It is illegal to post this copyrighted PDF on any website. A National Study of the Association of Attachment Styles With Depression, Social Anxiety, and Suicidal Ideation Among Lebanese Adolescents

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ABSTRACT

Objective: In Lebanon, depression and social phobia are prevalent, as is suicidal ideation. Consistent violence in Lebanon may cause distress and even mental illness among some children and adolescents. The objective of this study was to generate the first general population-based survey estimates on the association between insecure attachment styles (fearful, preoccupied, and dismissing), mental health disorders (depression and social anxiety), and a clinical manifestation of some mental/psychiatric disorders (suicidal ideation) among Lebanese adolescents.

Methods: This cross-sectional study was conducted between January and May 2019. Of 2,250 questionnaires distributed, 1,810 (80.44%) were completed and collected. Participants were enrolled in the study using a proportionate random sample of schools from all Lebanese governates (Beirut, Mount Lebanon, North, South, and Bekaa).

Results: The results showed that a secure attachment style was significantly associated with less fear (β = 5.966), depression (β = -0.319), and suicidal ideation (β = -0.583). Insecure attachment styles (preoccupied, fearful, and dismissing) were significantly associated with more fear and avoidance, depression, and suicidal ideation; more preoccupied attachment style was significantly associated with higher fear (β = 5.639) and avoidance (β = 9.974). Higher fearful attachment style was significantly associated with more avoidance (β = 4.605) and depression (β = 0.980). Finally, more dismissing attachment style was significantly associated with more fear (β = 8.508), avoidance (β = 10.689), and suicidal ideation (β = 0.528).

Conclusions: The study results revealed that insecure attachment styles are associated with higher levels of depression, suicidal ideation, and social phobia. Future research is necessary to confirm the findings.

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ttachment styles differ among children **L** based on experiences and interactions with their caregivers at a young age. The 4 categories of attachment are secure, disorganized (fearful), anxious (preoccupied), and avoidant (dismissing).¹ Secure attachment develops when the caregiver is always sensitive to the child's needs and is invariably present to meet their needs and protect them. In the insecure-avoidant attachment style, the caregiver is always neglecting the child's needs, making the child independent of the caregiver. Insecure-anxious attachment is present in people with a negative view of self and a positive view of others. They seek high levels of responsiveness, approval, and intimacy from their attachment figure and value the latter to such an extent that they become overly dependent on them.² The insecure disorganized attachment style is characterized by behavioral disorientation when interacting with caregivers.³ The majority of these children have a history of abuse and maltreatment and may show fear of the caregiver.⁴

Secure attachment is a healthy mechanism present in a child, helping him or her to form functional relationships, while insecure attachment causes the person to have psychological issues, in particular an unhealthy way of dealing with one's problems, leading to depression.^{5,6} It is hypothesized that an insecure attachment causes the internalization of negative thoughts, and this is linked to feelings of unworthiness in the individual,⁷ leading to negative emotions and thus depression.⁸

Insecure attachment styles are also directly linked to social anxiety. Indeed, dysfunctional types, such as avoidant and anxietyrelated attachments, lead to nonfunctional interpersonal relationships, maladaptive coping mechanisms, and negative thought processes about oneself.⁹ Moreover, insecure attachment styles are associated with higher anxiety symptoms,¹⁰ in addition to suicidal



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- Having a secure attachment style was associated with less fear, anxiety, depression, and suicidal ideation.
- Insecure attachment styles (preoccupied, fearful, and dismissing) were associated with more fear and avoidance, depression, and suicidal ideation.
- Health care professionals can approach adolescents in schools to identify attachment styles and individuals at risk of developing mental health problems.
- Health care professionals should develop the knowledge of factors associated with attachment styles, which can later impact the psychological state of the individual.

ideations and attempts, through mechanisms similar to those of depression, ie, negative self-criticism, vulnerability, and dependence. According to Blatt, personality is a mixture of 2 elements: the ability to develop mature interpersonal relationships and self-image and identity.¹¹ An individual more focused on the first dimension is dependent, while another focused on the second is a self-critic.¹² High levels of dependence and self-criticism lead to vulnerability and suicidal ideations and attempts.¹³

