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Comparison of reproductive health and its related factors in vulnerable and nonvulnerable women

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Abstract:

BACKGROUND: Women's health is supposed to be one of the indicators of development. Reproductive health is an important part of women's health. Vulnerable women are a group of women whose reproductive health needs to be given special attention. The purpose of this study was to compare the reproductive health of vulnerable and nonvulnerable women.

MATERIALS AND METHODS: This cross-sectional study was conducted on vulnerable women ($n = 250$) and nonvulnerable women ($n = 250$). The samples were selected from vulnerable women's centers and comprehensive health centers in Isfahan by quota and using simple random sampling method in 2017. The research tool was a researcher-made questionnaire completed by the researcher using interview method. Internal reliability of the questionnaire was confirmed to be 0.89 using Cronbach's alpha. A $P < 0.05$ was considered to be statistically significant. Data analysis was performed using SPSS 18 software and independent *t*-test, Mann–Whitney, Pearson, Spearman, and Chi-square tests.

RESULTS: The results showed that the mean total score of reproductive health in the nonvulnerable group (81.41) was significantly higher than that of the vulnerable group (68.6). The mean total score and the score of reproductive health components, except some of them, were significantly different between the two groups ($P < 0.05$). Having an addicted spouse and unsafe sex were the most prevalent features associated with high-risk behaviors.

CONCLUSIONS: According to the results, reproductive health status of vulnerable women is inappropriate in all dimensions. Given the importance of this issue, the development and implementation of special health programs for this group seem to be necessary.

Keywords:

Iran, reproductive health, vulnerable, women

Introduction

The expansion of reproductive health and addressing its various dimensions at national and international levels are essential steps in providing the society and family health, with a focus on women's health.[1] Women of reproductive age are exposed to greater risks.[2] Although overlooked, reproductive health problems are among the major causes of mortality;[3] the maternal mortality rate in developing countries in 2017 was 415 cases per 100,000 live births, while it has been 12 per 100,000 live births in Europe and North America.[4] It is estimated that 32 million women and girls of reproductive age live in critical status, all of whom need sexual information and reproductive health services.[5] These figures are indicative of the necessity of examining the high-risk groups and mortality-related factors in women of reproductive age. Researchers also report the lack of studies in the areas of family planning services.[6] Women exposed to the risks of social harms are one of the groups whose reproductive

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health is very important (acquired immunodeficiency syndrome). Social harms are diverse, relative, and variable phenomena.[7] Vulnerable women include (1) women substance users, (2) spouses of substance users, (3) women with unsafe sexual relations (because of ethical issues, "women with unsafe sex" is used instead of "prostitutes"), and (4) women with a history of imprisonment in themselves or their spouse.[8]

According to the United Nations Office on Drugs and Crime in 2018, one-third of all drug users and one-fifth of the world injecting drug users are women.[9] Further, studies have shown that women who are not drug users but the wives of addicted men can be subject to different injuries.[10,11] Quality of life is an important factor in predicting marital satisfaction and marital success.[12] The next group includes women with unsafe sexual relations. These women are often at risk of human immunodeficiency virus transmission that is due to having multiple sex partners and not using condom.[13] There is no precise statistics about the prevalence of unsafe sexual relations in Iran. Estimations fluctuate between 200,000 and 300,000 women with unsafe sexual relations in 2005.[14,15]

Another group consists of women with a history of imprisonment. The number of women prisoners in Iran has changed from 5850 in 2010 to 6880 in 2014.[16] Imprisonment can increase the vulnerability of women and jeopardize access to health services.[17] This vulnerability will be exacerbated by childbirth and motherhood in prison.[18] The last group includes women whose spouse has a prison record. These women may have multiple sexual partners or any risky sexual behavior.[19]

Studies have been conducted on reproductive health issues of vulnerable women. In a study on pregnant women, 25% of all women were drug users, of whom 3% had placental abruption, 33.4% had fetal growth restriction, and 31% had gestational age of <37 weeks.[20] Similarly, another study showed that women drug users are more prone to risky sexual behaviors.[21] Pregnancy and childbirth-related issues and other reproductive health components are under threat in this group of women. The results of a study showed that 29% of women with unsafe sexual relation had had an unwanted pregnancy in the last 2 years.[22] A study conducted on prisoner women showed that 89% of women were pregnant at the time of incarceration, and access to prenatal care had been insufficient for 36% of women.[23]

In studies on reproductive health of women in Iran and around the world, most of the focus has been on a specific group of vulnerable women or the prevalence of sexually transmitted infections; thus, no comprehensive study was found examining reproductive health and its components in these women. This is while that there are other damaging consequences, including unintended pregnancy, abortion, prepregnancy increased risk factors, and fetal and neonatal injuries. Given the fact that vulnerability in each society is epidemiologically different and can have a different impact on the reproductive health of the involved women, addressing all aspects of reproductive health in vulnerable women seems to be necessary in each culture and country. Therefore, with the aim of determining and comparing the reproductive health status of vulnerable and nonvulnerable women and the related factors, the present study was designed and performed to take a positive step in promoting the health of these women.

