Predisposing Factors of Anaemia among Pregnant Mothers with ≤ 12 Weeks of POA Receiving Antenatal Care in the Eastern Province of Sri Lanka

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Abstract

Background: Anaemia in pregnant mothers is associated with increased rates of maternal and perinatal morbidity and mortality. Therefore, identifying predisposing factors of anaemia in pregnant mothers is essential for results based intervention modalities. The aim of this study was to describe the predisposing factors for anemia and its related factors among pregnant mothers.

Objectives: To describe the prevalence and the predisposing factors for anemia in pregnant mothers in the Eastern Province. Methods: Simple descriptive cross-sectional study included 1334 pregnant mothers in first trimester. Pre-tested, structured questionnaire and Qualitative components such as Focus group discussion, In-depth interviews, and Key informant interviews were conducted to relevant participants and care providers.

Results: The overall prevalence of anemia was 32.9% (439/1334). Among 439 mothers with anaemia, 87.24% had mild level anaemia, 12.53% had moderate level anaemia, and 0.23% with severe anaemia. Following factors were related to the high prevalence of anaemia among pregnant mothers such as recurrent miscarriages three or more, increased number of gravidity, marital age of less than 18 years, and pregnancy after the age of 30, mothers studied up to primary level of education and with body mass index of < 18.5. In-Depth Interview pointed numerous supporting issues such as less value for nutrition and it related diseases among service providers, availability and adequacy of services for nutrition awareness and modification.

Discussion: Association of anaemia was found to be more significant in the age group of <20 years and >35 years. Analyzing possible predisposing factors shown, dietary habit, medical condition, number of pregnancy, and miscarriage are some positive contributing factors for anaemia during the pregnancy. Focus group discussion of PHM revealed service related issues such as inadequacy of facilities and manpower, maldistribution of service providers and area specific problems in remote areas. FGD conducted to pregnant mother's revealed negligence by service provider, lack of communication, and less priority for nutrition enhancement are identified as predisposing factors. Both types of evaluation show the education status of mothers and spouse play key role of iron deficiency anaemia. They gave less priority for control of anaemia, even most of them not bother about their nutritional status.

Keywords: Anaemia; Pregnant Mothers

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Introduction

Anaemia in pregnant mothers is associated with increased rates of maternal and perinatal morbidity and mortality [1]. During the year 2017 and 2018 the percentage of anemia complicated pregnancy was respectively 20.4 and 21.5 in the province [2]. Therefore, identifying predisposing factors of anaemia in pregnant mothers is essential for results based intervention modalities [3]. The aim of this study was to describe the predisposing factors for anemia and its related important factors among pregnant mothers in first trimester in eastern province and also indicates about differential attitude and contribution of service providers.

Methods

This was a simple descriptive cross-sectional study involved with 1334 pregnant mothers who initiated antenatal care follow up during their first trimester and conducted in all Medical Officers of Health areas in Eastern Province from January to December 2019 [4-10].

As multistage cluster-sampling technique was used, it was necessary to consider the design effect as well as compensate for non-respondents. A design effect of 1.5 was considered in this study, so the calculation was 1207. Finally with the addition of 10% of the non-respondents and incomplete questionnaire the sample size was the number 1327 [11-13]. Data were collected by using pre-tested structured questionnaire, reviewed antenatal care follow up record cards of each pregnant mother with some basic investigations including haemoglobin level. Antenatal records were used to verify the POA, parity, contraceptive method used and past obstetric history of participants.

In addition to this, Qualitative components such as Focus group discussion, In-depth interview, and Key informant interview were conducted to relevant participants and care providers to compare and support the quantitative variables. Statistical Package for Social Sciences (SPSS version 25.0 - 2019) was used for analysis.

Permission to conduct the study was obtained from the Provincial Director of Health Services and Regional director health services and Ethical clearance was obtained from Eastern University. As there are some identifiable questions in the quantitative component, respondents were assured of absolute confidentiality. Privacy was ensured during questionnaire administration and interview. All participants were informed that they could withdraw at any time. Verbal consent was obtained from participants after explanations in their language by using the Tamil/Sinhala consent form. Participation was entirely volunteered. Additionally some secondary data were used to identify the predisposing factors for anaemia.

