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ROLE OF HOMEMAKER IN MANAGING TYPE 2 DIABETES

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Abstract: Family is the center of the health care system, and homemakers are the core of these centers. Healthy practices within the family play a significant role in preventing type 2 diabetes. A homemaker contributes significantly to preventing, controlling, managing, and treating this lifestyle disease. Type 2 diabetes is one of the leading public health challenges of the twenty-first century. Among the total diabetes cases, more than 90 % of people are affected with type 2 diabetes worldwide. The growing prevalence of type 2 diabetes is directly linked to unhealthy diets and sedentary lifestyles. There is no cure, but prevention can be introduced with lifestyle and diet changes. Secondary data reveals that the majority of instances of type 2 diabetes might be avoided by creating a stress-free family environment, healthy diet, adequate sleep, weight management, engaging in regular exercise, altering one's diet, quitting smoking and alcohol, etc. This paper aims to throw light on the role of the homemaker in the family who can act as a game changer and solve the problem by introducing healthy life practices and helping to defuse this 'ticking time bomb' of type 2 diabetes in developing nations.

Keywords: Homemaker, Type 2 Diabetes, Lifestyle management, Dietary management.

Introduction

Women contribute significantly to the welfare of the family in developing nations. They are essentially seen as healthcare takers and homemakers. Therefore, the ability of women to make decisions inside the family has been viewed as one of the key factors that may affect the family's health and well-being¹. Diabetes mellitus (DM), a chronic metabolic illness, is characterized by persistent hyperglycemia. It may be caused by insulin

resistance, reduced insulin synthesis, or both. Based on an etiology and clinical presentation, the three primary types of Diabetes (DM) are Type 1 diabetes, Type 2 diabetes, and gestational Diabetes (GDM).

Causes of Type 2 diabetes (T2D) are multifactorial and can be attributed to a combination of genetic and acquired factors. Insulin resistance is a condition in which the body's cells become less responsive to the effects of insulin, leading to elevated blood glucose levels. According to the International Diabetes Federation, 90% to 95% of the 463 million people with Diabetes diagnosed in 2019 had type 2 diabetes (T2D). A study conducted by Byrne & Revenson (2021) predicted that about 9% of people worldwide are predicted to have type 2 diabetes mellitus (T2DM) by 2035, as the disease's global burden continues to rise. Modifying behavioral risk factors can help avoid type 2 diabetes, a chronic illness. Although there is no known cure for type 2 diabetes, there are ways to prevent, reduce the disease's progression, and even reverse its symptoms by significant lifestyle changes. (Schmidt et al., 2020)

The present paper focuses on finding out the role of women as homemakers and healthcare takers in managing type 2 diabetes. A systematic review of papers published related to dietary patterns and risk factors of participants with Type 2 diabetes was done. Google Scholar, Pub Med, Science Direct, Web of Science, MEDLINE Scopus, etc. were accessed to collect information on the Indian population in general. Information treated qualitatively and quantitatively was included in the review process to gain an in-depth understanding of the dietary choices among participants with Diabetes. Articles were searched using keywords like Diabetes, risk factors, diet, dietary patterns, Glycemic Index, and fruits & vegetables for Diabetes. Boolean operators were used for more productive searches. The information collected was subjected to content analysis. To know the prevailing role of the homemaker, a sample of 100 diabetic patients from OPD, JNMC Aligarh was surveyed randomly to find out the role of the homemaker in their day-to-day lives. Oral consent was obtained from all participant prior to data collection. The detailed review analysis helped in the streaming of the role of the homemaker that enforces the changes in the lifestyle of the family members. The information collected from the primary and secondary data was analyzed. Secondary data was used to analyze the prevalence and risk factors of type 2 diabetes, whereas the role of the homemakers in preventing type 2 diabetes was studied from the primary data. A survey of 100 type 2 diabetes patient was carried out to find out the role of homemaker in managing type 2 diabetes.

