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Knowledge, Attitude And Practices Regarding Medical Disorders In Pregnancy Among Women In A South Indian Rural Setup.

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ABSTRACT

Maternal and neonatal morbidity and mortality are the key health indicators of a country. In spite of significant advancements, a few rural/ suburban Indian societies still have limited awareness of the importance of antenatal healthcare, comprehensive perinatal wellbeing, and symptoms/ consequences of pregnancy complications. This study aims to assess the knowledge, attitudes, and practices of expectant mothers' from South Indian rural setup, about the above indispensable prenatal variables. A semi-structured, MCQ-based, validated questionnaire on knowledge, attitudes, and practices regarding preconceptional and antenatal healthcare and common medical disorders of pregnancy was administered to 100 voluntarily consenting pregnant women, admitted to or attending the OPD services in the Department of OBG of a tertiary care hospital after prior ethical approval. Majority of our study participants were compliant with antenatal BP and routine blood investigations and mandatory supplementations. 70% of participants experienced nausea, and majority chose anecdotal measures. Their knowledge regarding gestational diabetes, gestational hypertension, and hypothyroidism were suboptimal. Participants were observed to have poor knowledge about the active forms of physical activity during pregnancy. There is suboptimal knowledge of symptoms and complications pertaining to common pregnancy-associated complications, however, compliance to routine antenatal checkups and supplementation was indeed good, which implies that counselling by physician indeed played a major role in ensuring compliance, rather than knowledge alone. Improvement of knowledge can definitely aid expectant mothers' and their families while familiarizing the community about the importance of comprehensive family support, physical activity indeed needs concrete strategies, especially in rural society.

Keywords: Maternal health, fetal health, gestational diabetes mellitus, gestational hypertension, antenatal care.

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INTRODUCTION

Pregnancy is a unique and exciting experience in a woman's life, highlighting her creative and nurturing powers and helping in the sustenance of mankind [1]. It is also a time when a woman's body undergoes a lot of changes due to changes in the hormonal profiles which aid the pregnancy. Therefore, it is indeed crucial that adequate care be taken to prevent the development of any complications which might have an adverse effect on maternal and foetal health. So, women need to be aware of the role of nutrition and a healthy lifestyle on maternal and neonatal health and the key danger signs of obstetric complications and their management during pregnancy, delivery, and the postpartum period [2].

According to the WHO statistics, 830 women died every day due to complications of pregnancy and childbirth in the year 2015. Haemorrhage, hypertension, and infections are the most common causes which are preventable and most of the deaths occurred in low resource settings, the risk of maternal death was 33% higher in developing countries [3-6].

In India, it is estimated that 44,000 women die every year due to preventable pregnancy related causes, and mothers in the lowest economic bracket have about three times higher mortality rates. Also, 0.75 million neonates die every year in India and the major causes are pre-maturity births (35%), neonatal infections (33%), intra-partum complications & asphyxia (20%) and congenital malformations (9%). Most of the newborn deaths can be prevented by improving the quality of care during pregnancy, delivery and after birth [5].

The fifth Millennium Development Goals outlines the international commitment to measurably reduce maternal and foetal mortality (7, 8). Antenatal care is a part of public health promotion.⁹ ANC is a critical strategy in reducing adverse maternal and foetal outcomes, ensuring a comfortable pregnancy, and promoting maternal and child health. ANC clinics play a pivotal role in identification of complications, the management of the same and development of proper nutritional and health educational interventions. This in turn promotes protective and preventive health behaviours to improve maternal and neonatal health through better knowledge, attitudes and practices in pregnant women and their families [7].

But in a developing country like India, with a huge rural population, social norms and socio-economic factors often affect the accessibility to health care services. Families may have little knowledge about healthy and beneficial maternal and neonatal practices like appropriate age of women for conception, spacing between children, access to safe drinking water and nutritious food and importance of a healthy lifestyle [3]. Further, their low economic status and ignorance may be the reason of their non-compliance to visiting ANC clinics for regular check-ups, to the medications prescribed and tests ordered and in extreme cases to even opting delivery at home in absence of any skilled healthcare personnel. This in turn may lead to development of complications and adverse maternal and neonatal outcomes. Thus, it is imperative to create awareness and to educate the general population, especially women about the same. With this background, our present study aims to evaluate the awareness of pregnant women about the healthy practices to be undertaken during pregnancy, about the signs and symptoms of pregnancy related disorder and their impact on maternal and foetal health and importance of regular ANC visits, in a South Indian rural set up.

