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Impact of perceived social support on suicidal ideation among students at Ain Shams University

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Abstract

Background Suicide is a significant public health issue that has long-term impacts on individuals, families, and communities. Perceived social support can reduce the frequency of suicidal ideation (SI), which is an important precursor to later attempted and completed suicide. The present study aimed to measure the prevalence of SI and perceived social support among students at Ain Shams University, compare SI and perceived social support among medical and non-medical students, and identify the factors affecting SI.

Methods A cross-sectional study was conducted among 745 students recruited from two medical and two non-medical faculties at Ain Shams University. The data was gathered through a self-administered questionnaire, including socio-demographic characteristics, family relationships, daily habits, the Suicidal Ideation Scale (SIS), and the Oslo Social Support Scale (OSSS-3).

Results The mean age of participants was 20.1 ± 1.4, (58.1%) were females, and (7.2%) were cigarette smokers. SIS was statistically higher among non-medical students (19.89 ± 8.58) versus (16.60 ± 7.56) among medical ones. On the other hand, OSSS-3 was statistically higher among medical students, where (48.9%) of non-medical students reported poor social support versus (43.3%) among medical ones, and only (7.1%) of non-medical students reported strong social support versus (15.1%) among medical ones. The ordinal logistic regression revealed that non-medical education (OR = 1.74), smoking (OR = 2.16), dissatisfaction and neutral satisfaction regarding family relationships (OR = 6.49 and OR = 3.24, respectively), and low and moderate degrees of perceived social support (OR = 3.11 and OR = 1.81, respectively) are significant positive predictors of SI severity.

Conclusion Since SI is a serious issue among Ain Shams University students, screening is required as a secure element of initiatives to prevent youth suicide. As poor perceived social support was a significant predictor of SI severity, teaching parenting strategies to enhance family relationships and coping with stressful situations through lectures and media must be intensified.

Keywords Oslo Social Support Scale (OSSS-3), Suicidal Ideation Scale (SIS), Medical students, Non-medical students

Background

Suicidal ideations (SI) are suicidal thoughts or ideas that encompass a variety of contemplations, aspirations, and obsessions with suicide and death [1]. Suicide is a significant public health issue with long-term consequences for people, families, and communities [2]. Among individuals aged 15 to 29, suicide is the fourth most common cause of death. Around (77%) of suicides worldwide take

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place in low- and middle-income nations, where poor access to services, poverty, and stigma around mental health are listed as obstacles to receiving care [3]. Every 40 s, a suicide case occurs around the world [4].

In Egypt, the number of suicides has significantly increased over the past few years [5]. In 2022, 7881 people committed suicide, while Egypt witnessed 3022 suicides in 2019 [6]. Egypt has a suicide rate of around 0.5 per 100,000 people, compared to around 9.0, globally [7]. This large difference can be attributed to flaws in the surveillance system or religious customs of the country that encourage under-reporting implications [5].

A variety of risk factors can lead to SI like relationship problems, trauma, substance use, stress at work or education, a physical health problem, or financial obstacles. Additionally, having a mental health condition like anxiety, bipolar disorder, post-traumatic stress disorder, or depression can also have an impact [8]. Furthermore, females attempt suicide more often than males, but males are successful about three to four times more often than females [9–12].

The prevalence of SI varies among different countries. In the USA, the prevalence of SI was (9.7 to 58.3%) among university students and attempted suicide was (0.7 to 14.7%) according to a meta-analysis in 2018 [13]. Among Chilean adolescents, 65.6% of them reported that they had SI and 18.4% had attempted suicide [11]. In Bangladesh, the prevalence of SI was 61.1% [14]. In Ethiopia, the prevalence of SI, plans, and attempts among campus students was 58.3%, 37.3%, and 4.4%, respectively [12]. In Muslim-majority countries, a meta-analysis revealed that the pooled lifetime prevalence of SI was 21.9%, suicide plans were 6.4%, and suicide attempts were 6.6%. South-East Asia had the highest lifetime prevalence of SI (46.2%), but the Eastern Mediterranean Region had the highest 12-month prevalence (16.8%) [15].

Regarding the prevalence of SI in Egypt, 25% of university students in Zagazig had a significant risk for suicidal behaviors. Being in the first years of practical faculties and having no friends are significantly correlated with suicidal behaviors [9]. The quality of life had a statistically significant negative correlation with suicidal behaviors. Youths' perspectives about suicidal behaviors (pressure/escaping tool, seeking help/ending pain, and attention-grabbing behavior) are also risk factors [9]. Furthermore, SI was higher among students in the preclinical medical years when compared with students in clinical training and among students who live far from their families [16].

Suicides can be prevented with prompt, evidence-based, and often inexpensive interventions [3]. There are a number of activities that can be implemented at individual levels to prevent suicide such as; supporting social and emotional learning programs, teaching parenting skills to strengthen family relationships, and teaching stress management [2]. Perceived social support can reduce the incidence of SI and increase personal self-esteem [10, 17–19]. Low perceived social support and stressful life events were significantly associated with suicide attempts [20]. Research by Abdu et al. in Ethiopia found that students with poor social support, a family history of suicide attempts, lifetime alcohol use, rural residency, and less regular religious practice had an increased likelihood of developing SI [12]. Shenouda and Basha in 2014 showed that perceived stress is a significant predictor of SI for females among university students in Egypt, whereas perceived stress and social support are significant predictors of SI for males [21].

