

Original Article

Early Marriage and Negative Life Events Affect on Depression in Young Adults and Adolescents

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Abstract

Background: Negative life events (NLEs) and early marriage (EM), a worldwide social silent problem, are increasing in prevalence globally. Evidence is lacking regarding their impact on depression. We assessed the impact of EM and NLEs on depression among adolescents, young adults and adults in Iran.

Methods: A population-based descriptive study was performed among urban and rural population aged 13-40 years. Beck depression inventory scale II and life event questionnaire were used to assess the severity of depression and NLEs, respectively. EM was defined as a marriage or union between two persons in which one or both parties are younger than 18.

Results: In a total of 530 participants (300 female and 230 male) with a mean age of 26.78 ± 5.06 , almost 46% had depressive symptoms. A trend was found between rising age and depression so that among the three groups of study subjects, adults had the highest prevalence rate (49.34%). After adjusting for age, residence, substance abuse, alcohol abuse, unemployment and other NLEs by multiple regression, we found statistically significant relationships between depression and EM (2.77; CI: 1.75-4.57), and NLEs (2.78; CI: 1.85-4.19). Among types of NLEs, marital conflicts (5.8; CI: 1.60-20.81), loss of loved ones (6.12; CI: 1.28-28.26) and financial problems (13.79; CI: 1.72-108.17) were associated with depression risk.

Conclusion: Life skills improving program with intersectoral collaborative care to reduce determinants of EM and NLEs in the community, as well as training and screening for depression among adolescents and adulthood are necessary.

Keywords: Adolescents, Depression, Early marriage, Negative life events, Young adults

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Introduction

Depressive disorders are defined by gloomy feelings, losing interest or happiness, feelings of guilt or low self-worth, disturbance of sleep or appetite, feeling of tiredness, and poor attention.¹ According to the last reports, 322 million (4.4%) of the world population are living with depression.² Adolescence and young adulthood are a critical period for both boys and girls all over the world. The annual prevalence of major depressive disorder was estimated 4%-5% in middle to late adolescence and 8.3 from 12.4% among people aged 18 to 33 years.^{3,4} Depression is a main predictor for suicide in adolescence and young adulthood, the second-to-third important cause of mortality in this age group, such that studies reported that more than half of adolescent suicides have a depressive disorder at the time of death.⁵

Among adolescence and young adulthood, depression is a serious mental disorder with high prevalence and its associated with negative life events (NLEs), early marriage (EM), substance abuse and behavioral risk factors.⁶⁻⁸ Population-based studies indicate that 75% of psychological disorders during the adolescence and young adulthood have first-time attack.⁹ In this life stage, persons experience many traumatic life events and NLEs due to their developing period, EM, are exposed to new environment and conditions, have low experience and high sensitivity to life problems, academic prospects and their particular higher education program of study.¹⁰ NLEs are growing in prevalence globally and are related with an increase in symptoms of depression and the onset of major depressive symptoms in both sexes.¹¹⁻¹³ Accompaniment and history of NLEs in childhood and adolescence period have been

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recurrently found to be related with an increased risk of emerging psychological disorders during adulthood.⁷

EM is marriage or union between two people in which one or both parties are younger than 18. EM is one of the most important NLEs and a worldwide caveat that is associated with depression, social and health problems for teenagers, especially in developing countries.¹⁴ The United Nations Population Fund reported that in many developing countries, approximately one in three girls live with adolescent marriage.¹⁵ The EM rate varies across countries and regions. A high prevalence of EM has been reported from South Asia and Sub-Saharan Africa in 44% and 39% of girls, respectively. Iranian studies indicate that EM is also one of the most important social problems with high prevalence, such that 40% of girls in Sistan and Baluchestan and more than 7.7% of them in Tehran were married earlier than the age of 18 years.¹⁴⁻¹⁶

