PERCEPTION OF FEMALE STUDENTS OF KING SAUD UNIVERSITY TOWARDS PREMARITAL SCREENING

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Objective: The aim of this study was to investigate the perception of King Saud University female students towards the implementation of premarital screening (PMS) in the Kingdom of Saudi Arabia (KSA).

Methods: Two consecutive surveys on knowledge, attitudes and practice (KAP) were conducted two and nine months after the compulsory implementation of PMS in KSA in 1/1/1425H. The female students of King Saud University were given health education lectures before the survey. The first survey was done with a designed close-ended questionnaire distributed at pre and post stages of the health education lecture. However, the second one explored the participants' perception of the same items in open-ended questions summarized as a "consensus statement". In fulfillment of their demands, the signed statement was mailed to the legislative authorities.

Results and discussion: A total of 140 university female students attended the first lecture. The response rate for both pre and post lecture surveys were 132 (94.3%) and 128 (91.4%) respectively. A total of 112 out of 132 (84.8%) students in the pre test and 111 out of 128 (86.7%) in the post-test were single.

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Of the married students 7/20 (35.0%) and 7/17 (41.2%) in pre and post tests had previously had PMS screening. The attitude of the students towards PMS was generally positive. One hundred and eight (81.8%) in the pre test and 110 (85.9%) in the post test saw the importance of PMS in controlling the commonest hereditary diseases. However, a smaller percentage of students (69.7% and 75.0%) in pre and post lecture respectively were in favor of the compulsory application of PMS in KSA. In spite of the positive attitude of all the students in the pre and post tests, fears were expressed towards the confidentiality of PMS test results and it was felt that social and psychological problems would ensue from abnormal results. This, however, does not represent the feeling of the entire population in KSA since the participants of the study formed a select group.

The second awareness lecture was attended by 319 students from the College of Education. They were subsequently requested to state their perceptions of PMS application with regard to its content, nature and method of application in KSA in their own words. The collected forms were summarized into a "consensus statement" and signed by all 319 students. They felt that the scope of PMS should be extended to investigate and screen for other diseases especially sexually transmitted diseases that would adversely affect the health of members of the family and the community as a whole. Their worry about the lack of screening for other diseases may be because a majority of the study group were single and would, therefore, refuse to get married on account of the risks to their future offspring. In addition, it may reflect their knowledge of the effects of globalization on the transmission of diseases.

**Conclusions:** Health education is an important means of improving the public's perception of newly-introduced health interventions. University students have a good perception of the compulsory implementation of PMS in KSA. Pre-marital screening could be extended to include a broader spectrum of health/genetic disorders and will be useful for early identification and possible intervention as well as the prevention of complications.

**Key Words**: Premarital Screening, Health Education, Kingdom of Saudi Arabia.
haemoglobinopathies, to reduce the financial burden on individuals and the government and to minimize the social and psychological problems resulting from having affected children. A recent report from Saudi Arabia expressed the hope that the premarital screening program would include screening for other hereditary blood diseases as well as for sexually transmitted diseases.  

This study aims at investigating the perception of the female students of King Saud University on the application of premarital screening.

**METHODS**

A KAP survey was conducted by designing a close-ended questionnaire that included enquiries about the content, nature and ways of applying the premarital screening. It also included questions on the perception of the compulsory application of PMS. The given choices were "Yes", "No" and "Don't know". Participants were also allowed to express their opinion about the expected benefits and disadvantages of PMS. An open health education lecture on "the role of PMS in preventing hereditary blood disorders" was attended by 140 female students from various colleges including the Arts and Social Sciences of King Saud University. This was done during the annual awareness week of the university, which coincided with the end of two months of the compulsory enforcement of PMS in Saudi Arabia 1/1/1424H.

The same designed closed-ended questionnaires were distributed twice, before and after the lecture. The first set was collected before the start of the lecture. The second was distributed and collected at the end of the lecture and before the discussion. Students were reassured of the confidentiality of their opinions by ensuring that the responses were anonymous.

