Determinants of Early Marriage and Its Affect on Depression: A Population-based Study

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Abstract

Background: Early Marriage (EM) has defined as a marriage or union between two people when one or both are below 18. EM has serious side effects on psychological well-being and increases the probability of depression risk in the future. In Iran, EM predictors and the risk of depression among married people are poorly understood.

Methods: A community-based descriptive-analytic study was conducted among the married general population in Malekan County. Stratified random sampling was performed. The face-to-face interviews and Beck depression inventory scale II were used by trained interviews. Multiple logistic regression was used to calculate adjusted odds ratios with 95% confidence interval the association between EM and predictor factors.

Results: A total of 402 married participated in the study. The prevalence rate of EM was found 87 (21.64%). Out of 87 EM people, 80% were female. Almost 60% and 46.4% of EM and non-EM respondents had depressive symptoms, respectively. In the final analysis, EM was increased risk of depression (AOR=1.60; 95% CI: 1.2 – 2.72). Moreover, educational level of parents (AOR=5.53; 95% CI: 2.14 – 17.22), educational level of participants, (AOR=4.27; 95% CI: 1.28 – 14.35), female (AOR=2.43; 95% CI: 1.32 – 4.46), and family income (AOR=2.74; 95% CI: 1.00 – 7.84), were found significant predictors of EM.

Conclusion: The educational level of married people and their parents are strong predictors of EM. Furthermore, EM affects depressive symptoms in the future. A general policy with inter-sectoral collaborations and increasing health literacy and effective training programs are imperative to reduce EM rates.

Introduction

Early Marriage (EM), also known child marriage is defined as a marriage or union between two people when one or both are below the age of 18 years at the first time of the marriage [1]. EM is one of the most important public health concerns and a serious socio-cultural phenomenon in both developed and developing countries [2]. EM is one of the most important stressful life events and a worldwide concern that is related to many social and mental disorders for adolescents, especially in developing countries [1, 3]. Globally, it is estimated that EM is affected more than 60 million child girls.[4] Annually, 10 million EM occurred that is almost 27,397 a day or 19 every minute, almost one girl every three seconds [2]. According to evidence, the highest rates of EM were reported from Sub-Saharan Africa [1, 4]. Approximately one in three girls live with EM in the most developing countries [1, 5].

EM girls are exposed to a higher risk of maternal mortality. Among EM girls complications for the duration of delivery and gestation is one of the leading causes of death. Also, children born to young mothers less than 18 years are more at risk for preterm birth and low birth weight as well as poor nutritional and other health outcomes [6, 7]. EM has a side effect on physical and mental health, well-being, academic progress, bonding with their peers, and maturation of younger girls and boys [8]. Among

Iranian communities the highest prevalence of EM was reported in Sistan and Baluchestan with 40% [9]. EM is a socio-cultural event with a high prevalence that associated with depressive disorders and mental health in developing countries and also in Iran [1, 10]. Teenagers with EM are also highly vulnerable to depression and family conflicts due to a lack of enough life skills [11]. Moreover, family and marital conflicts is the most important predictors for suicidal behaviors in Iran and many of societies. Hence, EM is related to suicidal behaviors and the best recognition of EM predictors are useful for health care systems [12, 13].

A health community assessment in Malekan county North West of Iran identified that EM is one of the serious health problems. Local reports indicated that a high prevalence of EM in young girls, especially rural areas [1, 14]. However, in Iran, several gaps remain in our understanding of EM prevalence, psychological outcomes prevalence among EM people and the major determinants of EM and its linkages with depression. In the general population of married people, socio-economic and behavioral factors that affect EM are poorly understood. Furthermore, there are limited perceptions of the reasons that increase child marriage prevalence for reduced psychological well-being and poor mental health outcomes. The present study was aimed to determine the prevalence and determinant factors of EM and it's associated with depression among married general population in Malekan, Iran.

Methods

Study design and sampling

A community-based descriptive-analytic study was performed in Malekan County of Iran from May 2017 through December 2017 among the married general population. The study aimed to assess EM predictors and prevalence of depression among EM people. Malekan County is located in the Northwest of Iran and in a 200 Km distance with Tabriz city. The County population in the 2017 census, was 115,717 and most of them (almost 70%) lived in the rural areas. The main occupation of County residences are farming or farming-related.

The sample size was determined based on approximate prevalence of EM $P = 0.30$, 95% confidence interval, $\alpha = 0.05$, and accordingly yielding a sample size of 360 individuals. We added 10% to compensate for non-responders, hence the final sample size was estimated at 402 people.

