Section A-Research paper

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AWARENESS OF THERAPEUTIC EXERCISE FOR PREVENTION OF PREGNANCY INDUCED HYPERTENSION IN PREGNANT WOMEN OF RURAL AREA

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ABSTRACT

Introduction : Pregnancy induced hypertension refers to the conditions occurring due to high blood pressure during the pregnancy. Studies suggest that regular exercises can prevent the incidence of PIH and provide overall health benefits to antenatal women. This study was carried out to study the awareness of pregnancy induced hypertension among the pregnant women in rural area and also to assess their knowledge about various forms of exercises which can be performed during pregnancy such as aerobic exercises, resistance training etc. **Methodology** : In this study, a questionnaire consisting of 6 questions was given to a total of 105 antenatal women. The questions were regarding their awareness about PIH and various forms of exercises which can be performed during pregnancy to prevent PIH. **Results** : Response rate was 100%. Majority of the women included in the study, were in the age range of 21-30 years (86.10%) and multiparous (70.35%). Out of total population, 40.96% were aware about PIH and 27.68% were aware about the role of therapeutic exercises in prevention of PIH. Only 24.76 % were found to be performing regular exercises during their pregnancy. **Conclusion** : The average awareness of pregnancy induced hypertension among the pregnant women of rural area is moderate and the awareness about therapeutic exercises as a preventive measure for pregnancy induced hypertension is low. **Keywords:** PIH, preeclampsia, hypertension, therapeutic exercises, rural area, pregnancy.

INTRODUCTION

Pregnancy induced hypertension (PIH) refers to the conditions occurring due to high blood pressure during the pregnancy. The consequences of pregnancy induced hypertension are preeclampsia and eclampsia. Gestational hypertension indicates systolic blood pressure on or above 140 mmHg and diastolic blood pressure on or above 90 mmHg. Studies suggest that pregnancy induced hypertension is one of the most important factor which can lead to various complications such as death of the mother or infant, low birth weight, intrauterine

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growth restriction or prematurity.[1-3] Preeclampsia is defined as a new onset of hypertension along with proteinuria or hypertension with significant organ dysfunction with or without proteinuria which occurs after 20 weeks of gestation, in a pregnant woman.[4]

Some of the risk factors causing gestational hypertension are obesity, maternal diabetes, collagen vascular disease, family history, pre-existing hypertension, multiple gestation, increased testosterone concentrations etc. Thrombophilia increases the risk of PIH. The thrombogenic potential of this disorder is enhanced in pregnancy because of hypercoagulable state produced due to pregnancy-related physiological changes in various coagulation factors.[5,6] Some studies have concluded that maternal nutritional deficiencies such as decreased in vitamin D concentration and folic acid deficiency are associated with the elevated risk of preeclampsia[7] Anti-phospholipid syndrome (APS) causes PIH and several other obstetric complications due to recurrent thrombosis. Around one third of women suffering from APS develop preeclampsia.[8]

Preeclampsia is usually characterized by symptoms of elevated blood pressure such as severe headache, chest pain, shortness of breath, blurring of vision and loss of balance. Preeclampsia can affect multiple organ systems and women can develop diverse symptoms. Some common outcomes of multiorgan system dysfunctions are abnormal kidney function, abnormal liver function, pulmonary oedema, low oxygen saturation levels, nausea and vomiting.[9]

During pregnancy, it is essential to maintain normal intrauterine growth of the fetus. For this, enough blood flow to the embryo is important. To maintain this blood flow, various hemodynamic as well as cardiovascular changes occur in body of the mother. Parameters like cardiac output are increased along with increase in plasma volume and heart rate. A significant decrease is noticed in systemic vascular resistance and arterial blood pressure.[10] There are few structural and functional adaptive changes are made in cardiac vasculature which lead to further complications in pregnancy. In women diagnosed with PIH, these adaptations fail and lead to noticeable effects on cardiac function. Along with the mother, there is increased cardiovascular risk of child in long term.

In gestational hypertensive disorders, the arterial wall's structural and functional adaptations significantly fail, which has detectable impacts on blood pressure in the acute phase and increases the long-term risks of the mother and infant, towards cardiovascular disorders. By enhancing endothelial function, lowering arterial stiffness, and stimulating angiogenesis, regular exercise has a significant impact on various components of the vascular wall.

