Precursors in adolescence of adult-onset bipolar disorder. Journal of affective disorders. 2017; 218:353–8. Epub 2017/05/13. doi: 10.1016/j.jad.2017.04.071. PMID: 28499209.

76. Ferrari GR, Becker ES, Smit F, Rinck M, Spijker J. Investigating the (cost-) effectiveness of attention bias modification (ABM) for outpatients with major depressive disorder (MDD): a randomized controlled trial protocol. BMC psychiatry. 2016; 16(1):370. Epub 2016/11/05. doi: 10.1186/s12888-016-1085-1. PMID: 27809880; PubMed Central PMCID: PMC5094081.

77. Happer K, Brown EJ, Sharma-Patel K. Children's resilience and trauma-specific cognitive behavioral therapy: Comparing resilience as an outcome, a trait, and a process. Child abuse & neglect. 2017; 63:30–41. Epub 2017/09/25. doi: 10.1016/j.chiabu.2017.09.021. PMID: 28942056.

78. Shin SH, Ko SJ, Yang YJ, Oh HS, Jang MY, Choi JM. [Comparison of boys' and girls' families for actor and partner effect of stress, depression and parent-adolescent communication on middle school students' suicidal ideation: triadic data analysis]. J Korean Acad Nurs. 2014; 44(3):317–27. Epub 2014/07/26. doi: 10.4040/jkan.2014.44.3.317. PMID: 25060110.

79. Finan LJ, Ohannessian CM, Gordon MS. Trajectories of depressive symptoms from adolescence to emerging adulthood: The influence of parents, peers, and siblings. Developmental psychology. 2018; 54(8):1555–67. Epub 2018/07/27. doi: 10.1037/dev0000543. PMID: 30047776; PubMed Central PMCID: PMC6063517.

80. Jimenez-Iglesias A, Moreno C, Garcia-Moya I, Rivera F. Prevalence of emergency contraceptive pill use among Spanish adolescent girls and their family and psychological profiles. BMC women's health. 2018; 18(1):67. Epub 2018/05/18. doi: 10.1186/s12905-018-0560-x. PMID: 29769104; PubMed Central PMCID: PMC5956739.
81. Del Barrio V, Holgado-Tello FP, Carrasco MA. Concurrent and longitudinal effects of maternal and paternal warmth on depression symptoms in children and adolescents. Psychiatry research. 2016; 242:75–81. Epub 2016/06/06. doi: 10.1016/j.psychres.2016.05.032. PMID: 27262265.

82. Loades ME, Rimes KA, Ali S, Lievesley K, Chalder T. Does fatigue and distress in a clinical cohort of adolescents with chronic fatigue syndrome correlate with fatigue and distress in their parents? Child: care, health and development. 2018. Epub 2018/10/21. doi: 10.1111/cch.12626. PMID: 30342433.

83. Yun J-Y, Kim KH, Joo GJ, Kim BN, Roh M-S, Shin M-S. Changing characteristics of the empathic communication network after empathy-enhancement program for medical students. Sci Rep-Uk. 2018; 8 (1):15092. https://doi.org/10.1038/s41598-018-33501-z PMID: 30305683

84. Kobak R, Zajac K, Herres J, Krauthamer Ewing ES. Attachment based treatments for adolescents: the secure cycle as a framework for assessment, treatment and evaluation. Attachment & human development. 2015; 17(2):220–39. Epub 2015/03/07. doi: 10.1080/14616734.2015.1006388. PMID: 25744572; PubMed Central PMCID: PMC4872705.