Very few studies have investigated the impact of this worldwide social silent issue in the developed and developing countries. America has the highest teen marriage rate among developed countries.¹⁶ It is essential to identify and better understand depression etiology and local determinants and compare them among adolescences and young people in each region. Most adolescents and young people are students or seeking academic progress at this age group and depressive disorders can have a tremendous side effect on their academic and social development. Globally, the etiology and determinants of depression are known. However, the role of NLEs and their various types on depression (such as EM, a critical and worldwide health and social problem with high prevalence in Iran) is poorly understood especially among adolescents and young people. Another aim of the current study is to contribute to health systems for accessing up-to-date and local data for developing and implementing functioning programs and the best policy for controlling and reducing the burden of depressive disorders. Therefore, this study aims to determine the impact and association between NLEs and EM on depressive symptoms among adolescents and young adults.

Materials and Methods

Sampling and Study Design

A population-based cross-sectional study was conducted from May 2016 through December 2016 among urban and rural population aged 13-40 years in Malekan county, East Azerbaijan Province, Iran. In the 2016 census, its population was 115,717 and 70% of county population lived in rural area. The majority of the population, especially those older than 30 years, are poorly educated or uneducated and most of them have farming or farming-related occupation. Stratified random sampling was used proportional to the size of the population. The number of samples in each stratum (urban and rural strata) was determined based on the proportion of urban and rural

population to the total sample size. Sampling frame was all two cities and 52 villages of Malekan county. Thirty villages were selected from a total of 52 county villages by simple random sampling in a way that a health center was present in some or all villages covered by that health center in the samples. Samples assigned to each village were also determined based on their population size. Systematic random sampling was used within each village and city. The sampling interval was determined using the formula $I = Si / Ni$, where Ni is the samples of each village or city and Si is the number of households. The first sample was selected from the right side of the health home or health center by using a random numbers table. Then, households were surveyed from the right in terms of the presence of adolescents and youth, and if agreed and cooperated, the questionnaires were completed by trained interviewers. In the absence of a teenager or young person in the household or lack of cooperation, the next household was surveyed.

The sample size was determined considering a 95% confidence interval, $\alpha=0.05$, and the prevalence of depression $P=0.45$, thus yielding a sample size of 482 individuals. With addition of 10% to compensate for non-responders, the final sample size was estimated at 530 individuals.

Data Collection

For assessment of depressive symptoms, Beck depression inventory scale II (BDI II) was administered among participants by face-to-face interview. This tool includes 21 items which measure the depressive symptoms over the last two weeks in adolescents and young people aged 13-40 years. This tool was designed on a 4-point scale. The normal score in BDI-II ranges from 0 to 13, mild depression ranges from 14 to 19, moderate from 20 to 28, and severe from 29 to 63.⁸ Participants were invited to the health centers by trained interviewers. The interview was performed in a single session lasting 20 minutes for each participant.

Moreover, a semi-structured questionnaire was used to assess EM information, socio-demographic characteristics, behavioral risk factors and other health related variables of depression through face-to-face interviews. Secondary data and additional information were collected from household's records in the health centers.

Holms and Rahe Life Events Questionnaire (LEQ) with Cronbach's alpha test ($\alpha = 0.762$) was used for assessment of NLEs. This valid and reliable questionnaire is a 43-item of common various types of NLEs. It has been previously used in this study area and includes family or marital conflicts (disputes, divorce or separation and conflicts or disagreement with first- and second-degree family members), unexpected loss of loved ones (parent, first-degree family, offspring, and partner), unemployment more than 6 months, serious financial and economic problems (crisis), occupational problems, life failures in

studying or working, exposure to new conditions, EM (less than 18 years), migration or refugee, emotional issues with opposite sex and psychological distress.¹¹ EM, one of the NLEs in this study, was considered as marriage before the age of 18 years for both sexes.