In the majority of nations, prenatal care is a component of public health promotion and prevention programmes. Proper antenatal health care services are essential for a safe delivery and better neonatal outcomes, and regular exercise is encouraged for its overall health advantages. The idea of a "fit pregnancy" has found acceptance in contemporary popular culture. The argument that regular exercise during pregnancy poses no risk and is advantageous for both physical and mental health is supported by scientific literature.[11] According to the studies, staying physically active during pregnancy is a most important

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factor for a normal pregnancy; while sedentary lifestyle or staying inactive can lead to various complications during pregnancy such as PIH.[12]

The American Congress of Obstetricians and Gynaecologists have made a report on the health of prenatal subjects and advised them to engage in moderate exercise for 30 minutes daily.[13] The suggestions encourage activity for inactive women and those who have obstetric or medical issues, only after a physical examination and approval. However, studies have revealed that just 5-20% of pregnant women adhere to the most recent exercise recommendations and that the majority do not exercise regularly.[14,15] This percentage is further decreased in the women belonging to rural area as they have less access to adequate information, healthcare facilities and resources.

Present study was aimed to study the awareness of pregnancy induced hypertension among the pregnant women in rural area and also to assess their knowledge about various forms of exercises which can be performed during pregnancy such as aerobic exercises, resistance training etc.

METHODOLOGY

An approval for this study was given by by Ethical Committee of Krishna Institute of Medical Sciences, "Deemed To Be University" Karad, Maharastra . This is a study of assessment of awareness about pregnancy induced hypertension and therapeutic exercises in pregnant women. This study was conducted in various healthcare centres in rural area nearby Karad. Subjects who are in gravid state were selected. Sample size was calculated and the subjects were selected by using simple random sampling. 105 women were selected. The inclusion criteria and exclusion criteria was applied. The inclusion criteria were pregnant women within the age group of 18 to 40 years and belonging to rural area. Exclusion criteria were non-pregnant women, women from urban area and women not willing to participate. The questionnaire comprised of 6 questions and demographic data was circulated among the samples. The questions were regarding their awareness about PIH and various forms of exercises which can be performed during pregnancy to prevent PIH.

RESULTS

Response rate was 100%. It was noticed that, majority of the women included in the study were belonging to the age range of 21-30 years (86.10%) and multiparous (70.35%). Out of total population, 40.96% were aware about PIH and 27.68% were aware about the role of therapeutic exercises in prevention of PIH. Only 24.76 % were found to be performing regular exercises during their pregnancy. Based on the response of candidates on PIH and the role of therapeutic exercises in prevention of PIH , the awareness was less than average. About the types of exercises, the awareness regarding to walking, yoga, stretching and breathing exercise, viz., 98, 84, 64 and 47% respectively, which can be considered to be above average.

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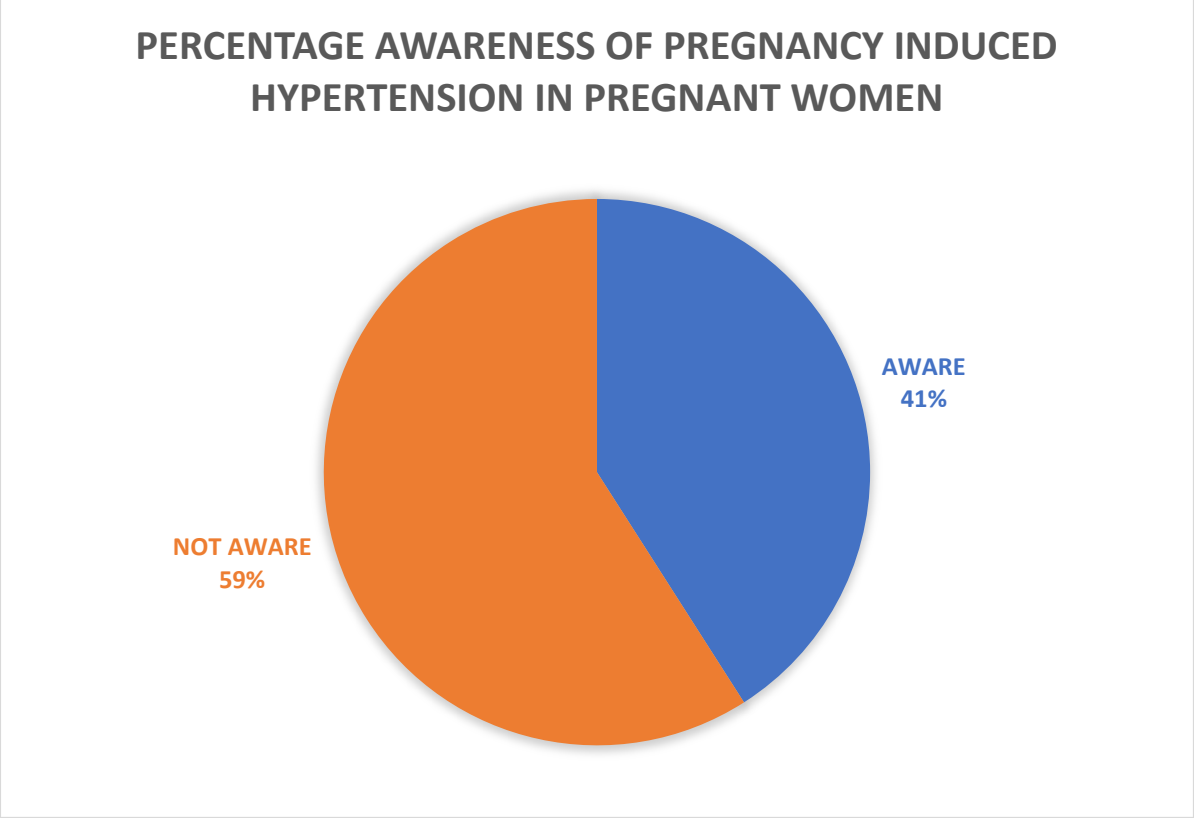

