

Prevalence of Premarital Sex Among Youths in Iran: A Meta-Analysis

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ABSTRACT

Iran is a religiously conservative nation where premarital sexual activity is prohibited. Early sexual behaviors are recognized as risk factors for sexually transmitted infections (STIs), including HIV. The transmission of HIV through sexual contact has increased by 33% in Iran, and the age of incidence has decreased by 16 years. We conducted a systematic review and meta-analysis to assess the prevalence of premarital sexual relationships. An advanced search was performed using keywords related to sexual behavior and similar terms, encompassing publications from 2000 to December 2023. All selected studies focused on sexual behavior among Iranian youth. Following the evaluation of various articles and the exclusion of duplicate, irrelevant, and low-quality papers, 14 studies were ultimately included in the current research. Data were analyzed using the random effects model in Rev5.3 software. The total number of participants in the selected articles was 13,889 individuals. The prevalence of sexual relations among Iranian youth was estimated at 22.80% (CI 95%; 16.93 - 28.66). It was 18.69% (CI 95%; 11.03 - 26.34) in females and 30.46% (CI 95%; 22.44 - 38.48) in males. The results of the study indicated that at least one-quarter of individuals engage in premarital sexual activity in Iran, with these individuals experiencing sexual intercourse before the age of 20 years. Given the increasing age of marriage and the necessity for education to prevent high-risk sexual behavior in Iran, it is imperative to develop programs and policies promoting safe sexual health practices

Keywords: Abstinence-only; Sexual Behavior; Sexual Relation; Youth, Meta-Analysis; Iran

Introduction

Refraining from sexual activities for a long period is defined as sexual abstinence [1], which is of two types: the primary type, which means not having a sexual intercourse experience, and the secondary type, in which a person who has previously experienced sexual intercourse avoids it later [2]. A systematic review conducted in America reported that increasing age was inversely related to the prevalence of sexual abstinence in young people. However, its prevalence increases with increasing age in middle-aged men [3]. Studies

conducted in Iran have reported the prevalence of premarital sex among young people between 10.8 and 49.75 percent [4, 5].

Numerous factors may contribute to sexual abstinence, including concerns about sexually transmitted infections (STIs) such as HIV, comorbidities with other high-risk behaviors, feelings of guilt, and the influence of family and peers, such as sexually inactive friends. Additionally, familial advice advocating for religious abstinence, which prohibits sexual intercourse before marriage, the preservation

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of virginity for marriage, and the prevention of unwanted pregnancies, are also relevant considerations [6]. In many countries, policymakers propose programs aimed at mitigating sexual risks by promoting abstinence, such as "abstinence-only-until-marriage" (AOUM) or "postponing sex" initiatives [7]. AOUM programs often marginalize sexually active youth by implying that they are less valuable than their abstinent counterparts and that their sexual behavior is shameful. Federal guidelines for AOUM programs associate all premarital sexual activity, pregnancies outside of marriage, and child-rearing with adverse health outcomes, including subsequent sexual dysfunction and feelings of guilt during sexual activity [8].

In certain countries, including Iran, policymakers employ moral terminology due to the significant influence of religious considerations. Terms such as "Chaste" or "Virgin" and the framing of abstinence as a "Commitment to Chastity" underscore the religious foundation [7]. In Iran, premarital relationships, particularly sexual ones, are prohibited by law, culture, and religion. Traditionally, virginity is expected to be proven at marriage and is considered a prerequisite for matrimony [9]. The advent of information technologies, such as the Internet and satellite communications, has played a pivotal role in the traditional and social transformations within Iranian society in recent years. An observable outcome is the increasing prevalence of premarital sex among young Iranians [10], while concurrently, the average age at first marriage is rising [11].

Premarital sex is not inherently a risky sexual behavior. The growing interest in sexual activity is a normal aspect of adolescent development, and young individuals who are equipped with appropriate knowledge, skills, and access to services can engage in healthy sexual relationships. However, in Iran, where significant cultural taboos regarding sexuality outside of marriage persist, premarital sex often occurs in contexts characterized by insufficient knowledge and limited access to services, thereby increasing the risk of unintended pregnancies and sexually

transmitted infections (STIs), including HIV [12]. Recent evidence indicates a shift in the mode of HIV transmission from needle sharing to unsafe sexual practices [9]. HIV infections through sexual relations have increased by 33 percent, and the age of incidence has decreased to 16 years in Iran [13]. Approximately one-fifth of Iran's population comprises juveniles aged 15–25 [14].

