Website: http: jebhpme.ssu.ac.ir
EBHPME 2020; 4(2): 112-26 pISSN: 2538-5070

EBHPME

ORIGINAL ARTICLE

Evidence Based Health Policy, Management & Economics
Health Policy Research Center, Shahid Sadoughi University of Medical Sciences

A Qualitative Exploration on Major Challenges of Reproductive Health in Adolescents and Youth in Iran

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ARTICLE INFO

Article History:
Received: 8 Nov 2019
Revised: 20 Feb 2020
Accepted: 15 Jun 2020

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ABSTRACT

Background: Reproductive health (RH) in adolescents and youth, as one of the critical components of population health policies, plays a pivotal role in preventing risky behaviors and achieving a healthy and productive generation for the future society. Thus, this study aimed to explore the challenges of RH in adolescents and youth in Iran.

Methods: Using a purposeful sampling method with maximum variation, semi-structured in-depth interviews were held with eighteen key informants in the field of RH. A Snowball sampling strategy was deployed to identify the participants. The multi-dimensional PRECEDE-PROCEED model of health promotion was used as a guiding framework for the topic guide. The transcribed interviews were coded and analyzed using thematic analysis.

Results: Three main themes of decision-making system, lifestyle, as well as social and epidemiological issues, were emerged from the interviews. We also explored six themes, including the knowledge and expertise about RH, policy-making and management system, environmental factors, individual factors, family and social anomalies, and epidemiological status of RH. Furthermore, twenty-five sub-themes were extracted from the main themes, which represented the challenges. Lack of understanding of the issues and absence of a coherent intellectual system that provides a collaboration of different systems in policy-making were fundamental and dominant challenges of RH for adolescents and youth in Iran.

Conclusion: To meet these challenges, we require an integrated and coherent system of policy-making with a reliance on scanning individual, environmental, social, and epidemiological changes that influence RH.

Key words: Reproductive health, Sexual health, Adolescents, Youth, Iran

Citation

This paper should be cited as: Mehrolhassani MH, Haghdoost AA, Dehnavieh R, Esmaeili M, Yazdi-Feyzabadi V. **A Qualitative Exploration on Major Challenges of Reproductive Health in Adolescents and Youth in Iran.** Evidence Based Health Policy, Management & Economics. 2020; 4(2): 112-26.

[DOI: 10.18502/jebhpme.v4i2.3436]

Introduction

Maintenance and promotion of heath among all members of society are one of the essential obligations of the governments (1). In this regard, population health management has a pivotal position not only to realize this mission but also to achieve sustainable development goals (SDGs), including a goal entitled "ensure healthy lives and promote well-being for all at all ages (SDG 3)". (2, 3). In the case that the population growth is not managed properly, it will bring different economic, social, environmental, physical, and psychological consequences across generations (4). A growing body of literature recognizes some economic consequences such as resource constraints, poverty, unemployment, a decrease in labor productivity, and livelihood problems as a result of unsustainable management of population (5, 6). In the case of social consequences, this mismanagement may lead to some adverse effects such as declining levels of well-being, urbanization pressure, gender inequality, violent crimes, and violence against women (7, 8). Another important aspect of population mismanagement is psychological consequences such as depression, suicide, substance and alcohol use, and mental disorders (9). Physically, some negative consequences of population mismanagement exist, such as sexual dysfunction and abortion, which may damage the population's health (10). On this basis, reproductive health (RH) focuses on all aspects of human reproduction to improve the health status of society now and in the future (3).

According to the World Health Organization (WHO), RH is defined as a state of complete physical, mental, and social well-being (not merely the absence of disease or infirmity) regarding all aspects of the human reproductive system and to its functions and processes (11). Accordingly, all people should be able to have a healthy and satisfactory sexual life, to decide freely and responsibly on the time and manner of childbearing, to have the right to access information and facilities, and to achieve the highest standard of sexual and reproductive health (SRH) without any discrimination, coercion, and violence (12). Moreover, in supporting SDG 3, a specific target exists to ensure universal access to SRH care services by 2030 (3). Therefore, paying attention to issues such as individual choice, gender equity, as well as intra- and inter-generational gaps, as the bases of RH, should be considered by policy-makers and program implementers to provide a stronger foundation for further research.

