

Adolescent Mothers Reproductive Health Status in an Iranian Setting: A Cross-Sectional study

Maryam zare (✉ zaremaryam119@gmail.com)

khalkhal uniiversity <https://orcid.org/0000-0001-6627-8564>

Afrouz Mardi

Ardabil University of Medical Sciences: Ardebil University of Medical Sciences

Mozhgan Gaffari-moggadam

Ardabil University of Medical Sciences: Ardebil University of Medical Sciences

Nazila Nezhad-dadgar

Ardabil University of Medical Sciences: Ardebil University of Medical Sciences

Malek Abazari

Ardabil University of Medical Sciences: Ardebil University of Medical Sciences

Atefeh Shadman

Ardabil University of Medical Sciences: Ardebil University of Medical Sciences

Research

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Abstract

Background: Reproductive health of married adolescent mothers including family planning, sexual, psycho-social and maternal health is still a severe and persistent challenge, where millions of women give birth before the age of 18 in developing countries. Therefore, this study was conducted to determine the reproductive health status in married adolescent mothers attending Ardabil health care centers in 2019.

Methods: This cross-sectional study was conducted on 312 married adolescent mothers, which were selected through a convenient sampling method in 2019. A demographic information questionnaire and Adolescent Women's Reproductive Health Questionnaire were completed anonymously. Data were analyzed using Statistical Package for the Social Sciences (SPSS version 20).

Results: The mean age of the participants, the mean age of their husbands, and the mean age of marriage were 16.41 ± 0.85 , 24.18 ± 2.29 and 15.06 ± 1.15 years, respectively. The mean score of reproductive health for adolescent mothers in this study was 63.78 ± 11.06 . There was a significant relationship between age, education, parity, age and education of husband and contraceptive methods with reproductive health status in married adolescent mothers ($p < 0.05$).

Conclusion: This study showed that to promote the reproductive health in adolescent mother, we need to improve the education level, and awareness of women, and their spouses and increasing their ability to use contraceptive methods. This study supports the evidence of the negative role of early marriage and motherhood on the reproductive health of adolescent mothers.

Plain English Summary

Reproductive health of married adolescent mothers includes family planning, sexual, psycho-social and maternal health. In this study the regional was conducted, what did determine the reproductive health status in married adolescent mothers?

Married adolescent mothers respondents answered to reproductive health question.

Adolescent mother's respondents have 15–26 years. Respondents indicated in your answered relationship between age, education, parity, age and education of husband and contraceptive methods with reproductive health status.

In conclusion, adolescent mother need to improve the education level, and awareness of women, and their spouses and increasing their ability to use contraceptive methods.

This information was earned of this study and needs research strategy and ultimately will need national and international research priorities.

Introduction

Adolescent defined as people between 10–19 years, where they representing 16% (about 1.2 billion) of the world's population [1]. The recent statistics indicate that more than 700 million girls were married while they were just an adolescent, and more than a third of them were less than 15 years [2]. Reproductive health in adolescent women is a challenge in many low and middle-income countries [2]. Usually, these teenage women pressured to become a mother soon after marriage because of some socio-cultural factors such as; proving their identity and fertility strengthen their position in the spouse's family, Relieving loneliness and low decision-making power [3, 4]. About 12 million women in developing countries give birth before the age of 18 [2].

Early marriage and motherhood have many negative consequences relating to educational prospects, adolescent health and nutrition, individual and social wellbeing, sexual and reproductive health and maternal morbidity and mortality [5, 6]. Studies showed that 23% of the total burden of diseases (Disability-Adjusted Life Year), is devoted to adolescents due to pregnancy and childbirth [7]. About 16 million births, 11% of all deliveries, occur among women aged 15–19 years annually [8].

Iran has a lower rate of early marriage in comparison with many developing countries but is still too familiar,[9] it was 3% for girls before the age of 15, and 17% before the age of 18, in 2018 [10]. Legal age of marriage for girls in Iran is 13, and in some areas, including Ardabil province with an estimated of 1,300,000 population who speak Azeri, the average rate of marriage before 15 years old is reported up to 9% [11, 12].