Prevalence of Diabetes in India

Despite large investments in clinical care, research, and public health initiatives, the rate of increase is significant for Type 2 diabetes (Khan, M. A. B. et al. 2020). It is showing a decadal growth among 20-79 years of age. In the world's diabetes epidemic, India is in second place to China with 77 million diabetics. According to the International Diabetes Federation (2021), it was found that 32,674.4 cases in 2000, 61,258.4 cases in 2010, 74,194.7 cases in 2020, and also predicted 92,973.7 cases in 2030, and 124,874.7 cases in 2045 in India⁴, which shows a significant growth in every decade. The high prevalence of Diabetes has serious social, economic, and developmental ramifications. It is becoming more and more necessary to control and reduce the risk factors. To design strategies with more assurance, it is essential to address the significant contribution of homemakers to opt for a family-centric approach to reduce risk factors.

Risk Factors of Type 2 Diabetes

The review of researches revealed that there are several factors that influence the development of Type 2 Diabetes (Pradeepa, R., & Mohan, V., 2021). Diabetes risk factors can be categorized as non-modifiable or modifiable.

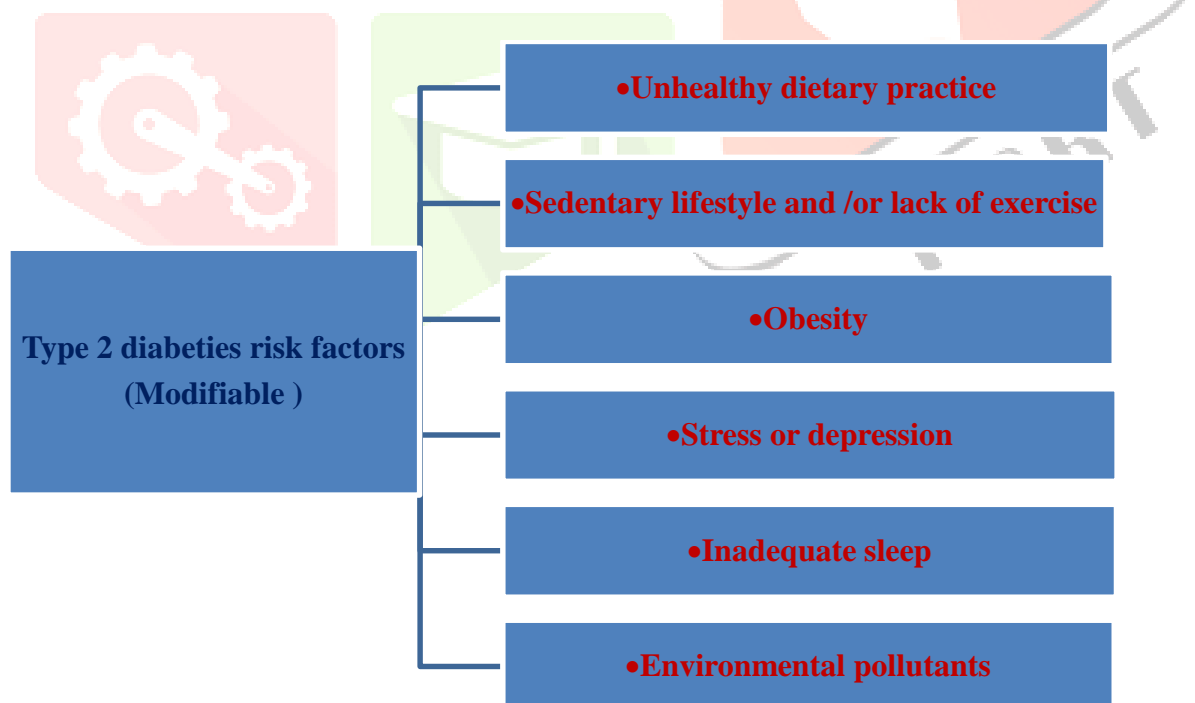


Fig. 1 : Type 2 diabetes modifiable risk factor

Although it is difficult to control non-modifiable risk factors such as Genetic predisposition & family history, Race/ethnicity, and Age > 45 years, etc., but in most cases, modifiable factors can be controlled. The most significant is lifestyle behavior commonly associated with urbanization. Consistent evidence shows that a relatively modest intentional weight loss achieved through a healthy diet and regular physical activity can prevent or delay type 2 diabetes. Lifestyle changes can prevent type 2 diabetes in adults with impaired glucose tolerance, as shown by the European Diabetes Prevention Studies in Newcastle upon Tyne, UK, which is consistent with other diabetes prevention trials (Penn L. et al. 2009). These results suggest that primary prevention of type 2 diabetes could be an effective strategy to restrain the epidemic increase in disease prevalence and reduce the economic burden it poses on the health care system (Abdul-Ghani M. & DeFronzo