Previous research revealed that there is no evidence of iatrogenic consequences resulting from suicide screening and screening in high schools is a secure element of youth suicide prevention efforts [22, 23]. Furthermore, asking an at-risk population about SI is not associated with subsequent increases in its occurrence [24].

In international comparisons, medical students had a higher rate of SI and attempt because they experienced higher levels of stress due to poor sleep, mental issues, and challenges in their study courses [25]. Because university students are the backbone of our society, it is important to safeguard them against suicide and other preventable causes of illness and mortality. The present study was the first one to identify the association between SI and perceived social support among students in Egypt. Therefore, the present study aimed to measure the prevalence of suicidal ideation (SI) and perceived social support among students at Ain Shams University, compare SI and perceived social support among medical and non-medical students, and identify the factors affecting SI.

Subjects and methods

Type of study and setting

A cross-sectional study was conducted at Ain Shams University.

Target population

The current study involved students recruited from 4 faculties: 2 medical faculties (faculty of medicine and faculty of nursing) and 2 non-medical faculties (faculty of engineering and faculty of commerce) at Ain Shams University (Supplementary Table S1).

Inclusion criteria were Egyptian students at the above-mentioned faculties of Ain Shams University aged 17–32 years old.

Sample size and type

Using the epi info program for sample size calculation using the following assumptions: prevalence of suicidal

risk behavior among university students was 25% (Abozaid et al., 2022), 97% confidence interval (CI), 5% margin of error, a non-response rate of 5%, and design effect = 2. A sample size of at least 745 participants will be needed. Regarding the sample type, a convenience non-random sample was conducted.

Data collection tool

A self-administered questionnaire was used to collect data. It consisted of the following sections:

- Socio-demographic characteristics included age, gender, and monthly family income.
- Daily habits such as smoking, drinking alcohol or substance abuse, practicing exercise, and sleeping hours.
- Family and social issues included information about satisfaction with parents' and friends' relationships.
- Suicidal Ideation Scale (SIS): It consisted of a 10-item scale. It is a 5-point Likert-type scale that is based on how the respondent felt or acted over the preceding year and is rated from 1 (never or none of the time) to 5 (always or a great many times). The overall score ranged from 10 to 50. SIS was created as a brief tool to measure the severity of suicidal behavior among the general population. It was intended to show the range of SI, from covert thoughts to more overt or intense ideation and actual suicide. SIS questions are divided into two groups: group 1 measures suicide desire (ongoing thoughts) and consists of 4 questions "5, 6, 7, 8", and group 2 measures resolved plans and preparation (intense thought, plans, and attempt suicide) and consists of 6 questions "1, 2, 3, 4, 9, 10". Among college students, a score of ≥ 15 is the starter score of minimum SI, while a total score of ≥ 36 is considered serious SI [26–28]. Based on these cutoff values, our participants were categorized into 3 categories: those who scored < 15 were labeled as low risk of SI, those who scored from 15 to 35 were labeled as moderate risk of SI, and those who scored ≥ 36 were labeled as serious or high risk of SI.
- The Oslo Social Support Scale (OSSS-3): A 3-item self-reported scale measuring one's perception of social support is used. It comprises three questions with a focus on the availability of practical assistance that inquires about the number of close confidants, the perception of other people's care, and the relationship with neighbors, with a focus on the accessibility of getting practical help. The sum score varied from 3 to 14, with high values indicating strong levels of social support and low values indicating poor levels. Three broad types of social support are determined by the OSSS-3 sum score: 3 to 8 have poor social support, 9 to 11 have moderate support, and while 12 to 14 have strong support [29].

Pilot study

To assess the questionnaire's clarity and feasibility, a pilot study involving 10% of the sample was carried out. Based on the pilot study's findings, some questions were modified, and the findings were not included in the study results.

Validity and reliability of the study scales

- SIS: Previous research has demonstrated that SIS exhibits a high degree of internal consistency (Cronbach Alpha = 0.86 and 0.91, respectively) [26, 27]. Evidence from earlier studies showed that SIS is more easily understood by students and is capable of detecting early to serious SI by examining the convergent validity and known-group validity [27, 30]. Regarding our data, assessment of the reliability of the SIS resulted in Cronbach's $\alpha = 0.91$, and interterm correlations ranged from 0.35 to 0.73.
- Validity evaluation is done by an expert panel, which consists of three experts: two public health experts and one psychiatry expert to evaluate the relevance, feasibility, and comprehensiveness of the tool. The investigators used a back-to-back translation for the development of the Arabic version of the questionnaire to ensure the validity of the Arabic version.
- OSSS-3: Regarding our data, assessment of the reliability of the OSSS-3 results in Cronbach's $\alpha = 0.7$, and interterm correlations ranged from 0.25 to 0.53.

Statistical analysis

Data were collected, checked, coded, and entered PC. Data were analyzed using the Statistical Package for Social Sciences (SPSS version 25). Descriptive analyses were performed as numbers and percentages for all qualitative data, mean, and SD for quantitative data.

Bivariate analyses were performed using the chi-square test for categorical variables, and the Student's t test for quantitative data. Pearson correlation was used to assess the correlation between SIS and OSSS-3 scores, and relationships were illustrated using scatter plots.

