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Original Paper

Responsiveness of Arab Women in Israel to Genetic Screening Tests Prior to/during Pregnancy

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Abstract

Hereditary morbidity is a severe health problem in the Muslim Arab society in Israel. There are populations where the prevalence of the Mendelian type hereditary diseases is 1 in 4 or 5 residents (Al Aqeel, 2007). One of the reasons for this is the high prevalence of relation marriage, which as of 2009 accounted for 24% of all marriages (Na'amnih et al., 2015). Despite this high prevalence, responsiveness to performing hereditary screening tests in Israel is very low among Arab women. For example, in performing Fragile X screening tests, only 9.1% of Arab women reported having performed the test, compared to 52% of Jewish women (Romano-Zlicha & Shochat, 2011).

Keywords

responsiveness, Arab women, genetic screening test , prior to/during pregnancy, hereditary, morbidity, Israel

1. Introduction

The subject of low responsiveness to performing screening tests was investigated from a number of angles, though not at a high frequency, with an emphasis on potential reasons for non-responsiveness. For example, one cause that was found to be connected to performing screening tests is religion. Arab women in Israel define themselves as religious with a high prevalence relative to the general population and stood at 87.6% (Romano-Zlicha et al., 2011). In light of this, one possible source that could serve as an authority promoting responsiveness is religion, and yet, as of the publication of this article, no fatwa was issued promoting the obligation to perform screening tests. This is despite the fact that, in 2007, when the subject of screening tests in light of Islamic was discussed at an international conference in Saudi Arabia, it was said that although one cannot demand genetic tests to be included in the marriage contract (given the nature of the contract and possible punishments sanctions under this

contract), performance of the tests could still be encouraged while maintaining the confidentiality of the test performer (Al Aqeel, 2007). With the exception of the Romano-Zlicha et al. (2011) study, not been many studies have been conducted in Israel on the causes of responsiveness to the performance of screening tests among Arab women, and this one was also conducted many years ago. Therefore, there is a great need for research to examine the latest data and causes today.

2. Research Methods

This article deals with a pilot study conducted among Muslim Arab women in Israel as part of a more comprehensive study, which was conducted in 2019. The study was conducted at community health centers in the northern and central areas of Israel, among a pilot sample of 20 Muslim subjects, ages 18 and older, who were recruited in a convenience sample by distributing questionnaires at community centers, women's centers and to mothers of children in elementary schools by the researcher and by sending a link to the questionnaire by mail, WhatsApp groups and social media. After receiving their written informed consent, the subject were asked to fill in the questionnaire in the Arabic language on the subject of performance of hereditary screening test and demographic data. The findings of the questionnaire were analyzed by the researcher using the SPSS software version 24. No wage was guaranteed to the subjects. The researcher has no personal or financial interest in the research findings.

3. Research Findings

3.1 Description of the Sample

The sample consists of 20 Arab women, ages 18-44, the age of fertility. This is a convenience sample recruited from family health clinics in Arabic-speaking communities in the northern and central areas. All subjects are Muslim, with high school education and above. Table 1 describes the demographic characteristics of the subjects.

Table 1. Summary of the Sample's Demographic Characteristics

Demographic variable	Number of subjects (N)	Percent %
Marital status		
Single	6	27.3
Married	13	59.1
Divorced	1	4.5
Degree of education		
Full Bagrut certificate	5	22.7
BA	9	40.9
MA	5	22.7

PhD	1	4.5
Degree of religiosity		
Secular	2	9.1
Traditional	16	72.7
Very religious	2	9.1
Number of children		
0	7	31.8
2-3	11	30
4 and above	2	9.1

Only 5 respondents (25%) responded that they performed the hereditary screening tests. Two of the positive respondents reported that they performed the screening tests after having an abortion or giving birth to a sick child, and the other 3 reported that they performed the tests after giving birth to at least one child. On the question of personal position regarding the performance of screening tests, the responses of all respondents were at a medium level or higher (Min=3, Max=5, Av=4.65). If so, the positions are positive.

Table 2. Summary of Factors Affecting Subjects' Decision to Perform Hereditary Screening Tests

	Minimum	Maximum	Average	Prevalence
Do you personally support screening tests	3	5	4.65	5
Is your decision to perform screening tests influenced by:				
Economic considerations	1	5	2.90	4
Religion	1	5	3.00	1
Parents' position	1	5	3.55	5
Spouse's position	1	5	3.60	5
Health considerations	1	5	3.95	5
Having knowledge of performance of screening tests	1	5	4.50	5
Availability of the tests at health funds	1	5	4.35	5
Possible existence of a law requiring the performance of the tests	1	5	4.50	5

In terms of the factors that influence the decision of the subjects to perform the screening tests, it was found that economic considerations have the lowest influence (Min=1, Max=4, Av=2.90) among the factors, with none of the respondents saying that the economic decision had a significant influence on her. The influence of considerations was moderate (Min=1, Max=5, Av=3.00), although the common answer was that religion had no effect on the decision to perform screening tests. Considerations of the surrounding positions had a higher influence—the parents' position was described as having a medium or higher influence (Av=3.55) as well as the spouse's position (Av=3.60). The greatest influence was of factors related to the law and the health system—the greatest importance was attributed to the availability of information on screening tests (4.35-4.50). Table 2 summarizes the dispersion data of the position scores toward the screening tests and the degree of perceived influence of various factors on it. In an examination of the relationship between performing the screening tests and considerations and positions using the Chi-squared test, it was found that there is a clear connection only between the performance of screening tests and economic considerations. The other connections were not significant (Table 3).