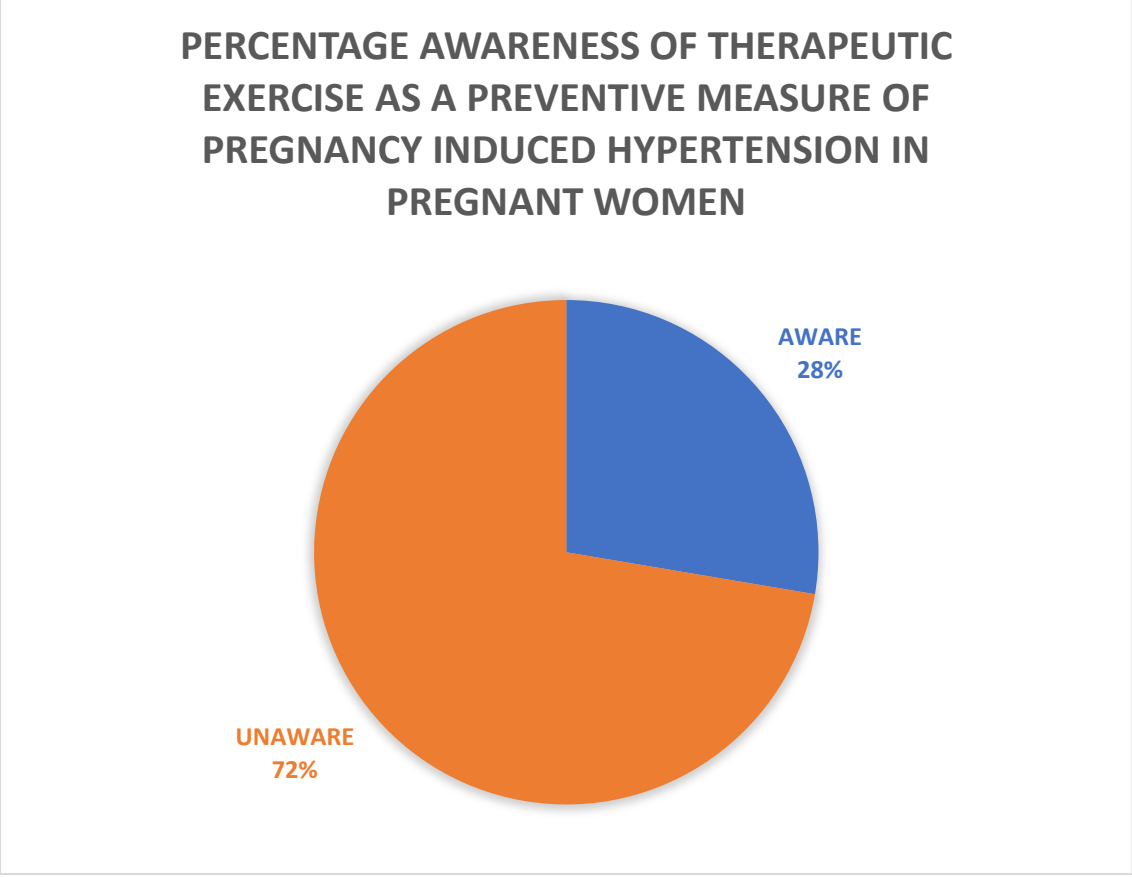

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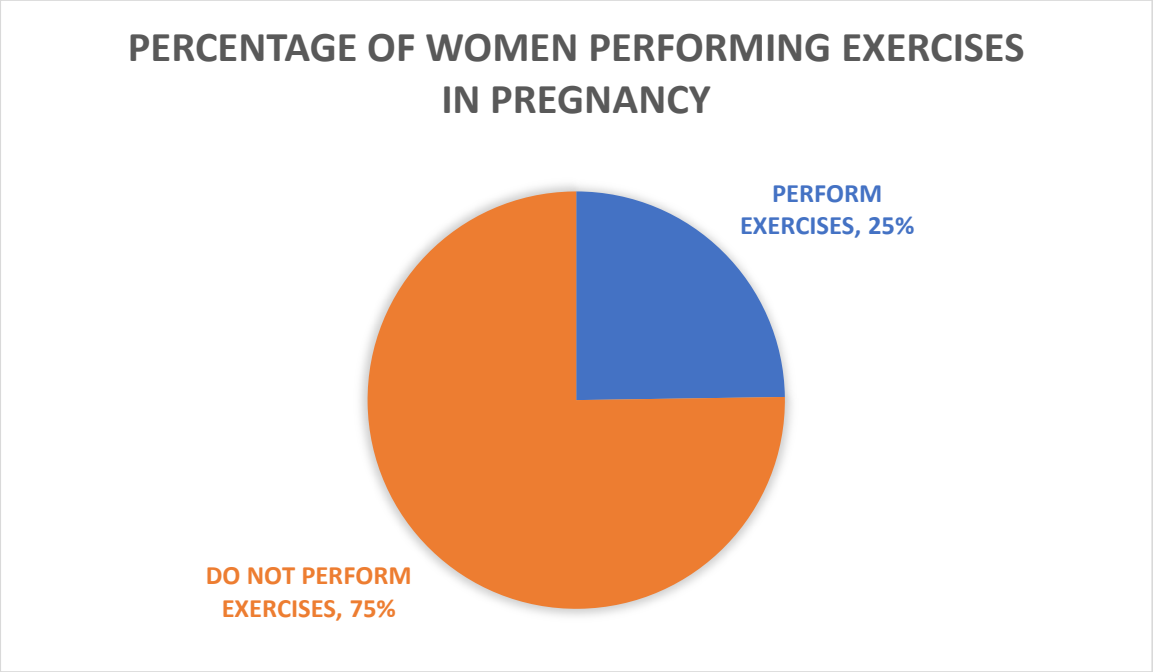

DISCUSSION

PIH consists of conditions occurring due to increased blood pressure during the prenatal period. The consequences of pregnancy induced hypertension are preeclampsia and eclampsia. There are severe life threatening complications of PIH. Many studies have proved that staying physically active during pregnancy is a most important factor for a normal pregnancy; while sedentary lifestyle or staying inactive can lead to various complications during pregnancy such as pregnancy induced hypertension.[16] A 2017 systemic review and meta analysis done by Magro-Malosso ER et al.[17] suggested that, women who performed aerobic exercises 30-60 minutes, 2-7 times a week, showed significant reduction in the risk of development of gestational hypertensive disorder and caesarean section as compared to sedentary women.

This study was aimed to assess the level of awareness about PIH and its prevention using therapeutic exercises among pregnant women of rural area. The sample size contained women from the age group of 18 to 40 years which was considerably a large range. Most of them were in multiparous state. Out of the studied population, 40.96% were aware about PIH and only 27.68% were aware about the role of therapeutic exercises in prevention of PIH. 24.76 % were practicing exercise in pregnancy. The awareness regarding to walking, yoga, stretching and breathing exercise, viz., 98, 84, 64 and 47% respectively, which can be considered to be above average. This suggested that women are nicely aware of these basic exercises, but on the other side, the awareness about exercise practices including low back care was very low, which clearly indicates lack of information and access to modern sources of information.

In this study, the main reason of lack of awareness is scarcity of information, medical advice and lack of proper healthcare services. Therefore, health care initiatives should be set up to

