

Nutritional habits in the light of general health behaviours of pregnant women

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Abstract

Introduction and objective. Teaching pregnant women behaviours connected with care for one's health condition and a healthy lifestyle is crucial in perinatal care. Desired health behaviours, including nutritional habits, play an important role in the health of the mother, as well as the proper development of the foetus. The aim of the presented study was to analyse the subjective assessment of nutritional habits in the light of general health behaviours of pregnant women.

Materials and method. Research was conducted on a sample of 81 women in Szczecin. The methodological basis for investigation was Juczyński's Health Behaviour Inventory (HBI). General index of intensity of health behaviours (GIIHB) was calculated by adding the results for all the 24 statements included in the HBI. Four categories of health behaviours were analysed separately: proper nutritional habits, preventive behaviours, positive thinking and health practices. The study presents the analysis of proper nutritional habits (PNH) in the light of GIIHB of women attending antenatal classes.

Results. Results indicate that the PNH of pregnant women displays a positive correlation with their GIIHB ($r=0.654$; $p<0.05$). It is also shown that the PNH ($r=0.26$, $p<0.05$) and GIIHB ($r=0.35$; $p<0.05$) are related to the age of pregnant women participating in antenatal classes.

Conclusions. Research indicates the need for education of pregnant women, initiatives and campaigns aimed at propagating and promoting proper health behaviours, including nutritional behaviours. There is a positive relationship between the PNH of women participating in antenatal classes and their GIIHB. Such measures should be addressed to women regardless of whether they participate in antenatal classes or not, and regardless of their age or level of education.

Key words

Pregnant women, health behaviours, eating habits

INTRODUCTION

Teaching pregnant women behaviours connected with care for one's health condition and a healthy lifestyle is crucial in perinatal care. The desired health behaviours, including proper nutritional habits, play an important role in the health of the mother, as well as the proper development of the foetus [1,2]. Adequate weight gain in pregnancy reduces the risk of obesity and overweight in offspring [3]. Also, high BMI scores can result in complications in pregnancy, delivery, and puerperium [4]. Factors often influencing eating habits, and consequently weight gain in pregnancy, include age, BMI before pregnancy, the number of children born previously, level of education, and socio-economic status [5,6].

The results of research conducted in the UK [7] indicate that only a small percentage of women who had been planning to become pregnant, actually followed the nutritional recommendations during pregnancy. Other publications present special nutrition advice for women with a multiple pregnancy [8,9], as well as information on the recommended consumption of fats during pregnancy and lactation [10]. Jones [11] noted that only as few as 37.3% of women were aware of the need for a special preconception diet. Only a small percentage of pregnant women [11,12] know how important it is to take folic acid supplements before pregnancy, and they still do not follow the recommendations [12]. A large-scale study in China [13], with 726 participants (60.5% from urban and

39.5% from rural areas) shows that only 37.9% of the surveyed women took folic acid supplements before pregnancy. The authors point out that there is a higher proportion of women living in the cities (81.8%) than those from the rural areas (57.8%) that take supplements before and during pregnancy. The major problems revealed in the research were low daily intakes of protein, calcium and microelements [13].

Polish research results also show [14, 15, 16, 17, 18] that pregnant women do not take enough folic acid supplements. They also consume too little fruit, vegetables, milk, and fish, and too many sweets. What must be emphasized is that an inappropriate diet, low in nutrients, often entails anaemia [19].

Some authors [16, 20, 11, 21, 22] note that the differences in nutritional habits are related to age and level of education, with young and uneducated women more frequently committing nutritional mistakes. Many publications [23, 19, 17, 10, 7, 11, 13] highlight the need for individual counselling, educational initiatives, and promotion of proper nutritional habits among pregnant women.

Objective. The aim of the presented study paper was to analyse the subjective assessment of nutritional habits in the light of general health behaviours of pregnant women participating in antenatal classes.