MATERIALS AND METHODS

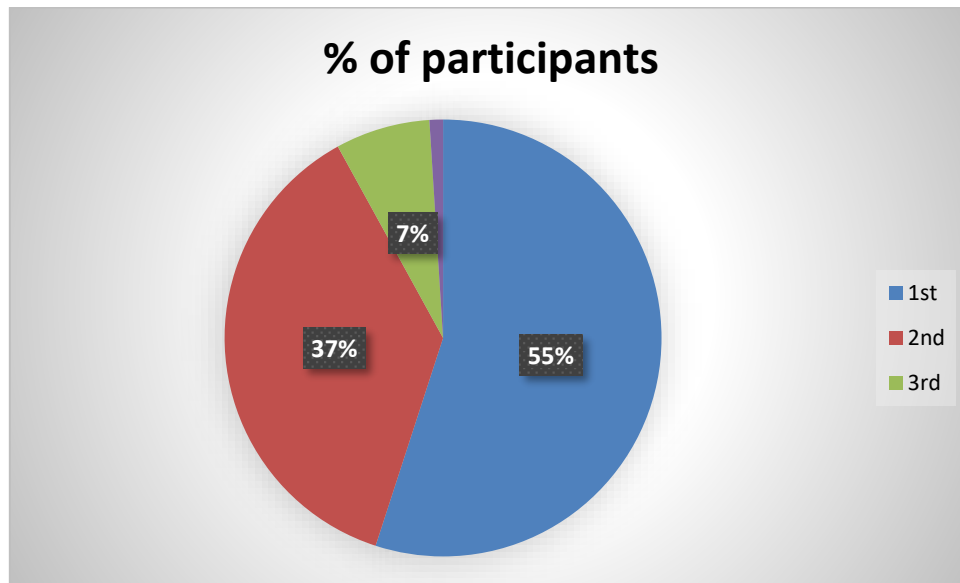
A semi structured predominantly multiple choice-based questionnaire based on existing questionnaires, and the need/ perceived knowledge deficit of the rural population was designed, validated by field experts, and registered under the Copyright Registry of India (L-95477/2020 dated 7th October 2020). The questionnaire was then administered by the research team be carried to 100 voluntarily consenting pregnant women admitted to or attending the Outpatient ANC clinic of MVJ Medical College and Research Hospital over a period of two months after due approval from the Institutional Ethical Committee (IEC no:20220726_152705378447). Quantitative characteristics are presented using descriptive statistics.

RESULTS

The recruited pregnant cohort included 100 women, 23.25 ± 3.12 years of age. Their educational qualification was highly variable and ranged from women who merely underwent schooling till 4th

standard, to diploma holders and women who had completed professional graduation as well as post-graduation degrees like master’s in engineering or science, BEd. Most of the participants were homemakers at the time of recruitment to the study while one each worked as an engineer, paramedical staff, and security. Two participants were employed as teachers, and one of the participants was a staff employed in the study center itself. While one participant each were employed in agriculture and as a domestic worker. Figure 1 presents the percentage of participants at each trimester during their recruitment in the study.