Ordinal logistic regression was used to identify significant predictors of the severity of SI among participants, and ten variables were selected as predictors for the degree of SI. The selection of variables was done after reviewing the literature and identifying all factors that were proven to be related to our outcome. P value < 0.05 was considered significant.

Results

The present study involved 745 students at Ain Shams University: 418 (56.1%) medical students and 327 (43.9%) non-medical ones. The mean age was significantly higher among non-medical students (20.5 ± 1.3) than medical ones (19.8 ± 1.3). Males were significantly higher among non-medical students (52%) compared to medical ones (34%). Regarding cigarette smoking, it was significantly higher among non-medical than medical ones (11.6% versus 3.8%). Lifetime drug and alcohol use were significantly higher among non-medical students (1.5% and 5.2%, respectively). On the other hand, satisfaction with family's and friends' relationships was significantly higher among medical than non-medical (Table 1).

SIS was statistically higher among non-medical students (19.89 ± 8.58 versus 16.60 ± 7.56) among medical ones. Suicide desire and attempt were statistically higher among non-medical students (9.83 ± 4.58 and 10.07 ± 10.07, respectively) versus among medical students (8.12 ± 4.16 and 8.48 ± 3.94, respectively). Furthermore, moderate, and high SI risks were significantly higher among non-medical students (59.3% and 6.4%, respectively) versus among medical ones (44.3% and 3.3%, respectively) (Table 2).

Regarding the 10 items of SIS, non-medical students were significantly higher in reporting the "Always" option in comparison with the medical ones (Supplementary Table S2).

OSIO Social Support Scale (OSSS-3) was statistically higher among medical students where (48.9%) of non-medical students reported poor social support versus (43.3%) among medical ones, and only (7.1%) of

Table 1 Socio-demographic characteristics of the studied participants (*N* = 745)

		Total (745) *N* (%)	Medical (418) *N* (%)	Non-medical (327) *N* (%)	*P* value
Age	M ± SD (Max.-Min.)	20.1 ± 1.4 (31–17)	19.8 ± 1.3 (25–17)	20.54 ± 1.3 (31–18)	**< 0.001*&**
Gender	Male	312 (41.9%)	142 (34%)	170 (52%)	**< 0.001***
	Female	433 (58.1%)	276 (66%)	157 (48%)	
No. of siblings	< 3	609 (81.7%)	326 (78%)	283 (86.5%)	**0.003***
	≥ 3	136 (18.3%)	92 (22%)	44 (13.5%)	
Family income	< 5000 EGP	400(53.7%)	225 (53.8%)	175 (53.5%)	0.930
	≥ 5000 EGP	345(46.3%)	193 (46.2%)	152 (46.5%)	
Cigarette smoking	Yes	54 (7.2%)	16 (3.8%)	38 (11.6%)	**< 0.001***
	No	691 (92.8%)	402 (96.2%)	289 (88.4%)	
Lifetime drug abuse	Yes	6 (0.8%)	1 (0.2%)	5 (1.5%)	0.060
	No	739 (99.2%)	417 (99.8%)	322 (98.5%)	
Lifetime alcohol use	Yes	19 (2.6%)	2 (0.5%)	17 (5.2%)	**< 0.001***
	No	726 (97.4%)	416 (99.5%)	310 (94.8%)	
Regular Practice	Yes	281 (37.7%)	156 (37.3%)	125 (38.2%)	0.800
	No	464 (62.3%)	262 (62.7%)	202 (61.8%)	
Sleeping hours / day	< 8 h	459 (61.6%)	259 (62%)	200 (61.2%)	0.820
	8–10 h	286 (38.4%)	159 (38%)	127 (38.8%)	
Satisfaction with family's relationship	Very satisfied	394 (52.9%)	242 (57.9%)	152 (46.5%)	**< 0.001*#**
	Satisfied	179 (24%)	98 (23.4%)	81 (24.8%)	
	Neutral	130 (17.4%)	61 (14.6%)	69 (21.1%)	
	Dissatisfied	35 (4.7%)	13 (3.1%)	22 (6.7%)	
	Strongly dissatisfied	7 (0.9%)	4 (1%)	3 (0.9%)	
Satisfaction with friends' relationship	Very satisfied	249 (33.4%)	143 (34.2%)	106 (32.4%)	**0.09#**
	Satisfied	284 (38.1%)	172 (41.1%)	112 (34.3%)	
	Neutral	178 (23.9%)	87 (20.8%)	91 (27.8%)	
	Dissatisfied	21 (2.8%)	7 (1.7%)	14 (4.3%)	
	Strongly dissatisfied	13 (1.7%)	9 (2.2%)	4 (1.2%)	

* Sig *p* value, test of sig chi-square

Chi-square for trend

& Independent sample *t* test

Table 2 Suicidal ideation scores (SIS) among the studied group (*N* = 745)