Providing women's reproductive health is one of the sustainable development goals by 2030 [13]. Meanwhile, the reproductive health of adolescent women, including family planning, sexual, psycho-social and maternal health, is still a severe and persistent challenge in low and middle-income countries [14]. There are relatively little evidence and information about reproductive health in adolescent mothers. Moreover, in many ways, the appropriate channels for information not readily available [15]. Considering the high prevalence of early marriage and teenage mothers in Iran, the hypothesise of this study was to determine the reproductive health status in married adolescent mothers attending Ardabil health care centers in 2019.

Methods

Data source

This Cross-sectional correlation study was conducted from January to June 2019 on married adolescent mothers, who attended the urban-rural health care centers affiliated to Ardabil University of Medical Sciences. Ardabil is capital of Ardabil province in the north-west of Iran with 1.32 million populations.

Inclusion/exclusion criteria

The inclusion criteria were; being a married woman less than 19 years old who gave birth at least once. Exclusion criteria were; addiction and suffering from any chronic disease. By using convenient sampling

method, 312 married adolescent mothers were selected.

Tools and data gathering

Data collection tools included; a demographic information questionnaire, and Adolescent Women's Reproductive Health Questionnaire.

Adolescent Women's Reproductive Health Questionnaire is a scale designed by Mardi & et al. as a PhD thesis in 2018. This scale consists of four sub-scales with 27 phrases. Questions 1–7 relate to the sexual aspect of the scale, Questions 8–14 compared to the pregnancy and childbirth, questions 15–22 refer to the element of psycho-social and issues 23–27 are related to the family planning. The reliability and consistency of the instrument were established with the Cronbach's alpha coefficient (0.90) for the entire scale and test-retest reliability with a two week-interval Intraclass Correlation Coefficient (ICC = 0.996, $p < 0.001$). This questionnaire was validated using content, face and construct validity.¹⁶

The demographic questionnaire, which included information such as age, education, occupation, age at marriage, gravida, parity, type of delivery and spouse's demographic information, was completed.

Statistical analysis

The scatter statistics (mean and median) was used to examine data distribution. Also, the correlation between variables has been evaluated using statistical correlation tests. For this purpose, the SPSS ver.20 was used.

Ethical approval

All participants were assured that their information would remain confidential and anonymous. Written informed consent was obtained from all participants to their voluntary participation in the study. Moreover, they had the right not to participate in the study without any problem. The Ethics Committee of Ardabil University of Medical Sciences approved the study (IR.ARUMS.REC.1397.2.3).

Results

The mean age of the participants was 16.47 ± 0.85 years ranged between 13 to 18, and the majority of them were 17 years old (61.2). The participants mean age of marriage was 15.06 ± 1.15 years ranged between 12 to 17, and the mean age of their husbands was 24.18 ± 2.29 years ranged between 19 to 35 years. Most of the participants (42%) had junior high school education, 87.5% of them had the history of one and the rest of them two childbirth, which 54.7% of them were terminated by cesarean section, only 30.36% of adolescent mothers used safe contraceptive methods, 49.28% used unsafe methods and 30.36% did not have any contraception (Table 1).

The mean score of reproductive health for mothers in this study was 63.78 ± 11.06 , ranged between 31 to 78. Table 2 shows the average rating and the scores obtained in each of the reproductive health subscales of adolescent mothers.

Table 3 shows the relationship between reproductive health status and demographic factors using Pearson correlation test. There was a significant correlation between age ($p=0.007$), education ($p=0.005$), gravida ($p=0.003$) parity ($p=0.007$), contraceptive method ($p=0.012$) and husband's age and education (>0.001) with the reproductive health status in married adolescent mothers.

13% of mothers had two children with a mean score of 59.62 for reproductive health status in comparison with 87% of women who had one child with a mean score of 65.01 ($p=0.007$). Also, mothers who used safe contraceptive methods had higher reproductive health status than those who used nothing or unsafe practices ($p=0.01$). There was no significant relationship between marriage age, husband's job, type of delivery and living place with reproductive health status among married adolescent mothers in this study.

Discussion

Our study shows that despite considerable improvements in many developing countries in promoting adolescent's health [17], we should be concerned about the health of women who experience adolescence and motherhood together.

The results of this study showed that the mean score of reproductive health in married adolescent mothers was 63.78. Since the scoring was linear, from zero to 100, it was concluded that the reproductive health status of married adolescent mothers who attended urban-rural health centers was moderate.