R. 2009). According to studies, type 2 diabetes is primarily caused by sedentary lifestyles, insufficient exercise, obesity, unhealthy eating habits, stress or depression, altered Intra-uterine environment, environmental pollutants, and inadequate sleep. In the present study, primarily modifiable factors that are within human control have been discussed. A diligent homemaker may easily change the way Type 2 diabetes is prevented, managed, and treated. Family is the only place where fundamental needs of the individuals can be met.

Role of homemaker in promoting a healthy lifestyle and preventing type 2 diabetes

There is a great need for patients to practice committed positive healthcare behaviors in a variety of areas, such as healthy eating, exercise, taking their medications as prescribed, and blood glucose monitoring in order to prevent diabetes-related morbidity and mortality. (Shrivastava, et al.,2013) The role of the homemaker is vital in caring for, imparting knowledge, and supporting individuals with Diabetes, as well as other members in the families. The primary focus is on lifestyle changes, dietary management, and overall well-being. As Chiasson, J. (2007) found in their study, Type 2 diabetes can be prevented or delayed through lifestyle modifications and pharmacologic interventions. A homemaker can implement preventive measures in an intelligent way to tackle type 2 diabetes. As mentioned by Winkley et al. (2020), a psychological approach can also enhance eating habits and overall well-being of individuals with Type 2 diabetes. A homemaker takes care of the whole family with intelligence, enthusiasm, sympathy, judgment, creativity, power of imagination, perseverance, adaptability, self-control, resourcefulness, communication skills, etc. many more can contribute positively in managing the needs of type 2 patients.

The field survey reported that the homemaker plays a crucial role in managing family health care through their participation in essential jobs directly or indirectly linked to family health. It was found that Cooking, bed making, creating a stress-free family environment, and buying groceries are the areas where the homemaker's contribution is significantly high. Fig 2. shows the percentage of homemakers' role in family care.