Regrettably, practical information on STI/HIV prevention and its consequences is not formally disseminated to young people through the educational system, rendering education on HIV prevention through sexual relations largely inaccessible, akin to a "Black Box." To assess the effectiveness of abstinence-only policies in delaying sexual initiation among Iranian youth, a systematic review was conducted to ascertain the prevalence of premarital sex among young individuals.

Materials and Methods

This systematic review adhered to the established protocols and recommendations of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines [16].

Literature search and data collection

A comprehensive search was conducted across English and Iranian databases (Web of Sciences, PubMed, Scopus, and Google Scholar). To focus on recent literature, the search was limited to the past 16 years. The search terms cross-referenced in multiple searches (utilizing Boolean operators) included: (sexual behavior, sexual contact, sexual relation, sexual practice, or sexual experience, sexual intercourse or premarital sex, sexual health, sexual initiation, or sexual risk) and (adolescent or young people, youth, teenagers, or juveniles) and Iran.

To supplement these searches, the reference lists of the reviewed studies were examined, and key authors in the field were contacted.

Studies selection and eligibility criteria

To be included in the systematic review, studies had to be: 1-published in a peer-reviewed English or Persian language journal; 2) empirically reported young people (risky) sexual relations; 3) published from 2000 to December 2023; and 4) include young people with a mean age of 30 years. If sexual relation prevalence is reported separately by different age groups in an article, we used the specific groups that were the purpose of this study, such as the Honarvar study [5].

The literature search and selection process was executed in three stages: an initial keyword search followed by a review of titles and abstracts; a subsequent review of abstracts or full texts, with the exclusion of studies that did not satisfy the review criteria or were duplicates (in instances where full-text access was unavailable, abstracts were used, and if abstract information was insufficient, the study was excluded); and a review of reference lists for each study to identify additional relevant studies, with steps 1–3 repeated until no new studies meeting the criteria were found. Following the selection of articles by the two authors, data extracted for each study included: first author, year of publication, study population, study period, age of participants, sample size, number of cases, and prevalence of sexual relations.

Quality assessment

The studies were evaluated for the clarity of objectives, explanation of the study's location and timeframe, clear description of participant selection/inclusion criteria, adequacy of the sample studied, ethical considerations, and appropriate statistical analysis using the Cochrane Collaboration's risk of bias tool.

Data extraction

The data were compiled into sheets (Table 1), including summary characteristics such as the first author, year, location, age of participants, gender, and prevalence of sexual relations. According to the WHO, 'Adolescents' are defined as individuals aged 10-19, 'Youth' as those aged 15-24, and 'Young People' as those aged 10-24 [15]. This age range was also considered in the study.

Results

Initially, 899 studies were included, with 19 independent studies meeting the inclusion criteria.

Full-text articles were excluded for not meeting the inclusion criteria (n=2) or being secondary publications (n=2). After quality assessment, one study was excluded due to a high risk of bias in three domains. Ultimately, information was extracted from 12 published articles and two theses (Figure 1). Table 1 provides a descriptive profile of the studies and a summary of their results.

The quality assessment (risk of bias)

The authors meticulously categorized the biases associated with the research methodologies into three distinct categories: low, high, and unclear, following the criteria established by the Cochrane Collaboration tool. Detailed insights into this categorization and a comprehensive breakdown of the types and instances of bias present in the study methodologies are illustrated in Fig 2. Only one high-risk study was identified [4], six low-risk studies [16, 19, 22, 25-27], and seven unclear-risk studies [5, 17, 18, 20, 23, 24, 28].

Study Characteristics

Samples included single practice sites and territorially representative samples ranging in size from 200 to 1,777. In alignment with the study's objectives, all studies employed quantitative analysis, except for one that utilized both qualitative and quantitative analyses. All studies were based on cross-sectional designs. The total number of samples across both genders was 13,889 in 14 studies.

In this study, the prevalence of sexual relations was reported both generally and separately for girls and boys, prompting an analysis of these aspects in both genders. Various studies have documented differing rates of sexual relations based on gender. Fourteen studies reported the prevalence of sexual relations in both sexes, while eight focused on girls and another eight on boys. A meta-analysis was conducted to analyze the information on sexual relations separately.