About seven months after the first lecture, there was a request to give the female students enrolled in special education and other humanities at the university, a lecture similar to the first one with special emphasis on the preventive benefits of PMS. At the end of the second lecture, the audience was encouraged to complete the distributed open-ended questionnaire asking for a feedback on the information given and their perception of the content, nature and the means of conducting PMS in Saudi Arabia. The collected forms were summarized into a signed consensus statement. As requested by the students, the signed format was mailed to legislative authorities.

**RESULTS**

The response rate of the first close-ended pre and post lecture questionnaires was 132 (94.3%) and 128 (91.4%) respectively. The age of the participants ranged from 20-25 years. A total of 112 out of 132 (84.8%) students in the pre test and 111 out of 128 (86.7%) students in the post test were single. Of the married students 7/20 (35.0%) in the pre test and 7/17 (41.2%) in the post test had previously had PMS.

Table 1 portrays students’ attitude towards PMS and the reasons for it. It shows that the majority of the students (81.8% in the pre test and 85.9% in the post test) saw the importance of PMS in controlling the commonest hereditary diseases. However, a smaller percentage supported the compulsory application of the test (69.7% and 75.0% in pre and post test respectively).

| Students’ responses | Pre (n=132) | No. (%) | Post (n=128) | No. (%) |
|---------------------|------------|---------|-------------|---------|
| Students’ attitude  |            |         |             |         |
| Approve the importance of PMS in controlling the commonest hereditary diseases | 108 (81.8) | 110 (85.9) |
| Support the compulsory application of PMS | 92 (69.7) | 96 (75.0) |
| Given reasons |            |         |             |         |
| Fear exists towards confidentiality of test results | 132 (100.0) | 128 (100.0) |
| Abnormal test results would yield social and psychological problems | 132 (100.0) | 128 (100.0) |
| Doubt the accuracy of test results | 47 (35.6) | 16 (12.5) |
| Expect to face community problems if undergoing PMS in future | 12 (9.1) | 26 (20.3) |

As regards the reasons for their attitude, Table 1 also reveals that all students (100.0%) in pre and post test were anxious about the confidentiality of the test results. Similarly, all of them believed that abnormal test results would create social and psychological problems.

Also, a considerable proportion of students were not confident that the test result would be accurate (35.6% and 12.5% respectively) as...
shown in Table 1. Moreover, 9.1% and 20.3% of the students in the pre and post tests respectively, expected to have social problems if they would undergo PMS in the future.

All responses from the pre and post questionnaires expressed the need to improve the community's awareness of the relationship between consanguineous marriages and hereditary blood diseases and the preventive value of PMS.

The second lecture was attended by 319 Saudi female university students, 298 (93.4%) of whom were from the College of Special Education and the rest from other Humanities Colleges. They had not attended the first lecture. Their ages ranged from 20-24 years; 50 (15.7%) of the students were married, and out of these 18 (36%) had undergone PMS.

The analysis of the collected open-ended questions revealed an overall positive attitude towards the importance of the topic of the lecture. A total of 250 (78.4%) students did not know that PMS covered only hereditary blood disorders. Owing to the similarity of the responses, they were summarized into a consensus statement which was signed by all participants. They suggested that the issues they raised be forwarded to the responsible authority.

The statement spoke of their concerns, as future mothers, about the health of their future partners and off-spring. They asked that the scope of the pre-marital examination be broadened to investigate and screen for other diseases that would adversely affect individuals and the community as a whole, and which may constitute a significant burden and strain on their marriages. They suggested screening for psychological and personality disorders, sexually transmitted diseases, drug addictions, viral hepatitis and human immunodeficiency syndrome. Accordingly, the signed statement was directed to the responsible authorities in the Ministry of Health for consideration.

DISCUSSION
The health and well-being of people is determined by a wide range of economic, social and environmental influences. Activities in many sectors beyond the health sector impact on these determinants of health.

Health impact assessment (HIA) is a participatory approach that encourages people from multiple sectors to work together. This study was done in order to investigate the perception of female university students towards the compulsory premarital screening in KSA. Although the included sample, a group of university students, is not representative of the Saudi population, their perception of and insights into PMS should not be spurned. A previous extensive study had shown that through health education, population screening and genetic counseling of carriers, as well as the prevention of marriages between carriers, it was possible to reduce the homozygous affected births from 53 per 8594 births in 1974 to 0 per 10752 in 1988 and 2 per 10830 in 1990. University students can serve as advocates of awareness in their own communities. The majority of the students were < 25 years old and single. The information provided could assist in making them better aware of the dangers and more selective of their future partners. Religious and ethical considerations in the prevention and management of genetic disorders were extensively reviewed before compulsory PMS was initiated in Saudi Arabia.