On the one hand, adolescents and youth cover a large proportion of the population in human history across the world (13) and Iran (14), which demands more attention and action concerning their health. On the other hand, adolescents and youths are faced with unprecedented social, economic, and cultural changes that affect their health currently and in the future (13). Therefore, the lack of addressing RH in adolescents and youth causes various personal, family, community, and national problems (15). Based on the recent evidence, about 250 thousand new HIV infections exist among adolescents within the age range of 10-19 years in 2015 (16), which indicates an increase of high-risk behaviors among this group. As a result, we are faced with an increasing public health concern worldwide. According to the latest reports from the Iranian Ministry of Health, HIV infections' trend is shifting from drug addicts sharing syringes to unsafe and unprotected sexual behaviors (17). Furthermore, evidence showed that people did not have enough knowledge about SRH. Furthermore, many myths and misperceptions exist about different aspects of SRH (18).

Since health and health behaviors transfer strongly from adolescence into adulthood, identifying RH challenges in adolescents and young people is the first step for improving the individuals' health, which eventually results in the

[DOI: 10.18502/jebhpme.v4i2.3436]

sustainable development of Iran in the future. Therefore, considering the remarkable proportion of adolescents and youths in Iran as well as the increased rate of high-risk sexual behaviors, it is required to improve RH among the Iranian population. Moreover, the challenges of this field should be explored, and policies should be tailored, adapted, and applied according to them. Therefore, this study aimed to explore the challenges of RH among adolescents and youths in Iran.

Materials and Methods

A qualitative study using a content analysis approach was designed to explore the challenges of RH among adolescents and youths in Iran. This research was conducted using a semi-structured in-depth interview method with diverse key informants on the RH field. The study was carried out from February 2015 to March 2016 at the national level in Iran.

Study sampling and participants

The study population included all key informants of adolescents and youths' RH in Iran. Key informants were defined as individuals with a scientific, research, and administrative background in the RH field in Iran. These key informants were approached and identified using a purposeful sampling method with maximum variation followed by a snowball sampling strategy to ensure a good representation of key informants. The RH is a multi-facet subject rooted in cultural, religious, social, economic, and political contexts. The maximum variation sampling permitted us to explore critical shared patterns and identify the essential features of a phenomenon as experienced by diverse stakeholders in different contexts to facilitate informed decision-making (19). The key informants were approached at national and provincial levels from different settings related to the RH. Key informants were excluded if they had any experience of fewer than three years about RH and or canceled the interview meeting more than three times.

Semi-structured interviews were conducted using a topic guide informed by the PROCEDE-PRECEDE framework of the research objectives, which included participant's views on RH in general as well as RH in adolescents and youth. Further questions explored participants' perspectives over the challenges of RH in adolescents and youths in Iran. At first, the primary topic was discussed among the research team, and later they were asked to verify the number and order of the questions in collaboration with one external expert on RH. Interviewees were conducted so that the participants could express their in-depth views and beliefs about the subject. The interviews were continued until saturation was reached, and no new findings emerged. After data saturation, two additional interviews were conducted, and the interview contents were analyzed and compared until the researcher ensured that no new or relevant data emerged. Interviews were conducted in the interviewee's worksite or any places where the participants preferred by the principal investigator of the study (MHM). Finally, 18 semi-structured in-depth interviews were conducted. Each interview lasted about 45-95 minutes, with an average of 75 minutes. Thirteen interviews were face to face, and five interviews were conducted on the telephone. All interviews were recorded and transcribed verbatim in Persian.

Data analysis

A thematic analysis was performed with an inductive approach for the transcribed interviews (20). All data were analyzed and coded manually. The guidance proposed by Braun and Clarke was used to conduct the thematic analysis (21). At first, two authors (MHM and ME) listened to the recorded interviews and read and re-read the transcribed data. Later, they coded the information independently and generated an initial list of codes. Then, the initial results were presented in the presence of the third researcher (VYF), and disagreements were discussed until the consensus

[DOI: 10.18502/jebhpme.v4i2.3436]

was reached. Later, repeated patterns were identified and codified. After the data were initially coded and collated, codes were analyzed, aiming at combining different codes under an inclusive theme. At this stage, we also found out the sub-themes within themes. At a later stage, the themes were reviewed and refined during frequent sessions with the members of the research team. We paraphrased themes and the overlaps between themes and sub-themes, as well as their relations to each other, were scrutinized. Eventually, the themes were defined and named.