		Total (745)	Medical (418)	Non-medical (327)	*P* value
SIS score	Mean ± SD	18.05 ± 8.18	16.60 ± 7.56	19.89 ± 8.58	**< 0.001*&**
	Max. -Min	10–50	10–50	10–48	
Suicide desire (ongoing thoughts)	Mean ± SD	8.87 ± 4.43	8.12 ± 4.16	9.83 ± 4.58	**< 0.001*&**
	Max. -Min	4–20	4–20	4–20	
Suicide plans, preparation, and attempt	Mean ± SD	9.18 ± 4.35	8.48 ± 3.94	10.07 ± 10.07	**< 0.001*&**
	Max. -Min	30–6	30–6	28–6	
Low SI risk, *N* (%)		331 (44.4%)	219 (52.4%)	112 (34.3%)	**0.006*#**
95% CI		(40.9–48%)	(47.6–57.1%)	(29.3–39.6%)	
Moderate SI risk, *N* (%)		379 (50.9%)	185 (44.3%)	194 (59.3%)	
95% CI		(47.3–54.4%)	(39.6–49%)	(53.9–64.5%)	
High SI risk, *N* (%)		35 (4.7%)	14 (3.3%)	21 (6.4%)	
95% CI		(3.4–6.5%)	(2%-5%)	(4.2–9.6%)	

* Sig. *p* value, test of sig chi-square

Chi-square for trend

& Independent sample *t* test

non-medical students reported strong social support versus (15.1%) among medical ones (Table 3).

Medical and non-medical students did not differ statistically in terms of the number of close people in case of great personal problems, but (18.2%) of medical students reported a lot of interest and concern expressed by people versus only (13.1%) among non-medical students, which was statistically significant. Moreover, (14.2%) of medical students showed that getting practical help from neighbors in case of need was very easy versus (7.4%) among non-medical, which was statistically significant (Supplementary Table S3).

There was a moderate negative significant correlation between SIS and perceived social support measured by OSSS-3 among whole participants ($r = -0.409$), medical students ($r = -0.416$), and non-medical students ($r = -0.381$) (Fig. 1).

After applying ordinal logistic regression, the following are significant positive predictors of SI severity: non-medical education (OR = 1.74, 95% CI 1.25–2.42), smoking (OR = 2.16, 95% CI 1.15–4.03), dissatisfaction and neutral satisfaction regarding friends' relationships (OR = 4.05, 95% CI 1.77–9.22, and OR = 2.89, 95% CI 1.92–4.34, respectively), dissatisfaction and neutral satisfaction regarding family's relationship (OR = 6.49, 95% CI 3.09–13.64 and OR = 3.24, 95% CI 2.06–5.09, respectively), and low and moderate degrees of perceived social support (OR = 3.11, 95%CI 1.77–5.48 and OR = 1.81, 95% CI 1.05–3.14, respectively) (Table 4).

Discussion

Suicide is the fourth-leading cause of death among individuals aged 15 to 29 [3]. The global goal is to reduce suicide rates worldwide by one-third by 2030 [7]. Concerning Egyptian society, it has recently witnessed an

Table 3 OSIO-3 social support scale scores, and prevalence of perceived social support among the studied group (*N* = 745)

		Total (745)	Medical (418)	Non-medical (327)	*P* value
OSIO-3 Social Support Scale	**Mean ± SD**	8.75 ± 2.21	8.96 ± 2.21	8.48 ± 2.19	**0.003*&**
	Max.- Min	14–4	14–4	14–4	
Social support categories	**Poor**	338 (45%)	180 (43.3%)	158 (48.9%)	**< 0.001*#**
	95% CI	(41.8–49%)	(38.4–47.9%)	(43–53.7%)	
	Moderate	315 (42.6%)	173 (41.6%)	142 (44%)	
	95% CI	(32.8–45.9%)	(36.8–46.2%)	(38.2–48.8%)	
	Strong	86 (11.6%)	63 (15.1%)	23 (7.1%)	
	95% CI	(9.3–13.9%)	(12–18.8%)	(4–10.3%)	