In line with this finding, the study conducted in an American community suggests that despite the expansion of health services, the reproductive health status of adolescent pregnant women was worse than in other developed countries [18].

Our study results also revealed that there was a significant correlation between mother's age and education, spouse age and education, gravida, parity and contraceptive methods with reproductive health status. Reproductive health score decreased with increasing maternal age but increased with the aging of the spouse. This is probably due to the increased likelihood of pregnancy and childbirth and its consequences with increasing age in adolescent mothers. However, ageing in men is usually accompanied by increased awareness, education, and maturity, and it has been a positive effect on their women's reproductive health.

The findings of a large study based on data from 29 African, Asian, Latin American and Middle Eastern countries indicate that Problems related to pregnancy and childbirth in adolescent women (13-19 years old) were more than young women (20-24 years old), [19] Which is inconsistent with the results of the present study.

The majority of mothers who participated in this study were educated up to junior high school, and their spouse's education was up to high school diploma. There was a significant relationship between the educational level of mothers and their spouses with reproductive health status. The mean score of

reproductive health was increased with increasing age and education level in mothers and their spouses. Bandari et al. (2016), also confirmed that education is one of the practical factors on adolescent women's health status [20]. Meanwhile, according to the WHO reports, increasing educational opportunities for girls, while positively affecting their health, also reduces the likelihood of early marriage and its consequences [21].

The other finding of this study was that just about one-third of adolescent mothers (non-pregnant) used the safe contraceptive methods and others either used unsafe methods or did not have any contraception.

Currently, over 200 million women, especially in developing countries, are not using any effective contraceptives despite their desire to prevent pregnancy [22,23]. On the other hand, behavioural patterns in the adoption and use of contraceptives differ significantly between adolescents and adult women [24,25]. Adolescent women use lower reproductive health services, such as contraceptives than adults. This difference may be due to the low level of awareness and experience, especially the lack of independence in decision making in adolescents [24]. Furthermore, most of the adolescent women tend to have children, especially boys, to strengthen their position and identity within the spouse's family [5]. Also, low education, social considerations and cultural restrictions on access to family planning services limit the use of contraceptives for adolescent women soon after marriage [26,27].

This study results also showed a significant relationship between the type of contraceptive methods and reproductive health status. That way, women who used safe methods, had higher reproductive health status than those who used nothing or unsafe methods. Similarly, many studies have reported that the use of contraceptive methods reduce maternal mortality up to 44% and affect women's health by reducing unwanted pregnancies and unsafe abortions [28].

Most adolescent mothers in this study had one pregnancy and childbirth experience, and the number of gravida and parity was significantly correlated with their reproductive health status. So, mothers with one child had a higher reproductive health score than mothers with two children.

Many studies have reported similar results that pregnancy and childbearing at adolescence influence health status and affect adolescent women's physical, mental, and social health directly or indirectly [10, 19, 29, 30].

As mentioned, some of the adolescent mothers in our study had two children. Aguilar et al. (2015) argued that unfortunately in most cases, teenage mothers experience the second pregnancy in less than two years later and suffer the negative consequences of these repeated pregnancies and deliveries until the end of life [31].

Meanwhile, the majority of adolescent mothers gave birth to cesarean section, which can be explained by the high negative consequences of pregnancy and childbirth in adolescents,[32] or the pelvic factors [33].

On the contrary, in some studies, more vaginal deliveries have been reported than the cesarean section in teenagers, which may be due to inadequate or limited access to a specialist or hospital for cesarean section [29].

There was no significant correlation between the type of delivery and reproductive health status of adolescent mothers statistically in this study. It can be explained by the fact that childbearing in adolescence has its consequences in any way that ends.

Also, there was no statistically significant relationship between marriage age, spouse occupation and place of residence with adolescent women's health status. As in some previous studies, the results have been different.

Early marriage has a wide range of consequences for adolescent girls, both individually and nationally and puts the general and reproductive health of these women at risk [34].

Concerning the relationship between spouse occupation and adolescent women's health, studies in Bangladesh on adolescent married women suggest that whenever husbands are unemployed and financially dependent on their parents, mothers play an important role in women's reproductive health decisions and it is undermined the autonomy and decision-making power of adolescent women [35].