In Lebanon, no previous research has investigated the relationship between attachment styles and mental health among adolescents. Further, depression, social phobia, and suicidal ideation are prevalent.¹⁴ According to data from the Global School-Based Student Health Survey collected in 2005, the prevalence of suicidal ideation was 16%,¹⁵ while a recent study¹⁴ among Lebanese teenagers found it to be higher (28.9%). Another study¹⁶ found that 6.7% of participants aged 11 to 17 years had mood disorders, 13.1% had anxiety disorders, and only 6% of those with disorders reported seeking professional help. Consistent violence in Lebanon is likely to cause distress and even mental illness among some children and adolescents.¹⁷ Psychological symptoms, especially posttraumatic stress disorder, remain high in war-affected populations many years after the war.¹⁸ In addition, Lebanon currently has many issues including the political situation, lack of clean water and electricity, and the waste crisis.^{19,20} All these problems coincide with poverty and shortage of jobs.²¹ Moreover, given the stigma toward mental health issues in Lebanon, it is difficult to get a clear picture when it comes to a person's health. All these factors psychologically affect caregivers, influencing their relationships with their children and making the latter prone to mental disorders, with no clear management plan thus far.²²

Accordingly, we hypothesized that insecure attachment styles would be associated with higher mental illness. The present study aimed to create the first general populationbased survey estimates on the association between insecure attachment styles (fearful, preoccupied, and dismissing), mental health disorders (depression and social anxiety), and a clinical manifestation of some mental/psychiatric disorders (suicidal ideation) among Lebanese adolescents.

General Design and Setting

A total of 1,810 (90.5%) of 2,000 students were enrolled in this cross-sectional study (January–May 2019). Participants were distributed randomly among 18 schools from the country's districts: 4 in Beirut, 2 in South Lebanon, 6 in Mount Lebanon, 2 in North Lebanon, and 2 in Bekaa. A total of 18 private schools were contacted, and 2 refused to participate. All students aged 14 to 17 years were selected from each school. There was no financial compensation in exchange for their participation. The only exclusion criterion was a refusal to fill out the questionnaire. The methodology is the same as that of previous articles.^{23–27}

Sample Size Calculation

According to the G-power software, and based on an effect size f2 = 2%, a 5% α error, an 80% power, and taking into consideration 9 factors to be entered in the multivariable analysis, the results showed that a minimum number of 395 was needed.

Questionnaire

The questionnaire was in Arabic and required 30 minutes to be completed. It was pilot tested on 10 students of the same ages as the participants to ensure understandability. Students completed the questionnaire in the classrooms without their parents' influence. The first part assessed the sociodemographic details of the participants (ie, age, sex, smoking status, parents' status). The Household Crowding Index corresponded to the number of persons living in the house divided by the number of rooms, excluding the bathroom and the kitchen.²⁸ The second part of the questionnaire included the following scales.

Relationship Questionnaire

The Relationship Questionnaire (RQ) is a self-assessment measure of attachment behavior²⁹ that consists of 4 subscales corresponding to the 4 attachment styles: style A (secure), style B (fearful), style C (preoccupied), and style D (dismissing). Each subscale is rated on a 7-point scale from 1 (not at all like me) to 7 (very much like me), with higher scores reflecting higher attachment style. This measure was used to assess attachment types in our population in the absence of a specific instrument for children/adolescents.

Exploratory Factor Analysis on Sample 1

The RQ items converged over a solution of 1 factor (total variance explained = 55.94%, Kaiser-Meyer-Olkin [KMO] = 0.706, Bartlett's test of sphericity P<.001, and Cronbach α = 0.970) (Table 1).

Confirmatory Factor Analysis on Sample 2

A confirmatory factor analysis was run on sample 2, using the structure obtained in sample 1 and yielded the following results: the maximum likelihood $\chi^2 = 2.22$ and df = 2, which gave an $\chi^2/df = 1.11$. For noncentrality fit indices, the

Clinical Points

Table 1. Factor Analysis of the Relationship Questionnaire						
Item	Loading Factor					
Relationship style A: secure	0.659					
Relationship style B: fearful	0.827					
Relationship style C: preoccupied	0.827					
Relationship style D: dismissing	0.659					

Steiger-Lind root mean square error of approximation was on 0.04 (0–0.22). Moreover, the Jöreskog goodness of fit index (GFI) equaled 0.987, and the adjusted GFI (AGFI) equaled 0.935.

