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Evaluation of folic acid and iodide supplementation in women with Turkish migration background before and during pregnancy

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Summary

Iodine and folate are of crucial importance for pregnant women. 65 pregnant women and mothers with Turkish migration background living in Fulda were interviewed concerning their knowledge in the necessity and the usage of iodine and folic acid supplements during pregnancy. 89 % of the respondents stated that they had been using at least one supplement before/during pregnancy. This proportion is relatively high but differs essentially from the proportion of women who had been taking folic acid and iodide according to the recommendations (27 %), which is particularly up to the low preconceptional rates. The results indicate a need for information on adequate supplementation especially before conception in women with Turkish migration background in Fulda.

Keywords: iodide, folic acid, pregnancy, migration background, dietary supplements

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Introduction

During pregnancy, the requirement of folate and iodide among other nutrients is increased compared to non-pregnant women. Mostly it cannot be met by food intake. Therefore, the German Nutrition Society (DGE) and the Federal Institute for Risk Assessment (BfR), inter alia, recommend the ingestion of suitable dietary supplements in addition to a folate-rich and iodine-adequate diet [1, 2].

The intake recommendations for iodine for women aged 19–51 years are 200 µg/day, 230 µg/day for pregnant women [3]. According to the results of the National Nutrition Survey II, the intake of iodine is 70–78 µg/day in women aged 19 – 50 years, whereby iodised salt and foods produced with iodised salt are not included [4]. Taking into account a general fortification of all mixtures and recipes with iodised salt, an intake of 173–200 µg/day iodine (age group 19–50 years) is calculated. It can be assumed that the real intake of iodine lies within the range with and without the consumption of iodised salt [5]. The intake of iodine is below the reference value. Even in non-pregnant women, the intake of iodine can be classified as critical. Women using supplements with iodide have an intake of 160 µg/day, which is, however, below the corresponding DACH reference value [4]. From the beginning of their pregnancy, healthy pregnant women should supplement 100 (to 150) µg iodide once a day. In case of thyroid diseases, the physician in charge is to be consulted [6].

The DACH reference value for pregnant women is 550 µg folate equivalents/day [3]. Even in non-pregnant women, the intake of folate is considered critical [4]. According to the DACH reference values, women who want to be or could be pregnant should take 400 µg synthetic folic acid per day in form of a supplement in addition to a folate-rich diet to prevent the foetus from neural tube defects. This extra intake of a folate supplement should start at least four weeks before the beginning of the

pregnancy and should be continued during the first trimester of pregnancy [3]. The median folate intake of women aged 19 – 50 years is 170–185 µg/day [4].
Compared to the majority of the population, people with migration background (MB) often show a more adverse health behaviour and a lower use of preventive offers due to cultural differences in the perception of health and disease, language barriers, information gaps, and a lower social status among others [7]. Most of the people with MB living in Germany come from Turkey [8]. To date, studies of supplementation practice in women with Turkish MB do not exist.

Objective

The study aimed at evaluating the supplementation practice of folic acid and iodide before and during pregnancy in women with Turkish MB in Fulda. With the results, the specific demand of health promotion measures for women of this population group in Fulda was to be derived.

Method

After a pretest, a retrospective survey was conducted using a standardised questionnaire in 65 pregnant women and mothers with Turkish MB in Fulda in October and November 2014. This questionnaire was filled in by instructed interviewers being familiar with the place. They had fluent German and Turkish language skills and knew the people with Turkish MB living in Fulda. Around one third were interviewed personally and around two thirds by telephone interview. During the individual interviews, the women had the chance to ask questions.