* Sig. *p* value

Chi-square for trend

& Independent sample *t* test

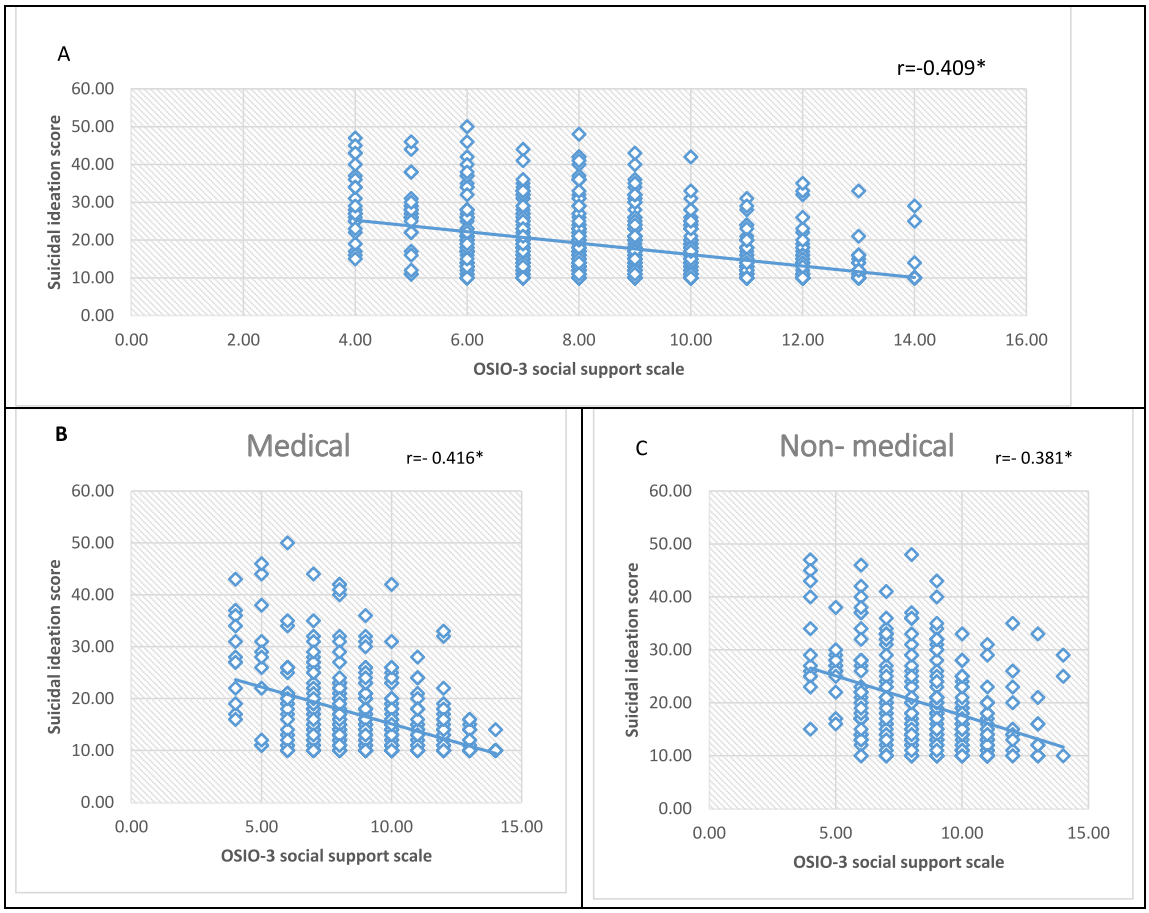

Fig. 1 Correlation between OSIO-3 and SIS; **A** Among the total sample, **B** among medical students, and **C** among non-medical students

*Sig *p*-value

escalation in the suicide rate, especially among youth [5]. Therefore, the present study was conducted to investigate the suicide phenomenon among students at Ain Shams University.

The current study revealed that 50.9% and 4.7% of the participants had moderate- and high-risk SI, respectively. The prevalence of SI varies among different countries. It was the highest among Chilean adolescents as 65.6% of them reported that they had SI [11] followed by students in Bangladesh, where the prevalence of SI was 61.1% [14], and in Ethiopia, where the prevalence of SI among campus students was 58.3% [12]. Moreover, in Muslim-majority countries, the prevalence of SI was 21.9%, suicide plans were 6.4%, and suicide attempts were 6.6% [15].

In addition, the Suicidal Ideation Scale (SIS) was statistically higher among non-medical students (19.89 ± 8.58) versus among medical ones (16.60 ± 7.56). Moderate and high SI risks were significantly higher among non-medical students (59.3% and 6.4%, respectively) versus among medical ones (44.3% and 3.3%). This study was inconsistent with a study in Pakistan, where medical students had high levels of SI compared to non-medical students [31]. This discrepancy can be attributed to different academic curriculums and populations.

There was a moderate negative significant correlation between SIS and perceived social support measured by OSSS-3 among whole participants ($r = -0.409$), medical students ($r = -0.416$), and non-medical students ($r = -0.381$). The results were comparable to a study in Zagazig showing that SI had a statistically significant negative correlation ($r = -0.415$) with the quality-of-life score, which included the social relationship as a domain [9].

As for the factors affecting severity of SI among the participants, ordinal logistic regression revealed that non-medical education (OR = 1.74, 95% CI 1.25–2.42), smoking (OR = 2.16, 95% CI, 1.15–4.03), dissatisfaction and neutral satisfaction regarding friends' relationships (OR = 4.05, 95% CI 1.77–9.22 and OR = 2.89, 95%

Table 4 Ordinal logistic regression for the association between the degree of suicidal ideation and different variables

Variable	Estimate	AOR	*P* value	95% CI
Age	0.013	1.014	0.820	(0.902–1.138)
Gender				
Female	0.283	1.326	0.095	(0.952–1.848)
Male	Reference			
Regular exercises				
Yes	−0.275	0.759	0.100	(0.547–1.055)
No	Reference			
Type of faculty				
Non-medical	0.553	1.739	0.001*	(1.248–2.421)
Medical	Reference			
Cigarette smoking				
Yes	0.768	2.155	0.016*	(1.152–4.032)
No	Reference			
Sleeping				
< 8 h/day	−0.238	0.788	0.146	(0.572–1.089)
≥ 8 h	Reference			
Income / month				
< 5000 EGP	0.146	1.158	0.362	(0.845–1.581)
≥ 5000 EGP	Reference			
Satisfaction with your friend's relationship				
Dissatisfied	1.401	4.057	0.001*	(1.77–9.221)
Neutral	1.061	2.890	< 0.001*	(1.923–4.344)
Satisfied	Reference			
Satisfaction with your family's relationship				
Dissatisfied	1.870	6.491	< 0.001*	(3.088–13.64)
Neutral	1.174	3.236	< 0.001*	(2.058–5.089)
Satisfied	Reference			
OSIO-3 social support scale scores				
Low	1.138	3.119	< 0.001*	(1.77–5.48)
Moderate	0.595	1.813	0.034*	(1.046–3.141)
High	Reference			

The dependent variable is the degree of suicidal ideation, no *f* observation = 745, **p* value < 0.05, *AOR* adjusted odds ratio. Model chi-square (χ^2) = 210.6, *p* value < 0.001. Chi-square goodness of fit = 947.4, *p* value = 0.424, McFadden pseudo R^2 = 0.168, test of parallel lines = 20.26, *p* value = 0.089

CI 1.92–4.34, respectively), dissatisfaction and neutral satisfaction regarding family's relationship (OR = 6.49, 95% CI 3.09–13.64 and OR = 3.24, 95% CI 2.06–5.09, respectively), and low and moderate degrees of perceived social support (OR = 3.11, 95%CI 1.77–5.48 and OR = 1.81, 95% CI 1.05–3.14, respectively) were significant positive predictors of SI severity.