Liebowitz Social Anxiety Scale

The Liebowitz Social Anxiety Scale (LSAS),³⁰ validated as a self-report scale³¹ and in Lebanon,³² helps identify social anxiety disorder. It features 24 items divided into 2 subscales: the first relates to performance anxiety (13 questions), and the second concerns social situations (11 questions). All items are graded on a 4-point Likert scale (from 0 to 3) on the fear and avoidance of the same situations. The overall score is the sum of fear and avoidance scores, with a maximum of 144 points. The higher the score, the more severe the social phobia.

Adolescent Depression Rating Scale

The Adolescent Depression Rating Scale (ADRS),³³ a 10-item depression screening tool, was used in the study, with higher marks reflecting more severe depression.

Columbia-Suicide Severity Rating Scale

The Columbia-Suicide Severity Rating Scale (C-SSRS), a 5-question instrument recently validated in Lebanon,^{14,34} evaluates suicidal ideation and behavior. A "yes" answer to any of the questions indicates the presence of suicidal ideation.³⁵

Translation Procedure

The forward (from English to Arabic) and back (from Arabic to English) scale translation process was followed; 2 health care specialists were involved in each translation, respectively. A committee of health care experts and a language professional verified both versions. Reviews of problematical questions were discussed with both translators. No major differences were found between the original and the translated versions.

Statistical Analysis

SPSS software version 23 was used to conduct the data analysis. Attachment style scores were dichotomized into low/high attachment style according to the median, which was chosen as a cutoff point in the absence of a cutoff point set for this scale. The Bonferroni correction was used to adjust for multiple testing (with a significance level of α/m , where α is the desired overall α level and m the number of hypotheses/tests conducted) to calculate the *P* value of the statistical significance in the bivariate analysis.³⁶ Seven

Table 2. Sociodemographic Characteristics of the Sample Population

Characteristic	Sample
Sex, n (%)	
Male	844 (46.7)
Female	963 (53.3)
Parental status, n (%)	
Living together	1,581 (88.1)
Separated	213 (11.9)
Smoking status, n (%)	
Yes	468 (25.9)
No	1,342 (74.1)
Age, mean±SD, y	15.42 ± 1.14
Household Crowding Index, mean + SD	1.01 ± 0.64

hypotheses/variables were tested in each model, with the desired error α of 0.05; therefore, the Bonferroni correction would test each hypothesis at a *P* value of .05/7 = .007.

A multivariate analysis of covariance using the "enter" method was carried out to compare multiple measures (each scale was taken as a dependent variable) between attachment styles, considering potential confounding variables: age, sex, and House Crowding Index.

To confirm the construct validity of the ADRS, an exploratory factor analysis, using the principal component analysis technique, was run on sample 1 (half of the original sample randomly chosen by SPSS). The model's adequacy was verified by the KMO and Bartlett's test of sphericity. Factors with an Eigenvalue >1 were retained. Moreover, Cronbach a was recorded for reliability analysis. Afterward, confirmatory factor analysis was carried out on sample 2 (the second half of the original sample) using the Statistica software. The maximum likelihood method for the discrepancy function was used to assess the structure of the instrument. Several goodness-of-fit indicators were reported: relative $\chi^2 (\chi^2/df)$, root mean square error of approximation (RMSEA), GFI, and AGFI. The AGFI was calculated by the value of χ^2 divided by the *df* (χ^2/df) (cutoff values < 2–5). The RMSEA tested the fit of the model to the covariance matrix. As a guideline, values <.05 indicate a close fit, and values <.11 indicate an acceptable fit. The GFI and AGFI are χ^2 -based calculations independent of df. The recommended thresholds for acceptable values are $\geq 0.90.^{37}$

Ethics Approval and Consent to Participate

The Psychiatric Hospital of the Cross Ethics and Research Committee, in compliance with the hospital's Regulatory Research Protocol, approved the study protocol (HPC-012-2019). Written consent was obtained from the students' parents prior to starting the data collection.

RESULTS

In this study, the Cronbach α values were excellent for the RQ (0.970), LSAS total score (0.969), fear and avoidance subscales (0.952 and 0.951, respectively), ADRS (0.940), and C-SSRS (0.966).

