EFFECTS OF MEDIA-BASED EDUCATION ON ADOPTION OF THALASSEMA PREVENTIVE BEHAVIOR AMONG FEMALE HIGH SCHOOL STUDENTS, SARDASHT, KHUZESTAN, IRAN

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ABSTRACT

Introduction: Thalassemia is among the prevalent blood diseases in the world and Iran. It is a congenital and preventable disease. Education is a crucial solution to promote knowledge about Thalassemia and to prevent it among students. The aim of this research is to assess the effect of media-based education on adoption of Thalassemia preventive behavior among the Sardasht (Iran) female high school students in 2013.

Method: In this semi-empirical study, 48 female high school students were selected using census method. Data collection instrument was an author-designed questionnaire. The questionnaire's validity was assessed using content validity method (CVI=0.88, CVR=0.89), and its reliability was calculated by internal homogeneous method (Cronbach's alpha = 0.78). It consisted of 30 questions about knowledge, attitude and behavior, and was distributed before and two months after the intervention. Educational intervention was a compact disc (CD) consisted of introducing Thalassemia, its various types, and transmission and prevention methods. During the procedures, the students were reminded in three-week intervals through SMS. The data were analyzed by SPSS20 and appropriate statistical tests.

Conclusion: The subjects' mean age was 17± 1.5 years. The findings a significant difference between the mean scores of knowledge before and two months after intervention (P= 0.001) so that the subjects knowledge score increased up to 21%. The same is true for the mean
attitude scores before and after intervention (P=0.001) so that the mean score increased up to 7.04%. A meaningful difference was also appeared between the mean scores of practice before and after intervention (P= 0.001) so that the mean score of practice increased up to8.3%. The Mann-Whitney’s test showed a meaningful relation between the students’ study course and their knowledge about the disease (P=0.03).

KEYWORDS: Knowledge, Attitude, Behavior, Multimedia, Self-educational program, Student, Thalassemia.

INTRODUCTION

The existence of 2-3 million living Thalassemia carriers in the country makes the disease one of the most prevalent blood diseases in Iran. It impairs production of globins’ chain in hemoglobin structure; as a result, the effective hemoglobin is not able to supply oxygen to the body organs.[1-5]

Thalassemia is seen among all races; however, it is highly pervasive around the Mediterranean Sea, and the tropical and sub-tropical areas in the African and Asian continents.[1] About 3% of the world population is Thalassemia beta gene carriers.[6-8] In Iran, 10-13% of Thalassemia beta gene carries live in Mazandaran and Golestan Provinces, where the highest level of Thalassemia major in the county is seen Guilan, Hormozgan and Khuzestan Provinces with 7-10% of carriers, and in Fars, Kohkiluye and BoirAhmad, Busheher, and Sistan and Baluchestan Provinces with 5-7% of carriers at the next ranks.[1-4, 8, 9] According to the reports, a Thalassemic patient's health costs equal to US$100,000 in his/her approximate remaining life course (average of 15 years), and since, the number of recorded Thalassemia major cases is 15,000, and the total cost of the patients care during 15 years equals to US$1,5b. The annual cost for each Thalassemic patient is US$6500, while preventing through screening costs is US$2.[3,7,8] Since Thalassemia is a congenital disease, the best curing/coping method is prevention through: 1) no marriage of two Thalassemic carriers (minor) and 2) in case the two Thalassemic carriers (minor) marry, they can choose one the following solutions:

a) refrain from having children, b) adopt a step-child, and c) use before-birth diagnosis services.[3, 12- 14] With regard to the priority of prevention over treatment, many unwanted consequences and side effects of the disease may be prevented. As high school age individuals may have the highest affectivity on their peers and families, and because the health knowledge, which is formed at this age, may have extraordinary effects on the health
educations, and lastly since these individuals are at the eve of marriage, their education may have more effects on the adoption of health behaviors. Therefore, this study aims at assessing the effects of media-based education on the knowledge and health beliefs of female students of Hazart Fatemeh (P.B.U.H.) high school in Sardasht, Khuzestan, Iran. The study has been conducted in 2013.

