

Exploring Alternative Therapeutic Medicines for Risk Reduction in Diabetic Patients under Medications

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Abstract: Diabetes mellitus is a chronic metabolic disease characterised by persistently high blood sugars. It increases the risk of serious complications that can affect many organ systems. Conventional treatments mostly aim to reduce heart disease risk by managing blood sugar. Still, the use of alternative medicines, including nutraceuticals and herbal cures, has grown more and more common. To evaluate their opinions on the use of nutraceuticals for diabetes control, this study comprised a poll of 100 consumers, 50 practitioners, and 50 vendors. The results indicate that diabetic patients strongly favour holistic therapy; reported improvements in glucose control and overall well-being abound from this approach. Since alternative medicines help manage diabetes, sellers and practitioners usually promote their use. This strengthens their legitimacy. The aim of the study is to clarify the role nutraceuticals play in controlling diabetes and underline the need to clinically prove them before they can be applied to daily treatment.

Keywords: Diabetes mellitus, nutraceuticals, herbal medicine, alternative therapeutic medicines, glycaemic control, insulin sensitivity

INTRODUCTION

Affecting millions of people worldwide, diabetes mellitus is a generally common metabolic condition marked by persistent hyperglycemia brought on by either insulin action, insulin production, or both (American Diabetes Association, 2022). Uncontrolled high blood sugar levels can lead to serious complications such as heart disease, kidney disease, nerve damage, and vision loss. This loss of vision makes managing diabetes a critical public health issue (Zimmet et al., 2016). To get glycaemic control, conventional treatments mostly concentrate on pharmaceutical interventions, including insulin therapy, oral hypoglycaemic medications, and lifestyle changes. But constraints include negative side effects, growing prescription prices, and patient non-compliance, which have piqued more interest in alternative therapy approaches (Nathan, 2015).

As a supplemental strategy to diabetes control, the use of nutraceuticals and herbal treatments has attracted much attention. A number of known anti-diabetic effects of nutraceuticals—which are bioactive molecules derived from food and medicinal plants—include improving insulin work, lowering oxidative stress, and changing how glucose is used in the body. Plant-based formulations have long been used in many classic systems of medicine, including Ayurveda, Siddha, and Traditional Chinese Medicine (TCM), to control blood glucose levels (Patel et al., 2012). These alternative remedies have lately been validated by studies, which motivates more research on their combination with traditional pharmacological treatments (Afolayan & Sunmonu, 2010).

This paper investigates the views of customers, medical professionals, and vendors about the efficacy of alternative therapeutic approaches to diabetes control. Through survey data analysis, the study seeks to pinpoint the most often used nutraceuticals, their claimed effectiveness, and the difficulties in their acceptance. The results will help clarify the function of alternative medicine in diabetes treatment and offer guidelines for future studies and legislative development.

METHODOLOGY

A cross-sectional survey study was used to find out what people with diabetes, doctors, and sellers thought about how well alternative therapeutic treatments worked for them. There were one hundred consumers(n=100), fifty practitioners(n=50), and fifty sellers(n=50) who sent a standard questionnaire. Questions on holistic medicine use, perceived efficacy, side effects, and advice for additional integration into traditional diabetes treatment comprised the survey. Data was gathered and examined to identify trends and statistical relevance in answers.

Survey Design

The survey comprised both qualitative and quantitative questions designed to evaluate participants' experiences with nutraceuticals. Consumers were asked about their history of holistic medicine use, the improvements they experienced, and whether they preferred these treatments over conventional medications. Practitioners evaluated the effectiveness and potential side effects of nutraceuticals, while sellers provided insights on consumer demand and feedback from customers regarding alternative therapeutic medicines. The collected responses were then analysed to determine trends in acceptance, effectiveness, and market perception.

Alternative Therapeutic Medicines for Diabetes Management

Herbal and natural chemicals have been under much study as alternative therapies for diabetes. Many conventional medicinal herbs have been demonstrated to reduce blood sugar and alter other metabolic pathways involved in the onset of diabetes and its consequences (Ashwlayan & Nimesh, 2018; Ndip et al., 2013). Many people are interested in herbal medicines and nutraceuticals because they are thought to work well, have few side effects, and not cost as much as traditional medicines (Ashwlayan & Nimesh, 2018). Many times, these natural products contain various bioactive substances like vitamins, minerals, antioxidants, and phytochemicals that might assist in regulating risk factors for diabetes, improving insulin action, and maintaining steady glucose levels. *Gymnema sylvestre*, a plant native to India and Africa, is one promising alternative medicine. Traditional medicine has long employed *Gymnema sylvestre* to treat diabetes; much research has shown its hypoglycemic and insulin-sensitising effects. According to Thakur (2012), gymnemic acids are one of the active chemicals in *Gymnema sylvestre*. They are thought to lower the absorption of glucose in the intestines, increase the production of insulin, and improve the use of glucose in peripheral tissues. African medicinal plants are another class of alternative therapies showing promise for the