Stratified random sampling and proportional to the size of the population was performed in each stratum. The study selected two cities and thirty villages from a total of 2 cities and 52 county villages by a simple random sampling method (sampling frame). Systematic random sampling was conducted within villages and cities. The formula $I = Si / Ni$, where Ni is the samples of each village or city and Si is the number of households, was used to determine sampling interval. To select the first sample, the right side of the health center as used by a random numbers table. Households (married) were surveyed for EM determinants and depressive symptoms, and if agreed and cooperated, the questionnaires were completed by trained interviewers. In the lack of consent, the next household was investigated.

Data collection

EM, defined any marriage or union between two people when one or two are less than 18 years. The face-to-face interviews (in a single sitting lasted 20 minutes) were used by trained interviews via a semi-structured questionnaire to assess EM or child marriage determinants, socio-economic status, behavioral risk factors, and other health-related information. The additional data were collected from the household's records in the health centers. Furthermore, we used native health workers to collect valid information about participants.

Depressive symptom was assessed by Beck II scale tool. This tool was designed on a 4-point scale. The ranges from 0 to 13, 14 to 19, 20 to 28, and 29 to 63, were considered normal, mild, moderate and severe ranges depression, respectively.

Data analysis

The SPSS software (version 21.0, Chicago, IL, USA) was used data analysis. Data normality was checked by using the Kolmogorov-Smirnov test. Bivariate analysis was used by Chi-square (χ^2) and T-tests to estimate binary/categorical and continuous variables with the outcome (early marriage), respectively. Depressive symptoms distribution were compared between EM and not-EM people. Multiple logistic regression was used to calculate cruds and adjusted odds ratios with 95% confidence interval the association between EM and predictor factors. In the all tests, *P*-value < 0.05 was considered significant.

Results

In this study, a total of 402 married participants were interviewed and participated in the study. Out of them, the prevalence rate of EM was 87 (21.64%) in this region. Two hundred sixty 260(64.67%) of respondents were female. Out of 87 EM people, almost 69 (80%) were female. Table 1 indicates the socio-economic and other determinants factors on EM risk among 402 married people. The study found that a significant association between EM risk and educational level of participants and their parents, female gender, monthly income less than 2 million Rial, household occupation, and smoking status (P-value < 0.05). Also, the study found no significant association between residence (rural and urban) of respondents and EM risk.

Table 1
Socio-economic status and determinants of early marriage among married people

Variables		Early marriage (N = 402)		Total	P-value
		Yes (N = 87)	No (N = 315)	N (%)	
Gender	Female	69	191	260 (64.67)	0.001
	Male	19	123	142 (35.30)	
Age group*	20>	41	8	49 (12.20)	0.153
	20–30	21	181	202 (50.25)	
	> 30	17	134	151 (37.55)	
Educational status*	Non-academic	78	263	341 (84.82)	0.002
	Academic	9	52	61 (15.18)	
Educational level of Parent	Non-academic	81	255	336 (83.58)	0.001
	Academic	6	60	66 (16.42)	
Family income	Blew 2 million	75	191	266 (66.20)	0.042
	Above 2 million	12	124	136 (33.83)	
Resident	Urban	28	111	139 (34.57)	0.677
	Rural	55	204	259 (64.43)	
Occupation	Household	67	156	223 (55.47)	0.003
	Farming or farming related	3	38	41 (10.20)	
	Student	6	24	30 (7.46)	

* At the study time

	Others	11	97	108 (26.87)	
Smoking status	Yes	3	40	43 (10.70)	0.007
	No	84	275	359 (89.30)	
Alcohol consumption	Yes	4	14	18 (4.48)	0.819
	No	83	301	384 (95.52)	
Substance abuse	Yes	2	8	10 (2.50)	0.447
	No	85	307	392 (97.50)	
Family size	2≥	13	33	46 (11.44)	0.245
	2–4	57	226	283 (70.40)	
	≥ 4	17	56	73 (18.20)	
* At the study time					

Figure 1 demonstrates the prevalence rate of depression among EM and not-EM people. Almost 60% of EM cases had depressed whereas 46.4% of not-EM cases not depressed. Regarding Table 2, it was found a relationship between EM and depression risk (P-value < 0.016). Likewise, more than 16% of EM people and 8.25% of not-EM people had severe depression, respectively.