**Methodology**

This is a pre- and post-semi-empirical study conducted on female grade three students of Sardasht Hazart Fateme high school in 2013, Khuzestan, Iran.

The town has just one female high school whose students participated in the project, totally. Data collection instrument was a researcher-designed questionnaire.

To determine the questionnaire's content validity, the opinions of expert panel were considered. The panel consisted of 10 faculty members of Health Education, Mother and Infant Health, and Obstetrics. The content validity ratio of 0.8 and the content validity index of 0.8 were confirmed, and the apparent validity was confirmed through calculation of efficiency coefficient = 4 and Cronbach's alpha coefficient = 0.78. The knowledge construct consisted of 10 questions with three items of "Yes" (2 scores), "Do not know" (1 score) and "No" (zero). The score scale was 0-20. The attitude construct contained 10 questions with the Likert scale answers of "totally agree" to "totally disagree". The score scale was 10-50. The last section of the instrument consisted of 10 questions about Thalassemia preventive behavior with the score scale of 0-10. Demographic variables of the study included the students' age, kinship relation between parents, Thalassemia record among the family members, and educational course. The mean age of the students was 17±1.5 years.

**Intervention**

We conducted the required coordination with the education and training authorities and the high school's manager to go to the classrooms. The research procedures were explained to the students. The subjects were explained about the project purposes and about how to completing the questionnaire. They announced their consent of participating in the study.

Following the pre-test, a self-education CD with Thalassemia content was prepared and distributed among the test group members, and the way of its application was explained. The CD content consisted of definition of the disease, types of transfer and prevention methods,
as well as the references and a survey on the related texts. The students were due to use the CD at home. The high school principal reminded the students in various intervals to study the content and apply the package. Also the students were reminded in three-week intervals to use the package through sending SMS. Two months after the intervention, once again the questionnaire data were collected through re-test, and analyzed using SPSS-20, non-parametric Wilcoxon test, and Kruskal-Wallis test.

The ethic considerations including the students’ and their parents' perfect consent, the right to leave the study, rendering un titled questionnaire, and privacy right were observed perfectly. The project was also approved by the Medical Ethics Committee of Tarbiat Modares University (Tehran, Iran) in 2012.

FINDINGS AND RESULTS

The student's mean age was 17±1.5 years, education level of the fathers was 3% (higher education), 64% (below diploma) and 33% (illiterate). The fathers were mostly farmers (85%) and the remainder worked in the private section. The families' average income was 8 million Rials monthly. According to the students' reports, 8.3% of the families suffered from the disease and 39.6% of the parents had kinship relation. Studies on the relation between demographic data and the considered constructs (knowledge, attitude and practice) revealed that the study course is the only characteristic with a meaningful relation (P<0.05) so that the students in Empirical Sciences course (29.12±2.3) had higher knowledge than those in Literature and Humanism courses (25.53±2.1) and other courses (15.50±2). The difference is significant statistically (P<= 0.05), so the knowledge level can be ranked based on the students' study courses as Empirical Sciences, Literature and Humanities, and other courses, respectively.

Table 1: Comparison of the mean scores of knowledge, attitude and practice before and after intervention

<table>
<thead>
<tr>
<th>Intervention Time</th>
<th>Average (n= 48)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Knowledge</td>
</tr>
<tr>
<td>Before intervention</td>
<td>12.85±2.93</td>
</tr>
<tr>
<td>After intervention</td>
<td>17.1±2.68</td>
</tr>
<tr>
<td>Meaningfulness level</td>
<td>P= 0.001</td>
</tr>
</tbody>
</table>

* Wilcoxon test
DISCUSSION

High prevalence of Thalassemia in Iran, especially in Khuzestan Province\[^{6, 8}\], high costs of treatment of Thalassemia major patients (about $15000) and the considerable expenses of these patients (about $6000)\[^{11, 12}\], as well as the social problems, the mental burden of families and lack of certain treatment make us assume it as the top health priority to be prevented. One of the basic prevention axes is concentration on public education, and the most important target group is female grade-three high school students because they are in pre-marriage age and are proper conveyers of educational subjects to the families.