MATERIALS AND METHOD

Research was conducted on a sample of 81 women in the third trimester of pregnancy, participating in antenatal classes held by 4 schools in Szczecin. The respondents

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were 21–39 years of age ($\bar{x}=29.2$ SD=3.5), 91.4% of them with higher education and 8.6% with secondary education. The majority of the participants (92.6%) were residents of Szczecin, with only 7.4% coming from the surrounding areas. The research plan was approved by the Bioethics Committee of the Pomeranian Medical University in Szczecin (KB-0012/142/10). The methodological basis for investigation was Z. Juczyński's [24] Health Behaviour Inventory (HBI). General index of intensity of health behaviours (GIIHB) was calculated by adding the results for all the 24 statements included in the HBI. The obtained GIIHB oscillated between 24–120 points. The results were then converted to standard units, and interpreted in terms of the Sten score system [24].

According to the guidelines presented by the author of the questionnaire, the respondents were divided into 3 groups: with a high GIIHB (H) – 7–10 stens, average GIIHB (A) – 5–6 stens, and low GIIHB (L) – 1–4 stens.

Four categories of health behaviours were analysed separately: proper nutritional habits, preventive behaviours, positive thinking and health practices.

The presented study examines the category of 'proper nutritional habits' (PNH), which according to Juczyński [24] takes into consideration mainly the type of foods consumed (e.g. wholegrain bread, vegetables or fruit), and calculated as a mean value of the results in the analysed category (ranging from 1.0–5.0), following the adopted diagnostic key. The higher the result, the healthier the eating habits. The obtained PNH index was also interpreted in the light of the general health behaviours (GIIHB) of the women participating in antenatal classes. In the statistical analysis, Pearson correlation coefficient and Kruskal-Wallis test were employed.

RESULTS

Analysis of results (Fig. 1) shows that over half of the respondents (55.6%) exhibited a high GIIHB, 32.1% were characterised by an average GIIHB, and the GIIHB of 12.3% of the women was low.

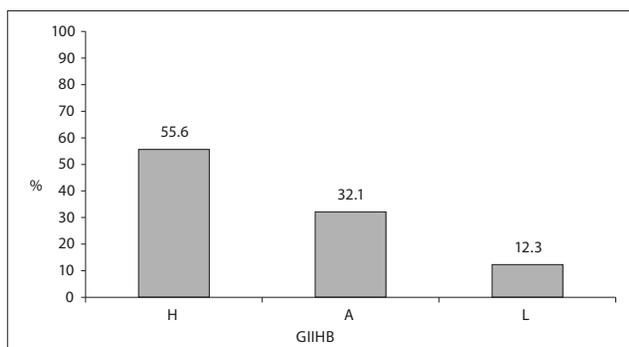


Figure 1. Percentage of pregnant women with high (H), average (A) and low (L) general index of intensity of health behaviours

The obtained GIIHB turned out to be related to the age of the respondents ($H=17.28$; $p<0.001$). A statistically significant difference was observed between women who exhibited the lowest GIIHB ($\bar{x}=25.2$ yrs old) and the remaining groups with an average ($\bar{x}=29.0$ yrs old) and high GIIHB ($\bar{x}=30.2$ yrs old). This means that the lowest GIIHB was found in the youngest group of women (Fig. 2).

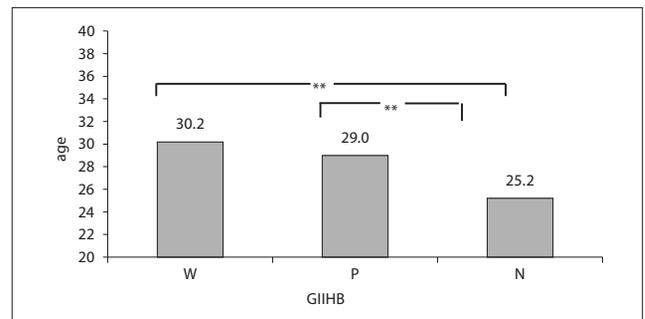


Figure 2. Mean age of participants in relation to general index of intensity of health behaviours: high (H), average (A) and low (L)
** level of statistical significance between the groups 0.001

It was also found that there was a positive relationship between the age of the respondents and their GIIHB ($r=0.35$; $p<0.05$), as well as between age and the category of PNH ($r=0.26$; $p<0.05$). It was observed that the older a woman, the higher her scores, both in PNH and in GIIHB (Fig. 3).

