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Diabetes Care, Team-Based Approach for Life-Style Modification and Monitoring of Patients

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Abstract: South India, with one of the largest and most diverse populations of people living with diabetes, experiences significant barriers in successful diabetes care. Limitations in appropriate and timely use of insulin impede the achievement of good glycemic control. The current article aims to identify solutions to barriers in the effective use of insulin therapy viz. its efficacy and safety, impact on convenience and life-style and lack of awareness and education. Therapeutic modalities, which avoid placing an undue burden on patients' life-style, must be built. These should incorporate patient-centric paradigms of diabetes care, team-based approach for life-style modification and monitoring of patients' adherence to therapy. To address the issues in efficacy and safety, long-acting, flat profile basal insulin, which mimics physiological insulin and show fewer hypoglycemic events is needed. In addition, therapy must be linked to monitoring of blood glucose to enable effective use of insulin therapy. In conjunction, wide-ranging efforts must be made to remove negative perception of insulin therapy in the community. Patient- and physician – targeted programs to enhance awareness in various aspects of diabetes care must be initiated across all levels of health-care ensuring uniformity of information. To successfully address the challenges in facing diabetes care, partnerships between various stakeholders in the care process must be explored.

Keywords: Insulin therapy, Diabetes, Life-style, Hypoglycemia

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Introduction

Diabetes is a particular problem in the South Indian community, as people from this ethnic are four times more likely to develop the condition than other groups. South Indian people with type 2 diabetes also have a greater risk of developing cardiovascular disease and renal problems and a higher diabetes-related mortality rate is seen among this group than in the general population (American Diabetes Association, 2005). South India, with one of the largest and most diverse populations of people living with significant

barriers in successful diabetes care (American Diabetes Association, 2006). Limitations in appropriate and timely use of insulin impede the achievement of good glycemic control, efficacy and safety, impact on convenience and life-style and lack of awareness and education (Eisenbarth, 1986).

Indian Society and Culture:

The influences of the caste system have created a culture that emphasizes relationships. Indians are

always conscious of social order and their status relative to other people, be they family members, friends, or strangers (Salim, 2005). All relationships involve hierarchies. In schools, teachers are called Gurus and are viewed as the source of all knowledge. The patriarch, usually the father, is considered the leader of the family. The boss is seen as the source of ultimate responsibility in business. Every relationship has a clear-cut hierarchy that must be observed for the social order to be maintained.

Role of the Family:

People typically define themselves by the groups to which they belong rather than by their status as individuals. Someone is deemed to be affiliated to a specific state, region, city, family, career path, religion, etc. (Pal and Banerjee, 2021). This group orientation stems from the close personal ties Indians maintain with their family, including the extended family. The extended family creates a myriad of interrelationships, rules, and structures. Along with these, mutual obligations comes a deep-rooted trust among relatives. People of South Indian origin are four times more likely to develop diabetes than other ethnic groups. Those with type 2 diabetes also have a greater risk of developing cardiovascular disease and renal problems (Lim *et al.*, 2021).

Nurses should not make assumptions about understanding among South Indian people with type 2 diabetes. Fatalism and strongly held cultural beliefs should not be seen as resistance to health education which is important for nurses to understand other cultures and how individuals relate to their own culture life-style. Diabetes management requires significant modifications in patient life-styles; new patterns of behavior and thought must be integrated into their everyday life and adherence to these patterns must be consistent. Often these changes place consequential demands on time and resources of patients (Fujisaka, 2021). Patients are known to negatively view therapeutic recommendations for

diabetes as demonstrated by the impact of therapy on patient quality of life (Bartstra *et al.*, 2021).

The negative impact of diabetes therapy extends to both pharmacological and life-style management recommendations. This has led to low rates of adherence to therapy in many patients as seen from well-cited reports in the medical literature (Nanayakkara *et al.*, 2021). Effective monitoring of adherence to therapeutic measures by patients is needed to keep doctors informed of the on-ground behavior patterns of the patient. Evolving tools to monitor adherence of patients to specific recommendations is necessary to provide information which will help make physicians' recommendations responsive to patient behavior (Nuzzo *et al.*, 2021).

A patient-centric approach of diabetes care must be built, which is sensitive to the needs of a patient and avoids placing an undue burden of therapy on the patient. An accelerated process of negotiation and motivation should be initiated, support enlisted from family, friends and paramedical staff, and a "finite" trial of appropriate therapy begun (Forsyth *et al.*, 2021). It is known that improved well-being, self-care, and diabetes control are seen in patients who report more involvement in making treatment decisions. There is a need for the formulation of diabetes- and wallet-friendly recommendations (Vieira and Lai, 2021).

The use of folk dance therapy is an example of recommendations which promote better outcomes without placing an undue burden on the patient. In traditional societies like India, socio-cultural factors play an important role on determining patient attitude to diabetes and its management (Kupriyanova *et al.*, 2021). The therapeutic modalities must also bear in mind the socio-cultural sensitivities of patients which impact their ability to adhere to treatment recommendations (fasting, religious requirements etc.) (Wang *et al.*, 2021). A large number of physicians find themselves unable to base their treatment decisions on culturally-dissonant

western guidelines which do not accommodate uniquely South Indian concerns (social and cultural). Socio-culturally responsive Indian national guidelines must be evolved to address this need (Hu *et al.*, 2021).