In order to ensure the trustworthiness and quality of the findings, the criteria proposed by Lincoln and Guba were used (22). Credibility was met with involvement with data analysis, which prolonged about eight months. For enhancing credibility, the researchers were continuously engaged with respondents. Furthermore, the participants were asked to read and confirm the contents of their transcribed interviews. In addition, frequent sessions were held among three members of the research team, which followed an iterative approach to reach a final analysis (21). The transferability of our qualitative findings was enhanced by using a purposive sampling technique with maximum variation. We also detailed descriptions of the applied methods and procedures. Dependability of the research was assured by an inquiry audit in which the study's third researcher (VYF) was engaged in frequent sessions providing amendatory comments in the coding process and analyzing interview text. To increase conformability, we interviewed key informants from different settings, which allowed us to examine the consistency of different data sources using triangulation of sources. In order to enhance the reflexivity, we used field note-taking to enrich the data. Moreover, we tried to shrink the impact of our experiences on different stages of the study process.

The Ethics Committee of Kerman University of Medical Sciences (KUMS) approved this study with the registration code of IR.KMU.REC.1398.023. Moreover, informed and voluntarily consent were acquired from all participants. The participants were ensured about their anonymity and confidentiality of information.

Results

A total of eighteen participants attended the interviews; two participants majored in seminary sciences and practiced as religious jurisprudent, three participants majored in educational sciences, five in clinical psychology, one in medical sociology, two in medicine (M.D.), one in community medicine, one in psychiatry, one in theology, and two in epidemiology. The characteristics of the study participants are presented in Table 1.

The following three main themes were extracted from the interviews: the decision-making system, the lifestyle of adolescents and youth, as well as social and epidemiological issues. These main themes encompassed six themes and twenty-five sub-themes. The sub-themes were recognized as the main challenges of RH in adolescents and youths in Iran explored in this study. The results are mentioned in Table 2.

Decision-making system in RH

The set of infrastructures may lead to better decision making on RH in adolescents and youths. This system refers to everything that facilitates the decision-making process and ensures that the process works well and efficiently. This main theme consists of two themes, including" collective intelligence about RH" and "policy- making system" with six sub-themes.

The existing challenges in "collective intelligence about RH" are as follows:

According to experts, the current terminology in this field is not appropriate.

"... Behdasht-e-Barvari" is not a proper Persian translation for reproductive health, since it is based on anatomy." (Participant 11)

[DOI: 10.18502/jebhpme.v4i2.3436]

Moreover, the basic concepts of RH, especially in the target group of adolescents and youths are not defined theoretically and operationally.

"... We have some conceptual issues that are not defined at all, and we do not have a correct understanding of physiological developments (not physiological issues of children). Indeed, we do not have a correct definition of sexual health, and we are not aware of the sexual profile of our population." (Participant 10)

Most participants mentioned poor research-led infrastructure. In this regard, it was mentioned that the research platform and applied research were not appropriate and sufficient. Participants mentioned that the high sensitivity of this field might limit the investigators to conduct the required research.

"... Due to the sensitivity of this subject, nobody has investigated these topics." (Participant 6)

One of the participants declared that *"... Unfortunately, there is no research about how religious culture is identified and institutionalized among our families; so, the effectiveness of this culture is ignored." (Participant 1)*

"When the consequences of reproductive health are analyzed, it is evident that religious issues, social norms, and nature-related roles are not considered." (Participant 8)

"... Who are working in this area have some experiences that are not collected systematically." (Participant 10)

The results showed no coherent and independent network of experts to decide RH at the national level. Decision-making is fragmented based on diverse stakeholders with a wide range of different interests and beliefs. This challenge impedes achieving a clear and comprehensive policy about this field.