Data Analysis

Stata software version 14 was used for data analysis. Data normality was checked using the Kolmogorov-Smirnov test. Chi-square (χ^2) test was used to compare binary or more categorical variables. T-test was used for comparison of continuous variables comparison. After overall analysis among all subjects, the participants were divided to three groups: adolescents (age 13–19 years) young adults (20–32 years) and adults (33–40 years). Multiple logistic regression was used to measure the relationship between depression and the most important affecting factors such as various types of NLEs, sociodemographic characteristics and other risk factors after adjusting for confounders and to estimate adjusted odds ratio with 95% confidence interval. For model building, all independent variables were first assessed with simple logistic regression and any interactions were checked. Then, all variables with p-value less than 0.2 were analyzed with multiple logistic regression using the backward stepwise method. The Hosmer and Lemeshow statistic was used for checking data matching and goodness of fit with the model. In the all tests, *P* value < 0.05 was considered significant.

Results

A total of 530 respondents, consisting of 26% adolescents (aged 13–19), almost 45% young adults (aged 20–33), and 28% adults (aged 33–40) participated in this study. The mean age of the participants was 26.78 ± 5.06 years and 56.6% of them were females. More than 51% of females and 39% of males had levels of depression disorder and there was a statistically significant relation between female gender and depression risk ($P = 0.002$). A trend with significant association was found between rising age or age groups and depression ($P = 0.048$) such that depression prevalence was higher among adults than adolescents.

In addition, there was a significant relationship between depression and occupation and educational level (Table 1).

Table 2 shows the association between the most important behavioral risk factors and depression among study participants. We found a significant association between psychiatric drug use, alcohol abuse, substance abuse and having a history of psychological disease ($P < 0.05$).

Among numerous types of NLEs, a significant association was observed between EM and depression ($P = 0.001$). Also, a statistically significant relation was found between depression and any history of NLEs in the last 12 months ($P = 0.001$), family conflicts ($P = 0.001$) and loss of loved ones ($P = 0.051$) while unemployment more than 6 months was not significantly associated (Table 3).

Figure 1 shows the severity of depression symptoms

Table 1. Baseline and Sociodemographic Characteristics of Study Participants

Variables	Depression		No. (%)	P Value	
	Not Depressed	Depressed			
Gender	Female	146	154	305(56.6)	0.002
	Male	139	91	225(43.4)	
Age group	13–19 (Adolescence)	86	52	138(26)	0.048
	20 – 32 (Young adult)	123	117	240(45.28)	
	33–40 (Adult)	77	75	152(28.7)	
Mean \pm SD	26.78 \pm 5.06			530(100)	
Occupation	Housewife	113	146	259(48.86)	0.012
	Farming or farming related	24	15	39(7.35)	
	Student	56	24	80(15.1)	
	Others	89	61	150(28.3)	
Marital status	Single	29	24	53(10)	0.243
	Married	257	211	468(88.3)	
	Widow and divorced	4	5	9(1.7)	
Educational level	Primary school	51	79	130(24.52)	0.004
	Secondary school	193	136	329(62.07)	
	High school and academic	41	30	71(13.4)	
Household size	2 \geq	34	31	65(12.26)	0.863
	2–4	192	169	361(68.11)	
	\geq 4	58	46	104(19.62)	
Income	Below 10 million Rials	289	219	508(95.85)	0.181
	Above 10 million Rials	9	13	22(4.15)	
Resident	Urban	122	85	207(39.05)	0.016
	Rural	162	161	323(60.94)	
Living status	With family or relatives	318	205	523(98.68)	0.682
	Alone	3	4	7(1.32)	

Table 2. Depression among Study Participants According to the Behavioral Risk Factors

Variables		Depression		P Value
		Not Depressed	Depressed	
Smoking status	Yes	31	22	0.471
	No	252	224	
Psychiatric drug use	Yes	3	24	0.028
	No	280	222	
Hospitalization history	Yes	13	17	0.295
	No	270	229	
Alcohol consumption	Yes	5	3	0.001
	No	278	243	
Physical illness	Yes	12	7	0.653
	No	275	239	
Substance abuse	Yes	3	6	0.003
	No	280	240	
Psychological disease	Yes	1	20	0.001
	No	282	226	