Figure 1: Percentage representation of participants in each trimester



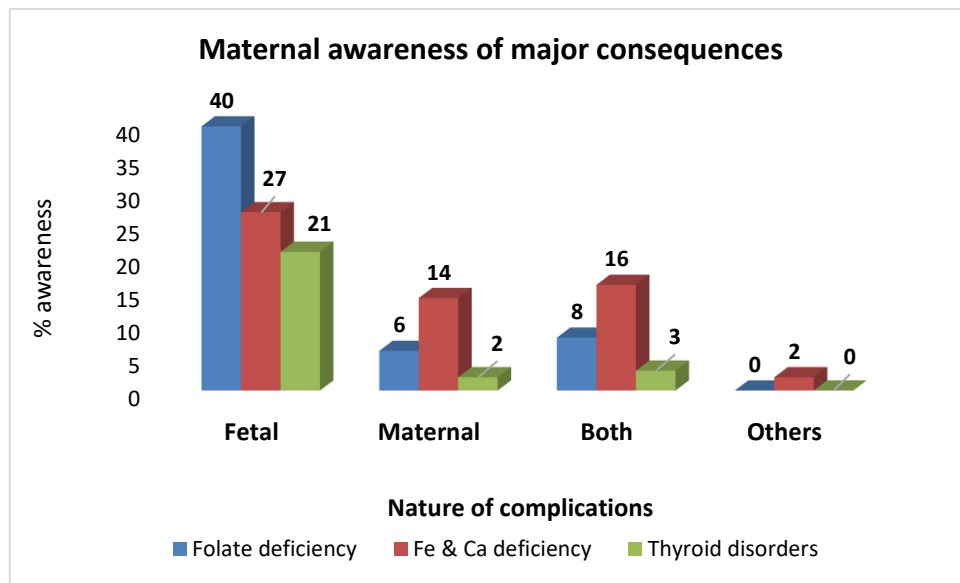
70.9% of the participating women said they experienced pregnancy-associated nausea and vomiting while only 33.8% of the women used physician-prescribed antiemetics to reduce/ relieve their symptoms while other women resorted to lying down when nauseated, consuming bland/ light food as soon as they woke up and other similar anecdotal remedies.

Table 1 represents the percentage of the pregnant cohort adhering to the standard gestational assessment of supplementation protocols.

Sl	Essential assessments and supplementation in gestational period	Adherence (%)
1	Folic acid supplementation (preconception/ 1 st trimester)	95
2	Iron & Calcium supplementation	93
3	Thyroid function assessment	89
4	Regular antenatal Blood Pressure monitoring	100
5	Glucose Tolerance Test assessment	94
6	Use of antiemetics to relieve hyperemesis	34

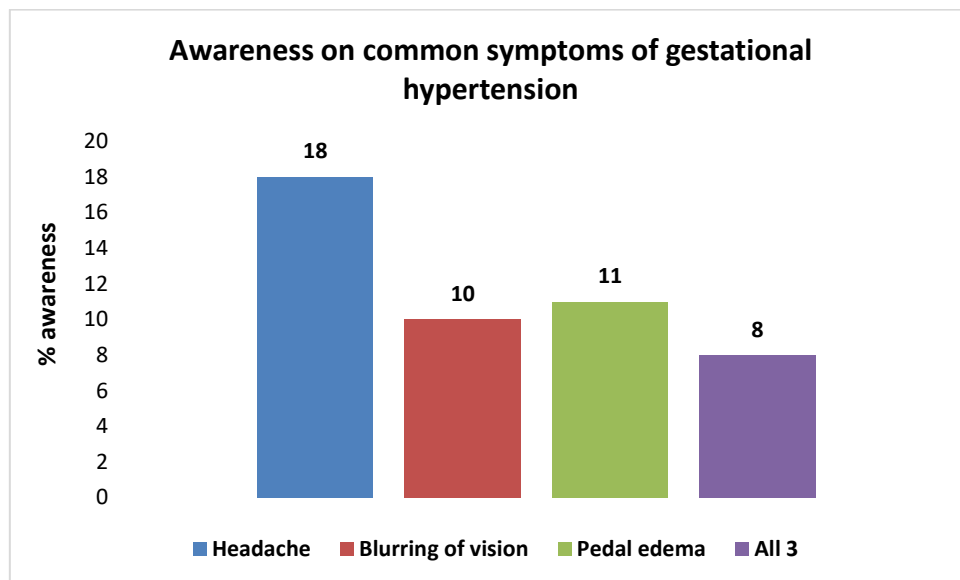
The questionnaire also assessed the awareness of our participants regarding adverse consequences of micronutrient deficiencies during pregnancy (Figure 2).