"There is no comprehensive and integrated cultural engineering in this field." (Participant 3)

"We are confused between the three Islamic, Iranian, and Western culture. We do not look at Islam as we should. We did not consider the role of Islam and did not discuss it with the Islamic scholars; so, it changed into a complicated issue for us. It means that we neither defined the sexual relationships as a traditional approach of our country nor presented a legal definition for it. We are in the paradox that we want physical and sexual health in the name of Islam on the one hand, and we want to provide sexual education on the other hand. Instead of promoting the issue of controlling relationships, we should try to solve the problem by encouraging sexual abstinence. We should achieve operational proposals for the younger generation." (Participant 12)

The existing challenges in "policy-making system" are as follows:

According to almost all participants, a weakness in the educational and training system is one of the most important issues about RH. Most participants believed that some programs, such as pre-marital training in Iran, do not train the required skills for decision making about marital commitments and life. It makes a person unable to overcome marital difficulties and decide appropriately in different circumstances.

"...Unfortunately, pre-marital training has some weaknesses, and we have some problems in informing, educating, and upbringing. Furthermore, there is no proper educational system in this area." (Participant 6)

"... Training provided by the health centers before marriage are not effective." (Participant 8)

"...Using new educational methods are very important, but unfortunately, only traditional methods and distribution of boring pamphlets are used." (Participant 10)

The interviewees emphasized that the inter-sectoral collaboration and skilled stewardship between different sectors of the RH field were not effective enough. They declared that the roles of different stakeholders are not clear, and in some cases, they are not informed about each other's decisions.

[DOI: 10.18502/jebhpme.v4i2.3436]

"The role of agencies, their contribution to the discussed subject, is not clear. No intellectual and practical order exists so that all agencies can act based on it. Therefore, there is no partnership between agencies." (Participant 3)

"The Ministry of Education does not accept the Ministry of Health's attitudes in research. The Ministry of Education expresses its attitudes in school health issues." (Participant 11)

"Primordial prevention is not the duty of the Ministry of Health. If we want to prioritize, the Ministry of Culture and Islamic Guidance, the Islamic Development Organization, the Seminary (school of theology, i.e., Hawza), and the Ministry of Education should do this duty." (Participant 5)

Some participants believed that one of the main challenges in the field of RH was a defect in planning because the dominant approach in planning this field depends on the insights of the authorities.

"... The evidence-informed approach has a small role in our planning system, and this system is more led by personal beliefs." (Participant 10)

"... Because of some psychological issues and limitations, managers and policy-makers act based on subjectivity; so, some of the issues are not tangible and understandable for them." (Participant 8)

Lifestyles

The health-promoting lifestyle is essential and effective for improving the mental and physical health status and social relationship of a person.

"... Due to the incorrect lifestyles and unhealthy behaviors, physical illnesses and behavioral abnormalities have emerged in society." (Participant 12)

This main theme included two sub-themes of "environmental factors" encompassing three sub-themes and "individual factors" with five sub-themes. The main challenges developed by "environmental factors" were:

The economic environment, job, and employment have a significant impact on women's role in the family.

"... The mechanisms of women's employment have caused some damages in our country. It does not mean that having a job is bad; but the problem is that we have a manly attitude towards women's jobs. Both men and women work 7.5 hours per a day, while women are not able to work such long hours due to their physiological, relationships, parenting, and elegance issues. Therefore, women who work long hours out of the home may not be able to do their duties at home effectively, which may lead to divorce. In this regard, job engineering must be considered based on gender features." (Participant 4)

Deviation from the Islamic-Iranian pattern was another challenge mentioned by some participants, which could affect lifestyle in the community and environmental level. Participants believed that the cultural environment in the society was recognized as effective factors on this issue.

"... At first, we should determine the sources of these effects, and it can be found that many of these factors have resulted from lack of religious culture in our family as well as social and individual lives." (Participant 1)

Some participants believed that unconducive political environment might override decisions related to improving the healthy lifestyle. The polarized political climate in Iran is among the challenging factors in this regard.

"... The hijab issue and the relationship between girls and boys have become as a symbol of power and sovereignty in Iran, which has raised the sensitivity of the subject. In many cases, it has become a security issue." (Participant 10)

"...adolescents and the youths are the purpose and result of the soft war ." (Participant 11)

The identified challenges regarding the theme of "individual factors" were:

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Lack of essential knowledge and skills for a healthy and successful marriage was one of the important issues emphasized by the interviewees.

"... One of the successful marriage skills for couples is talking about their needs and solving them; furthermore, they should learn the skills of negotiation and consultation as soon as possible." (Participant 10)

Reduced adherence to the religious beliefs/teachings: most participants believed that a reduction existed in the level of adherence to religious teachings. As they added, many of our religious teachings have diminished; so, the youth consider religious teachings in contrast with science principles. The more important point is choosing a spouse.

