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ORIGINAL ARTICLE

Syrian refugee mothers' knowledge levels of childhood wellness: a program evaluation

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ABSTRACT

Background: Children are most affected by migration and wars. The health of child asylum seekers is adversely affected due to poor nutrition, malnutrition, insufficient vaccinations, and a lack of preventive health-care services (PHCS). The aim of this study was to determine the knowledge levels of the refugee mothers of child wellness monitoring, child vaccinations, and the importance of breastfeeding before and after implementation of an educational program. **Materials and Methods:** A questionnaire consisting of 12 statements about the importance of child wellness monitoring, child vaccinations, and breastfeeding was prepared and translated into Arabic. Refugee mothers were asked to complete the questionnaire before and after the education program. **Results:** Thirty-one (72.1%) of the 43 participating mothers had their children vaccinated regularly. Vitamin D supplementation was given to 58.1%, and 23.1% were started on iron supplementation. The rate of vitamin D supplementation was higher in the literate mothers (P = 0.010). The least correctly answered statement before the education program was related to iron supplementation (n = 24, 55.8%). The mean (standard deviation) number of correct answers given by the participating mothers to the 12 statements before the seminar was 9.16 (±2.05), this increased to 11.16 (±0.99) after the seminar. **Conclusion:** The results of this study show that refugee mothers' knowledge levels about vitamin D and iron supplementation are quite low. Their knowledge levels can be increased in the short term by providing information in the mothers' native languages.

Key words: Child health, mothers, primary health care, refugee

INTRODUCTION

Since the civil war that began in 2011, millions of Syrians have been forced to migrate to neighboring countries, especially Turkey, Lebanon, and Jordan. However, Turkey has the highest number of Syrian refugees.[1-3] Women and children make up more than one half of the Syrian population that is migrating abroad. Children are most affected by migration and wars. The health of refugee children is adversely affected due to poor nutrition, malnutrition, unhygienic living conditions, insufficient vaccinations, psychological disorders due to trauma, and a lack of preventive health-care services (PHCS).[4-9]

Among the services provided to refugees in the countries of migration, PHCS is one of the areas with the most disruption. Studies have shown that the rate of refugees presenting for PHCS is extremely low. Some of the reasons for this are the refugees' financial and

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language barriers, lack of knowledge about the services, and not being able to understand the importance of PHCS.[10-12]

The aim of this study was to determine the baseline knowledge levels of the refugee mothers for children admitted to our hospital between 1 and 24 months of age in terms of child wellness monitoring, child vaccinations, and the importance of breastfeeding. In addition, the knowledge levels of the mothers before and after an educational program were compared.

MATERIALS AND METHODS

The study was planned prospectively on Syrian refugee mothers whose children were inpatients at the University of Health Sciences, Ankara Child Health and Diseases Hematology Oncology Training and Research Hospital, which is a tertiary pediatric hospital in Ankara, Turkey, between August 2018 and May 2019. The mothers of infants with chronic diseases were excluded from the study. The demographic characteristics of the participating mothers and infants were recorded. In addition, a questionnaire consisting of 12 statements about the importance of child wellness monitoring, child vaccinations, and breastfeeding was prepared [Table 1]. These expressions were translated into Arabic by a native Arabic speaker, and the participating mothers were asked to answer these statements as "true," "false," or "I do not know." The illiterate mothers were provided with an interpreter to complete the questionnaire. The correct answers were not provided with the mothers after the preprogram questionnaire. After the questionnaires were completed, the refugee mothers, in groups of two or three, were given a training seminar with the same interpreter, lasting approximately 30 min. In the seminar, refugee mothers were given information on child wellness monitoring, child vaccinations, breastfeeding, and health-care services in Turkey. At the end of the seminar, the refugee mothers were asked to complete the same questionnaire again. The answers given before and after the seminar were then compared. Finally, the relationships between the vitamin D supplementation, the children's vaccination status and the mother's literacy status, and the number of children she had, were examined.

Informed consent was provided by the participants before they started the study. This study was approved by the local ethics committee (Protocol no. 2018–142).