Figure 2: Awareness on adverse consequences of micronutrient and thyroid hormone perturbations



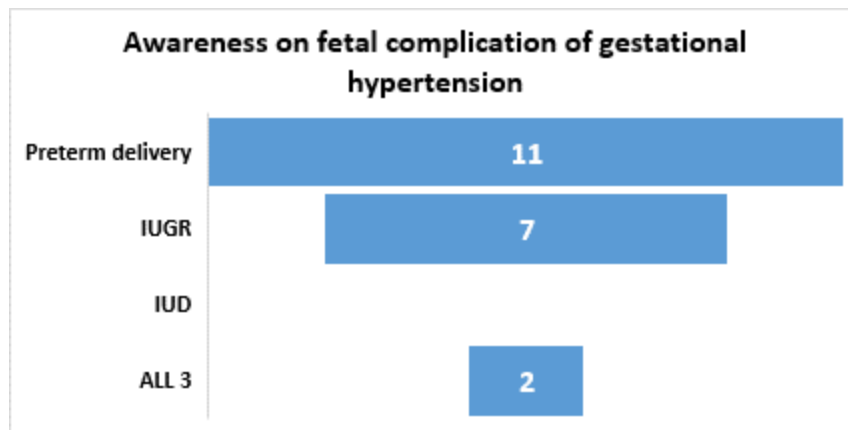
44% of the study participants were aware that high blood pressure during pregnancy needed medical management, while only 16% and 7% (out of which 5% of the participants had a history of GDM in their earlier pregnancy) of them were aware of the need of medications to manage gestational thyroid anomalies and gestational diabetes mellitus.

Figure 3: Awareness on symptoms of gestational hypertension/ hypertensive disorders of pregnancy



While 44% of the participants opined antihypertensive medications were the mainstay in the management of gestational hypertension, 2% of the women felt rest alone could control high blood pressure while another 3% of the participants expressed that medications, dietary modifications, and adequate rest together could achieve effective management of gestational hypertension.

Figure 4 represents the percentage of women aware of the fetal consequences of gestational hypertension.



However, none of our study participants were aware of the maternal consequences/ complications of high BP during pregnancy.

Further, though 35.48% of the pregnant women had a history of diabetes in the family, and 5% had a history of GDM in their previous pregnancy, none of our participants were aware on the adverse consequences of GDM.

24% of the participants were in consanguineous marriage. 66% of the women were aware that consanguinity could lead to congenital anomalies in fetus while 2% opined that it could lead to miscarriage. 95% of the would-be mothers opined that they received adequate family support during their pregnancy, while 2% felt that their family did not support them during pregnancy and 3% chose not to answer the question (may be attributed to the presence of bystanders in the vicinity during the questionnaire administration). 2% of the women attributed the lack of family support during pregnancy to the birth of a female child previously.

3% of our maternal cohort accepted consuming tobacco during gestation. Only 16% of the women were aware that smoking, tobacco, and alcohol consumption could affect fetal health. When probed about the detrimental effects of these addictive substances, 6.45% of the pregnant cohort answered correctly.

88.7% of the women claimed to be following a healthy lifestyle during their pregnancy, while 11.29% of the women were unsure whether their lifestyle pattern was healthy or not. 22.5% of the women went for regular walks, 6.45 practiced daily exercises while a few women felt that carrying out their routine household chores was sufficient to ensure a healthy and active lifestyle during pregnancy.