"... In the process of choosing a spouse, we only consider one aspect. We only say that we want to marry a woman or a man, but we do not say that we want to choose a good mother or father or someone who can provide us a better life. We just consider this issue that if we do not have sexual education, we will have some problems. The problem is not about a lack of knowledge regarding sexual issues; in fact, the problem is about moral obligations and commitments. The main problem for both men and women is having no adherence and compliance to the family territory/discipline." (Participant 11)

Different perspectives exist about marriage, the required training, and the aesthetic concept in male-female relationships. Almost half of the participants declared that they had a self-indulgence look at marriage while looking at marriage in terms of religion was a holy issue.

"... There is wrong teaching saying that marriage is equal to sex. So, what are emotional issues, obligation, commitment, etc. related to?" (Participant 6)

"... Three important misconceptions exist about the relationships of girls and boys: for better choices, maturation and reduction in the level of stress, and lust or temporary/shallow love. ... These relationships are created for five reasons: lack of affection, emotional problems, group preferences of peers, social issue, class differences, and ultimately sexual needs." (Participant 14)

"... By an increase in the number of photos, sexual expectations of men and women increased, and their level of sexual satisfaction decreased." (Participant 11)

One of the significant findings of this study was that no response was provided for the fundamental questions of adolescents and youth.

"... Adolescence is a period of identification in which the youth have a lot of philosophical questions. One of these questions is love. If the adolescents or youth can find an answer for their philosophical and identity questions, their problems can be solved. However, if they do not find an answer for love, they will be heavily disturbed. They may become dissociable, engage in immoral and unethical issues, and become careless and unrestrained." (Participant 6)

According to most participants, the high-risk behaviors were increased that were influenced by misconceptions about marriage, dating girls and boys, and mechanisms to form a family. These can damage a healthy lifestyle at the individual level.

"... The RH-related risky behavior problems have also increased in adolescents, such as the way of dressing and embellishing, mobility and physical activity, as well as nutritional style. Risk factors include plucking eyebrows, coming home late, or having a video on the cellphone." (Participant 11)

"... We should control sexual stimuli in adolescence and youth, such as nutrition, appropriate way of sleeping, method of bathing, relationship with the opposite gender, and dressing." (Participant 4)

Social and epidemiological issues

In this main theme, problems related to physical, psychological, and social health are discussed. This main theme has two themes of "social anomalies" with six sub-themes and "epidemiological status"

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with five sub-themes. The most important challenges in "social anomalies" were:

Family setting and parenting style were recognized as a challenge that may affect the healthy lifestyle among adolescents and youth in Iran.

Concerning the concept of social networks, the most critical supportive and social structure about the RH is the family environment since family culture is a healthy one that has institutionalized its effect on the personality structure of the family members.

"... Receiving sex-related information through sources not guided by families, such as internet-based virtual networks, smartphones, satellite and real networks such as peers, leads to undermining the values and destructing the mainstream of adolescents and youth." (Participant 1)

The majority of participants believed that the interval between the age of sexual and intellectual maturity and marriage had had an increase. According to the experts, the main cause of many RH abnormalities is the rising age of marriage and its distance from sexual and intellectual maturity.

"The crime, violation, and assault of children and adolescents are related to their sexual pressures. On the other hand, they are disappointed by marriage (since they can marry 15 years after their sexual need) and they should satisfy their sexual need. Thus, they will suffer from sexual deviation." (Participant 5)

Some participants emphasized that family structure and household size have been changed, and the number of single-child families increased.

"... Currently, many families have only one child in their first 10-12 years; therefore, the number of families who have only one child is increasing." (Participant 8)

According to the findings extracted from the interviews, another social challenge related to RH was the high rate of divorce. The number of divorced women or women who had lost their husbands increased; consequently, a significant percentage of families are female-headed.

"... Many young women exist who have not been married, and they were expelled from selection due to the high levels of beauty among women. The minimum divorce rate is 20-25 %; of these, usually few people have the chance of being re-elected, or they should have poor choices. None of the above-mentioned scenarios consider reproductive health. The people with such conditions are about 6 million, and their sexual/psychological needs should be responded." (Participant 8)

Some participants declared that the number of illegal sexual relationships has increased outside the family framework, especially among adolescents and youth. They added that the age of sexual maturity decreased imperceptibly, and the critical point is that the age of the first sexual relationship decreased. At the same time, the number of sex before marriage and street love or friendship increased.