Table 3. Association between Depression and Various Types of Negative Life Events among Adolescents and Young Adults

Variables		Depression		P Value
		Not Depressed	Depressed	
Any NLEs in the last 12 months	Yes	54	103	0.001
	No	229	144	
Loss of loved ones	Yes	2	8	0.051
	No	280	238	
Unemployment >6 months	Yes	11	8	0.437
	No	271	238	
Financial problems	Yes	1	9	0.025
	No	282	237	
Early marriage*	Yes	22	47	0.001
	No	260	199	
Others NLEs**	Yes	15	18	0.387
	No	267	228	
Family conflicts	Yes	13	12	0.001
	No	472	32	

*Under 18 years of age.

**Life failures, psychological distress, retirement, pregnancy, change in work, school, residence, sleeping and eating habits.

among participants: 46% of all respondents had depression symptoms, of whom 24% had mild, 14% had moderate and 8% had severe depression.

Regarding the prevalence of depression among age groups, Figure 2 shows the comparison of depression prevalence among three groups of study participants. Almost half of adults (49.34%), 48.75% of young adults and 37.68% of adolescents had depression.

Table 4 indicates the adjusted odds ratio estimated from multiple logistic regression after adjusting for confounders such as sociodemographic and behavioral risk factors with *P* value less than 0.2 and Hosmer and Lemeshow goodness of fit. The analysis showed that there was a statistically significant association between depression and history of NLEs with increased odds of depression 2.78 times compared to subjects who did not a history of NLEs

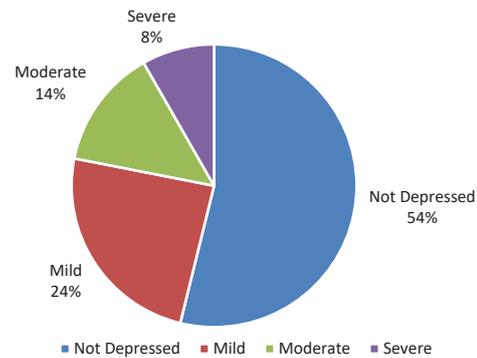


Figure 1. Severity of Depressive Symptoms among Adolescents and Young Adults in General Urban and Rural Population of Malekan County, Iran, 2017.

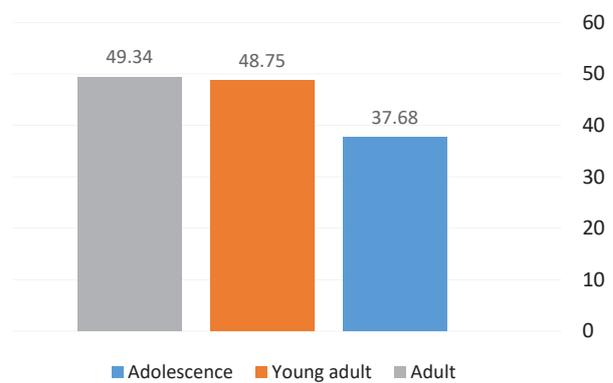


Figure 2. Prevalence Rate of Depressive Symptoms among Adolescents, Young Adults and Adults in Malekan County, Iran, 2017.

(AOR: 2.78, 95%; CI:1.85–4.19). Moreover, statistically significant associations were found for female gender, psychological disease and household occupation.

Our results indicate that EM was the most statistically significant determinant that increased the odds of depression risk by 2.77 times (AOR: 2.77, 95%; CI: 1.75–4.57; *P* = 0.001). We also found statistically significant relations for family conflicts (AOR: 5.8, 95%; CI: 1.60–20.81; *P* = 0.007), loss of loved ones (AOR: 6.12, 95%; CI: 1.28–28.26; *P* = 0.023) and financial problems (AOR: 13.79, 95%; CI: 1.72–108.17; *P* = 0.013) to increase the odds of depression risk.