Materials and Methods

Study design and setting

This cross-sectional study was carried out from October to December 2017 on 250 vulnerable and 250 nonvulnerable women ($Z1 = 1.96$, $Z2 = 0.84$, $d = 0.3$) in Isfahan, Iran.

Study participants and sampling

Owing to the limited number of centers for vulnerable women's centers, five centers covered by Isfahan University of Medical Sciences and Isfahan Welfare Organization were selected purposefully. By quota and using simple random sampling method, 60, 60, 50, 50, and 30 vulnerable women were selected from five centers, respectively. For nonvulnerable women, out of the six comprehensive health centers that, in terms of location and sociocultural context, were close to the centers of vulnerable women; three were randomly selected and quota based; 85, 85, and 80 women were selected, respectively, from these three centers by simple random sampling method. Sampling lasted for 3 months. Inclusion criteria were Iranian citizenship, resident of Isfahan, willingness to participate in the study, being in reproductive age, having sexual relationship, and pregnancy experience in the past 5 years.

Data collection tool and technique

The research tool was a researcher-made questionnaire completed by the researcher using interview method. Data collection tool was a two-part: Part 1 consisted of 25 multiple-choice and yes/no questions related to baseline characteristics including demographic characteristics and some other factors. Part 2, which was related to reproductive health components, consisted of 64 yes/no questions in four dimensions: reproductive health features - 12 questions, pregnancy-related issues (prepregnancy, pregnancy, childbirth and postpartum) - 42 questions, access to and receipt of health services and family planning - 4 questions, and safe

sexual relation - 6 questions. Qualitative and quantitative content and face validity were determined based on the opinion of 15 faculty members, and content validity index and content validity ratio were determined to be 0.98 and 0.85, respectively. Internal reliability of the tool was determined, and Cronbach's alpha was calculated to be 0. 89. Data analysis was performed using SPSS software (version 16) (SPSS inc, Chicago, IL, USA) and independent *t*-test, Mann–Whitney, Pearson, Spearman and Chi-square tests. Quantitative and qualitative descriptive findings were reported as mean and standard deviation and in the form of number and percentage. A $P < 0.05$ was considered statistically significant.

Ethical consideration

Informed consent was obtained from all participants. This study was conducted with the approval of ethic committee of Isfahan University of Medical Sciences. The information of the women participating in the study was kept confidential.

Results

Based on the results, the distribution of marital status and residence of the participants were significantly different between the two groups. The other individual and reproductive characteristics of the two groups are listed in Tables 1 and 2, respectively ($P < 0.05$). Risk factors and reproductive health status of two groups are stated in Tables 3 and 4, respectively. The mean total score of reproductive health in the nonvulnerable group was significantly higher than that of the vulnerable group ($P < 0.05$). A comparison of the components of this variable is shown in Table 5. In the vulnerable group, the score of reproductive and health characteristics was inversely correlated with the age and number of pregnancies ($P < 0.05$). Other items are reported in Table 6.

Discussion

Assessment of reproductive health and its promotion in women can reduce injuries and mortality and promote the level of health in a society. Hence, at first, to assess sexual well-being and provide treatment or education for Iranian women's sexuality, it is necessary to understand their sexuality and the meanings they give to sexual behaviors.[24] Given the importance of reproductive health, the present study compared this variable in the vulnerable and nonvulnerable women in Isfahan. Comparing the demographic characteristics, the results of the study showed that the economic level of vulnerable women was lower. Poverty can expose one to social harms. Low-income women are more exposed to addiction and prostitution.[25] A study showed that in women with low economic status, 0.3% had high tendency, 24.6% had moderate tendency, and 45.39% had low tendency to drug use.[26] Furthermore, economic level can be a factor associated with receiving health services.