Regarding the age of participants, the current study demonstrated that the age of participants was not a significant predictor for the severity of SI, which agreed with Abdelaziz et al. in 2022 about SI among youth at Suez Canal University [32] and another study at Zagazig University [9].

As for gender, previous studies revealed that SI is higher among females than males [9, 10, 31]. This can be explained by the assumption that females are dependent and indecisive and that they ruminate to release their tension [9]. But the present study revealed that gender is not a predictor for the severity of SI, which is consistent with other studies conducted in Egypt [21, 32] and a study that was conducted in Bangladesh [14]. This discrepancy may be attributed to different study populations.

As regards regular exercise, SIS in the current study was not affected by the presence of regular exercise which agreed with other studies [9, 14].

Concerning the type of education, it was expected that SI would be higher among medical students than non-medical ones due to more academic pressure and long years of study in practical faculties compared to other non-medical ones, like a study in Pakistan showing that medical students had more academic stress and a higher level of SI compared to non-medical students [31]. But surprisingly, the present study revealed that SI was higher among non-medical students. This finding can be explained by what Zagazig University students said in focus group discussions that a graduate of theoretical colleges holds the stressor of not having a future or a well-paying job, which is a widespread perception of the great majority of Egyptian families [9]. Therefore, non-medical students were significantly higher in reporting the "Always" option in the 10 items of SIS compared with the medical ones.

Furthermore, cigarette smoking was significantly higher among non-medical students than medical ones (11.6% versus 3.8%, respectively), and it was a significant predictor for the severity of SI. Smokers in Nepal were somewhat more likely than non-smokers to report SI (OR = 1.12) [33]. Besides, Waters et al. in 2021 proved that daily smokers had the highest level of SI [34].

For sleeping hours per day, the current study revealed that sleeping was not associated with SI. The results disagreed with other studies that showed that short sleep duration was associated with SI in undergraduate students [35, 36].

Family income was not associated with SI, and this study was consistent with Abozaid et al. who revealed that socioeconomic status did not affect SI [9] and agrees with Mamun et al. in Bangladesh [14].

According to satisfaction with friends' and family's relationships, the present study showed that dissatisfaction and neutral satisfaction regarding friends and family were significant positive predictors of the severity of SI among participants. These findings were consistent with another study, which revealed that having

no friends was significantly correlated with suicidal behaviors [9]. This is explained by the fact that as young people spend more time with their peers throughout this stage of life, friends become a more vital source of social support [9]. Moreover, poor family relationships and improper parenting styles in China were associated with SI, which demonstrates the importance of considering the family environment when examining SI among university students, and it can help predict and prevent suicides among them [37].

Concerning perceived social support, OSSS-3 was statistically higher among medical students, where 48.9% of non-medical students reported poor social support versus 43.3% among medical ones, and only 7.1% of non-medical students reported strong social support versus 15.1% among medical ones. These findings agreed with various studies. In Germany, middle or high social support was associated with a lower probability of reporting SI (OR = 0.42, 95% CI = 0.34–0.52) [10]. In Indonesia, perceived social support was a significant predictor of decreased SI [18]. Furthermore, in Ethiopia, students who had poor social support were significantly associated with suicidality [12].

Limitations

Because the study participants were recruited from different faculties in a single university and our sample was a convenient one, the current study cannot be generalized to Egyptian students. The presence of psychiatric disorders such as depression and anxiety, which have been linked to suicide, was not examined in this study. Additionally, because the study was cross-sectional, it was unable to examine the causal association between the factors. Since the data was collected using self-administered questionnaires, the study also exhibits information bias.

Conclusion and recommendations

Since SI is a serious issue among Ain Shams University students, screening is required as a secure element of initiatives to prevent youth suicide. As poor perceived social support was a significant predictor of SI severity, teaching parenting strategies to enhance family relationships and coping with stressful situations through lectures and media must be intensified.

Abbreviations

CI	Confidence interval
OSSS-3	Oslo Social Support Scale
OR	Odds ratio
SI	Suicidal ideation
SIS	Suicidal Ideation Scale

Supplementary Information

The online version contains supplementary material available at https://doi.org/10.1186/s43045-023-00390-6.

Additional file 1: Supplementary Table S1. Distribution of faculty students.

Additional file 2: Supplementary Table S2. Details for SIS score.

Additional file 3: Supplementary Table S3. Details for social score.

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Authors' contributions

R.S.: conceptualization, methodology, data collection, and formal analysis; S.Y.: writing—original draft and editing, ethical approval. All authors have read and agreed to the published version of the manuscript.