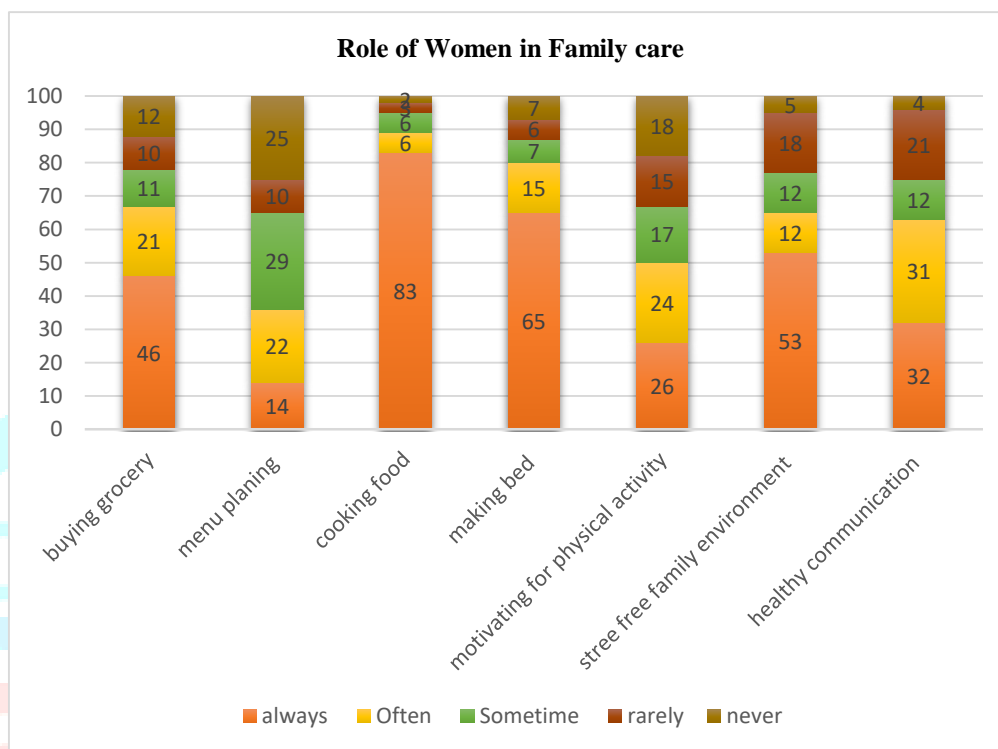


Fig. 2 : Percentage of homemaker engaged in Family care

Goodwin et al. (2005) also mention in their study that women's roles within families have positioned them to become health managers or promoters of overall family health, particularly for children in developing countries whose lives are directly linked to that of their mothers. Women are central to the health of their families by contributing directly or indirectly to their families' nutrition through the production, processing, and selection of foods for family consumption.

The research findings from the field and the reviewing of related researches show how homemakers can become a game changer in controlling type 2 diabetes. A diligent homemaker could immediately notice even a little change in the health of a family member. Thus, the study emphasized the crucial role of women as homemakers in preventing and managing Type 2 diabetes within the family. A woman can create a healthy family environment by utilizing all available resources, i.e. both human and non-human, taking an active part in decision-making, planning, managing, diet selection, creating stress-free family environments, good

interpersonal relationships, extra care for family members in times of crisis, or developing healthy relationships with their children and other family members, inculcating healthy practices, and promoting physical activity. It is believed that women make a positive difference in helping to solve problems that are either directly or indirectly related to Diabetes. Type 2 diabetes can be prevented by changes in the lifestyles of high-risk subjects. (Tuomilehto et al., 2001). Managing type 2 diabetes involves making significant lifestyle changes to control blood sugar levels, improve overall health, and reduce the risk of complications. Diabetes care is a complex phenomenon that includes managing medications (taking the appropriate dose at the appropriate time), adhering to a glycemic diet, eating a balanced diet, checking blood sugar levels, exercising frequently, and receiving regular medical attention. It is advised to involve the family in designing measures to enhance care abilities (glycemia monitoring) adherence to, and areas in which the homemaker can make a substantial contribution. The role of homemaker is summarized in figure 3.