A study found that participants in prepregnancy care had higher levels of income and education.[27] The results of a study on 30 women with unsafe sexual intercourse showed that some of them had unsafe sexual intercourse during pregnancy, which was caused by financial problems.[28] The results of the present study with regard to economic problems are in line with the above-mentioned studies. According to these studies, economic problems can be a factor related to social harms and lack of access to health services. Providing low-cost or free services for this group can be considered.

The results of the present study showed that smoking and alcohol consumption were significantly different between the two groups. Using these two substances by women can endanger their reproductive health. While a lot of attention is currently paid to smoking during pregnancy, the use of alcohol and drugs is not sufficiently considered.[29] Smoking leads to adverse consequences for women of childbearing age.[30] A study found that smoking was more prevalent in lower-educated women, women who were cohabiting with a man, and women who used alcohol once or twice a week.[27] The results of the present study on the concomitant use of cigarettes and alcohol in women are almost consistent with the above study. As such, the inclusion of a program for curbing and reducing the use of these substances in counseling programs of vulnerable women seems to be essential. Overall, various underlying factors can affect the reproductive health of individuals that need further research and attention.

According to the results of the present study, there is a concurrence of social harms in some subjects of the vulnerable group. In a study, 16% of women with unsafe sex were drug users.[31] The results of the present study, in terms of the concurrence of social harms in some women, are in line with the above research. Groups with more than one vulnerability factor need more attention and services. In the present study, the mean total score of reproductive health was significantly different between the vulnerable and nonvulnerable groups. One study showed that addiction of women or their spouses can make them do risky behaviors such as unsafe sex, thereby endangering their sexual and reproductive health.[32] The results of the present study, in terms of the impact of these factors on the reproductive health of women, are in line with the above study. Being in vulnerable groups can decrease the attention of women to the importance of pregnancy and childbirth issues. Therefore, effective planning can reduce the irreparable consequences of these harms on women's reproductive health. No similar

Table 1: Comparison of frequency distribution of individual baseline factors in vulnerable and nonvulnerable women

Variable	Total (*n*=500), *n* (%)	Nonvulnerable (*n*=250), *n* (%)	Vulnerable (*n*=250), *n* (%)	Chi-square test	
				χ^2	*P*
Marital status					
Married	403 (80.6)	246 (98.4)	157 (62.8)	125.5	<0.001
Divorced	50 (10)	2 (0.8)	48 (19.2)		
Widow	5 (1)	1 (0.4)	4 (1.6)		
Temporary marriage	6 (1.2)	0	6 (2.4)		
Live separately	36 (7.2)	1 (0.4)	35 (14)		
Job					
Employee	21 (4.2)	14 (5.6)	7 (2.8)	27.9	<0.001
Manual worker	36 (7.2)	6 (2.4)	30 (12)		
Homemaker	438 (87.6)	230 (92)	208 (83.2)		
Others	5 (1)	0	5 (2)		
Residence status					
Personal	133 (26.6)	85 (34)	48 (19.2)	14.4	0.002
Rental	287 (57.4)	128 (51.2)	159 (63.6)		
With parents	73 (14.6)	34 (13.6)	39 (15.6)		
Level of education					
Illiterate/elementary	211 (42.2)	97 (38.8)	114 (45.6)	1.4*	0.14
High school	259 (51.8)	134 (53.6)	125 (50)		
Academic	30 (6)	19 (7.6)	11 (4.4)		
Economic level					
Good	35 (7)	24 (9.6)	11 (4.4)	6.1*	<0.001
Medium	232 (46.4)	144 (57.6)	88 (35.2)		
Poor	233 (46.6)	82 (32.8)	151 (60.4)		

*Mann-Whitney test (*Z*)

study was found comparing this variable in the two groups.

According to the results of this study, only the mean score of access to and receipt of health services and healthy reproductive counseling was not significantly different between the two groups. This result suggests that both vulnerable and nonvulnerable women have received equal services in the research setting.

Positive developments in reproductive health have been reported in several studies around the world. Poor or limited reproductive health services can be improved through humanitarian interventions before the crisis.[33] A study conducted on men and women with unsafe sexual relations found that the access of the participants to health services had been insufficient.[34] Overall, in terms of poor access to health services, the results of the present study were similar to the results of the above research. Given the importance of health services provision, especially for vulnerable groups, the health system needs to pay special attention to the provision of health services to all women.