DISCUSSION

Maternal and child health are the key determinants of general health and the developmental status of society. Maternal and neonatal morbidities and mortalities are largely preventable and treatable. The Sustainable Development Goals (SDGs) aim to reduce the global maternal mortality rate to less than 70 per 100,000 live births by the year 2030 [10]. Although the global maternal mortality rate has shown a decrease of 38% and the MMR of India has also shown a declining trend, an unacceptable 810 maternal deaths are reported on an average daily [11]. Access to antenatal healthcare, and skilled care during childbirth and postpartum play indispensable roles in monitoring and early detection/ management of health discrepancies and limiting adverse maternal and neonatal outcomes [11]. The present study was undertaken to assess the knowledge, attitudes, and practices among Bangalore rural women about antenatal monitoring, supplementation, maternal disorders, and maternal and neonatal consequences these disorders. Our study shows that though a major percentage (approximately 71%) of the participants experienced nausea, most of them resorted to anecdotal measures. Our study population showed good compliance to the mandatory blood assessments and nutritional supplementation protocols though their level of awareness regarding the consequences of folate/ iron/ deficiencies and thyroid disorders was sub-optimal. Only 44% of the participants were aware of the imperative need for medical management in

gestational hypertension while awareness regarding symptoms and maternal and foetal consequences of untreated gestational hypertension was even poorer. Majority of our study participants were aware of the detrimental effects of consanguinity. Though smoking and alcoholism were almost negligible only 16% of the women were aware of the hazards of smoking, tobacco, and alcohol consumption during pregnancy. A majority (88.7%) of the women claimed to be following a healthy lifestyle with walking being the most preferred and practiced mode of physical activity, however, a few women opined that completion of their household chores itself ensured an active lifestyle for them. 95% of the participants claimed to receive adequate family support while the previous birth of a female child emerged as a major reason for lack of family support.

Our study reveals suboptimal knowledge of maternal pregnancy complications among our study participants, however, the participants had a favourable attitude and complied with antenatal blood assessments. A study assessing the KAP of primigravida women on blood pressure reported that 65% of the women had a moderate level of knowledge of BP, and 96.5% had a favourable attitude toward BP [12]. A cross-sectional study on 131 pregnant women in Pakistan reported that though pregnant women seemed to have a fair knowledge about iron deficiency anemia they seemed to display negative attitudes and poor practices [13].

Our study reports negligible smoking and alcoholism in our study cohort however the majority of the women were unaware of the maternal and neonatal/foetal consequences of such practices. Similar studies have reported highly diversified results. A study on 436 pregnant women in Jordan reported that 17.6% of their pregnant study cohort continued to smoke through their pregnancy and while non-smokers were more aware of the perinatal outcomes of smoking and that hookah and electronic cigarettes are as bad for health as cigarettes, while smokers believed that hookah and electronic cigarettes were as hazardous as cigarettes [14]. The attitudes and practices of pregnant women towards smoking and alcohol seem to be more influenced by social and regional norms rather than their knowledge of the detrimental effects.

A physically active lifestyle during pregnancy has numerous health benefits [15]. Most of our study participants agreed that an active lifestyle was beneficial and most of them preferred walking as a mode of physical activity. This is in agreement with previous studies. A study on 349 pregnant women reported that only 39.5% of the women had adequate knowledge of the health benefits of antenatal exercises while approximately 38% of the women practiced healthy exercises during their gestation period which predominantly included brisk walking, relaxation, and breathing exercises while a few practiced yoga and pelvic floor exercises [16]. About 53.6% of the study participants reported that antenatal exercises could be perceived as inappropriate in Ethiopian culture [16]. The study finally reported knowledge, attitude, and practice of pregnant women toward antenatal exercise depended on their education, job profile, previous exercise routine, and counselling regarding antenatal exercises [16]. Another study reported that approximately 42% of their study participants had a high level of physical activity awareness and practice while 58.37% had a low level of awareness and practice and significant differences in terms of parity, education, and socioeconomic status was observed within the two groups [17]. This highlights the role of antenatal counselling and the importance of holistic health setup to educate and promote awareness of various modalities of antenatal exercises and their benefits and contraindications in pregnant women. The importance of antenatal counselling has also been highlighted in other studies, a study on 229 pregnant women reported that counselling significantly improved KAP scores regarding safe medication use in pregnant women [18].