The aim of this study is to consider the effect of education on knowledge, attitude and practice of grade-three high school students in Sardasht. The findings revealed that applying the self-education packages may promote the above mentioned variables. Our findings are consistent with the results of study that emphasized on multimedia application in enhancement of public knowledge about Thalassemia.\[^{16}\] Moreover, results of a study on Thalassemia control and prevention in Bangladesh showed that multimedia application has been useful in promotion of the target group's knowledge.\[^{17}\] The findings of a study in Boston University confirmed the efficiency of multimedia-based education in increasing the students' participation, knowledge and attitude.\[^{18}\] Our findings also show that apply of multimedia can promote knowledge and change the attitude and improve the participation in the students. In addition, a study show the effect of educational assessment through multimedia on AIDS prevention among the university students.\[^{19}\] In a research under the title of "Is video type efficient in enhancement of individuals' knowledge and attitude?" explain that apply the video types improve students' knowledge.\[^{20}\] Conclude of a study showed that use of the multimedia sources are efficient in development of individuals' knowledge.\[^{21}\] Our findings confirmed this results too. Results of a study in Poland "Multimedia intervention in reduction of smoking behavior among adults", the positive effect of the intervention on attitude and behavior change was confirmed.\[^{22}\] And another in Saint Bernardino University studied the effect of multimedia program on prevention of fetal alcohol syndrome, and revealed that the program has been efficient in knowledge promotion.\[^{23}\] Results of a investigation showed that apply of media adoption is effectiveness on increasing the level of knowledge and attitude, and showed that TV is the most efficient media in this regard.\[^{24}\] Also a study on 600 female students in Khalkhal (Iran), during which education was in the form of lecture and distribution of pamphlet and discussion. The results revealed that media-based education concerning the anemia was efficient in promotion of the
students' attitude.[25] And a study suggested that apply of health programs can enhance students' practice and attitude toward nutrition.[26] In this study, we showed that the media-centered educational package affected the Thalassemic students' practice change; this finding is in agreement with the results of many other researchers including the results of the study about evaluated the preventive multimedia program prepared to encounter violence among adults, concluded that the media slightly changed the subjects' behavior, self-awareness and attitude.[27] The reason may be the habitual traits of some behaviors such as violation. Such behaviors are too complex and multifaceted, which are not bound to knowledge or lack of knowledge; rather they depend on many factors. A investigation claims that multimedia and computer-based educations affect individuals' practices concerning disease prevention.[28] A study in Cyprus showed the affectivity of multimedia-based education on Thalassemia related behaviors of the individuals at the ever of their marriage.[29] Also a study is showed that education through imagery media has been effective in promotion of the students' mouth and tooth health practice.[2] The results of a study under the title of "Comparison of knowledge, attitude and behavior among primary school students, concerning their nutrition in South Korea", emphasized on the considerable effect of multimedia-based education on the subjects' nutrition behavior, attitude and knowledge.[30] And result of a study considered the problem of nutrition intervention through distribution of an education compact disc(CD) on the students' nutrition behavior, and concluded that the media is not sufficient by itself[31], this is not in conformity with our findings. The reason may be rooted in food stimulus characteristics, and delicious food is an intervening factor in behavior change, which may not be easily controlled.

**CONCLUSION**

In the present research, applying the multimedia educational package was signifiicantly efficient in promotion of the students' knowledge, attitude and practice toward Thalassemia, and ultimately led to an acceptable and positive practice, concerning Thalassemia preventive behavior.

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