The results of the present study showed that the mean score of other components of reproductive health was significantly different between the two groups so that it was lower in the vulnerable group, and some components obtained very low scores. The results of a study showed that drug users are more susceptible to high-risk sexual behaviors and nonuse of condoms. In fact, reproductive health components are at risk in this group of people.[21] The results of another study in this area showed that the female participants of the study had at least one prepregnancy risk factor such as an unhealthy lifestyle (smoking, alcohol, and substance abuse) that could place them in a vulnerable group.[35]

Another study on the pregnancy experiences of the women with unsafe sexual relations revealed that they had at least one abortion. In fact, they also were faced with the complications of pregnancy.[28] The results of the present study on the perturbation of reproductive health and its components in vulnerable women are in line with the above research.

In another part of this study, we examined the relationship between some baseline characteristics and the mean scores of the reproductive health components. According to the results of the study in the vulnerable group, age was only inversely correlated with the score of reproductive health related to the features of healthy reproduction In other words, older women had more disorder in these areas. This may be because older people have longer fertility and are more likely to have

Table 2: Comparison of the descriptive indicators of reproductive characteristics in vulnerable and nonvulnerable women (*n*=500)

Variable	Mean (SD)		Independent *t*-test	
	Nonvulnerable (*n*=250)	Vulnerable (*n*=250)	*t*	*P*
Pregnancy	2.46 (1.60)	2.86 (1.45)	2.77	0.006
Childbirth	2.15 (1.37)	2.39 (1.47)	1.73	0.08
Child	2.12 (1.34)	2.25 (1.18)	1.01	0.31
Refer to the health center (per year)	2.32 (1.73)	2.53 (2.54)	0.87	0.39
Last delivery	82 (32.8)	101 (40.4)	3.43*	0.06
Cesarean section vaginal delivery	168 (67.2)	149 (59.6)		

*Chi-square test. SD=Standard deviation

Table 3: Comparison of the frequency distribution of risk factors in two groups

Variable	Total (*n*=500), *n* (%)	Nonvulnerable (*n*=250), *n* (%)	Vulnerable (*n*=250), *n* (%)	Chi-square test	
				χ^2	*P*
Smoking					
Past	29 (11.6)	2 (0.8)	27 (10.8)	14.8	<0.001
Present	39 (7.8)	0	39 (15.6)		
Never	405 (84.6)	248 (99.2)	175 (70)		
Past and present	9 (1.8)	0	9 (3.6)		
Alcohol consumption					
Past	26 (5.2)	1 (0.4)	25 (10)	41.1	<0.001
Present	7 (1.4)	0	7 (2.8)		
Never	466 (93.2)	249 (99.6)	217 (86.8)		
Past and present	1 (0.2)	0	1 (0.4)		

Table 4: Frequency distribution and the mean total score of reproductive health of vulnerable women according to vulnerability status

Vulnerability status	Descriptive index	
	n (%)	Mean (SD)
Addicted	17 (6.8)	36.61 (14.72)
Addicted spouse	104 (41.6)	71.12 (12.23)
Imprisoned spouse	8 (3.2)	95.70 (11.21)
Having unsafe sex	39 (15.6)	72.87 (16.10)
Addict and addicted spouse, imprisoned spouse	23 (9.2)	59.32 (9.24)
Addict and having unsafe sex	15 (6)	65.27 (14.98)
Addicted spouse and imprisoned spouse	6 (2.4)	68.56 (9.14)
Addicted spouse and unsafe sex	23 (9.2)	64.40 (14.44)
Addict, addicted spouse, and unsafe sex	10 (4.8)	51.75 (23.69)
Addict, addicted spouse, imprisoned spouse, and unsafe sex	5 (1.2)	83.30 (6.50)
Total	100 (250)	67/76 (11/11)

SD=Standard deviation

complications, and thus, they should be considered more specifically.

According to another results of the study, the number of pregnancies was inversely correlated with the total score of reproductive health. This means that increase in the number of pregnancies will lead to more disorder in the reproductive health of women. According to the results of a study, the number of pregnancies and unwanted pregnancies was among the barriers to receiving prenatal care.[36] The results also showed that economic level was directly correlated with the total score of reproductive health and some of its components. In fact, women with higher levels of economic were better able to provide their reproductive health. On the other hand, economic level, as a social determinant, has indirectly affected the health of these people. As such, the healthcare system needs to pay special attention to vulnerable women with a lower economic level. No other study was found which can be compared with these results.