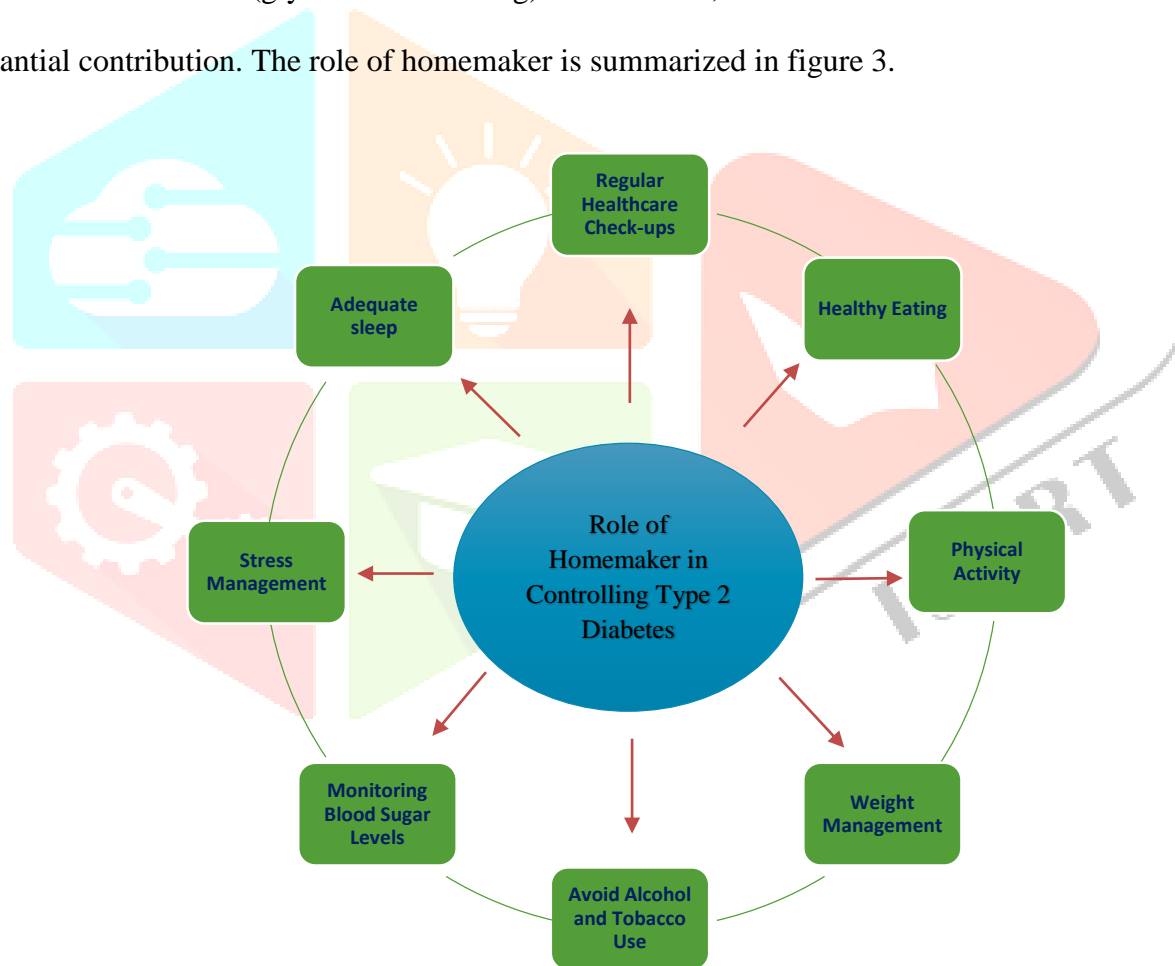


Fig 3. Role of homemaker in Preventing Type 2 diabetes

Homemaker as Health Manager: The homemaker is portrayed as a vital figure in implementing preventive measures against Type 2 diabetes. Their role involves creating a healthy family environment by making informed decisions regarding the following field:

Dietary Management: A homemaker's role in preventing, managing, and treating type 2 diabetes is crucial, involving three stages. Family meal selection and preparation come under the responsibility of women (Goodwin, et al. 2005). Firstly, for prevention, the homemaker introduces a balanced diet emphasizing that food choices significantly impact health. Women, as primary decision-makers and planners for family diets, can foster healthy eating habits in children. Secondly, managing the initial stages involves making daily diet decisions to regulate blood sugar levels. Finally, dietary therapy is a vital part of treatment, impacting insulin secretion and glycemic management. A key component in managing Diabetes holistically is diet, which can be either diet alone, diet along with oral hypoglycemic medications, or diet combined with insulin (Asif, 2014). Fast foods are rich in fat and carbohydrates, which has been linked to type 2 diabetes; several studies have demonstrated a connection between eating a lot of sugar and the development of type 2 diabetes (Sami et al., 2017) Eating more ultra-processed foods (UPF) raises chance of developing type 2 diabetes (Duan et al., 2022) e.g. processed meat, butter/hard margarine, refined grains (white bread), etc. Including balanced portions of carbohydrates, protein, and healthy fats is recommended to prevent and manage type 2 diabetes effectively. As the total of 83 percent homemakers directly engaged in cooking, but sadly 25 percent never plan healthy diet and 10 rarely do diet planning for the family. So, if she includes low glycemic index food, fiber-rich foods, fresh and healthy diet and also avoid high glycemic index food, fast food/ultra-processed foods, sugary foods and soft drinks for the family to control diabetes. It is also helpful to use home remedies measure such as Bitter melon (*Momordica charantia*) as a natural nutritional treatment for diabetes mellitus (Richter et al 2023).

Monitoring Blood Sugar Levels: The homemaker plays a key role in regularly measuring and monitoring blood sugar levels and contributing to therapeutic dietary planning. Utilizing accurate data on glycemic variability allows for adjustments in diet, physical activity, and medication to maintain blood glucose within a healthy range. Additionally, choosing low glycemic index foods is advised, with at least 150 minutes of moderate-intensity aerobic activity per week recommended for optimal blood glucose control.