Table 3. Connections between Performance of the Screening Tests and Considerations

	X^2 value	Significance of the connection
Personal position on the performance of the tests	2.222	.329
Economic considerations	12.1	.016*
Religion	3.47	.483
Parents' position	2.222	.528
Spouse's position	1.15	.764
Health considerations	2.57	.461
Having knowledge of performance of screening tests	1.69	.639
Availability of the tests at health funds	4.76	.190
Possible existence of a law requiring the performance of the tests	7.42	.059

$*p<0.05$

In examining the connection between a personal position on the performance of the screening tests and consideration variables using the Chi-squared test, no significant connection was found between the variables.

Table 4. Connection between Personal Position and Performance of the Genetic Screening Tests

	X^2 value	Significance of the connection
Economic considerations	6.73	.566
Religion	6.02	.645
Parents' position	5.89	.436
Spouse's position	3.01	.807
Health considerations	8.20	.224
Having knowledge of performance of screening tests	11.91	.064
Availability of the tests at health funds	5.14	.526
Possible existence of a law requiring the performance of the tests	1.62	.951

In addition, in examining the connection between positions and performance of the screening tests and demographic variables, no significant connection was found with any demographic variable. However, a significant connection was found between the marital status and the position of the subjects towards the performance of screening tests as shown in Table 5.

Table 5. Connection between Demographic Variable and Positions and the Performance of the Screening Tests

	Positions on the performance of screening tests		Performance of hereditary screening tests	
	X^2 value	Significance of the connection	X^2 value	Significance of the connection
Year of birth	22.0	.781	16.44	.287
Marital status	9.744	.045*	3.59	.166
Degree of religiosity	5.0	.287	1.33	.513
Years of education	9.5	.301	3.29	.511

*$p<0.05$

4. Discussion

One can see from the analysis of this sample that, although the respondents verbally attribute a relatively low significance to religious considerations in the performance of the screening tests, in practice, the only significant connection between the performance of the screening tests and the considerations was actually with the religion variable. This finding is also supported by the literature. According to Romano-Zlicha et al. (2011), there is a connection between the woman's degree of

religiosity and her intention to perform screening tests. In fact, if one examines at the religion of Islam, there is no uniform policy of what can be done at all if the screening demonstrates an unusual finding, although in the past decade there has been a policy of encouraging the performance of screening tests to prevent parental suffering (Al Aqeel, 2007), and there are even recommendations of the limit date for the performance of screening tests—120 days from the date of conception, since then it is believed that the soul enters the fetal body and the abortion becomes a killing (Zlotogora, 2014). On the other hand, it can be argued that in the present sample there is no significant connection between the degree of religiosity itself and the intention or positions to perform hereditary screening tests. This finding unequivocally contradicts the data of Romano-Zlicha et al. (2011). One possible explanation is the difference in the sample—the present study is a pilot sample with a low measure of representation of the population and therefore it is quite possible that findings would be different in a larger sample.

If to continue the examination of the question of religiosity with a comparative view, one can see that in the countries surrounding Israel—Cyprus, Saudi Arabia, Gaza, great awareness is attributed to the performance of screening tests in the religious context. Cyprus' religious authorities may refuse to marry in the church a couple who did not perform hereditary screening tests, in Gaza the non-performance of screening tests can serve as grounds for divorce (Cousens, Gaff, Metcalfe, & Delatycki, 2010).

No connection was found between the performance of the screening tests and economic aspects. This finding is inconsistent with the literature. According to Romano-Zlicha et al. (2011), economic considerations and the existence of supplementary insurance influence the intention of Arab women to perform hereditary screening tests.

No significant connection was found between the performance of the screening tests and the influence of family members (parents or spouse). One can see an explanation for this in the policy of screening tests in Israel. The main target audience for training and the performance of the screening tests is women, while men are only offered the option by the initiative and knowledge of the spouse (Ministry of Health, 2016). In addition, the procedure itself is relatively new (the original is from 2004), and therefore it is likely that the parents are unaware of the tests. The lack of knowledge by the family and spouse makes their ability to influence a woman's awareness or decision to perform screening tests is low. Therefore, further research is required on the spouse's awareness and position towards the performance of the test. In addition, in the current sample, a significant part of respondents are unmarried (single or divorced) and it is quite possible that their position toward the spouse's position is influenced by their marital status. There is a need to examine the differences between married and unmarried women on the subject of screening tests in a larger and more representative sample.

There was no significant connection between the performance of the screening tests and/or the positions of the subjects towards the tests and variables related to the health organizations (availability of the tests, the existence of knowledge or the existence of legislation on the subject of screening tests). A possible explanation in the literature is that screening tests performance services for Arab women in

Israel have only just begun (Zlotogora et al., 2006), and so it is quite possible that there is a perceived insignificance of something that is not available at all—the knowledge and the tests themselves. The subject of change in the policy of screening tests for Arab women in terms of training and availability requires further research.

5. Summary and Conclusions

While this is a one-sample pilot study, there are differences between the findings of the existing sample and those described in previous studies in Israel. The study indicates a lack of responsiveness to the screening tests and the possible influence of religious factors on the performance of the screening tests, although the connection is of the religious factors, but not the degree of religiosity. There is room for more research into the influence of other factors, as there may be differences in the light of a more representative sample, as well as a more in-depth study of the specific influence of religion, religiosity, and religious factors on Arab women's readiness to perform screening tests.

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