The present study revealed that 75.0% supported the compulsory application of PMS. Similarly, in assessing the attitudes of university students in Abha, KSA, in 2002 towards premarital counseling, 70% accepted its application while 17% gave neutral response. However, 13% rejected the idea of premarital counseling. The majority of those who rejected it believed that it interfered with God's will. It was accordingly concluded that this negative attitude was the result of religious misunderstanding, and the respondents could benefit from intensive religious health education. An earlier study in Riyadh in the year 2000, had findings and implications similar to the previous study.

The results of the present study showed different influences in their attitude towards application of PMS. The students indicated that though they had no fear about the investigations, they were apprehensive of the maintenance of confidentiality of results and also felt that abnormal results would create both social and psychological problems. These students can be reassured on the envisaged negative impact of abnormal test results by weighing the adverse effects against the many advantages of PMS including the alleviation of the burden of preventable disorders, would improve their future perception. All respondents asked that the awareness of the general public be raised about the benefits of PMS in KSA, where the rate of consanguineous marriages is high. Previous studies estimated that the rate of consanguineous marriages in KSA is...
unions in KSA constituted more than 50% of all marriages in KSA.\textsuperscript{12-14}

As the second health education lecture was called for by coordinators from special education and humanities departments in King Saud University, more students attended than in the first lecture. The interaction of the audience showed their interest in the subject. The passage of time usually increases people's perception of the benefits of a compulsory legislation that was meant to improve the quality of life of future generations. Nevertheless, a participatory approach that takes on board the views of the community should be encouraged.

The students in the present study demanded the extension of PMS to investigate and screen for other diseases especially sexually transmitted diseases likely to adversely affect the health of individuals and the community. Their anxiety and interest in screening for other diseases may be due to the fact that the majority of the study group were unmarried and may reject proposals of marriage on account of anxiety about the health of their offspring. In addition, it may reflect their knowledge of the effect of globalization on the spread of diseases.

As a matter of fact, premarital screening has now been included in the curriculum of special education, which is a very progressive and encouraging approach. The Health Impact Assessment as defined by the World Health Organization (WHO), calls for the identification of the relevant stakeholders at the initial stage of an assessment. During this process a framework is designed for meaningful consultations, with various responsible authorities and the promotion of the ideas. Female university students were used as study population because women have a stake in this issue. Others with vested interests include the local community (particularly vulnerable groups), planners, local/national Government, health workers at various levels, and decision makers.\textsuperscript{7} As future beneficiaries, students were encouraged to express their opinion on the nature, content and how premarital screening is performed in Saudi Arabia. It was hoped that the consensus statement which had the views of all 319 students, who had signed it would reach the responsible authorities. The statement made no reference to the compulsory status of the policy. It however, asked that the scope of the battery of tests be extended to include the screening of other diseases that they thought likely to undermine their marriages. This view has also been expressed by Al-Swaidi.\textsuperscript{6} The values of health impact assessment include democracy, equity, sustainable development and ethical use of evidence. Democracy dictates that people be allowed to participate in the development and implementation of policies, programmes or projects that impact on their lives.\textsuperscript{6} Because of the lack of adequate quantitative and qualitative evidence, it is hoped that consideration is given to the issues raised when developing future large-scale premarital screening. More analytic and qualitative studies should be encouraged to bring in views of more representative groups of the community. To influence the decision-making process on issues under discussion, it is advisable that recommendations reach the decision-makers before legislations are made.

**CONCLUSION**

This study highlights in general, the positive views of female university students on compulsory premarital screening in Saudi Arabia. However, the results do not reflect the views of the entire Saudi population because of the selective nature of the study. The reservations that few students had on this issue can be addressed by improving the health awareness on certain related issues. In this regard, a concerted effort and the cooperation of the educational, health and social agencies is required. However, appropriate measures could only be taken when the decision-makers are supplied with the necessary evidence from community-based studies.

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