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Nutrition for Pregnant Women: What Should be Informed and How do Health Professionals Provide It?

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Nutrition for Pregnant Women: What Should be Informed and How do Health Professionals Provide It?

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Abstract. Nutrition for pregnant women is one of the most essential factors that influence the outcomes of maternal and infant. Pregnant women can gain nutrition information from many sources including consultation to health professionals. However, some studies showed that mother received lack of nutrition information during pregnancy and the evidence regarding the nutrition advice for pregnant women is limited. A literature review was conducted to identify the nutrition information received by mothers during antenatal period. This review included qualitative and quantitative studies which concern in the nutrition advice during pregnancy and the strategy used by health practitioners to provide information about pregnancy nutrition in the antenatal care. The included studies were searched from electronic databases such as Medline, CINAHL, Cochrane Library, ProQuest Central and PubMed Central, and also from Google scholar. This review produced seven studies included qualitative and quantitative research. Generally, women were not receiving adequate nutrition education during pregnancy. Health practitioners in the developing countries use counselling during antenatal care to provide information about nutrition for pregnant women, while in the developed countries, health professionals prefer to use online and social media. The evidence of healthcare professionals in providing nutrition information for pregnant women is limited. Nutrition counselling and online media were identified as effective tools in promoting a healthy diet and supplementation for pregnant women within some population groups. Further studies about health practitioners' strategies in providing nutrition education during antenatal care are highly recommended.

Keywords: nutrition information, pregnancy, health professional

1. Introduction

A healthy diet for pregnant women is important for normal growth and development of the infant [1]. Observational studies [2] have identified a positive impact of healthy diet during pregnancy in reducing gestational weight gain and lowering risk of pregnancy complications such as preeclampsia, preterm birth, and reduced foetal growth. In pregnancy, the body has an increased need for some nutrients such as folic acid and iodine. In certain conditions, supplementation is needed to meet these nutritional needs which may not be obtained from daily nutritions. The lack of one or some nutrients will damage the fetal growth. For instance, severe iodine deficiency in pregnancy will prevent the body from making T4 which plays a role in the child's brain



development, this will cause a disruption of the child's brain development [3]. The most serious consequence of iodine deficiency is mental retardation (cretinism). That is why the quality of food intake is the biggest determinant of the outcome of pregnancy.

The World Health Organization has specific guidelines for health care providers to provide nutritional information for pregnant women [4]. Some countries such as Australia [5], Canada [6] and England [7] have developed their own antenatal clinical guidelines. These guidelines include nutritional advice relating to healthy eating, as well as specific advice for single nutrition (eg folic acid supplementation, vitamin D supplementation, avoidance of supplements and products containing vitamin A) [8]. Other nutrition related topics included in the guidelines are management of conditions commonly experienced during pregnancy (constipation, heartburn, and hemorrhoids), as well as information about food safety [9]. Other important aspects that must be considered from the mother's diet during pregnancy included controlling weight gain and proper weight management, and management of pregnancy symptoms such as nausea and vomiting.

WHO also provides strong support in the implementation of antenatal care for pregnant women [4]. In pregnancy, women are believed to be more concerned with their health and are considered more receptive to nutritional advice [10]. Research conducted by May et al [11] found that pregnant women who received nutritional advice by health care professionals showed positive changes in their diet behavior compared to those who did not. This proves that providing nutritional information from health practitioners has a positive impact on the diet of pregnant women. However, the provision of nutritional advice by health professionals for pregnant women is limited, with the lack of education and confidence of practitioners in giving nutritional advices indicated as one of the challenges to providing these information [8].

Healthcare providers need to understand women's experiences in obtaining information about nutrition in pregnancy [12]. This will make it easier to identify gaps in knowledge and provide appropriate support to meet their needs. The World Health Organization [13] identified that to achieve high-quality antenatal services, health care providers must involve women in decision making and consider participants who are active in optimizing their own health. For this reason, it is important to find out the special needs of pregnant women related to nutritional communication and their ideas about strategies that are effective in promoting healthy dietary behavior [14].

Research on the experience of women obtaining information about nutrition during pregnancy is limited [15]. Pregnant women have reported that they rarely receive nutritional advice during antenatal care, and when health problems or symptoms related to nutrition occur in pregnancy, they only get limited advice from healthcare practitioners [16].

2. Method

A literature review was undertaken to identify relevant studies in the areas of nutrition during pregnancy, nutrition information, and the strategies of promoting healthy diet for pregnant women.

The search started with identifying relevant journal articles in some databases included Medline, CINAHL, Cochrane Library, ProQuest Central and PubMed Central.

A wide variety of key words were used across the searched databases. The key words included: nutrition, healthy eating, food, health professional, midwife, maternal nutrition, pregnancy, antenatal, pregnant women, knowledge, role, practise, diet behaviour, nutrition recommendation, guidelines and approach. In order to broaden, narrow or refine the search results, Boolean operators and truncation between different search terms were used in accordance with the specific instructions of each database. The bibliographies and reference lists of the relevant articles were also examined to identify further studies.

