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# Infertility: knowledge and attitudes of Moroccan young people—gender approach

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## Abstract

**Background:** The knowledge and the beliefs of people could affect the fertility of women and men all over the society. According to gender, the aim of this study was to describe knowledge level and attitude of Moroccan young people about infertility in Marrakesh-Safi region in Morocco.

**Results:** We selected 355 Moroccan young people by a simple random sampling method, during 2019 and using a previously validate questionnaire. Both of female and male had a low level knowledge about the meaning, causes, and treatment of infertility (only 20, 8% of female and 25, 6% of male were aware). Almost, half of them (41, 6% of female versus 51, 9% of male) had reported that it is easier to conceive if the couples had already their first baby. However, 92% of female and 86% of male had confirmed that the lifestyle is a factor that may affect the infertility. The results showed that there was a difference between male and female attitude if the fertility treatment fails, the percentage of male who had proposed the polygamy as solution was higher than female (22.5% versus 6.6%). Besides, the minority had accepted divorce as alternative. The adoption was another solution proposed and accepted by both male and female.

**Conclusion:** The result of our study reflects the fact that it is important to investigate on education and a public awareness about fertility in order to upgrade the level of knowledge and attitudes of Moroccan young people.

**Keywords:** Infertility, Knowledge, Attitude, Moroccan young people, Gender

## Background

The fertility is not always controlled by human; there is panoply of factors which influenced fertility, like socio-cultural factors; lifestyle; impact of environment on the human body; knowledge of people; social attitudes; and practices [1, 2]. Thus, the voluntary childlessness is on an increase and can become involuntary childlessness due to fertility diseases [3].

The infertility as a reproductive health disease is defined by the failure to achieve a clinical pregnancy after at least 12 months of regular unprotected sexual intercourse [4]. Generally, 20-35% of infertility cases due to woman etiology, 20-30% of cases due to man etiology, 25-40% of cases due to both of man and woman etiologies and 10% idiopathic etiology [5].

In Morocco, the infertility is estimated to 15% of population [6]. Like in developing countries, it is associated to the socially taboo; hence, the man infertility is related to virility and woman infertility is related to dishonor [7]. Consequently, this social perception about infertility can affect fertility behavior. Thus, it is important to act on knowledge and attitude of young people in order to have a favorable behavior toward their fertility

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[8]. According to the theory of Moscovici and Jodlet, the communication, scientific knowledge, and education influenced the social perception, subsequently; the behavior and practices could change toward the health reproductive of people [9, 10].

Our study is extended to describe knowledge and attitudes of young Moroccan people, aged between 15 and 25 years old, about infertility to understand the difference in awareness between genders and the importance of education about fertility.

## Methods

We conducted a descriptive study in Marrakesh-Safi region in Morocco. The participants were selected from Marrakesh-Safi region by a simple random sampling method during 2019. The required sample size was estimated 355 participants aged between 15 and 25 years old (male  $n'=129$ ; female  $n=226$ ). They were questioned about their knowledge and attitude concerning infertility, by administering a semi-structured questionnaire with open and close questions in Arabic language.

The form includes socio-demographic characteristics and questions concerning knowledge and attitude about infertility. Statistical analyses were performed using SPSS package (version 10). The questionnaire was elaborated from a review of literature, and was pretested extensively. The ethical aspects such as self-determination, privacy, anonymity, confidentiality, comfort, and equal treatment were respected.

## Results

Overall, 355 participants were included in this study whose 226 female (average age  $M = 20.77$  years;  $SD = 2.2$ ) and 129 male (average age  $M = 20.72$  years;  $SD = 2.9$ ). Most of them had higher school education (Table 1), 88.9% of female versus 99% of male ( $p = 0.001$ ). In total, 73.5% of female versus 60.5% of male had an urban origin ( $p = 0.011$ ).

The finding of this study affirms that both of female and male had a low level knowledge about the meaning and causes of infertility (20.8% of female versus 25.6% of male who had infertility information ( $p = 0.041$ )). Besides, the majority (92% of female and 84.5% of male) had confirmed that the lifestyle is a factor that may affect the fertility of the couple.

The most of them, 94.7% of female and 92.2% of male, had thought that infertility is 100% curable. Almost, 7.75% of male and none of female had affirmed that infertility is just a woman problem. The half of participants (41.6% of female versus 51.9% of male) had reported that it is easier to conceive if the couples had already their first baby.