The interviewers recruited the women in choosing them randomly from their circle of acquaintances. Only women from Fulda and surrounding area, being pregnant (any trimester) or mother of a child aged at most two years at the time of the survey and having a Turkish MB were allowed to participate in the study. In the present study, people with MB were defined according to the Federal Statistical Office, whereby this group comprises all foreigners and naturalised former foreigners, all Germans who themselves immigrated to the present Federal Republic of Germany after 1949, and all who were born as Germans in Germany with at least one parent who immigrated to Germany or was born as foreigner in Germany [8]. Hence, for the recruitment it was substantial that the country of birth of the women or at least one parent was Turkey. The willingness to participate was 100 %.
The questionnaire in German and Turkish language covered 27 questions. For the aim of the study, 18 questions were included. Four questions dealt with used and preferred sources of information for supplementation regarding pregnancy. Five questions related to the supplementation of vitamins and minerals. For reasons of simplification for the participants, categories of the intake frequency of a single dose ("once a daily", "less frequently than once a day or irregularly," and "never") referring to different time periods before and during pregnancy were evaluated for iodide and folic acid. Furthermore, information on the name of the product of the used mono or combination preparation was required. Reasons for incorrect use or disuse were inquired. Five questions on socio-demographic data as well as four general questions about pregnancy, inter alia, were asked. The questions were predominantly closed or half-open. Partly, multiple answers were possible.

The programme IBM SPSS Statistics, version 22 was used to prepare and evaluate the data. All of the included questionnaires were analysable. In case of uncertainties, the interviewers were contacted and amendments were done if necessary. Information and calculations considering a specific time period within pregnancy were not taken into account in women who had not completed the respective time period.

Results

9 women were pregnant and 56 women were mothers at the time the survey was conducted. The average age of the 65 participating women was 31.2 years (19–44 years, standard deviation [SD] 5.3). 55 % of the women were born in Germany. The average duration of stay in immigrated women was 16.7 years.
89 % of the participants stated that they had gotten information on the use of supplements for pregnant women. Of those, 91 % had received it from a physician, 16 % from a midwife, 12 % from family members and 9 % from a pharmacy (multiple answers possible). In case of information sources, the preferred language for 52 % was German, for 29 % Turkish and for 19 % both languages. 67 % mentioned the internet and 43 % brochures or flyers as attractive information medium (multiple answers possible).
A total of 89 % of the respondents indicated that they had been using dietary supplements before/during pregnancy. In case of folic acid (◆ Figure 1), the proportion of the respondents who had been using supplements was generally a bit higher compared to iodide (◆ Figure 2). The proportion of mothers among the respondents who had been using folic acid four weeks before until three months after the beginning of the pregnancy,