"... If we say that a quarter of youth, under 18 years of age, have experienced only one sexual relationship until reaching the legal age, we cannot ignore this quarter of the population." (Participant 10)

The findings showed that dating and sexual relationships with several individuals have also increased in both genders. University research proved the existence of a sexual relationship with multiple sex partners.

"... Among the high-school students, having multiple sex partners shows that they have self-confidence, and in fact, it is a kind of honor for them." (Participant 8)

"... Individuals tend to have a single person during adolescence (single love), but this has changed from 3 to 5 years after the marriage. The issue is that at the early stages, the subject of single love and nature was lost." (Participant 6)

The explored challenges in "epidemiologic status" sub-theme are as follows:

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Almost half of the participants highlighted that the level of psychological RH risk factors that causes sexual disorders and deviations increased, such as stress, depression, and anxiety.

"... About 30-40 % of families have a mental disorder; 85 % of disorders are caused by weaknesses and disabilities in psychological issues, not biological ones. Most psychological issues include communication issues, attitudes, housing architecture (walls that are not insulated), quarrels, fears, anxieties, illicit relationships, entry into virtual sex, pornography, and modern life." (Participant 8)

"... Many sexual and emotional referrals to the counseling center exist, but many referrals were preventable: the disability of a man after marriage is entirely a mental issue." (Participant 6)

The participants emphasized that an increased number of sex-related relationships between girls and boys increased the rate of HIV / AIDS.

"... In Iran, the speed of AIDS transmission has changed globally from the drug injection index to unsafe sexual relationships." (Participant 8)

According to some interviewees, the number of illegal abortion and trans-sexual surgeries have also been increased.

The rate of transgender surgeries in Iran is higher than in other countries in the world.

"... In Iran, about 600 transgender surgeries are done in a year, while in France, only 300 surgeries are performed per year." (Participant 10)

"... Many of the surgeries that lead to transgender do not have a biological-bisexual basis. In other words, they have a biological-psychological basis or a complete psychological basis that refers to the culture and discussion of gender identity." (Participant 8)

The rate of sexual inabilities has increased in both genders.

"... Nowadays, sexual disorders in families such as women's sexual frigidity and men's disorders are highly increasing." (Participant 8)

Table 1. Characteristics of the study participants per setting and profession

Setting	Profession	Total (N = 18)
Provincial Department of Education	Educational sciences	1
Qom Seminary	Clergyman (who practicing religious jurisprudence known as Mojtahed)	2
Research Institute of Hawzeh and University	Theologist	1
Joint United Nations Programme on HIV and AIDS (UNAIDS)	Epidemiologist	1
University of Medical Sciences	Community Medicine	1
	Medical Sociologist	1
	Epidemiologist	1
	General Practitioner (GP)	2
Provincial University affiliated with Ministry of Science, Research and Technology	Clinical Psychologist	2
Imam Khomeini Education & Research Center	Psychiatrist (Family Counselor)	1
	Educational Sciences	2
	Clinical Psychologist	2
Parliamentary Cultural Committee	Clinical Psychologist	1

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Table 2. Main themes, themes, and sub-themes related to each issue in the field of reproductive health in adolescents and youth

Main themes	Themes	Sub-themes
Decision-making system	Collective intelligence	1. No unified/common terminology of sexual and RH 2. Poor research-led infrastructure 3. Lack of a coherent and independent network of experts
	Policy making system	1. Ineffective inter-sectional collaboration and skilled stewardship 2. Defect in Planning system 3. Ineffective educational and training system
	Macro environmental factors	1. Economic environment and women's role 2. Deviating from Islamic-Iranian pattern 3. Non-conducive political environment
Lifestyle factors	Individual factors	1.The lack of essential knowledge and skill for marriage 2. Reduced adherence to religious beliefs/teachings 3. Contrasted perspectives about marriage and aesthetic relationships 4. No responding to philosophical and identity questions 5. Increase in high risk behaviors
Social and epidemiological issues	Social anomalies	1. Family setting and parenting style 2. Increased interval between age of sexual and intellectual maturity and marriage 3. Family structure and household size 4. Increase in divorce rate and female-headed households 5. Increase in illegal sexual relationship 6. Multiple friendship and dating and sexual relationship
	Epidemiological status	1. Increasing burden in psychological disorders 2. Increase in HIV prevalence through unsafe sex 3. Increased illegal abortion and illegal transsexual surgeries 4. Increased transgender surgeries 5. High rate of sexual disabilities