Overall, no other study was found with the subject of comparing reproductive health between vulnerable and nonvulnerable women. Most studies have examined a component such as drug use or unsafe sex in one of the vulnerable groups, and other components of

Table 5: Comparison of the mean total score and the score of components of reproductive health in vulnerable and nonvulnerable women

Study groups	Mean (SD)		Independent *t*-test	
	Nonvulnerable	Vulnerable	*t*	*P*
Total reproductive health score	81.4 (11.1)	68.6 (14.7)	11.4	<0.001
Reproductive health components				
Healthy reproduction feature	90.5 (7.1)	82.9 (9.5)	10.0	<0.001
Pregnancy-related issues				
Prepregnancy care	50.5 (42.3)	26.5 (39.9)	6.5	<0.001
Pregnancy care	79.5 (18.3)	58.03 (31.9)	9.2	<0.001
Delivery care	93.6 (10.3)	83.5 (19.0)	7.3	<0.001
Postpartum care	80.9 (21.6)	65.9 (23.6)	7.3	<0.001
Access to reproductive health services	69.2 (35.0)	65.1 (41)	1.1	0.23
Safe sex-related issues	88.0 (9.7)	73.0 (21.1)	9.3	<0.001

Table 6: Relationship of the mean total score of reproductive health and its components with some underlying factors in the two groups

Reproductive health components	*r* (*P*)		
	Age	Gravida	Economic situation
Nonvulnerable			
Reproductive health status	−0.210 (0.001)	−0.411 (<0.001)	0.363 (<0.001)
Reproductive health components			
Healthy reproduction Feature	−0.368 (<0.001)	0.273 (<0.001)	0.391 (<0.001)
Pregnancy-related issues			
Prepregnancy care	−0.182 (0.004)	0.286 (<0.001)	0.287 (<0.001)
Pregnancy care	−0.032 (0.61)	0.214 (<0.001)	0.192 (<0.001)
Delivery care	0.055 (0.39)	0.131 (0.04)	0.045 (0.48)
Postpartum care	−0.047 (0.46)	0.140 (0.02)	0.037 (0.56)
Access to reproductive health services	0.029 (0.64)	0.119 (0.06)	0.116 (0.06)
Safe sex-related issues	0.012 (0.86)	−0.065 (0.31)	−0.047 (0.46)
Vulnerable			
Reproductive health status	0.037 (0.56)	−0.264 (<0.001)	0.242 (<0.001)
Reproductive health components			
Healthy reproduction feature	−0.133 (0.03)	0.225 (<0.001)	0.172 (<0.007)
Pregnancy-related issues			
Prepregnancy care	0.055 (0.39)	0.258 (<0.001)	0.273 (<0.001)
Pregnancy care	0.100 (0.12)	-0/121(0/057)	0/149 (0/02)
Delivery care	−0.033 (0.60)	0.047 (0.46)	−0.097 (0.13)
Postpartum care	0.048 (0.45)	0.003 (0.96)	−0.021 (0.74)
Access to reproductive health services	0.115 (0.06)	0.074 (0.24)	−0.027 (0.68)
Safe sex-related issues	0.134 (0.05)	0.087 (0.22)	−0.109 (0.13)

reproductive health and other groups as well as the co-occurrence of harms in these women have been overlooked.

Considering different vulnerable groups and all components of reproductive health is among the strengths of the present study. According to the results, the design and implementation of a specific reproductive and sexual health program for vulnerable women and reducing the cost of health services for this group of women can be considered.

Limitation and recommendation

The lack of access to all groups of vulnerable women because of sociocultural reasons was one of the limitations of the study. Another limitation of this study is the lack of new statistical information about the women studied due to the nature of their antisocial and secretive behaviors., it is suggested for interdepartmental cooperation and team works in all levels of this area. It is also suggested that activities related to the prevention and timely intervention and rehabilitation of people who suffer from such problems be done so that these people return to the normal course of life. As a result, maintenance and promotion of women's health will promote family health and, at the highest levels, maintain the health of our society. Finally, it is suggested that future studies examine all aspects and components of reproductive health in vulnerable women.

Conclusions

The present study compared the reproductive health of vulnerable and nonvulnerable women. Although many reproductive health services are provided by health centers to vulnerable women, there are still gaps in reproductive health services (including inadequate attention to pregnancy-related issues) for these women. Not all vulnerable women go to health and counseling centers and access to all of these women is difficult; as such, some of these women are deprived of access to health services which brings about unpleasant consequences. As vulnerable women, because of having risk factors, need more information, education, and care in the area of reproductive health, special cares need to be provided for them considering all components of reproductive health.

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Conflicts of interest

There are no conflicts of interest.

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