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Availability of data and materials

The datasets generated during and or analyzed during the current study are available from the The corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate

Approval of the Research Ethical Committee of the Faculty of Medicine, Ain Shams University was obtained (FWA 00001785/FMASU R311/2023). Informed consent was obtained from university students including objectives, benefits, risks, and confidentiality of the study.

Consent for publication

Not applicable.

Competing interests

The authors declare that they have no competing interests.

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References

1. Harmer B, Lee S, Duong T, Vi H, Saadabadi A (2023) Suicidal ideation. In: StatPearls. Treasure Island: StatPearls Publishing; 2023. PMID: 33351435
2. CDC (2021) Facts about suicide. https://www.cdc.gov/suicide/facts/index.html. Accessed July 2023
3. WHO (2021) Suicide. https://www.who.int/news-room/fact-sheets/detail/suicide. Accessed July 2023
4. WHO (2019) Suicide: one person dies every 40 seconds. https://www.who.int/news/item/09-09-2019-suicide-one-person-dies-every-40-seconds. Accessed Sept 2023
5. Hilali S (2022) About the phenomenon of suicide in Egypt. https://en.eipss-eg.org/wp-content/uploads/2022/03/About-the-phenomenon-of-suicide-in-Egypt-.pdf. Accessed Aug 2023
6. World life expectancy (n.d.). Health profile Egypt. https://www.worldlifeexpectancy.com/egypt-suicide. Accessed Sept 2023
7. Suicide worldwide in 2019 Global Health Estimates (n.d.). https://iris.who.int/bitstream/handle/10665/341728/9789240026643-eng.pdf?sequence=1. Accessed Aug 2023
8. Purse (2022) What Is Suicidal Ideation? https://www.verywellmind.com/suicidal-ideation-380609. Accessed Aug 2023
9. Abozaid MMES, Aboserea MM, Metwally SM, AbElkhalek HA (2022) Prevalence, psychosocial correlates of youths' suicidal behaviors and