Discussion

This research was one of the first studies on the challenges of RH in adolescents and youth in Iran. The results of this study showed that different challenges exist in the three main themes of the decision-making system, lifestyles, as well as social and epidemiological issues. These challenges reflect a variety of factors and determinants at the individuals and environmental levels, which may affect the RH outcomes in Iran.

One of the main obstacles for effective decision making in each policy system is a common understanding among stakeholders. Based on our findings, no common language and unified terminology exist for RH and sexual health in Iran. It may hamper the effective inter-sectoral collaboration among a wide range of stakeholders in this field. This result is supported by Newman et al., (23), who mentioned that common language was necessary among advocates of sexual and RH. This language will help to explain why and how sex, RH, and rights were relevant for sustainable development. Furthermore, another research on the association between sex, RH, and HIV concluded that lack of a common understanding over terminology and clear technical, operational guidance was one of the significant constraints to integrate the services for sexual and reproductive health and HIV (24).

Furthermore, we found that the required infrastructures for research development about SRH were poor. Evidence showed that poor research infrastructures not only may block and limit the agenda-setting of health problems but also may impede a health policy to achieve desirable outcomes

[DOI: 10.18502/jebhpme.v4i2.3436]

(25). A study on the challenges of RH research concluded that low-resource countries faced many challenges, including establishment and maintenance of global collaboration, community partnerships, ethical issues, staff training and development, data collection and management, as well as infrastructure and logistics (26).

The RH of adolescents and youth are categorized under the development model of Iran. However, it cannot result in desirable outcomes due to the lack of skilled controlling and ambiguity in the roles of different stakeholders. Results of a study carried out about the universal coverage and its impact on RH services in Thailand showed that institutional capacity was not adequate. In other words, the controlling system and regulatory functions were among the weakest functions of the state, and a need existed for a clear definition in the scope of benefits package, its goals, and operational targets, monitoring of the indicators, as well as rewards and punishments (27). Another study conducted in India showed that transformation of health systems using some efforts such as capacity building for developing technical committees and involving different stakeholders in policy processes might help to improve some outcomes of RH such as unmet needs for contraception, adolescent pregnancies, and access to safe abortion (28).

Furthermore, capacity-building to developing an expert network for decision making and applying proper mechanisms to involve them in a collaborative approach may improve health policies. Therefore, unified stewardship should be formed for the integrated management of RH in adolescents and youth in order to raise the collaboration and coherence of the relevant institutions (26). To this end, the community realities should be recognized, a comprehensive and dynamic intellectual system should be employed, and cultural engineering should be formed.

The education system used in many RH programs in Iran does not work properly and does not provide the required skills to manage a marital life. This result was also supported by a narrative review conducted on the evaluation of the pre-marriage counseling program in Iran. It concluded that some defects existed in all structural, content, process, and outcome aspects of this program (29). Another research conducted on female adolescents' experiences and perceptions regarding sexual health education in Iranian schools showed consistent results with our result (30).

The present research conclusion regarding the lack of sufficient knowledge about SRH needs and overall preparation for marriage is consistent with previous studies conducted in Iran (31) and other developing countries (32). We also found differing perspectives, behaviors, and misconceptions, such as tending to date, pre-marital sex, and HIV transmission among adolescents and youth, which were also supported by other previous studies conducted in Iran (33, 34). In this regard, health promotion programs are suggested in SRH in different settings, such as schools and counseling centers. They should focus on changing the gender norms associated with sexuality. It might lead to the promotion of safer sexual behaviors, particularly among adolescents and youth.

Studies show that the high-risk behaviors among adolescents and youth, HIV/AIDS prevalence through unsafe and unprotected sexual relationships (17, 35, 36), sexually transmitted diseases (STDs) (37), and illegal abortion are increasing, which support our results. Therefore, with the social and individual empowerment of the family members, especially adolescents and youth, by raising the level of knowledge, awareness, and health literacy of the community, and by strengthening life skills based on religious lifestyle and rituals, many possible harms can be prevented in this risky population.