In the present study, living with a spouse's family had no significant relationship with adolescent women's health status. The findings of a study in Africa, which was conducted on 15-19-year-old women with a history of pregnancy under 18 years of age, showed that Adolescent mothers have somehow been supported by their surroundings, including their families, spouses and spouse [36].

In other similar studies, adolescent mothers benefited from non-financial support from their families, for example, they took their child to their parents when they went to school, and these supports had a positive impact on their children and themselves health [37].

Strength and limitations

Findings of this study determined some of the challenges that adolescent mothers in Ardabil City face in terms of reproductive health. Understanding of these challenges that adolescent mothers face in urban-rural centers can support the programs to improve health status in these vulnerable mothers.

Conclusion

This study highlights the status of reproductive health in adolescent mothers in an Iranian setting for the first time. It is crucial to ensure that all adolescent mothers can realize their rights and welfare of sexual and reproductive health. Our findings underscored the need to promote the reproductive health in adolescent mothers by improving the education level and awareness of women and their spouses and increasing their ability to use contraceptive methods. Preventing marriage and motherhood in adolescent girls should be pursued more seriously by health care providers and policymakers.

Declarations

Ethics approval and consent to participate

All participants were assured that their information would remain confidential and anonymous. Written informed consent was obtained from all participants to their voluntary participation in the study. Moreover, they had the right not to participate in the study without any problem. The Ethics Committee of Ardabil University of Medical Sciences approved the study (IR.ARUMS.REC.1397.2.3).

Consent for publication

No consent to publish was needed for this study as we did not use any details and images related to individual participants. In addition, data used is available in the public domain.

Availability of data and materials

Data for this study were sourced from this project IR.ARUMS.REC.1397.2.3.

Competing interests

None.

Funding Information

This study was approved and funded by Ardebil University of Medical Sciences.

Authors' contributions

Mardi A conceived the study. Zare M, Mardi A, Gaffari-moggadam M, Nezhad-dadgar N, Abazari M and Shadman A designed the study and drafted the initial manuscript. Zare M had final responsibility to submit for publication. All authors read and amended drafts of the paper and approved the final version.

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Author information

¹PhD of Nutrition, Assistant Professor of Nutrition, Department of Nutrition, khalkhal university of Medical Sciences, khalkhal, Iran. Email:zaremaryam119@gmail.com. ORCID ID: 0000-0001-6627-8564.²PhD in Reproductive Health, Assistant Professor, Department of Public Health, School of Health, Ardabil University of Medical Science, Ardabil, Iran. *Corresponding author. Email: Email: mardi1151@gmail.com.T: 989143530294.³MSc in Health Education and Health Promotion, Instructor, Department of Public Health, School of Health, Ardabil University of Medical Science, Ardabil, Iran.⁴PhD in

Health Education and Health Promotion, Department of Health Care Services and Health Education, School of Health, Ardabil University of Medical Science, Ardabil, Iran. ⁵MSc in Biostatistics, Instructor, School of Health, Ardabil University of Medical Science, Ardabil, Iran. ⁶M.D, Specialist of Community and Preventive Medicine, School of Medicine, Ardabil University of Medical Science, Ardabil, Iran.