Only four studies provided data on the age at first sexual relationship for both girls and boys.

Quantitative Data Synthesis

The overall prevalence of sexual relations among Iranian youth was found to be 22.80% (16.93, 28.66) (Fig 2). Excluding the Honarvar study, the heterogeneity of studies decreased, with the Tau2 Test changing from 122.30 to 48.47, although the I2 test remained unchanged. To address the heterogeneity of studies, data were examined in terms of gender, age, and the year(s) of data collection. The prevalence of sexual relations was 18.69% [11.03, 26.34] in girls and 30.46% [22.44, 38.48]

in boys. The mean age of initiating sexual relations was 18.23 years (15.54 – 20.91) for Iranian youth, 16.77 years (11.65 – 21.88) for boys, and 19.65 years (14.56- 24.56) for girls (Fig 3). Additionally, the prevalence of sexual relations at ages 15 to 18–19 years was 22.40%, and 23.74% at ages 19-25 years. Premarital sex generally increased over the years of study. The results indicated that the prevalence of premarital sex ranged from 3.4% in girls around 20 years old in Kerman to 39.0% in 18-24-year-old girls in Shahroud. Furthermore, 18.0% of boys aged 15-18 years in Tehran and 49.45% of boys aged 14-29 years old in Shiraz reported premarital sexual relations