Discussion

After adjusting for the confounders, the findings of this study support the general hypothesis that NLEs, especially EM, are highly associated with the severity of depressive symptoms in both adolescence and young adulthood, and these factors were found to be the most important determinants of depressive symptoms in our study. Also, our study revealed that the prevalence rate of depressive symptoms was higher among young adults compared to adolescents. Most of previous worldwide investigations

Table 4. Results of Multiple Logistic Regression* for Crude and Adjusted Odds Ratio for Depression Risk with Negative Life Events, Early Marriage and the Most Important Significant Determinants of Behavior and Sociodemographic Characteristics

Variables	Crude OR (95% CI)	Adjusted OR (95% CI)
History of NLEs		
Yes	3.06 (2.06–4.53)	2.78 (1.85–4.19)
No		
P value	0.001	0.001
Gender		
Female	1.78 (1.23–2.56)	1.58 (1.07–2.33)
Male	0.002	0.021
P value	1	1
Having mental disorder		
Yes	12.47 (2.88–53.02)	7.12 (1.03–35.28)
No		
P value	0.001	0.047
Psychiatric drugs usage		
Yes	10.09 (3.0–33.94)	3.53 (0.87–14.22)
No		
P value	0.001	0.076
Educational level		
Primary school	1	1
Secondary school	2.19 (1.21–3.96)	1.60 (0.86–2.99)
P value	0.009	0.134
High school and academic	0.96 (0.57–1.62)	0.84 (0.49–1.43)
P value	0.887	0.519
Housewife	1.69 (1.14–2.51)	1.61 (1.06–2.42)
P value	0.009	0.025
Farming or farming related	0.52 (0.28–1.52)	0.57 (0.19–1.72)
P value	0.233	0.323
Student	0.56 (0.28–1.14)	0.66 (0.32–1.37)
P value	0.112	0.271
Others		
Early marriage	2.8 (1.62–4.78)	2.77 (1.75–4.57)
P value	0.001	0.001
Loss of dears	4.7 (1–22.37)	6.12 (1.28–28.26)
P value	0.051	0.023
Family conflicts	7.83 (2.29–26.82)	5.8 (1.60–20.81)
P value	0.001	0.007
Financial problems	10.74 (1.35–85.43)	13.79 (1.72–108.17)
P value	0.025	0.013

NLEs, negative life events.

*Adjusted for age, residence, substance abuse, alcohol abuse, unemployment and other NLEs

were conducted among adults or the general population but few studies addressed this issue in adolescents and young people. Overall, the prevalence of depressive symptoms among a total of 530 adolescents and young adults was found to be 46%. A study among adolescents found the prevalence of depression to be 34.5%.⁸

Early Marriage

EM, one of the most important NLEs and a serious social problem, was found as a strong predictor for depression risk in this study. Currently, EM is a global problem and social concern for adolescent girls and boys related with their health. EM has a direct impact on girls and boy's mental health, well-being, education cessation, academic

progress, challenges and the health of their offspring and can hinder their ideal health, bonding with their peers, maturation, and finally choosing their own life spouses.¹⁶

Most of previous studies, in Iran and in the world, were often dedicated to the determinants and factors responsible for EM and forced marriage^{16–19} but this study is one of the rare studies that was performed to explore the impact of EM and NLEs on the depressive disorder among adolescents and young adults in a developing country. Almost 70% of the county's populations live in the villages. Often, this population is illiterate or poorly educated. It is possible that rural life with low education levels and remoteness from academic environments are the main reasons for EM in this study, although further studies are need. Our findings are in agreement with the results of studies performed in Pakistan and India. These studies indicate that EM is associated with depressive and psychological disorders.^{20,21} These findings and our results are also consistent with the findings of a study by Uecker in North Carolina.²²

Adolescents with EM are highly susceptible to depressive disorders due to lack of enough experiences and life skills and low levels of education which can lead to marital conflicts followed by depressive disorder.²³ Also, in our study, marital conflicts were found to be an effective determinant for depressive risk, which may be the result of EM. On the other hand, due to inadequate physical growth of adolescents, EM is a social emergency issue that has several side effects on adolescence health including elevated risk of sexually transmitted diseases, death at delivery, cervical cancer and obstetric fistulas and malaria.²⁴