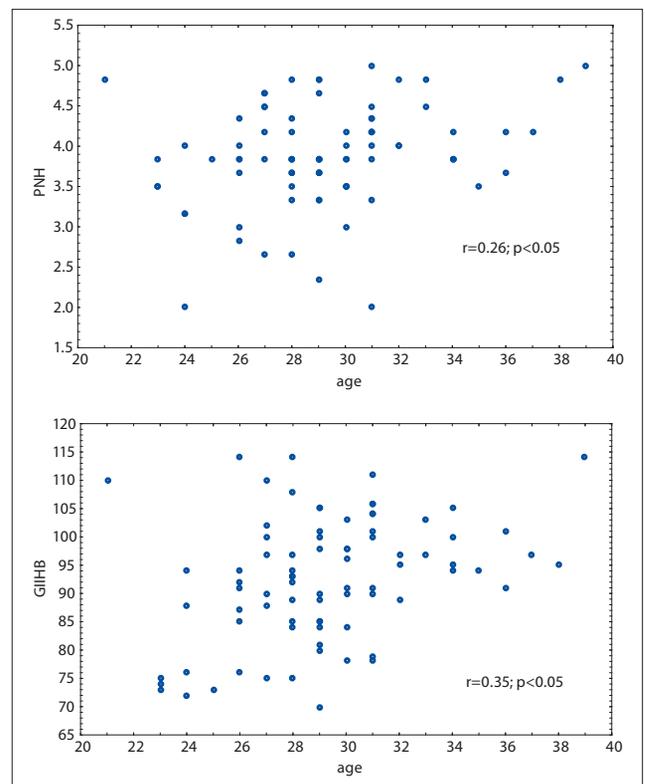


Figure 3. Relationship between age of pregnant women and proper nutritional habits (a) and between age and general index of intensity of health behaviours (b)

The relationship between the PNH index and GIIHB in the investigated sample was analysed. Pearson correlation analysis revealed a positive relationship ($r=0.654$; $p<0.05$) between these two factors (Fig. 4).

Taking into consideration the positive relationship between the two investigated factors, the nutritional behaviour results were analysed in the light of the three GIIHB groups (high, average, and low) (Fig. 5).

In accordance with expectations, there was a statistically significant difference between women with a high GIIHB ($H=32.98$, $p<0.001$) and the remaining part of the sample. The former were also characterised by the highest mean value

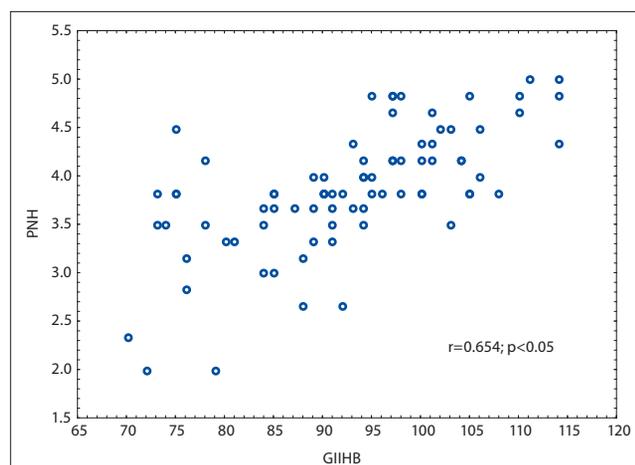


Figure 4. Analysis of Pearson correlation between general index of intensity of health behaviours and index of proper nutritional habits in the investigated sample of pregnant women

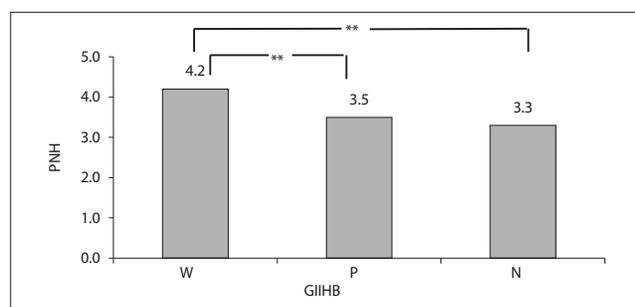


Figure 5. Mean value of index of proper nutritional habits in respective groups of general index of intensity of health behaviours (low, average and high)
** level of statistical significance between the groups 0.001

of PNH (4.2 ± 0.8), while the lowest index of PNH was found in pregnant women with a low GIIHB (3.3 ± 0.5). However, no statistically significant difference was found between women with an average and low GIIHB.

