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Challenges and Barriers to Pregnant Women's Nutrition: Policy Recommendations

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Malnutrition affects millions around the world, especially in low and middle-income countries and has widespread negative consequences including morbidity, mortality and loss of productivity and production capacity (Karmacharyad and Ranaa, 2017, Ramakrishnan *et al.*, 2012). Pregnancy is a vital and important phase of the life cycle (Dietetics, 2014). Malnutrition during pregnancy can have irreversible short- and long-term effects on maternal and fetal health (Arrish *et al.*, 2017, Reyes *et al.*, 2013).

Studies have shown that maternal malnutrition during pregnancy is related to neonatal complications such as abortion, pre-term birth, low birth weight and infant born small or large for gestational age. Maternal malnutrition has also been associated with long term neonatal complications such as impaired brain development, poor cognitive and behavioral capacity and functional impairment in adulthood (Arrish *et al.*, 2017, Ramakrishnan *et al.*, 2012, Reyes *et al.*, 2013, Yakoob and Lo, 2017). The future of any society depends on children being able to reach their optimal growth and development. Therefore, the inadequate nutrition of mothers during pregnancy can disrupt the development process of countries through impairing the children's physical and mental growth (Yakoob and Lo, 2017). Malnutrition before, during and after pregnancy can also lead to various maternal complications such as hypertension, obesity, gestational diabetes, labor complications, preeclampsia, postpartum hemorrhage, depression and mental disorders (Dietetics, 2014, Nguyen *et al.*, 2017, Ramakrishnan *et al.*, 2012, Reyes *et al.*, 2013).

In contrast, an adequate maternal nutrition is associated with greater maternal and child health, better management of pregnancy outcomes and

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prevention of complications (Kavle and Landry, 2018, Ramakrishnan *et al.*, 2012, Yakoob and Lo, 2017). Therefore, many countries have considered women's nutrition during pregnancy a health priority and have made it a focus in their national health policies (Ramakrishnan *et al.*, 2012). However, unfortunately, available data from many different countries suggest that inadequate nutrition during pregnancy remains a persistent challenge (Kavle and Landry, 2018). Solving this problem requires addressing its various underlying determinants (Karmacharyad and Ranaa, 2017). Maternal nutrition throughout life is affected by complex and interdependent economic, social, cultural and healthcare-related factors; therefore, adapting a holistic approach is imperative to deal with the issue. (Moghasemi *et al.*, 2015, Yakoob and Lo, 2017).

An approach which focuses on the entire life cycle and various malnutrition risk factors before, during and after pregnancy will help to formulate effective policies and strategies by identifying challenges and barriers to maternal nutrition.(Moghasemi *et al.*, 2015). In general, challenges and barriers to adequate maternal nutrition can be divided into three categories:

The first category of adequate maternal nutrition barriers is individual and household challenges. Some of the most important barriers of this level are: economic barriers such as financial hardship and the lack of access to affordable food in less developed countries. Of course, it should be noted that malnutrition does not only happen in poor societies; poor nutrition can also occur in more developed countries due to unhealthy and excessive food intake (Karmacharyad and Ranaa, 2017, Kavle and Landry, 2018, Moghasemi *et al.*, 2015, Yakoob and Lo, 2017). Other barriers in this category are lack of physical access to healthy food, especially in rural and remote areas (Arrish *et al.*, 2017); poor nutritional knowledge; cultural barriers; work commitments and inadequate life skills of adolescent girls and women (Arrish *et al.*, 2017, Karmacharyad and Ranaa, 2017, Kavle and Landry, 2018, Moghasemi *et al.*, 2015, Yakoob and Lo, 2017). Furthermore, the family structure directly affects family support received by mothers. For example, in crowded families, women's access to adequate nutrition is more threatened (Hromi-Fiedler *et al.*, 2016). Discrimination in the homework pattern can also increase the chance of women experiencing nutritional deficiencies. Intra-household food allocation can be a barrier to adequate nutrition. For example, in some societies, based on the existing cultural norms, husbands and children eat prior to women. Lastly, premature and multiple pregnancies can aggravate nutritional problems during pregnancy (Kavle and Landry, 2018, Moghasemi *et al.*, 2015).

The second category of barriers affecting maternal nutrition is community level challenges. The main barriers in this category are cultural ones, which include social misconceptions and inappropriate customs. These can lead to women having unhealthy food habits. Another barrier is poor social support for pregnant women. A more constructive and educational support system would include nutritional advice for women during pregnancy (Hromi-Fiedler *et al.*, 2016, Kavle and Landry, 2018).

The third category is trans-local and institutional challenges. Barriers of this category are poor food procurement and distribution system (Hromi-Fiedler *et al.*, 2016); a weak nutritional educational system; poor nutritional knowledge of pregnancy-related caregivers (Moghasemi *et al.*, 2015) and lack of relevant and reliable public training infrastructure, resources and platforms. Furthermore, there are inappropriate models of care and health system arrangements that threaten the early recognition of nutritional inadequacy in pregnant women (Arrish *et al.*, 2017, Ramakrishnan *et al.*, 2012). Lastly, there is poor legislation capacity to support maternal nutrition: for example, the lack of legislation on women's employment during pregnancy (Arrish *et al.*, 2017, Moghasemi *et al.*, 2015).