Previous findings from countries with high prevalence of this social caveat and qualitative studies have found many reasons for EM such as cultural poverty, low knowledge about side effects of teen marriage, poor attention to rural areas, social pressures, lack of power to make decision, low authority, poverty and economic problems and the tendency of young boys to marry at an early age.^{14–19}

Negative Life Events

NLEs and stressful life events are robustly linked with an increase in depressive symptoms.⁷ According to previous findings, NLEs were found to be a significant predictor of depression in adolescents, putting them at risk for future depressive onsets.²⁵ Our findings also show that recent NLEs are one of the most important predictors of depressive symptom; after adjusting for confounders, they dramatically increased the odds of depression risk. A study by Cuijpers et al indicated that a history of NLEs during childhood and adolescence was related with an increased risk of progression of mental disorders in adulthood.²⁶ These results demonstrate that NLEs may lead to increased depressive onsets indirectly through the mechanism of reduced association confidence especially

among the married. Lack of support for alternate models strengthens this explanation.²⁷ A study by Meyer et al also confirmed the association between stressful life events and depressive symptoms.²⁸

Family and Marital Conflicts

In the final analysis using multiple logistic regression, marital conflicts in young adulthood was another type of NLEs in our study that was significantly related with increased depressive symptoms. This relation was also reported by Choi and Marks²⁹ According to that study, marital conflict was a substantial predictor for mental, physical and functional health limitations. Community-based studies have indicated that marital conflict or poor spousal quality is related with adverse physical health effects such as worse self-rated health and greater functional impairment.³⁰⁻³² Family conflicts among parents such as verbal or physical quarrels have a negative effect on the mental health of adolescents and students. This finding is in agreement with many studies.^{8,33}

Loss/death of loved ones was another type of NLEs that has a significant association with depression risk and its increased odds. Loss of loved ones in first degree family, especially unexpected deaths, results in traumatic experiences. This association was also found in population-based studies.^{34,35} Loss of loved ones is associated with strong exposure to virtually all frequently incident mental disorders. This heightened incidence risk is noticeable from adolescence through late adulthood for major depression, panic disorders and PTSD, is specially associated in the elderly with manic onsets, phobias, and alcohol abuse. Findings demonstrated that after an unexpected death, there is a heightened risk for onset of depressive disorders, anxiety and alcohol use disorders.³³

There are several pathways through which experiencing loss of a loved one may affect psychiatric disorders. Grief is a main NLE, and stressful life events in general are linked with later onset of several physical and psychological disorders.^{35, 36} Various types of cognitive, affective, and neurobiological mechanisms relating NLEs exposure to the onset of mental disorders have been recognized³⁷ and work in this area in first degree family member's losses and death of a loved one is ongoing.³⁸

Financial Problems

Our study did demonstrate a significant association between family financial and economic problems and depression. This is in agreement with the study by Economou et al.³⁹ Adolescents in families with serious financial problems have experienced high psychological stressor and increased risk of depressive disorders and psychiatric disorders during youth and adulthood. The effect of financial problems on the psychological health of people is universal.⁴⁰ Community-based surveys have found a significant relationship between major depression

and financial hardship. Young adults and married individuals with financial grief have higher odds of suffering from depressive disorders.³⁹⁻⁴¹

Prevalence of Depression Among Adolescents and Young Adults

In our study, 46% of total participants had levels of depressive disorders and only 8% of them were identified to have severe depression by the BDII instrument. The depression prevalence increased with age such that among the three groups of participants, adults had the highest prevalence in comparison others age groups (adolescents 37.68%, young adults 48.75% and adults 49.34%). In the present study, the prevalence of depressive symptoms among adolescents was comparable to the prevalence found in studies conducted in Qatari adolescents and a Malaysian study with depression rates of 34.5%⁸ and 39.7%,⁴² respectively. Among Iranian adolescents, the prevalence of depression was reported to be 31.30% by Daryanavard et al⁴³ which is lower than our study results with 37.68%. On the other hand, many studies have found a high prevalence, such as an Iranian study which reported the prevalence of depression to reach as high as 52.2% and Saudi Arabia with 46.9%.^{8, 44} Our findings demonstrated a significant association between the participants' age and depressive disorder and this finding is in agreement with Turkish and Indian studies.^{45,46} Nevertheless, Ekundayo et al⁴⁷ did not discover any association between age and prevalence of depression.