The sociodemographic characteristics of the participants are summarized in Table 2. The mean (SD) age was 15.42

Table 3. Adjusted Means of the Psychological Scales According to the Adolescent Attachment Styles After Adjusting for Covariates^{a,b}

	Relationship Style A: Secure		Relationship Style B: Fearful		Relationship Style C: Preoccupied		Relationship Style D: Dismissing	
	Low Level	High Level	Low Level	High Level	Low Level	High Level	Low Level	High Level
Liebowitz fear score	30.42 (0.68)*	23.91 (0.75)*	26.37 (0.73)	27.95 (0.79)	30.02 (0.74)*	24.31 (0.77)*	22.43 (0.66)*	31.90 (0.74)*
Liebowitz avoidance score	32.97 (0.65)*	30.65 (0.73)*	34.27 (0.71)*	29.35 (0.77)*	36.86 (0.71)*	26.77 (0.74)*	26.09 (0.64)*	37.53 (0.72)*
Depression score	4.83 (0.07)	4.95 (0.08)	4.38 (0.08)*	5.40 (0.09)*	4.77 (0.08)	5.01 (0.08)	4.85 (0.07)	4.93 (0.08)
Suicidal ideation score	0.89 (0.08)*	1.45 (0.08)*	1.29 (0.08)	1.06 (0.09)	1.11 (0.08)	1.23 (0.09)	0.89 (0.07)*	1.45 (0.08)*
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^aCovariates = age, sex, House Crowding Index, and physical activity score.

^bData are presented as adjusted mean (standard error).

**P* value significant at < .05.

years (1.14), and 46.7% were male. In addition, 11.9% of those adolescents had separated parents, and 74.1% were nonsmokers.

Attachment styles scores were dichotomized according to the medians that were used as the cutoff points. The results showed that 594 (43.0%; CI, 0.40–0.46) participants had a high secure attachment style, 604 (44.1%; CI, 0.41–0.46) had a high fearful style, 672 (49.1%; CI, 0.46–0.51) had a high preoccupied attachment style, and 624 (45.5%; CI, 0.42–0.48) had a high dismissing attachment style.

Association Between the Psychological Scales and the Adolescent Attachment Styles Adjusted for Age, Sex, House Crowding Index, and Physical Activity Score

Table 3 presents the association of adolescent attachment styles with psychological scales adjusted for age, sex, and the House Crowding Index. After adjusting for all covariates, lower mean social fear (mean = 23.91, P < .001) and social avoidance (mean = 30.65, P = .031) scores were significantly found in participants with a high compared to a low level of secure attachment style. However, a higher mean suicidal ideation score (mean = 1.45, P < .001) was significantly found in participants with a high compared to a low level of secure attachment style.

Higher mean social fear (30.02 vs 24.31) and social avoidance (36.86 vs 26.77) scores were significantly found in participants with a low versus high level of preoccupied attachment style (P<.001 for both).

Moreover, a higher mean social avoidance was significantly found in participants with a low versus high level of fearful attachment style (34.27 vs 29.35, P < .001), while a higher mean depression score was significantly found in participants with a high versus low level of preoccupied attachment style (5.40 vs 4.38, P < .001).

Also, higher mean social fear (mean = 31.90), social avoidance (mean = 37.53), and suicidal ideation (mean = 1.45) were significantly found in participants with a high versus low level of dismissing attachment style (P < .001 for all).

Multivariate Analysis

Taking the Liebowitz fear score as the dependent variable, female adolescents (β =2.555, η =0.006) with high preoccupied (β =5.639, η =0.016) and high dismissing (β =8.508, η =0.046) attachment styles were significantly associated with higher social fear. Higher security

 $(\beta = -5.966, \eta = 0.022)$ attachment style and high Household Crowding Index ($\beta = -3.509, \eta = 0.022$) were significantly associated with lower social fear.

Taking the Liebowitz avoidance score as the dependent variable, adolescents with high fearful ($\beta = 4.605$, $\eta = 0.011$), preoccupied ($\beta = 9.974$, $\eta = 0.053$), and dismissing ($\beta = 10.689$, $\eta = 0.075$) attachment styles were significantly associated with higher Liebowitz avoidance score. Higher Household Crowding Index ($\beta = -3.042$, $\eta = 0.018$) was significantly associated with lower Liebowitz avoidance score.