Results

The overall prevalence of anemia using a cut off level of hemoglobin <11 g/dl was 32.9% (439 /1334). Among 439 mothers with anaemia, 87.24% had mild level anaemia, 12.53% had moderate level anaemia, and 0.23% with severe anaemia. Study variables revealed following factors were related to the high prevalence of anaemia among pregnant mothers such as recurrent miscarriages 3 or more, increased number of gravidity, marital age of less than 18 years, and pregnancy after the age of 30, mothers studied up to primary level of education and with body mass index of < 18.5.

In-Depth Interview pointed numerous supporting issues such as less value for nutrition and it related diseases among service providers, availability and adequacy of services for nutrition awareness and modification, and client's hope on existing services especially nutrition enhancement in ANC. It clearly shows the gap between the service providers and clients. It may be the main reason for the high prevalence of anaemia [14,15].

Discussion

Public Health Midwife and trained data collectors were used to get Hb level, basic measurements and variables of anaemia to ensure the results of quantitative measures. We added qualitative measures such as Key Informant Interview, In-Depth Interview and Focus Group Discussion to pregnant mothers and we got information from experts and PHM.

Association of anaemia was found to be more significant in the age group of <20 years and >35 years than the age ranged from 20-35years. Our study was supported by the finding of Bencaiova G as participants who were >35 years and those who married after the 30 years of age showed significant association with anaemia.

Grace Stephan et al had also reported that women with low income were more anaemic than women with higher income. In our study, Most of the participants were belonged to low and middle-income families and only 3.5% of participants were belongs to the higher income families [4]. So, the study couldn't reveal any significant association between income and anaemia.

Analyzing possible predisposing factors shown, dietary habit, medical condition, number of pregnancy, and miscarriage are some positive contributing factors for anaemia during the pregnancy. Service related factors such as antenatal care, nutritious supplementation, worm treatment, and iron folate are not significantly contributed.

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Among the nutritious related diseases and pregnancy related diseases, anaemia is the commonest issue everywhere in Sri Lanka. Eastern Province also not an exception in this issue, the Eastern Province population is vulnerable to nutrition deficiency anaemia and iron deficiency anaemia because of poverty, war, and various discriminations in this area [16].

Focus group discussion of PHM revealed service related issues such as inadequacy of facilities and manpower, maldistribution of service providers and area specific problems in remote areas. FGD conducted to pregnant mother's revealed negligence by service provider, lack of communication, and less priority for nutrition enhancement are identified as predisposing factors. Thalassemia, Dietary Practices, less important for nutritious food and ignorance of advice of supplementary food given by service provider also highlighted.

In-Depth Interview pointed numerous associated issues in service providers, availability of services, and their hope on our services. It clearly shows the gap between the service providers and clients. It may be the main reason for the high prevalence of anaemia.

Both types of evaluation show the education status of mothers and spouse play major role of iron deficiency anaemia. They gave less priority for control of anaemia, even most of them not bother about their nutritional status. Therefore, it is important to strengthen women education and knowledge on pregnancy and its complications, family planning and effect of nutritional deficiency with the support of health team.

Conclusion

This study suggested some factors related to anaemia in pregnant mothers in Eastern Province. FGD conducted to pregnant mothers revealed negligence of service provider, lack of communication, and less priority for nutrition enhancement are identified as predisposing factors. Thalassemia, Dietary Practices, less important for nutritious food and ignorance of advice of supplementary food given by service provider also highlighted.

Recommendation

Proper Health education on dietary habits and anaemia management to mothers and regular screening and referral for treatment of mothers by service providers is a key factor for the reduction of anaemia and improvement of socio economic status of the mother is essential control measures in Eastern Province. Regular evaluation and reporting the level of anaemia is essential in the existing system for pregnant mothers.

Further, we recommend ongoing education about the effects of anaemia especially among women with low education and the population of adolescent women and women of reproductive age in general. Women education and empowerment are not within the health sector and there is a need for multisectoral collaboration in combating anaemia and other maternal health problems.

Ongoing interventions to target anaemia before pregnancy for eligible mothers seem to be working in this setting and they would reach national coverage. For this, preconception care for eligible mothers should be strengthened by introducing DOTS (direct observation treatment short course) for iron supplementation, encourage home garden& home-based animal husbandry which could be supported by multi sectorial approach and awareness programs such as issuing leaflets in the marriage registrar office and wedding halls.

Acknowledgement

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