Table 2
The association between early marriage and severity of depressive symptoms among married people

Variables		Early marriage (N = 402)		Total (N = 402)	P-value
		Yes (N = 87)	**No (N = 315)**		
depressive symptoms	Not depressed	35 (40.23)	169 (53.65)	204 (50.75)	0.016
	Mild	21 (24.13)	78 (24.76)	99 (24.62)	
	Moderate	17 (19.54)	42 (13.33)	59 (14.67)	
	Sever	14 (16.10)	26 (8.25)	40 (9.95)	
Total		87 (100)	315 (100)	402 (100)	

The multiple logistic regression analysis indicated that who had no-academic or low educational level of parents and participants highly associated with EM event, so that increased odds of EM 5.53 and 4.27 times, (AOR = 5.53; 95% CI: 2.14–17.22), (AOR = 4.27; 95% CI: 1.28–14.35), respectively. As well, the gender of females (AOR = 2.43; 95% CI: 1.32–4.46), those who had less than 2 million income per monthly (AOR = 2.74; 95% CI: 1.00–7.84), have had a significantly higher risk of having EM.

Moreover, EM people 1.60 times more likely attacked by depression symptoms as compared to those who had no EM event (AOR = 1.60; 95% CI:1.02–2.72). More details are shown in Table 3.

Table 3
Measure of association between early marriage risk and predictors by multiple logistic regression*

Variables		Crude OR (95% CI)	Adjusted OR (95% CI)
Gender	Male	1	1
	Female	2.31 (1.34–4.07)	2.43 (1.32–4.46)
p-value		0.003	0.004
Educational level of participants	Academic	1	1
	Non-academic ☒	5.47 (1.65–17.82)	4.27 (1.28–14.35)
P-value		0.005	0.019
Educational level of parent	Academic	1	1
	Non-academic	6.09 (2.44–19. 74)	5.53 (2.14–17.22)
P-value		0.001	0.002
Family income (monthly)	More than 2 million	1	1
	Less than 2 million	2.71 (1.02–7.37)	2.74 (1.00–7.84)
P- value		0.049	0.052
Depressed	No	1	1
	Yes	1.72 (1.06–2.77)	1.60 (1.02–2.72)
P- value		0.029	0.048
*Adjusted for occupation, and smoking status			
☒ included primary, and secondary school			

Discussion

The final analysis of the study showed that socio-economic status especially low educational level of parents, educational level of respondents, and family income were strong and significant predictors of

EM, as a global concern. This finding is in line with studies done in Ethiopia, Serbia, Uganda, Sudan, and the Democratic Republic of Congo [15–18].

Parents with less understanding of family life and worldview may consider EM as the best solution to create a good association with others [19]. The advanced one's educational achievement, the more awareness she/he gets and comprehends, including all knowledge about reproductive health, the best age of marriage, and the impact of having an EM [4].

Likewise, in this study, having a history of EM event is a significant predictor of developing depressive symptoms. EM people are more suffering from depressive disorders in the future. Limited studies have focused on this issue. The increasing trend of depressive symptoms in participants of the present study and EM girls and boys are a serious concern. Obviously, increasing the risk of depression is just one of the adverse outcomes of EM. Undoubtedly, EM has many negative effects on other aspects of mental and physical health, well-being, fetal health and birth weight, education and academic progress, communication with peers and other social developments [1, 20, 21].

To our knowledge, EM as a worldwide and public health concern and its importance, there is a high impact of educational level and socio-economic status, and a high prevalence of depression on those, little is known about the existence of depressive symptoms in EM people in Iran especially in developing countries [1]. EM people have very low life skills and experiences or may behave inappropriate husband selection at the age of under 18 years. These elements could be rising marital conflicts, as a strong predictor for depressive disorders and suicidal behaviors in the future [12, 22].

Several procedures may be a role in the association between EM and psychological well-being. Evidence suggests that EM often exposes girls to raised risk of intimate partner violence, reduced communication with the husband or spouse, lack of awareness about controlling fecundity, low decision-making power, and low access to resources compared to girls who marry as appropriate age or adults [3, 23].

The results of this study indicated that the EM rate in girls is higher than boys. Close to 80% of EM has occurred in the female gender. Special social approach, cultural stigma, rural setting and low education status are factors may affect child marriage of girls in this region. In this study, the prevalence rate of EM was reported at 21.64%. This prevalence is high but higher prevalence was reported from African countries and Bangladesh in Asia [24, 25].

EM is an emergency issue in prevalence globally. Commonly, EM is prevalent in rural areas and undeveloped settings, it was not found any association between EM and residence of respondents in this study. The rate of EM was high in the city similar to villages. The multiplicity of villages and their proximity to the city, their continuous linking with the city and the lack of modernization of the city and the distance from the academic environment can be the main reasons [26, 27].