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raise the awareness about the benefits of exercising during pregnancy, especially in rural area. Research should be done to interpret whether the actions done are improving the women's lives and boosting their knowledge and desire to exercise. Studies may be conducted to determine the benefits of exercise for a healthy pregnancy and perinatal outcome. Even the less driven members of the group will benefit from this.

Studies have shown that PIH is the reason for increased mortality rates among pregnant women and also the infants.[18,19] Simple, consistent exercise and moderate work activity should be performed during pregnancy by women as it shows a positive effect on both their health. This can also have good impact on the condition of newborn.[20] The cost is little, however, there are significant advantages for a woman's health and well-being throughout pregnancy. Simple community-level initiatives that promote social support and an active lifestyle can readily provide these advantages. Identifying societal myths and misunderstandings would inherently promote a shift in mindset. In this study, the reasons behind respondents' decreased awareness about PIH and about the role of therapeutic exercises in prevention of PIH is studied, and techniques for promoting behavioural change are suggested. Additionally, we provide to the patients enhanced counselling and exercise recommendations.

CONCLUSION

This study concludes that the percentage awareness of pregnancy induced hypertension and its prevention, in pregnant women of rural area is very low. It is of utmost importance to spread the awareness about this condition and the benefits of therapeutic exercise among this women by various measures and also to promote them to perform exercises during pregnancy.

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