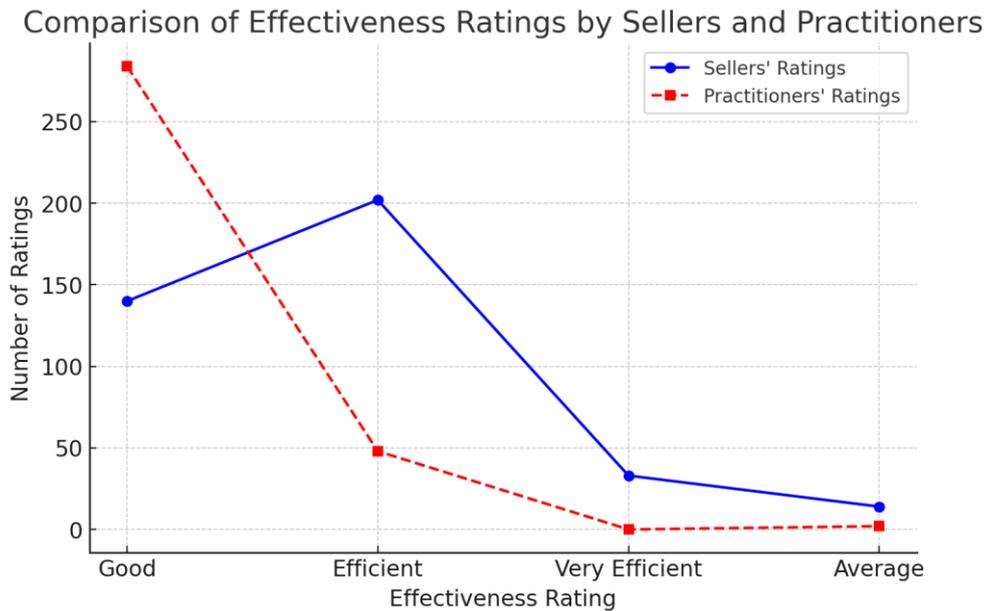
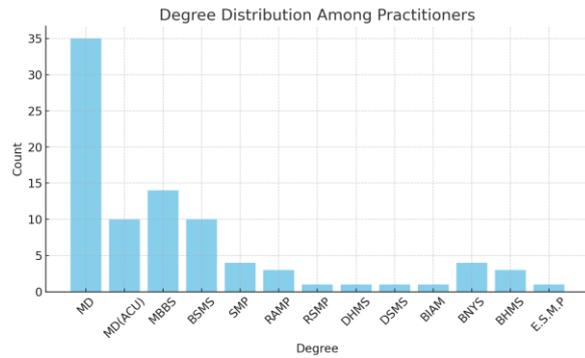
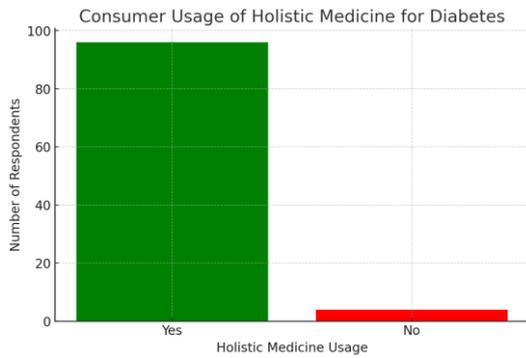
management of diabetes. With modes of action ranging from inhibition of carbohydrate-metabolising enzymes to stimulation of insulin production and increased insulin sensitivity, many African medicinal plants have been reported to have antidiabetic characteristics. Among African medicinal herbs with known antidiabetic action are *Trigonella foenum-graecum*, *Allium sativum*, and *Momordica charantia*. Although the safety and efficacy of these alternative therapies haven't yet been completely established, the data we do have points to them perhaps complementing conventional medication treatments for diabetes. They might enable diabetics to feel better generally, reduce their chance of problems, and improve their blood sugar control.