Limitations

The study had some limitations. First, we couldn't collect some social determinants of EM including social and cultural barriers, parents' approach to EM, autonomy in decision-making, and relationship with parents, due to the qualitative genus of these variables. Nevertheless, we gathered socio-economic and predictors of EM. As well as, it is believed that the most important predictors of EM are attributed to socio-economic status especially educational level and health literacy. If the educational level of people will be raised, the EM rate will be decreased.

Another problem was descriptive in the design of this study and cannot ascertain causal inference. The temporal association between EM and depression in a cross-sectional study is not predictable. But based on the Beck II scale tool and self-reported participants, depressive symptoms (outcome) were developed after EM events (exposure). Moreover, to minimize this problem we used native community health workers to collect valid data and analyzed by multiple logistic regression for estimating adjusted odds ratios.

Conclusion

In this study, the prevalence rate of EM was found high. The educational level of respondents and their parents, family income (low), female gender and household occupation that related to females were strong significant predictors of EM in this County. More importantly, EM people suffering from depressive symptoms and poor psychological well-being.

Recommendations

Increasing health literacy and academic education is essential for the best understanding of the values of life and worldview of the general population. A general policy with strong political commitment and inter-sectoral collaborations of various sectors of the community such as health system, welfare, governorate, legal affairs, municipality, media, clerics, and social organizations are needed to reduce EM rate. Policymakers should take bold action to place equity concerns and the moralities and protection against EM girls and boys.

Some proportion of EM events are forced marriage. The study of the impact of forced marriages on various aspects of mental health situations is deserving attention. Furthermore, longitudinal studies are required for assessing and monitoring EM people's physical and psychological well-being.

Abbreviations

EM
Early marriage

Declarations

Ethics approval and consent to participate

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. Written inform consents were obtained from all subjects before the interview. For subjects who had under 18 years old, we have obtained written informed consent from the father or guardian of participants in a face to face position with justifying the purpose of the study. All participants have given consent for their data to be used in the research. Participants' names and secret information were entered into the electronic system merely as a code and kept strictly confidential.

Consent for publication

Not Applicable.

Availability of data and materials

The datasets generated and/or analysed during the current study are not publicly available due to the sensitivity of the suicide issue and the confidentiality of the information, the consent of the sponsoring organization is required. But are available from the corresponding author on reasonable request.

Competing Interest

The authors declare that there is no conflict of interest and financial disclosure.

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Authors’ Contributions

HA developed idea and protocol, interpretation of the data, data analysis, and data collection and drafted all sections of the manuscript. AF and MF conceived of the study, contributed in the protocol development, and technical comments. EDE contributed in the protocol development, data collection and contribute in the manuscript development. HB contributed to the development of the protocol and edited of manuscript.

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Figures

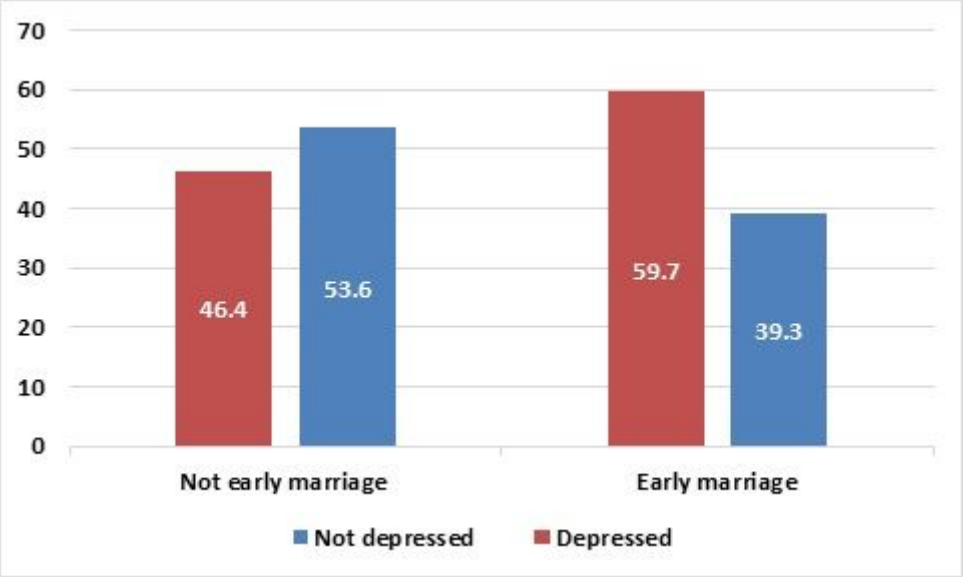

Figure 1

The prevalence rate of depression* among early marriage and not early marriage people *Depressed included levels of mild, moderate, and severe