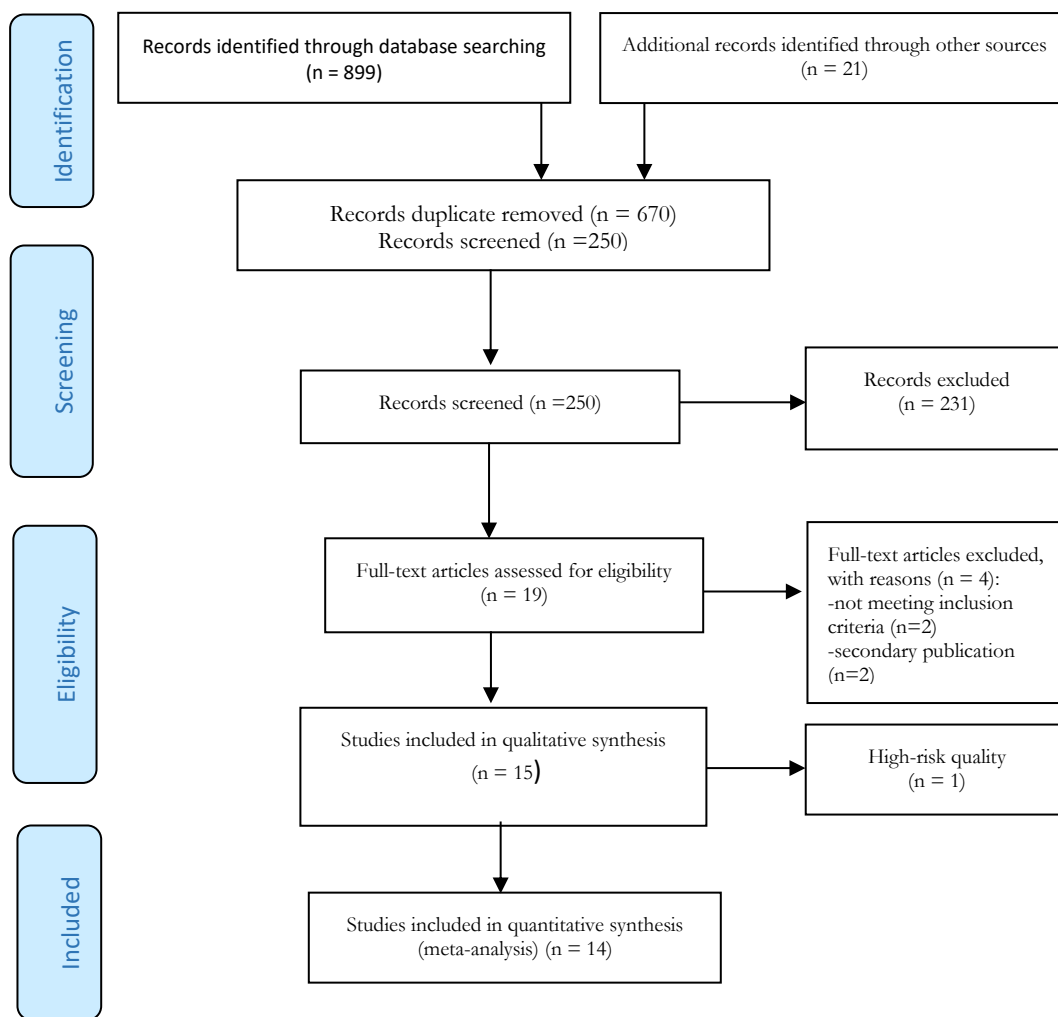


Figure 1. Study selection flow diagram. SLR, systematic literature review.

Table 1: Sexual relations prevalence among Iranian youth

1 st Author, Year	Place	Age of participants (Min-Max)	Gender (N)	Prevalence of sexual relation (%)
Mohammadi 2006 [16]	Tehran	15-18	Boys: 1385	27.7
Karimzadeh Shirazi 2009 [17]	None	18-27	Boys: 200	20
Hamza Gardeshi 2013 [18]	Tehran	15-18	Boys: 592	18
Khalajabadi Farahani 2012 [19]	Tehran	21.48*	Girls: 1743	23
Mirmolaei 2005 [20]	Tehran	14- 19	Girls: 1192	12.5
Honarvar 2015 [5]	Shiraz	14- 29 **	N: 924	49.45
Pour 2006 [21]	Lorestan	21.26*	N: 700	16.1
Hedayati-Moghaddam 2015 [22]	Mashhad	18-25	N: 557 Boys: 164 Girls: 393	15.1 32.9 7.6
Soleimaninia 2007 [23]	Tehran	14- 19	N: 385 Boys: 188 Girls: 197	31.2 40.4 22.3
Rashid 2015 [24]	Tehran	15-18	N: 1022 Boys: 511 Girls: 511	30.4 33.9 27
Zareshahabadi 2012 [4]	Yazd	21*	N: 244 Boys: 96 Girls: 144	10.8 None None
Zahedi 2019 [25]	Kerman	20.5 ± 1.5*	N: 1730 Boys: 1035 Girls: 695	14.85 22.6 3.4
Safiri 2018 [26]	Tabriz	-	N: 1777 Boys: 723 Girls: 1054	19.13 23.22 16.17
Vakilian 2014 [27]	Shahroud	18-24	N: 1438 Boys: 535 Girls: 919 No response:27	41 45 39

*The mean age was stated in the articles. ** All group ages were studied in the articles, but we used two age groups (14-17 and 18-29) in this research.

Discussion

The findings of the present study revealed that at least 22.80% of Iranian youth and teenagers had engaged in sexual relations before marriage, suggesting that abstinence policies have not effectively prevented premarital sexual relations. This figure is considered a minimum estimate, as many young individuals may conceal such experiences due to the taboo nature of these relationships. Most studies indicated that abstinence-only sex education has minimal to no impact on rates of abstinence or delaying the initiation of sexual relations [29, 30]. The rate of premarital sexual relations varies significantly across different societies [31, 32].

In Iran, an Islamic country, premarital sexual relations are prohibited by religious and national laws and are considered criminal offenses. However, it must be acknowledged that access to various communication technologies has influenced social, cultural, and family traditions, as well as the prohibition of premarital sexual relations [33]. Other factors influencing sexual behavior among Iranian youth include underreporting due to the shame associated with such expressions, fear of strict legal repercussions, and possibly the diversity of study environments [32]. A study conducted in the United States in 2001 demonstrated that over 90% of young individuals reported their first sexual experience during adolescence and before marriage [34].