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Tables

Table 1
Demographic Characteristics and Score of Reproductive Health

| Variable | | Reproductive health score | | P-value |
|----------------------------------|---------------------|---------------------------|---------------|---------|
| | | N(%) | Mean(SD) | |
| Age | ≤ 15 | 49 (15.7) | 66.40 (10.39) | 0.07 |
| | > 15 | 263(84.3) | 63.29(11.13) | |
| Marriage age | ≤ 13 | 21(6.7) | 64.00(9.43) | 0.409 |
| | 14–15 | 176(56.4) | 64.47(11.43) | |
| | > 15 | 115(36.9) | 62.67(10.75) | |
| Education | Elementary school | 49(15.7) | 61.89(9.74) | 0.005 |
| | Junior high school | 131(42) | 61.86(12.02) | |
| | Senior high school | 89(28.5) | 66.61(10.27) | |
| | High school diploma | 43(13.58) | 65.90(9.60) | |
| Gravida | 1 | 223(71.5) | 65.75(10.37) | 0.003 |
| | 2 | 83(26.6) | 61.64(10.90) | |
| | 3 | 6(1.9) | 61.84(12.69) | |
| Contraceptive | Safe | 85(30.36) | 61.34(10.1) | 0.012 |
| | Unsafe | 110(39.28) | 59.06(10.38) | |
| | Nothing | 85(30.36) | 59.58(10.68) | |
| Para | 1 | 272(87.2) | 65.01(11.84) | 0.007 |
| | 2 | 40(12.8) | 59.62(16.06) | |
| Spouse age | <i>cript</i> > | 68(21.8) | 59.35(12.61) | 0.001 < |
| | 20–25 | 153(49) | 63.92(9.87) | |
| | > 25 | 91(29) | 66.84(10.75) | |
| Spouse education | Elementary school | 79(25.3) | 58.30(10.25) | 0.001< |
| | Junior high school | 79(25.3) | 65.12(11.89) | |
| Data are presented as mean ± SD. | | | | |
| Data indicated as, n (%). | | | | |
| * P < 0.05 | | | | |

| Variable | | Reproductive health score | | P-value |
|----------------------------------|---------------------|---------------------------|--------------|---------|
| | Senior high school | 41(13.1) | 64.75(10.19) | |
| | High school diploma | 84(26.9) | 67.15(9.74) | |
| | College | 29(9.3) | 63.89(10.83) | |
| Type of delivery | vaginal | 272(87.2) | 65.01(11.84) | 0.158 |
| | cesarean | 40(12.8) | 59.62(16.06) | |
| Data are presented as mean ± SD. | | | | |
| Data indicated as, n (%). | | | | |
| * P < 0.05 | | | | |

Table 2
Reproductive Health Status of Adolescent Married Women Referred to
Ardabil Urban-Rural Health Centers

| Reproductive health score | Minimum | Maximum | Mean(SD) |
|--------------------------------------|---------|---------|--------------|
| Sexual | 35 | 67 | 64.45(17.86) |
| Pregnancy and childbirth | 38 | 71 | 59.27(15.47) |
| Psycho-social | 32 | 78 | 53.54(14.09) |
| Family planning | 31 | 76 | 59.53(18.32) |
| Total | 31 | 78 | 59.12(10.29) |
| Data are presented as mean \pm SD. | | | |
| * P < 0.05 | | | |

Table 3
Associations between (regression coefficients) reproductive health score and demographic characteristics

| Variable | | Univariate | | Multivariate | |
|--------------------------|---------------------|------------|---------|--------------|-------------------|
| | | Beta | P-value | Beta | P-value |
| Age | | -1.55 | 0.033 | -2.18 | 0.006 |
| Marriage age | | -0.988 | 0.068 | - | |
| Spouse age | | 0.942 | 0.001< | 0.875 | 0.001 < |
| Education | Elementary school | ref | | | |
| | Junior high school | -0.035 | 0.985 | -0.732 | 0.679 |
| | Senior high school | 4.72 | 0.015 | 4.532 | 0.023 |
| | High school diploma | 4.01 | 0.079 | 3.713 | 0.110 |
| Gravida | 1 | ref | | | |
| | 2 | -4.11 | 0.002 | -2.302 | 0.123 |
| | 3 | 2.09 | 0.373 | 0.975 | 0.691 |
| Contraceptive | | | | | |
| | Safe | 2.78 | | | |
| | Unsafe | 2.92 | 0.08 | 2.26 | 0.160 |
| | Nothing | 5.57 | 0.001 | 3.29 | 0.069 |
| Para | 1 | ref | | | |
| | 2 | -2.11 | 0.066 | | |
| Spouse education | Elementary school | Ref | | | |
| | Junior high school | 6.82 | 0.0001 | 6.14 | 0.001< |
| | Senior high school | 6.45 | 0.002 | 4.62 | 0.031 |
| | High school diploma | 8.85 | 0.0001 | 5.04 | 0.004 |
| | College | 5.93 | 0.016 | 2.52 | 0.269 |
| Delivery | Vaginal | Ref | | | |
| | Cesarean | -2.47 | 0.158 | | |
| Pearson correlation test | | | | | |
| * P < 0.05 | | | | | |