Considering the depression score as the dependent variable, female sex ($\beta = 0.456$, $\eta = 0.013$), a high fearful attachment style ($\beta = 0.980$, $\eta = 0.033$), and a high Household Crowding Index ($\beta = 0.228$, $\eta = 0.007$) were significantly associated with higher depression. Older age ($\beta = -0.250$, $\eta = 0.022$) and a high secure attachment style ($\beta = -0.319$, $\eta = 0.004$) were significantly associated with lower depression.

Considering the suicidal ideation score as the dependent variable, female sex ($\beta = 0.714$, $\eta = 0.034$) and high dismissing ($\beta = 0.528$, $\eta = 0.014$) attachment style were significantly associated with high suicidal ideation score. Older age ($\beta = -0.095$, $\eta = 0.003$), high Household Crowding Index ($\beta = -0.223$, $\eta = 0.007$), and a high secure attachment style ($\beta = -0.583$, $\eta = 0.016$) were significantly associated with lower suicidal ideation score (Table 4).

DISCUSSION

This study is the first in Lebanon to investigate the link between attachment styles and mental health in adolescents. The results showed that a secure attachment style was significantly associated with less fear, avoidance, depression, and suicidal ideation. Insecure attachment styles (preoccupied, fearful, and dismissing) were significantly associated with more fear and avoidance, depression, and suicidal ideation.

This study shows that individuals who have preoccupied and dismissing attachment styles are more prone to suffer from social fear, considering that socially anxious individuals were more concerned about others' opinions, consistent with previous studies.³⁸ Moreover, they are scared to make mistakes on social occasions, which makes them at risk of developing social fear. An ambivalent attachment or preoccupied attachment leads one to socially desire a relationship but reject it. Adolescents who are avoidantdismissive restrict revealing their feelings to others, and they

It is illocal to post this convright Table 4. Multivariate Analysis of Covariance^a

					95% Cl	
		Р	Partial	Lower	Upper	
	β	Value	η²	Bound	Bound	
Liebowitz fear score						
Sex (females vs males*)	2.555	.005	0.006	0.772	4.338	
Household Crowding Index	-3.509	<.001	0.022	-4.760	-2.257	
Secure attachment (high vs low*)	-5.966	<.001	0.022	-8.123	-3.808	
Preoccupied attachment (high vs low*)	5.639	<.001	0.016	3.269	8.009	
Dismissing attachment (high vs low*)	8.508	<.001	0.046	6.411	10.606	
Liebowitz avoidance score						
Household Crowding Index	-3.042	<.001	0.018	-4.249	-1.836	
Secure attachment (high vs low*)	-2.012	.058	0.003	-4.092	0.069	
Fearful attachment (high vs low*)	4.605	<.001	0.011	2.292	6.918	
Preoccupied attachment (high vs low*)	9.974	<.001	0.053	7.689	12.260	
Dismissing attachment (high vs low*)	10.689	<.001	0.075	8.666	12.711	
Depression						
Age	-0.250	<.001	0.022	-0.341	-0.160	
Sex (females vs males*)	0.456	<.001	0.013	0.244	0.668	
Household Crowding Index	0.228	.003	0.007	0.079	0.377	
Secure attachment (high vs low*)	-0.319	.015	0.004	-0.575	-0.062	
Fearful attachment (high vs low*)	0.980	<.001	0.033	0.695	1.265	
Suicidal ideation score						
Age	-0.095	.035	0.003	-0.184	-0.007	
Sex (females vs males*)	0.714	<.001	0.034	0.507	0.921	
Household Crowding Index	-0.223	.003	0.007	-0.368	-0.078	
Secure attachment (high vs low*)	-0.583	<.001	0.016	-0.833	-0.332	
Dismissing attachment (high vs low*)	0.528	<.001	0.014	0.285	0.772	

^aIn the global model, the independent variable is the adolescent attachment styles. Covariates are age, sex, and Household Crowding Index.

*Reference group.

subsequently develop social fear.³⁹ Further, insecure adolescents avoid being close to others since their needs as children were not met by their attachment figure, which explains our finding that insecure attachment styles were significantly associated with higher avoidance scores. Thus, they become socially isolated and do not seek the help of others and their comfort. They usually have a flat affect, which is an unstable relational style.⁴⁰

Additionally, our results showed that the fearful attachment style was associated with depression, similar to previous findings.⁴¹ Also, subjects with an insecure attachment style have a negative self-representation and criticism. They tend to keep emotional distances from people and avoid close relationships, making them more prone to sad moods.¹⁰ Moreover, secure attachment is linked to a lower level of depression, as shown in previous studies.⁴² Indeed, people with secure attachments do not rely on others and have healthy relationships.