Physical Activity: A sedentary lifestyle is a significant factor in the rise of type 2 diabetes, making physical activity essential. Homemakers can encourage daily physical activity, integrating simple measures like taking stairs or walking short distances. Regular exercise aids in weight management, a critical factor in preventing type 2 diabetes. Initiating healthy habits like early morning walks or light jogging contributes to family fitness

and prevents Diabetes. At least 50 percent respondent agreed that homemaker motivates them for physical activity directly and indirectly.

Avoid Alcohol and Tobacco Use: Homemakers play a preventive role in creating a healthy family atmosphere by controlling alcohol and tobacco use. In addition to instilling moral values, mothers can build strong interpersonal relationships within the family, fostering a supportive environment that discourages addictive behaviors. Mothers' roles in shaping habits from childhood influence the family's overall well-being.

Stress-Free Family Environment: Anxiety and depressive symptoms have been shown to be important risk factors for the development of type 2 diabetes (Engum, A. (2007)). Controlling this risk factor and creating a stress-free environment is essential. Homemakers, particularly women, can transform the home environment through effective management, resolving issues, and contributing to stress relief. Encouraging open communication and teaching stress-reducing techniques like meditation or yoga helps manage stress and blood sugar levels. As from the field data it was found that 65 percent respondent believed that family environment depends on homemaker.

Regular Health Checkups: Homemakers contribute to family health by ensuring regular health checkups, monitoring weight, and observing physical appearances for early signs of diseases or changes in behavior. Implementing lifestyle practices, such as maintaining a happy family environment, effective budgeting, and division of labor, significantly contributes to overall family health care in modern times.

Adequate sleep management: The importance of adequate sleep management, particularly in the context of a homemaker's role, is highlighted in a recent survey. Sufficient sleep, essential for overall health and blood sugar control, is hindered by various factors such as uncomfortable surroundings, stress, an empty stomach, mosquitoes, and the use of electronic devices. A knowledgeable and skillful homemaker plays a crucial role in ensuring restful sleep for the family, aiming for 7-9 hours of quality sleep per night. Research by Jung, et al. (2023) revealed that those who slept for less than five hours each night had a greater risk of incident diabetes. According to field study Almost 80 % families depend on homemaker for proper bed making. To achieve optimal sleep, homemakers can implement various strategies, including interior space management, light management, maintaining a noise-free environment, avoiding gadgets before bedtime, ensuring a proper diet, and incorporating at least a 40-step walk after dinner. It is emphasized that going to bed immediately after dinner is unhealthy, and a minimum 30-minute gap should be observed between dinner and sleep.

Through diligent management, homemakers contribute to the well-being of their families beyond dietary considerations.

Conclusion

Diabetes is an expensive illness, not just for the patient and their family but also for the healthcare system. According to the studies, the cost of caring for a person with diabetes can account for up to 25% of family income in low-income households. Managerial skills of homemakers can be effectively utilized to boost the family health care system. A small initiative by the homemaker, opting for family-centric strategies, can be very helpful in reducing the global burden of type 2 diabetes. Thus, homemakers in the family, by opting for simple home remedial measures, can play a significant role in family health care management, which is the fundamental and building block of community health. The prevalence of Type 2 Diabetes mellitus (T2DM) is rising alarmingly around the world and is becoming a severe public health issue that primarily affects developing nations. Making these lifestyle changes and maintaining a proactive approach to managing type 2 diabetes can significantly improve your quality of life and reduce the risk of complications associated with the condition. Family members' roles are believed to be positive adjustments in nutrition, and exercise is more likely to stick when they are implemented as a collaborative effort involving adults as well as children. Therefore, rather than focusing solely on the adult with diabetes, treatments must focus on families as a whole, take advantage of the bilateral influences between parents and children, and boost family members' skills to enable them to practice a healthy lifestyle. It will be crucial to develop strategies that work in a variety of resource settings and aim to serve a variety of groups in the era of targeted therapy for the treatment of diabetes.

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