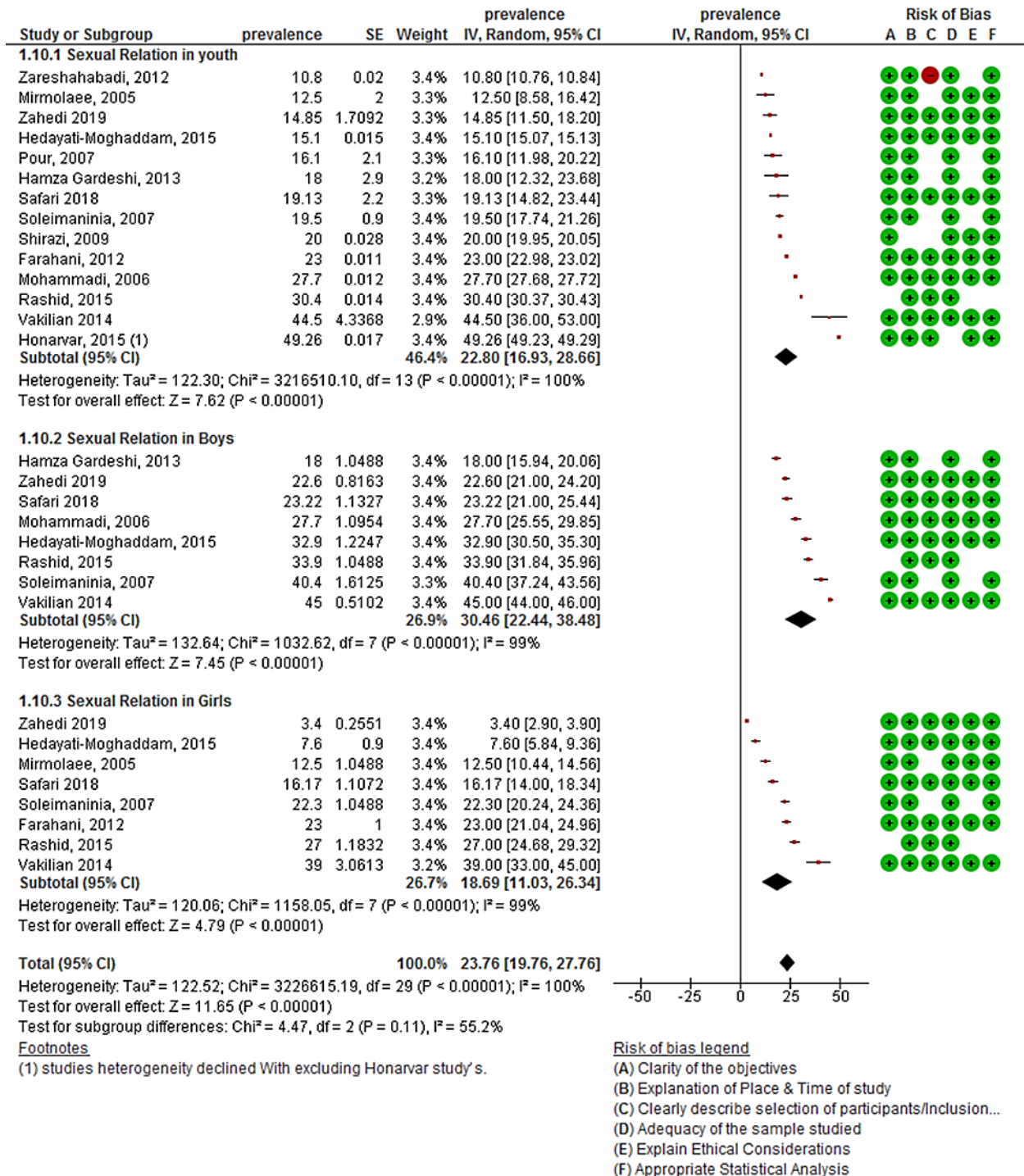


Fig 2: The result is a forest plot of sexual relations in Iranian youths. The diamond sign indicates a combination of all studies with a confidence interval of 95%