Given these challenges, many countries have implemented policies, strategies and actions to

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improve maternal nutrition during pregnancy. Based on our holistic approach, these actions can be divided into 3 levels; individual/household, community and national/institutional level. Examples of each level actions are presented in below.

1. Individual / household level

Improving nutrition education for adolescent girls and women in order to correct nutritional attitudes and preferences, empowering them and promoting self-efficacy (Arrish *et al.*, 2017, Hromi-Fiedler *et al.*, 2016, Karmacharyad and Ranaa, 2017, Kavle and Landry, 2018).

- Correcting inappropriate nutritional traditions, customs and norms within the family and providing family support for pregnant women (Hromi-Fiedler *et al.*, 2016, Moghasemi *et al.*, 2015).

- Identifying and addressing the barriers affecting women's perceptions and choices of food (Kavle and Landry, 2018).

- Empowering households and trying to make behavioral changes at the individual / household level (Kavle and Landry, 2018, Moghasemi *et al.*, 2015).

2. Community level

- Strengthening the role of NGOs in development and implementation of maternal nutrition plans (Karmacharyad and Ranaa, 2017).

- Adopting a community-based management approach to address malnutrition during pregnancy (Karmacharyad and Ranaa, 2017).

- The widespread use of social marketing aimed at improving nutritional culture (e.g. promoting healthy eating, supporting and implementing symbolic programs such as villages' health and nutrition or mothers' nutrition day) (Karmacharyad and Ranaa, 2017, Moghasemi *et al.*, 2015).

- Encouraging the development of maternal supportive networks such as female community health volunteers, social campaigns such as pregnant women's education campaigns and influencer groups such as religious societies to play a role in improving maternal nutrition (Karmacharyad and Ranaa, 2017, Kavle and Landry, 2018, Moghasemi *et al.*, 2015).

- Development of psychosocial support infrastructure for women (Yakoob and Lo, 2017).

- Modifying pregnancy care models and using holistic community-based models (Ramakrishnan *et al.*, 2012).

- Supporting cultural reforms related to maternal nutrition at a community level (Ramakrishnan *et al.*, 2012).

3. National / institutional level

- Developing a national nutrition policy and strategy for pregnant women (Kavle and Landry, 2018).

- Regular monitoring, review and updating of maternal nutrition policies and strategies (Karmacharyad and Ranaa, 2017, Ramakrishnan *et al.*, 2012).

- Developing pregnancy-related national dietary guidelines and including them in strategic policies and programs as well as in-service training curriculum (Reyes *et al.*, 2013).

- Identify at-risk groups and support them through policies such as subsidizing pregnancy-related foods, focusing on rural and remote areas or the distribution of nutritional supplements for school girls and pregnant women (Karmacharyad and Ranaa, 2017, Moghasemi *et al.*, 2015).

- Strengthening girls and women's education, including primary and higher education, by improving nutritional knowledge and the access to health information for individuals, households and communities, especially access to relevant and valid nutritional information (Arrish *et al.*, 2017, Karmacharyad and Ranaa, 2017, Moghasemi *et al.*, 2015, Mora and Nestel, 2000).

- Decentralizing government functions and empowering regional and local bodies with sufficient resources and power to plan and act (Karmacharyad and Ranaa, 2017).

- Improving the affordable food supply/procurement and distribution system (Arrish *et al.*, 2017, Moghasemi *et al.*, 2015).

- Empowering pregnancy-related caregivers such as midwives and nurses, and improving their nutritional knowledge by integrating sufficient nutrition courses in training curriculums, and providing resources for nutritional advice during

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pregnancy (Kavle and Landry, 2018, Ramakrishnan *et al.*, 2012, Reyes *et al.*, 2013).

- Integration of general nutrition recommendations by general practitioners, nutritionists and dietitians in prenatal care (Ramakrishnan *et al.*, 2012).

- Using an active approach instead of a passive and preventive approach (Kavle and Landry, 2018, Ramakrishnan *et al.*, 2012).

- Promoting intersectoral (even cross-country) collaboration, political commitment and technical capacity to address the challenge of malnutrition during pregnancy (Karmacharyad and Ranaa, 2017).

- Provide appropriate supportive laws including legislation on the employment of women during pregnancy (Moghasemi *et al.*, 2015).

- Using missed capacities of the health system to improve the maternal nutrition: some of components of Iranian health system, such as the primary health care network and the implementation of some programs such as family physician program have made an exclusive platform for local and community-based interventions, but this capacity seems to have been used less to improve the nutritional status of adolescent girls and women (Moghasemi *et al.*, 2015).

- Involve other sectors such as the national youth organization, the presidential women deputy, educational system, agricultural system, private sector and other nonprofit organizations in improving maternal nutrition (Kavle and Landry, 2018).

- Develop fair access to health, nutrition and family planning services for women of child bearing age (Mora and Nestel, 2000).

This paper presents some of the current maternal nutritional challenges as well as potential policy options to address them. Despite the extent of the barriers and challenges facing maternal nutrition during pregnancy, there is still little research on factors associated with this challenge and the effectiveness of related interventions. Furthermore, there is a wide gap in the translation of existing documents into effective policies and strategies. Therefore, future research should focus on these aspects (Kavle and Landry, 2018, Mora and Nestel, 2000).

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