A detailed analysis of eating habits revealed that women with a high GIIHB more often avoided food with preservatives ($H=25.45$; $p<0.001$), salt and salted foods ($H=19.73$; $p<0.001$), and at the same time they ate more wholegrain bread ($H=16.51$; $p<0.001$) than women with a low and average GIIHB. There was a difference between women with a high and average GIIHB in the amount of animal fats and sugar they consumed, as well as in the general care for proper nutrition ($H=12.34$; $p<0.001$ and $H=10.20$; $p<0.001$, respectively). There were no significant differences as far as the consumption of fruit and vegetables were concerned ($H=1.08$; $p>0.05$).

DISCUSSION

Some researchers emphasize that a significant percentage of Polish women possess only a fragmentary knowledge of the influence of proper nutrition on the course of pregnancy and the health of their child. It has been noted that about a quarter of women do not follow the rules of healthy eating before becoming pregnant [21], and the same is true for the period of pregnancy [25, 14]. Other authors, in turn, indicate that pregnant women exhibit a high [26] or at least satisfactory [15] level of knowledge about general nutrition

rules during pregnancy. Some research results [27, 22] show that pregnancy and puerperium can contribute to an improvement in women's eating and hygiene habits. A pregnant woman's lifestyle can be modified by socio-economic factors, as well as the course of pregnancy itself [25]. Nevertheless, other studies indicate that there are no significant differences in individual behaviours of women with high risk and low risk pregnancy, respectively [28].

The presented study assessing current health behaviours shows 55.6% of the respondents had a high general index of health behaviours. It is interesting that according to Pilch [15], healthy pregnant citizens of Szczecin tend to possess a satisfactory knowledge of healthy nutrition rules and weight gain during pregnancy. In author's own research, the mean index of proper nutritional habits, based on the HBI questionnaire was 3.9, and turned out to be higher than both the 3.4 obtained by Juczyński [24] and 3.3 published in Bojar et al. [29]. It is worth noting, however, that the respondents in the presented research were participants of antenatal classes, while those investigated by Juczyński [24] had complicated pregnancy, and those polled by Bojar et al. [29] were hospitalized in pregnancy pathology wards.

In author's own research, a significant correlation can be observed, i.e. the higher the general index of health behaviours of pregnant women participating in antenatal classes, the higher the index of proper nutritional habits ($r=0.654$; $p<0.05$). This only confirms the need for education of pregnant women in the sphere of general health behaviours, including nutritional behaviours [29, 21, 17, 18], since it can be assumed that general positive changes in behaviour will probably also positively affect nutrition.

Such measures should be addressed to women regardless of whether they participate in antenatal classes or not, and regardless of their age or level of education. Research conducted by Kozłowska-Wojciechowska et al. [21] revealed that pregnant women with higher education possess insufficient knowledge concerning the rules of proper nutrition. Bachanek and Nakonieczna-Rudnicka [18], in turn, claim that the level of education of pregnant women shows no direct correlation with the awareness of the influence eating sweets has on dentition. The results of present research confirmed the statement by Bojar et al. [29], that the oldest women scored the highest in the assessment of proper nutritional habits, while the youngest scored the lowest. This is in agreement with what other authors [14] noted about older women more frequently making rational nutritional choices.

Research indicates that there is lack of sufficient knowledge concerning proper nutritional habits during pregnancy, which calls for taking educational measures in this respect [30, 31]. In case of the presented research, however, conducting analysis of the relationship between nutritional habits and level of education was impossible, since 91.4% of the respondents had higher education. Nevertheless, this confirms what has already been observed by other authors [28], that the higher the level of education, the higher the awareness of one's lack of knowledge and the need for learning in the context of perinatal education.

CONCLUSIONS

Research indicates the need for the education of pregnant women, initiatives and campaigns aimed at propagating and

promotion proper health behaviours, including nutritional behaviours. There is a positive relationship between proper nutritional habits of women participating in antenatal classes and their general index of intensity of health behaviours. Such measures should be addressed to women, regardless of whether or not they participate in antenatal classes, and regardless of their age or level of education, despite the fact that the older the respondents, the higher they scored both in the assessment of nutritional behaviours, and the general index of intensity of health behaviours.

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