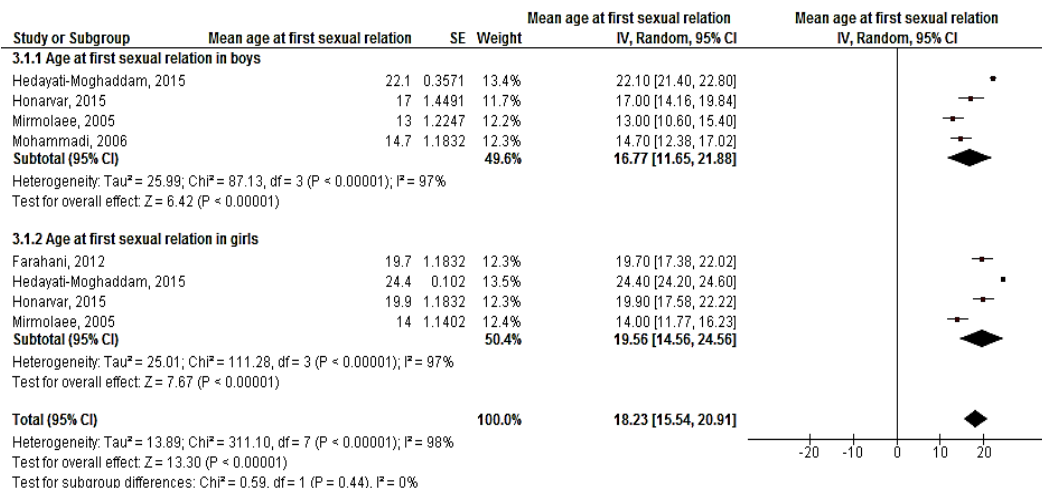


Fig 3: The result is a forest plot of the mean age of sexual relations in Iranian youths. The diamond sign indicate a combination of all studies with a confidence interval of 95%

As the existing evidence suggests, the spectrum of sexual relations among Iranian youth is extensive and is influenced by various factors. The study was conducted in Yazd City, a city known for its religious adherence. In such a religious context, premarital sex is not widely accepted, resulting in lower prevalence rates [4]. (4). Additional factors contributing to this variation include differences in definitions, sample populations, study locations, and sampling methodologies. This review assessed the prevalence of sexual relations based on gender. Eight studies focusing on females and eight on males reported this variable separately, revealing a prevalence rate of 18.69% among females and 30.46% among males. Consequently, premarital sexual activity was more prevalent among males than females in all early studies. In some studies, male gender is identified as a predictive factor for initiating sexual relations before marriage [35]. Among young individuals (aged 20–25 years) surveyed in 11 European countries in the early 1990s, the prevalence of sexual initiation before age 20 for males ranged from 73% in the Netherlands to 88% in Iceland, while for females, it was 51% [36]. In many Asian countries, particularly for females, sexual initiation often coincides with marriage [37-39]. In certain cultures, premarital sex is closely

linked to a female's future prospects, leading many females to avoid such relationships or opt for anal sex to preserve their virginity [40]. The loss of virginity can adversely affect a female's social standing and future marital prospects, making virginity preservation until marriage of utmost importance [39]. Sexual activity is a natural and healthy aspect of human biological, psychological, and sexual desire, providing pleasure and intimacy throughout life and serving as an indicator of natural sexual socialization. Abstinence is deemed reasonable for activities with inherent risks that outweigh potential benefits, such as smoking or drunk driving [41]. Proponents of abstinence-only education argue that promoting abstinence outside of marriage can suppress the natural human inclination towards sexual activity. These programs advocate a singular life path for youth, disregarding the structural barriers, cultural differences, and individual choices and experiences that shape people's lives [42]. Accurately determining the prevalence of sexual relations is challenging, presenting a limitation of this study due to: 1) In most societies, studies indicate that socially sensitive behaviors (such as sexual behaviors) are underreported when self-reporting methods are used compared to face-to-face interviews. 2) There is currently no evidence supporting

the reliability of adolescent and youth self-reported sexual behavior [43]. 3) Sexual topics are taboo in many Iranian societies, and premarital sexual experiences, particularly for females, are stigmatized.

Conclusion

The study's findings indicate that at least a quarter of individuals in Iran engage in premarital sex, with these experiences occurring before the age of 20. This finding holds significant implications for policymakers and administrators concerning policy, health, and population dynamics

Considering the policies of AOUM programs, increasing the age of marriage, and the lack of formal and necessary training to prevent risky sexual behavior in Iran, it is essential to reform AOUM programs and think of a logical solution to decrease sexually transmitted diseases, unwanted pregnancy, and unsafe abortion.

The AOUM programs prohibit premarital sexual activity, emphasize only abstinence from sexual relations, and do not include harm reduction programs. Therefore, due to the relatively high prevalence of premarital sex among youth and teenagers, reforms in the relevant programs are necessary.

Ethics statements

Not applicable.

Acknowledgment

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Declaration of Competing Interest

None

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