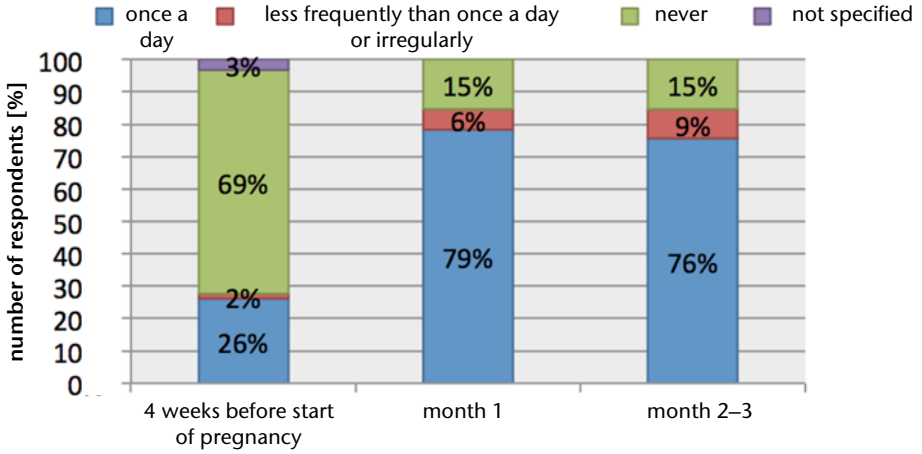

Fig. 1: **Folic acid supplementation before/during pregnancy (n = 65)**

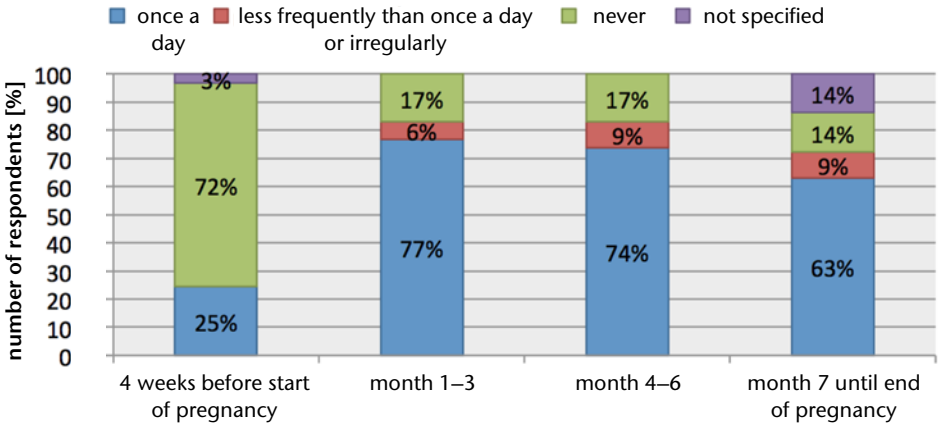

Fig. 2: **Iodide supplementation before/during pregnancy (n = 65)**

and iodide from the beginning until the end of the pregnancy on a daily basis, was 27 %. A part of the respondents (n = 32) who had not been supplementing or supplementing inadequately before/during pregnancy gave reasons for it. The most common reasons of these women were the following: pregnancy had not been planned or discovered late (34 %), women believed that important vitamins and minerals were already part of the diet (25 %), and/or thought their state of health was good (13 %), ignorance (9 %) or a lack of financial means (9 %) (multiple answers possible).

Discussion

Most frequently, the interviewed women received information on the supplementation of folic acid and iodide when personally dealing with medical staff (physician, midwife). In a study on iodine prevention in 2011, Röhl and Schücking showed that the direct recommendation for supplementation – usually by the gynaecologist – is the substantial influencing factor for implementing supplementation [9].

The rate of supplementation in women with Turkish MB (89 %) is lower than the number found in a study from Becker et al. (97.1 %) who surveyed the supplementation practice of 522 women in maternity wards in the area of Munich. In this collective, 72.8 % of the women had German and 27.2 % another citizenship [10].

Only a good quarter of the respondents of the present study used both nutrients every day during the entire recommended time period, which can be ascribed to the low preconceptional intake of folic acid. In this regard, the proportion of a good third of the respondents who stated that they had not planned the pregnancy or had discovered it late, seems relevant.

Particularly for folic acid, the low percentage of the preconceptional intake can be seen as critical because it is essential for the preventive potential and the risk reduction of a neural tube defect. Thus, the information of all women at childbearing age plays an important role [11]. Similarly low supplementation rates of folic acid (26 %, ◆ Figure 1) were also reported when evaluating the results of the programme „BabyCare“ in 2003. At that time, only 31.7 % of the women had been supplementing folic acid before pregnancy [12]. Becker et al., too, found a supplementation rate of 33.7 % for folic acid before pregnancy in their study in 2009 [10].

In case of iodine, the supplementation rates of 63–77 % during pregnancy are comparable with the results of Becker et al. (77.2 %) [10]. In order to ensure the intake of iodine for the foetus and the infant, recommendations for the supplementation of iodine for pregnant and breastfeeding women should be forced specifically in the future [13].

Limitations

The study shows limitations due to the small sample size, the selection of the respondents which was not random but made by the interviewers, the retrospective data collection, as well as possible interviewer effects that could have occurred during filling in the questionnaires (by the interviewers) among others.

Conclusion

It is recommended to offer women with Turkish MB in Fulda information on the use of dietary supplements in the form of print media and/or a homepage in German and Turkish language. The information should be disseminated in cooperation with appropriate multipliers such as gynaecologists and general practitioners, midwives, schools (e.g. biology class) and special facilities for migrants. The information should be adjusted according to the needs of the particular target groups:

- prevention in adolescents at school and
- women at childbearing age.

Conflict of interest
The authors declare no conflict of interest.

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