The Statistical Package for the Social Sciences software, version 18.0, for Windows (SPSS, Chicago, Illinois) was used for the statistical analysis. In the evaluation of the study data, in addition to descriptive statistical methods (mean, standard deviation [SD], and frequency), the Student's *t* test was used for the comparisons of the quantitative data. The Mann–Whitney *U* test was used for the comparisons between the groups that did not show normal distributions. The χ^2 test was used to compare the qualitative data, and the Pearson correlation test was used for the correlation analysis. Significance was accepted at a *P* value of less than 0.05.

RESULTS

The mean (SD) age of the 43 mothers included in this study was 23.86 (±4.62) years. Although 36 (83.7%) of the mothers knew how to read and write in Arabic, 7 (16.3%) did not. The average number of children that each mother had was 2.69 (±1.71) (range, 1–7). The mean age of infants was 6.46 (± 5.33) months, and 23 (53.5%) were males. Twenty-five (58.1%) of the babies were born via the vaginal route, and all babies were born in a hospital. Twenty-two (51.2%) of the mothers were married to first-degree cousins.

At the time of the study, 14 (32.6%) of the 43 infants were given complementary feeding (introduced minimum of 5 months, maximum of 11 months). The mean breastfeeding duration of the participating mothers was 4.97 (±4.28) months.

When the inpatient diagnoses of the refugee children were examined, 22 (51.2%) of the patients were hospitalized with

Table 1: Statements provided to the participating mothers

1. A baby should be breastfed within the first half hour after birth.
2. The most ideal nutrient for newborn babies is breast milk.
3. The immune system nutrients in breast milk protect the baby against diseases.
4. Only breast milk should be given to babies for the first 6 months, unless there is a medical necessity.
5. Breastfeeding the baby along with complementary foods should be continued until the age of 2 years.
6. Vaccines are protective against serious infectious diseases.
7. There may be a slight fever, pain, redness, and swelling after a vaccination.
8. Vaccines are provided free of charge at health institutions in the Republic of Turkey.
9. Emergency situations are reported via the 112 emergency ambulance services in the Republic of Turkey.
10. Syrians under temporary protection may present directly to institutions affiliated with the Ministry of Health without paying any fees.
11. It is important to give my child three drops of vitamin D every day after birth.
12. When the baby is 4 months old, I need to provide iron supplementation. I can obtain iron medicine free of charge from health institutions.

respiratory tract infections, 7 (16.3%) were hospitalized with convulsions, 3 (7%) were hospitalized with fever, and 2 (4.7%) were hospitalized with nutritional rickets, trauma, and metabolic diseases [Figure 1].

Thirty-one (72.1%) of the total participating mothers had their children vaccinated regularly. Vitamin D supplementation was given by 25 (58.1%) of the mothers. Six of the 26 mothers (23.1%) whose babies were 4 months old and older had begun iron supplementation. No significant difference was observed between literate and illiterate mothers in the rate of vaccination of their children (P = 0.059). The rate of vitamin D supplementation was higher in the literate mothers (P = 0.010). No significant difference was observed between the mother's number of children and their child's immunization status and vitamin D supplementation (P = 0.597 and P = 0.531, respectively).

The least correctly answered statements before the seminar were related to iron supplementation, and the fact that the refugees could benefit from the health facilities free of charge (n = 24 and n = 25, respectively). The mean number of correct answers given by the participating mothers to the 12 statements before the seminar was 9.16 (±2.05), which increased to 11.16 (±0.99) after the seminar. A significant difference was found between the pre- and post-seminar number of correct answers (P <0.001). A significant increase was observed in all the answers after the seminar, with the exception of statements two and seven. There was a positive difference in all of the other statements [Table 2].

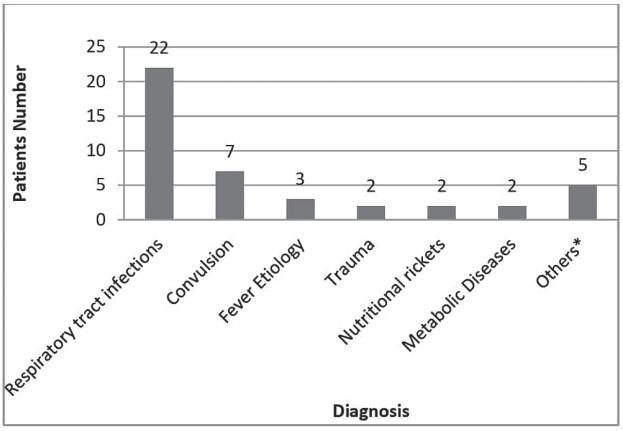

Figure 1: Distribution of children's admission diagnoses. *Iron deficiency anemia, urinary tract infection, nausea-vomiting, myocarditis, and malnutrition