Our results showed that a dismissing attachment style was associated with higher suicidal ideation, consistent with that of a previous study showing that insecure attachments are associated with higher suicidal ideation.¹² The explanation for this finding can be that insecure attachments create cognitive dysfunction leading to suicidal ideations. Moreover, individuals with high levels of avoidant attachment may view others as negative and may believe they need to remain highly competent or perfect in everything they do to preserve self-confidence instead of risking additional rejections.⁴³ Suicide might be a consequence of these rejections and/or failure to attain the preset high standards. Conversely, older age was associated with lower depression/suicide ideation, in contrast to previous findings.¹⁴ This result needs to be further assessed. It could be due to a higher sense of wisdom and resilience as people grow older.

Female sex in adolescents was associated with social fear and depression, similar to other studies.^{44,45} Sex differences, in terms of

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behaviors and coping styles, are hypothesized to predispose women to be more sensitive to rejection, criticism, and separation, which in turn make them more vulnerable to depression and anxiety disorders.⁴⁶ Moreover, this outcome may also be due to differences in brain function between males and females in memory, affect, cognition, and fear. Another reason would be differences in the socializing process between the 2 sexes in adolescence, in addition to the concept of masculinity and femininity. Indeed, men are encouraged to face their fears, which makes them more exposed, while women adopt a more avoidant and fearful attitude.44 However, this result needs to be further assessed, as another study⁴⁷ found that women tend to internalize their emotions. Female sex is linked to higher suicidal ideation, consistent with previous findings.¹⁴ Women attempt suicide as a means of expressing their need for help. These results are contrary to those of other studies^{48,49} suggesting that males may be at higher risk of suicidal ideation, probably due to conduct problems.

Furthermore, a high Household Crowding Index was associated with lower social fear/ avoidance. This result contradicts a study⁵⁰ that found more crowded households produced higher stress among adolescents, making them more aggressive and thus more avoidant socially. Also, a high Household Crowding Index was linked to lower rates of suicidal ideation, which was similar to the findings of Pepin et al in 2018.⁵¹ A possible explanation for this outcome is that a more crowded household suggests higher social support and less privacy, which could be related to less suicidal ideations.

Implications for Health Care Professionals

Health care professionals (social workers, school psychologists, nurses) can approach adolescents in schools to identify attachment styles and individuals at risk of developing mental problems. Specifically, health care professionals should develop the knowledge of factors associated with secure/insecure attachments styles, which can have an impact later on the psychological state of the individual. Therefore, health care professionals need to apply this understanding to their health promotion activities by (1) recognizing factors related to the development of secure/insecure attachment styles and (2) providing caregivers with counseling sessions and mindfulness programs to face negative factors related to the development of an insecure attachment style in their children.

Fattouh et al It is illegal to post this copyrighted PDF on any website. Limitations

This study does not infer causality of results, as it is crosssectional (the chronological manifestation of the events is unknown). Also, a residual confounding bias could occur since residual differences were not controlled after adjusting the variables. The amount of time during which adolescents were exposed to parental divorce was not evaluated. A selection bias is possible since the sample was recruited from private schools only (public schools and adolescents not attending school were not involved). An information bias is also possible since questions may not have been appropriately understood. Moreover, all variables were evaluated through a self-reported questionnaire and not through a clinical interview by a health care professional, thus the responses might lack precision, and accuracy may have been subject to reporting bias. In addition, some scales are not validated in Lebanon (ADRS and RQ). Finally, a residual confounding bias might be present since not all factors associated with mental illness were taken into consideration in this study.

CONCLUSION

Our results revealed that insecure attachment styles are associated with higher levels of depression, suicidal ideation, and social phobia. Future research is necessary to confirm our findings and reveal the causes of this association.

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Availability of data and materials: All data generated or analyzed during this study are not publicly available as per the rules and regulations of the ethics committee. The dataset supporting the conclusions is available upon request to the corresponding author.

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