**Table 1** Socio-economic and demographic characteristics of participants, distributed by gender

| Variables and modalities             | Female $n=226$ | Male $n'=129$ | P value |
|--------------------------------------|----------------|---------------|---------|
| <b>Age of youths (years)</b>         | 20.77 ± 2.2    | 20.72 ± 2.9   | 0.10    |
| Group age                            |                |               |         |
| 15-18 years                          | 32 (14.2%)     | 30 (23.3%)    | 0.030   |
| 18-24 years                          | 194 (85.8%)    | 99 (76.7%)    |         |
| <b>Education level</b>               |                |               |         |
| Primary school                       | 8 (3.5%)       | 13 (10.1%)    |         |
| College                              | 17 (7.5%)      | 23 (17.8%)    | 0.001   |
| High school                          | 201 (88.9%)    | 93 (72.1%)    |         |
| <b>Origin</b>                        |                |               |         |
| Urban                                | 166 (73.5%)    | 78 (60.5%)    |         |
| Rural                                | 60 (26.5%)     | 51 (39.5%)    | 0.011   |
| <b>Parental socioeconomic status</b> |                |               |         |
| Low income                           | 45 (19.9%)     | 26 (20.2%)    |         |
| With middle income                   | 165 (73.0%)    | 99 (76.7%)    | 0.292   |
| With high income                     | 16 (7.1%)      | 4 (3.1%)      |         |

Statistical significance at  $p < 0.05$

Even the most of the participants thought that infertility is a god's will (92% of female versus 84.5% of male) (Table 2), just 11.5% of female and 10.9% of male had proposed the first resort, if they would be infertile, is prayer (Table 3).

Table 3 shows that the majority had agreed that the first resort is consulting a medical advice (82.3% of women versus 79.1% of men). If the fertility treatment fails, 75.2% of female and 62.8% of male had considered the adoption as a solution. But, the percentage of male who had proposed the polygamy was higher than female (22.5% versus 6.6%). Just 3.5% of female versus 3.1% of male had accepted divorce as alternative.

## Discussion

From the statistical data about socio-economic and demographic characteristics, we notice that the knowledge state of participants was influenced by the following variables: age between 18 and 25 years old, origin (rural or urban) and education level.

### Knowledge

The result shows that the level of knowledge about infertility was considered as low level; thus, fewer than fifty percent of participants (20.8% of women and 25.6% of men) ( $p=0.041$ ) had gave a definition of the infertility and a low percentage had talked about some causes of it. The majority had affirmed that infertility is 100% curable. Important proportion of participants had confirmed that the best age for getting pregnant is more than 25 years.

**Table 2** The comparison of basic infertility knowledge, distributed by gender

| Variables and modalities                          | Female (n=226)<br>Yes/no | Male (n'=129)<br>Yes/no | P value |
|---|--------------------------|-------------------------|---------|
| Do you know what infertility is?                  | 47 (20.8%)               | 33 (25.6%)              | 0.041   |
| Infertility is a problem for only women?          | 0 (0.0)                  | 10 (7.75)               | 0.057   |
| If you had a baby once, is it easier to conceive? | 94 (41.6%)               | 67 (51.9%)              | 0.063   |
| Infertility is a god's will?                      | 208 (92.0%)              | 109 (84.5%)             | 0.027   |
| Infertility is 100% curable?                      | 214 (94.7%)              | 119 (92.2%)             | 0.359   |
| Have you ever met an infertile couple?            | 138 (61.1%)              | 60 (46.5%)              | 0.008   |
| Does our lifestyle cause infertility?             | 208 (92.0%)              | 111 (86.0%)             | 0.072   |
| <b>What is the best age for getting pregnant?</b> |                          |                         |         |
| 20 to 24 years                                    | 20 (8.8%)                | 14 (10.9%)              | 0.672   |
| ≥ 25 years  | 206 (91.2%)              | 115 (89.1%)             |         |
| <b>Female infertility is caused by?</b>           |                          |                         |         |
| Genital infections                                | 795 (35.0%)              | 50 (38.8%)              | 0.474   |
| Uterine abnormalities                             | 53 (23.5%)               | 21 (16.3%)              | 0.110   |
| Hormonal problems                                 | 124 (54.9)               | 62 (48.06)              | 0.400   |
| Menstrual disorders                               | 77 (34.1%)               | 36 (27.9%)              | 0.230   |
| Tubal diseases                                    | 78 (34.5%)               | 30 (23.3%)              | 0.027   |
| <b>Male infertility is caused by?</b>             |                          |                         |         |
| Sperm anomalies                                   | 113 (50.0%)              | 54 (41.9%)              | 0.139   |
| Hormone disorders                                 | 51 (22.5%)               | 33 (25.5%)              | 0.666   |
| Other diseases                                    | 112 (49.6%)              | 67 (51.9%)              | 0.221   |

Statistical significance at  $p < 0.05$

Our result corroborate with 71 articles which had presented studies about the knowledge of fertility awareness. Those studies were in different countries of the worlds, Europe, America, and Africa. Among of those studies, the results had showed that the people had a low knowledge and awareness about infertility.