While, the physician is the central figure with oversight of the disease management process, the complex nature of diabetes management modalities require a comprehensive team-based approach to effectively deal with the individual aspects of care (Shang *et al.*, 2021). Team-based care has been shown to be more effective in diabetes management, resulting in better care outcomes than conventional therapy without team care. Hence, a pool of well-informed and adequately trained paramedical personnel must be created to counsel patients for facilitating better and easier adherence to therapy (Zhang *et al.*, 2021). The training of these personnel must be uniform in content and quality and viable career opportunities must be ensured to encourage greater interest in such training. A greater degree of customization of therapy to individual needs can thus be achieved (Gajewska *et al.*, 2021)]. The physician too must be empowered by improving motivational skills to make meaningful interventions and blending clinical knowledge with psychosocial support.

Education:

Diabetes education and awareness of the disease is an important modulator of the success of a therapeutic strategy. The two components of an effective diabetes awareness program need to encompass: (1) Strategies to reach out to the general populace to spread awareness of the disease and its complications, and (2) educate and reach out to diabetes patients and physicians to improve outcomes (Mantovani *et al.*, 2021). Spreading awareness about diabetes in south India will require a large outlay of resources and efforts to succeed (Pal *et al.*, 2021a). Given the vastly varied demography of South India, multiple modes of communication need to be utilized to spread awareness of diabetes and its

complications (Wilkinson, 2021). There is a need to increase the awareness of public and physicians on modern medicinal care like insulin analogues and the harmful effects of dependence on alternate and complementary medicine for patients with diabetes. A strategy utilizing both conventional (dramas, skits, newspaper, TV etc.) and non-conventional (internet, short message service, mobile phone apps etc.) modes of communication must be adopted to maximize the reach of diabetes education programs (Pal *et al.*, 2021b). Diabetes awareness programs conducted through community involvement have reported improved awareness about diabetes and its complications in a South Indian city (Cho *et al.*, 2021a). Cost effectiveness of telemedicine based multi-disciplinary care in achieving glycemic targets and providing continuous education may be considered. Titration of insulin and oral drugs in this program precludes the need for physical visits to the hospital and avoids hypoglycemia even in patients on insulin therapy (Pergolini *et al.*, 2021).

Educational programs must be simultaneously planned to educate and sensitize various stakeholders in diabetes management about the disease and insulin therapy (Saeedi *et al.*, 2021). Uniformity of content in diverse diabetes education programs especially with regard to insulin therapy must be ensured to assure consistency of information across various levels of care (Cho *et al.*, 2021b). To ensure multi-stakeholder participation and to reflect a broad consensus of opinions, recommendations for promoting insulin therapy should be endorsed by national-level organizations (Wang and Sander, 2021). The information resources and communication processes thus created can often be challenging for the patient to comprehend and translate into simple applicable everyday strategies for diabetes care (Polk *et al.*, 2021).

It must become a matter of routine for endocrinologists to teach their patients with diabetes the difficult nuances of self-monitoring,

self-adjustment of insulin dosage, and sick day management. As noted earlier there is a need to create space for specialized diabetes educators who will effectuate the larger goals of educating and raising awareness of diabetes and insulin therapy.

Designing and implementing programs and strategies of such wide-ranging consequences requires collaboration and partnership between different constituents with an interest in diabetes care. Exploring multiple partnerships between the government and the private sector in diabetes education is one way of finding synergies between these constituents (Pal *et al.*, 2021b). In addition, integrating diabetes education across all levels of healthcare professionals (HCPs), patients and the community will ensure effective channels for flow of information. One final stakeholder in the care process that is often forgotten is the family of diabetes patients, who bear a significant burden of the disease indirectly (Cho *et al.*, 2021a). Designing family-centric education programs using a team of HCPs, to address the immediate care environment, i.e., the family will help in encouraging insulin use by patients.

Cultural:

Culture is an amalgamation of behaviors, ideas, attitudes, values, habits, beliefs, customs, language, rituals, and ceremonies. A community's culture provides the structure and design for how individuals live their lives and interpret reality, including their own health. South Indians are a linguistically and religiously diverse population whose behavior is strongly influenced by cultural values (Pergolini *et al.*, 2021). Unfortunately, some aspects of this culture have resulted in an increase in the risk of diabetes in an already biologically vulnerable population. For example, the South Indian diet is rich in fats, sugars, and deep fried foods, which are major contributors to the increased risk of diabetes in this population. Food plays an important social role for South Indian, and South Indian who are diabetic agree that changing their traditional diet is the most difficult

aspect of their care regimen. As a result, compliance with reduced sugar and caloric diets tends to be poor (Cho *et al.*, 2021a).

Additionally, misconceptions about certain foods, such as “ghor”, or brown sugar, being a ‘natural’ source of sugar and therefore a healthy dietary supplement further exacerbate problems in managing blood glucose levels. Many societal and religious practices also act as obstacles to effectively manage diabetes in South Indian (Pal *et al.*, 2021b; Cho *et al.*, 2021a; Pergolini *et al.*, 2021). For example, strong religious beliefs cause many individuals to develop apathy towards the management of their disease because they feel their illness is ‘God’s will’. These individuals believe they do not have to treat their diabetes because a higher power will look after them. Some communities have been known to encourage obesity as it is a sign of wealth, prosperity, and good health (Saeedi *et al.*, 2021). During specific holidays and festivals, certain South Asian groups practice fasting and pilgrimages followed by massive feasts. These activities often lead to extreme changes in blood glucose levels and complicate diabetes management (Polk *et al.*, 2021; Wang and Sander, 2021).

Conclusion

Type 2 diabetes is a serious chronic health concern for South Indians. The increased risk of diabetes may be associated with several factors, including genetic predisposition, in-utero metabolic factors, and cultural practices. In light of this increased risk, it is important to provide an inter-professional approach to management. This may include sufficient education which would make consideration, cultural practices and development of a therapeutic plan.

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