perspectives on the phenomena at Zagazig University: a mixed-methods study. Middle East Curr Psychiatry 29(1). https://doi.org/10.1186/s43045-022-00250-9
10. Otten D, Ernst M, Tibubos AN, Brähler E, Fleischer T, Schomerus G, Wild PS, Zöller D, Binder H, Kruse J, Johar H, Atasoy S, Grabe HJ, Ladwig KH, Münzel T, Völzke H, König J, Beutel ME (2022) Does social support prevent suicidal ideation in women and men? Gender-sensitive analyses of an important protective factor within prospective community cohorts. J Affect Disord 306:157–166. https://doi.org/10.1016/j.jad.2022.03.031
11. Veloso-Besio C, Cuadra-Peralta A, Gallardo-Peralta L, Cuadra-Fernandez P, Quiroz PT, Troncoso NV (2023) The prevalence of suicide attempt and suicidal ideation and its relationship with aggression and bullying in Chilean adolescents. Front Psychol 14. https://doi.org/10.3389/fpsyg.2023.1133916
12. Abdu Z, Hajure M, Desalegn D (2020) Suicidal behavior and associated factors among students in Mettu University, South West Ethiopia, 2019: an institutional based cross-sectional study. Psychol Res Behav Manag 13:233–243. https://doi.org/10.2147/PRBM.S240827
13. Crispim M de O, Dos Santos CMR, Frazão I da S, Frazão CMF de Q, de Albuquerque RCR, Perrelli JGA (2021) Prevalencia de conductas suicidas en jóvenes universitarios: revisión sistemática con metaanálisis. Revista Latino-Americana de Enfermagem 29. https://doi.org/10.1590/1518-8345.5320.3495
14. Mamun MA, Rayhan I, Akter K, Griffiths MD (2022) Prevalence and predisposing factors of suicidal ideation among the university students in Bangladesh: a single-site survey. Int J Ment Heal Addict 20(4):1958–1971. https://doi.org/10.1007/s11469-020-00403-z
15. Arafat SMY, Baminiwatta A, Menon V, Singh R, Varadharajan N, Guhathakurta S, Mahesar RA, Rezaeian M (2023) Prevalence of suicidal behaviour among students living in Muslim-majority countries: systematic review and meta-analysis. BJPsych Open 9(3):e67. https://doi.org/10.1192/bjo.2023.48
16. Ahmed SA, Omar QH, Abo Elamaim AA (2016) Forensic analysis of suicidal ideation among medical students of Egypt: a crosssectional study. J Forensic Leg Med 44:1–4. https://doi.org/10.1016/j.jflm.2016.08.009
17. Ragab El Sebaie S, Elsayed Abdelfatah A (2021) The Impact of Alexithymia and Perceived Social Support on Suicidal Probability of Drug Abusers' Patients. Egypt J Health Care 12(2):1718-1738. https://doi.org/10.21608/ejhc.2021.228812
18. Naila S, Takwin B (2018) Perceived social support as predictor of suicide ideation in Gunung Kidul high school students. Adv Soc Sci Educ Humanit Res 139:47–52. https://doi.org/10.2991/uipsur-17.2018.8
19. Deng Y, Li X, Liu L, Chui WH (2021) Suicide attempts and perceived social support among Chinese drug users: the mediating role of self-esteem and depression. Int J Environ Res Public Health 18(1):1–12. https://doi.org/10.3390/ijerph18010208
20. Panesar B, Rosic T, Rodrigues M, Sanger N, Baptist-Mohseni N, Hillmer A, Chawar C, D'Elia A, Minuzzi L, Thabane L, Samaan Z (2021) The role of perceived social support in the association between stressful life events and suicidal behavior. Front Psychiatry 12. https://doi.org/10.3389/fpsyt.2021.699682
21. Shenouda EN, Ezzat Basha S (n.d.) Resilience, social support, and stress as predictors of suicide ideation among public universities' students in Egypt. http://www.ssrn.com/link/OIDA-Intl-Journal-Sustainable-Dev.html
22. Dazzi T, Gribble R, Wessely S, Fear NT (2014) Does asking about suicide and related behaviours induce suicidal ideation? What is the evidence? Psychol Med 44(16):3361–3363. https://doi.org/10.1017/S0033291714001299
23. Gould MS, Marrocco FA, Kleinman M, Thomas JG, Mostkoff K, Cote J, Davies M (n.d.) Evaluating iatrogenic risk of youth suicide screening programs a randomized controlled trial. https://jamanetwork.com/. Accessed Oct 2023
24. Mathias CW, Michael Furr R, Sheftall AH, Hill-Kapturczak N, Crum P, Dougherty DM (2012) What's the harm in asking about suicidal ideation? Suicide Life Threat Behav 42(3):341–351. https://doi.org/10.1111/j.1943-278X.2012.0095.x
25. El-Sayed M, Simon MA, Al-Khabouri Z, Al-Mandhari N, El Shamy AM (2019) Prevalence and determinants of suicidality among medical students in Oman. Egypt J Psychiatr 41:103–110. https://doi.org/10.4103/ejpsy.ejpsy_1_20
26. Rudd MD (1989) The prevalence of suicidal ideation among college students. Suicide Life Threat Behav 19(2):173–183. https://doi.org/10.1111/j.1943-278X.1989.tb01031.x
27. Luxton DD, Rudd MD, Reger MA, Gahm GA (2011) A psychometric study of the suicide ideation scale. Arch Suicide Res 15(3):250–258. https://doi.org/10.1080/13811118.2011.589720
28. Halim MRTA, Ibrahim N, Abdul Kadir NB, Ibrahim MA (2021) The Malay version of the revised-suicide ideation scale (R-SIS): an examination of its psychometric properties. Int J Acad Res Psychol 8(1). https://doi.org/10.46886/IJARP/v8-i1/7331
29. Kocalevent R-D, Berg L, Beutel ME, Hinz A, Zenger M, Härter M, Nater U, Brähler E (2018) Social support in the general population: standardization of the Oslo social support scale (OSSS-3). BMC Psychology 6(1):31. https://doi.org/10.1186/s40359-018-0249-9
30. Fitriana E, Purba FD, Salsabila SP, Danasasmita FS, Afriandi I, Tarigan R, Ichsan A, Pandia V (2022) Psychometric properties of the suicidal ideation scale in the Indonesian language. J Prim Care Community Health 13:215013192211437. https://doi.org/10.1177/21501319221143716
31. Bibi S, Ahmed S (2020) Academic stress and suicidal ideation among medical and non-medical students of Abbottabad, KPK, Pakistan. A cross sectional study. In Journal Homepage. Int J Phys Soc Sci 10. http://www.ijmra.us, http://www.ijmra.us. Accessed Oct 2023
32. Abdelaziz SH, Anwar MM, Muhammad OY, Hashish RK (2022) Suicidal ideation and its association with childhood maltreatment among undergraduate students of Faculty of Medicine, Suez Canal University. Egypt Soc Clin Toxicol J 10(1):62–73. https://doi.org/10.21608/esctj.2022.142702.1010
33. Sathian B, Menezes RG, Asim M, Mekkodathil A, Sreedharan J, Banerjee I, Van Teijlingen ER, Roy B, Subramanya SH, Kharoshah MA, Rajesh E, Shetty U, Arun M, Ram P, Srivastava VK (2020) Cigarette smoking dose-response and suicidal ideation among young people in Nepal: a cross-sectional study. Nepal J Epidemiol 10(1):821–829. https://doi.org/10.3126/nje.v10i1.28277
34. Waters AF, Peltier MR, Roys MR, Stewart SA, Copeland AL (2021) Smoking and suicidal ideation among college students: smoking expectancies as potential moderators. J Am Coll Health 69(8):951–958. https://doi.org/10.1080/07448481.2020.1719112
35. Zemestani M, Abdolmaleki S, McGrew SJ, Vujanovic A (2023) Associations between sleep disturbance and suicidal ideation severity in Iranian university students: evaluating emotion regulation difficulties and distress tolerance. Arch Suicide Res 1–17. https://doi.org/10.1080/13811118.2023.2190366
36. Wu R, Wang C-Y, Wang F, Wang Y-J, Zhu H, Wang G-H, Jiang C-L (2022) Association between sleep and suicidal ideation in Chinese undergraduate students. Int J Environ Res Public Health 19(23):15433. https://doi.org/10.3390/ijerph192315433
37. Zhai H, Bai B, Chen L, Han D, Wang L, Qiao Z, Qiu X, Yang X, Yang Y (2015) Correlation between family environment and suicidal ideation in university students in China. Int J Environ Res Public Health 12(2):1412–1424. https://doi.org/10.3390/ijerph120201412

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