Most Selected Nutraceuticals by Participants

The poll answers revealed a number of nutraceuticals that participants most often choose for diabetic control. Turmeric curcumin, *Gymnema sylvestre*, *Momordica charantia* (bitter melon), *Allium sativum* (garlic), and *Trigonella foenum-graecum* (fenugreek) were some of these. These nutraceuticals reportedly helped to lower glucose absorption, increase insulin sensitivity, and offer antioxidant effects.

RESULTS

The poll taken among customers, vendors, and professionals demonstrated a considerable propensity for using nutraceuticals and herbal remedies for diabetes control. Of the consumer group, 96% said they used holistic medicine; 49% said they had notable gains, and 43% said they only slightly improved. High confidence in these items was shown by distributors and sellers, evaluating 202 formulas as efficient and 33 as very efficient. With 284 cases of efficacy noted, practitioners mostly agreed on the advantages of alternative treatments. The study underscored the need for more scientific investigation, even though nutraceuticals are generally recognised by a small percentage of consumers (6%) who have mentioned no notable improvements.



REVIEW OF LITERATURE

Previous research has looked at the management of diabetes and related risk factors using alternative medicinal medicines like phytochemicals and herbal therapies. Many traditional medicinal plants and natural compounds appear to have anti-diabetic effects, with mechanisms of action including inhibition of carbohydrate-metabolising enzymes, stimulation of insulin secretion, and increased insulin sensitivity (Patel et al., 2012; Afolayan & Sunmonu, 2010). Many species of African medicinal plants have shown hypoglycemic effects, which supports their traditional usage in the management of diabetes, according to a review article evaluating their antidiabetic action (Kooti et al., 2016). Research carried out in Africa has shown the advantages of hypoglycemic-effect medicinal herbs. Another study emphasised in vivo research on the antidiabetic plants used in South African herbal medicine and highlighted the growing demand for plant-based medications to treat diabetes (Modak et al., 2007).

This effort is necessary because traditional medicines can have bad side effects, and people believe that herbal therapies can have extra benefits on top of allopathic treatment. The study notes thirty-two plant species historically used in South Africa for diabetic therapy.

DISCUSSION

According to the results of this study, distributors, healthcare professionals, and diabetes patients all seem to have welcomed alternative therapeutic treatments—especially nutraceuticals—pretty nicely. The high proportion of users claiming improvements corresponds with other studies indicating that plant-based therapies can greatly improve glucose metabolism and insulin sensitivity. The support of sellers and practitioners confirms the market credibility of these treatments even further. Nevertheless, a small percentage of respondents did not show any appreciable improvement, despite the encouraging outcomes, which underscores the need

for more randomised clinical studies. While assessing the effectiveness of these treatments, one should also take into account the possible impact of individual metabolic variations, product standardisation, and placebo effects. The study emphasises the need to include traditional medicine in regular diabetic care while ensuring that evidence-based methodologies guide therapy recommendations.

CONCLUSION

Herbal remedies and nutraceuticals are among the alternative medicinal drugs that have shown especially promise in controlling diabetes. According to the poll results, most consumers and practitioners of these therapies agree that they have advantages, indicating a significant tendency towards them. But the variation in patient reactions demands more methodically planned clinical studies to provide a benchmark for their application. The growing popularity of nutraceuticals points to their potential to be used in concert with conventional diabetes treatment to enable patients to function better and require less medication. Future studies should concentrate on improving formulations, dosage optimisation, and long-term safety evaluations to guarantee the integration of alternative medicines in general diabetes treatments.

Limitations and Challenges of Nutraceuticals

Lack of standardisation and quality control, potential adverse effects, and limited scientific evidence are the major drawbacks of nutraceuticals. We conducted a survey with a limited sample size of 200 people, but we plan to increase this number in the future for further development.

Author Contributions

Dr. Senthilkumar Kathamuthu & Dr. Kokilabhuvaneswari designed the study; Dr. Hemachandran Ravikumar provided ideas on the final design and selection of assessment tools. All the authors were involved in data collection, summarising, statistical analysis, and finalising the report. Dr. Hemachandran Ravikumar provided the initial draft of the manuscript, and everyone considered it before making the final version available.

Declarations of conflicts of interest

The authors declare that they have no potential conflicts of interest regarding the study design, research analysis, or publication of this article.

Funding

The work was supported by the UNS Research Council & UNS Digital Technologies Pvt Ltd.

Ethical Approval

The study was approved by the Review and Ethics Committee of the UNS Research Council, India. All participants provided written informed consent about the trial.

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