Pregnancy is an extremely vulnerable phase for women bringing about immense physiological and psychological transitions that prominently shape maternal and fetal/ neonatal health outcomes. Perinatal social and family support play a crucial role in maternal well-being. Most of the study participants perceived that they received adequate social support from their families, however, a few participants chose not to answer the question while a few felt that they did not receive family support during their pregnancy. Our study observes similar themes and trends as previous studies. A study on Chinese women reported that interpersonal relationships exerted significant effects on postpartum depression and sleep quality of pregnant women and new mothers [19]. South Asian countries have a more traditional and strict cultural fabric where women are expected to display high resilience and moral standards and upholding the family status/ respect is often dependent on women exhibiting a perceived “epitome of perfection” [20]. Further high level of stigma revolves around seeking mental healthcare in these societies which is a deterrent for expecting/ new mothers to speak openly about lack of family support or access to mental health care [20].

Studies have reported stigma as the key barrier and women often do not open up about such issues to friends and even healthcare providers due to fear of shame, judgment, and angering their spouses and in-laws [21]. We observed a few study participants hesitant to opine on family support in presence of their bystanders. Unfortunately, a few allied health professionals from these conservative societies, too opine that perinatal depression is a hallmark of weakness and “women choose to get postpartum depression” [22]. While stigma has long been an integral part of societies, the central role of unconditional family support and access to psychological well-being during pregnancy can never be emphasized enough [20]. A study on urban India (where social norms are more flexible) pregnant women reported that perceived social support and sense of coherence negatively correlated with antenatal depression, while maternal-fetal attachment, sense of coherence, and social support were positively associated with antenatal well-being [23]. Another study reported that women were more likely to access antenatal healthcare services if they had cordial and comfortable with their husbands and in-laws [24].

Our results reaffirm “the Health Belief Model” and “the Theory of Reasoned Action” and emphasize that health behaviors might be driven by an individual’s understanding of the benefit from such behavior, their subjective norms (social/ family), and level of education, stream of education, as well as multiparity, emerged as the major factors shaping better knowledge, attitudes, and practices among pregnant women [25-28]. However, though many of our study participants displayed suboptimal knowledge of maternal and neonatal outcomes of pregnancy complications, most of them were compliant with the antenatal supplementation and assessment protocols which prove that advice/ prescription by a health care professional majorly impacts practices (especially in rural setups) unlike the theory that says knowledge (improved health literacy) alone improves practice.

Cues to future actions (triggers necessary for prompting engagement in health-promoting behaviors) as implicated by the study include mass awareness initiatives to improve perinatal health literacy among the general population, implementing a mandatory holistic and inclusive/ family (primary caregivers of the expecting women) antenatal health counselling (including but not limited to common perinatal health complications/ symptoms, modalities of physical activities, the importance of family support and mental health), ensuring universal and affordable access to overall perinatal healthcare and robust implementation and updation of maternal welfare policies such as Surakshit Matritva Aashwasan and Janani Shishu Suraksha Karyakram [29]. Large qualitative, as well as quantitative studies, should be carried out among expectant women, new mothers, their families, and health care providers (from rural healthcare centers) to assess barriers and facilitators to every aspect of perinatal health including emotional and social well-being paving the path for an informed, empowered, secured, healthy and memorable perinatal journey to every woman.

CONCLUSION

The study observed suboptimal knowledge of symptoms and complications pertaining to common pregnancy associated complications, among our study participants. Though the knowledge seemed to be suboptimal, compliance to routine antenatal check ups and supplementation was indeed good, which implicates that counselling by physician indeed played a major role in ensuring compliance, rather than knowledge alone. The study findings need to be validated by large community based studies, to highlight the opinions and perception of mothers who might not access tertiary health care facilities during their gestation. Improvement of knowledge and awareness can definitely aid expectant mothers’ and their families to be cautious of early symptoms and can avert complications. Perinatal social support is indispensable yet a hugely overlooked variable in a few rural Indian communities, where pregnancy and childbirth might still be considered a duty of a women which she is expected to navigate with sheer ease and the concept of holistic support from their spouse and inlaws still remain elusive. Familiarizing the community about the importance of comprehensive family support and physical activity during pregnancy indeed needs concrete strategies, especially in the rural society.

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