Moreover, the articles had affirmed people through on fertility treatment and they believed that the age could influence the fertility too later [11].

However, both female and male had a higher awareness about the influence of lifestyle on the health reproductive, so 92% of female and 86% of male were aware

**Table 3** The hypothetical answers regarding possible future infertility, distributed by gender

| Variables and modalities                                    | Female (n=226)<br>Yes/no | Male (n'=129)<br>Yes/no | P value |
|---|--------------------------|-------------------------|---------|
| <b>When the fertility treatment fails?</b>                  |                          |                         |         |
| Would you consider divorce?                                 | 8 (3.5%)                 | 4 (3.1%)                |         |
| Would you consider adoption?                                | 170 (75.2%)              | 81 (62.8%)              | 0.001   |
| Should you consider remarriage?                             | 15 (6.6%)                | 29 (22.5%)              |         |
| You do not know?  | 33 (14.6%)               | 15 (11.6%)              |         |
| <b>What is the first resort, if you would be infertile?</b> |                          |                         |         |
| Medical advice (hospital)                                   | 186 (82.3%)              | 102 (79.1%)             |         |
| Traditional healer  | 2 (0.9%)                 | 5 (3.9%)                | 0.170   |
| Prayer  | 26 (11.5%)               | 14 (10.9%)              |         |
| <b>Treatment options, if you would be infertile?</b>        |                          |                         |         |
| Should you consider in vitro fertilization?                 | 59 (26.1%)               | 29 (22.5%)              | 0.656   |
| Would you consider artificial insemination?                 | 125 (55.4%)              | 74 (57.4%)              | 0.706   |
| Should you consider surgery?                                | 85 (37.6%)               | 47 (36.4%)              | 0.825   |

Statistical significance at  $p < 0.05$

that lifestyle is a risk factor of infertility. Effectively, the environment causes associated to the deterioration of lifestyle (tobacco smoking, alcohol, stress, high temperature, dietary practices, etc.) could affect negatively both of male and female fertility [12, 13].

### Attitude

From the result of our study, the majority of interweaved had affirmed that the infertility is a god's will. They had proposed three alternatives, if the treatment failed. The adoption was an alternative proposed by participants (75.2% of women versus 62.8% of men). In this sense, a lot of studies had confirmed that adoption is the first option of infertile couple if the treatment failed [14]. In the Islamic society, the adoption is completely accepted with specific rules [15].

In the least developed countries, the marriage is related to the procreation; thus, the femininity is associated to the motherhood, also the masculinity and the virility is associated with fatherhood [16]. Additionally, the polygamy is an accepted norm in our society, because Islamic religion gives the opportunity to have more than a wife for man in special conditions [15]. It is why a higher percentage of male had proposed the polygamy as solution (22.5% male versus 6.6% female).

Finally, a minority of participants had agreed with the divorce as a solution of infertility if the treatment failed (3.5% female versus 3.1% male).

### Conclusion

The result of our study reflects the fact that Moroccan young people had a low level of knowledge which often affects their awareness about fertility; their attitudes should influence the behaviors and practices of people about reproductive health. This is why it is important to investigate on education and a public awareness about fertility in order to upgrade the level of knowledge and attitudes of Moroccan young people.

### Study limitations

The study was limited by the characteristic of our population from Marrakesh-Safi region. Thus, in our study, we made comparison just according to gender; it would be important to compare knowledge and attitudes of our study's participants with a young people who had already a medical knowledge. We are increasing this option in the actual research.

### Abbreviations

M: Statistical average age; SD: Sample standard deviation; P: Probability value; n: Sample size of female participants; n': Sample size of male participants

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### Authors' contributions

SE contributed to conception and design. SE, AB contributed to all experimental work, data and statistical analysis, and interpretation of data. The draft of manuscript was revised by AB, YA, AS, and MC. All authors read and approved the final manuscript.

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### Availability of data and materials

In our study, the data and the analysis are available in case a reasonable request is made to the corresponding author.

### Declarations

#### Ethics approval and consent to participate

Our research was approved by High Institute of Nursing and Technical Health, Marrakesh, Morocco, and the consent was not obtained from the participants, but we had the authorization from Health authority of Marrakesh. The committee's reference number is not applicable.

#### Consent for publication

Not applicable.

#### Competing interests

The authors declare that they have no competing interests.

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