These studies included quantitative and qualitative researches which are concerned in women experiences in obtaining nutrition information during pregnancy and the role of healthcare professionals in providing nutrition information for pregnant women. This review considered the population of interest which includes pregnant women and health practitioners such as doctor, midwives and dietitians. The studies were restricted to the last ten years (2009-2018) and written in Indonesian and English. Studies that dealt with the nutrition information for nonpregnant women and the role of health practitioners in providing health advice regarding smoking and alcohol were excluded.

3. Results

The search strategies resulted in 96 potentially relevant papers to be examined. After examining the abstracts, 13 studies were selected. More detailed examination was conducted to determine the relevant papers that meet the inclusion criteria and 7 papers were left to be included in this literature review. The process can be found in Figure 1.

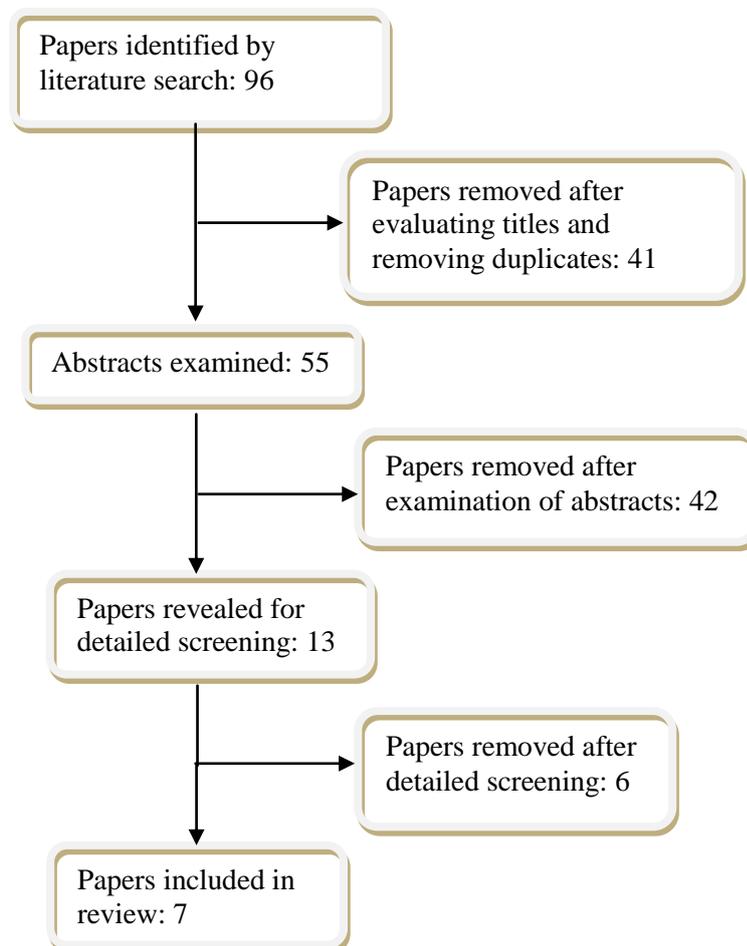


Figure 1. Study Retrieval Process

Six of seven included studies are from developed countries (Scotland, Canada, Australia, and the United Kingdom) and one from developing country (Indonesia). Most of them are qualitative research using interview and focus group methods. Four articles identified the experiences of pregnant women in gaining nutrition education from healthcare professionals [17,

18, 19, 12]. Two studies investigated the role of midwives in providing nutrition information for pregnant women during antenatal care [20, 21] and one study from Australia explored the nutrition education received by midwives in their academic level [22]. Summary of included studies were shown in the table 1 below.

Table 1. Summary of studies included in the review

Author	Country	Aim of Study	Study design and Method	Key Findings
Subarda, Hakimi, M., Helmyati, S., (2011)	Indonesia	to know the relationship between ANC services in anemia management with iron supplementation compliance of pregnant women	cross sectional design, Interview	Consultation methods that prioritise individual approaches are considered to be more effective in increasing understanding of the benefits of iron tablets.
Barbour et al (2012)	Scotland	to explore the rationale behind women's decision-making on folic acid supplement use to inform health communications	Self-administered written surveys and focus groups	2 out of 24 women had received advice about folic acid supplementation from their midwife. All women received an education book at 12 weeks of pregnancy.
Graham et al (2013)	Canada	To explore women's sugar consumption behaviors during pregnancy.	Ethnography Semi-structured interviews	Women found barriers to achieving a low sugar diet, lack of nutritional guidance and social pressures.
Arrish, J., Yeatman, H., and Williamson, M., (2014)	Australia	To investigate the role of midwife in providing nutrition information for pregnant women	Descriptive design, Interview and focus groups	Midwives lacked of basic knowledge about nutrition requirements for pregnancy
Basu, A., Kennedy, L., Tocque, K., and Jones, S., (2014)	United Kingdom	To explore the feasibility of delivering a compact and novel training model to increase the knowledge and confidence of midwives in giving nutrition, physical activity, and weight management advice during pregnancy	Simple experimental design, pre- and post-test	A compact nutrition, physical activity, and weight management training package improves midwives self-reported knowledge and confidence in providing information to women.
Arrish, J., Yeatman, H., and Williamson, M., (2017)	Australia	To explore Australian midwives' recollections of the nutrition education they received during basic education and following registration and their perspectives regarding their preparation to provide	Cross sectional descriptive design, Survey	Australian midwives may not be receiving adequate nutrition education during their academic education.