Moreover, the increased social changes such as change in family structure, Western/modern lifestyle, divorce rate, as well as dating and illegal sexual relationships were considered as the main

[DOI: 10.18502/jebhpme.v4i2.3436]

challenges of the RH in adolescents and youth. A study conducted in Iran showed that marriage postponement was related to improvements in women's education that could partly be explained by the increased opportunity costs of marriage (38), which is in line with our result. Furthermore, the family environment has a pivotal role in guiding and organizing information sources about RH for adolescents and youth in Iran. These results are in agreement with those obtained by two systematic reviews in Iran (39, 40), which explicitly proved the effective role of the family in limiting the high-risk sexual behaviors in Iranian adolescents. In addition, parenting styles may be non-conducive and increase the occurrence of high-risk sexual behaviors. Parents are required to take the guiding role if they adopt autocratic and negligent parenting styles, the likelihood of risky behaviors increases in adolescents (39). Wamoyi et al. (41) in Tanzania concluded that parenting style and family structure affected young people's sexual behavior by influencing children's self-confidence and interactional competence, improving sexual health, and shaping economic provision for children.

Regarding the cultural factors and their role in the lifestyle of individuals, lack of religious culture in family, social, or individual life is evident. Latifnejad Roudasri et al. (42) concluded that although religious uncertainties and non-Islamic patterns of education are two main challenges to sexual health education for female adolescents in Iran, cultural resistances are more important contextual factors. In order to design a plan for the education of SRH in Iran, attention should be paid to certain cultural and religious aspects as well as the rules, norms, and values governing the society and families.

Although many studies were conducted on RH in Iran, the present study is one of few qualitative studies that specially focused on the exploration of RH challenges in adolescents and youth as key informants at the national level. In this regard, we considered the comprehensive concept of RH and tried to benefit from the broad participation of key informants across different sectors of policy-making since they play a pivotal role in RH in Iran. The findings provided additional evidence for health policy-makers to understand the big picture of challenges in detail.

This research also had two main limitations. Its major limitation was the issue of subjectivity. Theoretically, RH has some intangible and subjective aspects, which make it difficult to interpret. To deal with this, all data obtained from the interviews were checked more than two times by at least two members of the research team and an external expert on the RH field. However, our interpretation may remain subjective, and our findings are claimed to cover all the truth. As our philosophical paradigm of research was formed through a constructive approach, this issue was unavoidable and defensible. As the second limitation of our study, we did not explore the perspectives of adolescents and youth about the RH problems they faced. So, we cannot claim that the emerged challenges in this study are all matched and compatible with the target audience. As a result, further research should be conducted in order to explore the perspectives of adolescents and youth about the challenges of RH.

Conclusion

This study qualitatively identified the main challenges of RH in adolescents and youth in Iran. It also provided proper evidence for health policy-makers to adopt tailored policies in order to face these challenges. The response to such challenges requires addressing an integrated and coherent system of policy-making that has a reliance on the scanning of individual, environmental, social, and epidemiological changes influencing RH. In order to improve the educational and policy-making system, it is necessary to take into account two key challenges of acquiring the required knowledge and recognition of RH as well as establishing an

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integrated and independent intellectual system. In this regard, capacity-building is required to maximize the utilization of the families, schools, and health facilities in order to raise awareness and knowledge of adolescents, youth, and the public.

Acknowledgments

The authors would like to thank the Department of Population, Family, and Schools' Health affiliated with Hygiene Deputy of the Ministry of Health (MoH) for their financial support. This study was approved by the Deputy of Research and Technology of Kerman University of Medical Science (KUMS) with ID number 97001073.

Conflict of interests

The authors declared no conflict of interests.

Authors' contributions

Mehrolhassani MH and Yazdi-Feyzabadi V designed and supervised the study; Mehrolhassani MH and Esmaili M conducted research; Haghdoost AA and Dehnavieh R made substantial intellectual contributions to the methods section; Yazdi-Feyzabadi V and Mehrolhassani MH analyzed data; Yazdi-Feyzabadi V wrote manuscript. All authors read and approved the final manuscript.

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[DOI: 10.18502/jebhpme.v4i2.3436]