DISCUSSION

The primary health problems for refugee children in migrant countries are infectious diseases, nutritional deficiencies, and incomplete vaccinations. Unfortunately, refugee children are at risk for vaccine-preventable diseases.[8,13,14] In one study evaluating 1001 refugee children, it was found that the vaccinations were inadequate in 72% of them.[15] However, in our study, 31 (72.1%) of the children were vaccinated regularly. This result may be due to the small number of participants included in the study, the fact that all of the babies were born in the hospital, and the fact that the study group consisted of the first 2-year-old children who received the most intensive vaccination program of the Ministry of Health. In our country, every baby born in the hospital is issued a vaccination card, and the mothers are informed about when the vaccinations will be given. Despite that, 12 (27.9%) of the children lacked vaccinations. This could be due to inadequate maternal education on the importance of vaccines or lack of access to health care.

Nutritional deficiencies are more common in refugee children. Vitamin D deficiencies and iron deficiencies are common noninfectious diseases in refugee children.[13,16] In addition, nutritional rickets is more common in refugee children. In two different studies evaluating children with rickets in Australia and Denmark, approximately 75% of the children were found to be refugees.[17,18] In our study, two (4.7%) of the children were hospitalized with nutritional

Table 2: Number of correct answers and *P* values of the participating mothers before and after the seminar

Statement	Frequency of correct answers before seminar % (*n*)	Frequency of correct answers after seminar % (*n*)	*P* value
1	83.7 (36)	93 (40)	0.046
2	97.7 (42)	100 (43)	0.317
3	88.4 (38)	100 (43)	0.025
4	69.8 (30)	88.4 (38)	0.023
5	67.4 (29)	88.4 (38)	0.004
6	83.7 (36)	97.7 (42)	0.020
7	86 (37)	90.7 (39)	0.317
8	86 (37)	100 (43)	0.020
9	72.1 (31)	86 (37)	0.014
10	58.1 (25)	86 (37)	0.001
11	65.1 (28)	97.7 (42)	0.000
12	55.8 (24)	86 (37)	0.001

rickets. Twenty-five (58.1%) of the refugee mothers provided vitamin D supplementation, and 23.1% provided iron supplementation. One of the least correctly answered statements in the questionnaire at the beginning of the study was about iron supplementation. On the basis of these results, we believe that the refugee mothers are insufficiently informed about vitamin D and iron supplementation. The mothers should be provided with more information about these supplements.

Refugees have health problems due to their financial challenges, language barriers, not knowing where to access health care, and not knowing the importance of PHCS.[10-12] In a study conducted in Canada, it was concluded that if refugee mothers were provided with detailed information about vaccinations, the mothers would follow the recommendations of the health professionals.[19] In our study, the mean number of correct answers given by the participating mothers to the 12 statements before the seminar was 9.16 (± 2.05), whereas after the seminar, this increased to 11.16 (± 0.99). A significant difference was found between the pre- and post-seminar answers. Moreover, a significant difference was observed between the mothers' correct answers to 10 of the statements before and after the seminar. Therefore, to see a significant increase in the level of knowledge of the refugee mothers, it is very important to conduct a seminar for them in their native language.

Within the scope of this study, we have a few suggestions for reviewing the health policies of the countries in which the refugees live most intensively:

- All newborns should be registered at primary health-care institutions, and vaccination cards should be issued.
- Brochures describing healthy child follow-ups, children's vaccinations, and the importance of iron and vitamin D supplementation should be prepared in the mothers' native languages.
- Refugee children should be screened for nutritional deficiencies.

Some of the limitations of our study were that it reflected single-center data, the number of participants was low, and the blood values of the children included in the study were not evaluated. At the end of the seminar, the refugee mothers were asked to complete the same questionnaire again due to the possibility of not reaching refugee mothers after discharge, so long-term effects of seminar could not be evaluated.

The results of this study show that refugee mothers' knowledge levels about vitamin D and iron supplementation are quite low. Their knowledge levels can be increased in the short term by providing educational program in the mothers' native languages. Communicating with refugees in their native languages is important in this respect.

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Conflicts of interest

There are no conflicts of interest.

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