nutrition advice

Bookari, K., Yeatman, H., and Williams on, M., (2017)	Australia	to provide insights into Australian women's experiences in gaining nutrition information during pregnancy	Qualitative design, semistructured interview	Women valued nutrition information, actively sought it, and passively received it especially from three sources: healthcare providers, media, and their social networks.
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4. Findings and Discussion

4.1. Nutrition information provided by healthcare practitioners in antenatal care

Three articles discuss the practice of healthcare professionals in antenatal care. Study [21] found that not all midwives received nutrition education during their academic education, most midwives received nutrition education from nutrition organizations. Research [17] showed that nutritional counseling conducted by midwives in Indonesia has a positive impact on the compliance of pregnant women consuming iron tablets. In Sweden, 15% of 134 midwives do not promote iron supplementation to all pregnant women, even though it has been regulated in Swedish antenatal care guideline [18].

A survey in Australia conducted on 226 healthcare providers shows that the most important information delivered to pregnant women in antenatal care is nutrition and physical activity, while advice for supplementation with folic acid, iron, food safety, and a healthy diet in general is not a priority [20].

4.2. Midwives as primary providers of nutrition information during pregnancy

Generally, health professionals who play a role in providing nutrition information and education to the public, including pregnant women, are nutritionists. A study of pregnant women at Queensland antenatal clinics reported that they preferred getting nutrition information from dietitians as experts in nutrition, but access to consult with nutritionists was limited, so it was not possible for all pregnant women to consult with nutritionists whose numbers limited in maternity services [24]. In some cases, pregnant women can be referred to a dietitian by a midwife due to the emergence of certain problems during pregnancy [25]. Midwives have the opportunity to provide nutritional advice to pregnant women in a timely manner because they are the primary caregivers during pregnancy. Midwives can benefit from nutritionists developing practice guidelines for midwives or collaborating with nutritionists in providing nutrition education for pregnant women. The National Delivery Service Plan (2011) clearly emphasizes the importance of midwives having the knowledge and skills needed to provide better maternity services, including nutrition education to address the problem of obesity in Australia [26].

4.3. What sources are utilised and are they perceived to be reliable?

Two studies identified sources of nutritional information used by pregnant women during pregnancy and perceived reliability from these sources. Women in the [27] (US) reported that generally pregnant women seek nutritional information from outside sources other than their health care providers, although the majority were confident about the reliability of pregnancy books, magazines and the internet. Some women in this study also noted that they did not pay too much attention to health advice from family and friends. This research in line with study [23]

which identified the best strategies of maternity care providers could do to provide nutrition education in antenatal care. Interviews and focus groups in this research reported that providing nutritional information should be done with interactive online media.

Research [28] reported that although some pregnant women do not trust the internet, they continue to use it to find answers to questions related to the problems they face related to food.

Three studies reported media chosen by pregnant women to receive nutritional information. Research [12] showed that pregnant women prefer to receive nutrition education in written pamphlet from their health professionals. In contrast, a study conducted in pregnant adolescents reported that listening to an explanation from a health professional was the best way to learn about nutrition [29]. For nutrition counseling, women prefer individual counseling rather than groups, because they feel free to consult and receive advice according to personal needs [1, 30]. A qualitative study conducted in antenatal care suggested that nutrition education about LCn3PUFA is information needed by women during pregnancy. Pregnant women want detailed information through media such as books, pamphlets and calendars, allowing them to better understand the role of nutrition in pregnancy.

5. Conclusion

The evidence of healthcare professionals in providing nutrition information for pregnant women is limited. The limited available studies show that pregnant women are not receiving adequate nutrition education in the antenatal care to make informed decisions during their pregnancy. Nutrition counselling and online media were identified as potentially an effective tool in promoting a healthy diet and supplementation within some population groups.

However, the small number of studies available suggested that healthcare practitioners, including midwives, are not routinely assisting pregnant women to make informed decisions. Further studies about healthcare practitioners' strategies in providing nutrition education during antenatal care are highly recommended.

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