Gender

In agreement with many studies,^{48,49} similar to ours, female gender was recognized as a main predictor of depressive disorder in the multiple logistic model by backward conditional and was found to significantly increase the odds of depressive symptoms. It seems that females are more vulnerable to depressive disorder. The biological and physiological features of women render them more at risk for depressive disorder development, as fluctuations in hormone levels affect their body both physically and mentally from puberty onwards.^{50,51}

Behavioral Risk Factors

History of psychiatric disease in our study was clearly associated with depressive risk with the highest odds ratio. Comorbidity of depressive disorders with other mental health problems may explain this observation.

Substance and alcohol abuse were significantly associated with depressive disorder in the present study, which is in agreement with several studies.⁵²⁻⁵⁴ Substance abuse, hazardous alcohol drinking and depressive disorders are common in early adulthood; therefore, modifying behaviors in young adults is important to reduce the burden of mental disorders. Longitudinal studies are needed to clarify the temporality association between

alcohol and substance abuse with depression although it seems that individuals with depressive disorders increase alcohol and substance abuse after depressive disorders. Our results indicated high rates of hazardous alcohol abuse and substance abuse in young adults seeking depression and psychological disorders treatment, and regular screening is needed in this group.

Alcohol consumption has an adverse influence on symptom severity and treatment of mental disorders.⁵⁵ Even modest levels of alcohol consumption have been observed to reduce the response to antidepressants and increase the risk of side effects.⁵⁶

Limitations

This study has several limitations. Our study is cross-sectional in design and does not allow for ascertaining temporality and causal inference. However, we used multiple logistic regression and adjusting for confounders. Second, NLEs were assessed qualitatively not quantitatively, although we collected various types of NLEs, especially EM. We used the BID-II test and semi-structured review; therefore, the use of an additional quantitative tool for NLEs assessment was redundant. Because some of the exposures in this study were not prevalent in study participants, some odds ratios have large CIs.

In conclusion, after adjusting for confounders, our study demonstrated that EM and NLEs such as marital conflicts, financial problems, and loss of loved ones were found to be strong predictors for depression risk among both adolescents and young adults. Almost 46% of total participants had levels of depressive symptoms. A noteworthy relationship was found between the participants' age and depressive disorder such that among the three groups of participants, adults had the highest prevalence.

We recommend preventive and educational programs with intersectoral collaboration to reduce the determinants and burden of EM, a worldwide issue, and many various types of stressful life events among adolescents and young people. Health systems, community organizations and stakeholders take action to resolve the sources of an increase in EM and improve life skills in adolescents and young adults. Moreover, health systems should design appropriate screening programs for depression among adolescents and young adults in their facilities for early recognition and treatment.

Authors' Contribution

All authors were involved in designing the study. HA and EDE contributed to the protocol development and interpretation of the data, data analysis, and data collection and drafted all sections of the manuscript. MF and AF conceived of the study, contributed in the design and idea, preparing of the manuscript draft. MM developed the original idea and the protocol, abstracted and contribute in the manuscript development. LH and VAR and SG contributed to the development of the protocol and data collection and draft of discussion.

Conflict of Interest Disclosures

The authors declare that there is no conflict of interests.

Ethical Statement

This study was approved and funded by Social Determinants of Health Research Center (SDHRC) and ethics committee under code IR.TBZMED.REC.1394.674 by Tabriz University of Medical Sciences. Informed consents were obtained from all subjects before the interview.

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