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The Impact of the Alphabet Strategy for Diabetes Mellitus: A Literature Review

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Abstract

Background: The number of people with diabetes continues to increase, and the inability to control blood glucose increases the risk of complications, morbidity, and mortality. Diabetes mellitus requires lifelong self-care management to keep blood glucose levels within normal limits and reduce the risk of complications. One effective self-care management strategy is the alphabet strategy, which is proven to improve glycemic control.

Objective: This study aims to evaluate the effectiveness of the alphabet strategy in improving outcomes for individuals with diabetes.

Methods: This systematic literature review was conducted in accordance with PRISMA guidelines. We searched four major databases ScienceDirect, PubMed, Springer, and Wiley using keywords defined by the PICO framework.

Results: The findings indicated a significant reduction in HbA1c levels, a decrease in systolic blood pressure, and improved medication adherence as a result of the alphabet strategy implementation.

Conclusion: The alphabet strategy is an effective, adaptable, and cost-efficient intervention for diabetes management, offering significant improvements in clinical outcomes and feasibility across various healthcare settings.

Keywords: The Alphabet Strategy, Diabetes Mellitus

INTRODUCTION

Diabetes mellitus (DM) is one of the most significant global health challenges, with major impacts on individuals and health systems worldwide. The prevalence of diabetes continues to rise dramatically, with data from the International Diabetes Federation (IDF) reporting that in 2021 there were approximately 537 million adults living with diabetes, and this figure is expected to jump to 783 million by 2045 (1). Type 2 diabetes, which accounts for approximately 90-95% of all diabetes cases, is closely associated with cardiovascular complications, neuropathy, nephropathy and retinopathy, all of which can lead to long-term disability and premature death. A major challenge in diabetes management is optimizing glycemic control to minimize the risk of these complications (2, 3).

Effective diabetes management depends not only on medical interventions, but also on active patient participation in self-care. Patient education and empowerment play an important role in ensuring adherence to medication and necessary lifestyle changes. However, studies show that many patients still experience difficulties in adhering to long-term diabetes management recommendations, caused by various factors, including a lack of understanding of their disease and limitations in remembering or executing care plans (4, 5).

The alphabet strategy, as an innovative evidence-based approach, aims to address this challenge by providing a structured and memorable educational framework. The strategy is designed to simplify diabetes management through a mnemonic approach, where each letter of the alphabet represents an important component of diabetes care. For example, “A” for Advice on lifestyle changes, “B” for Blood pressure monitoring, “C” for Cholesterol checks, and “G” for Guardian drugs. In this way, the alphabet strategy facilitates better understanding and increases patient involvement in their disease management (6).

Research shows that the alphabet strategy is effective in improving clinical outcomes. The study by Robinson et al. (2019) reported that the implementation of this strategy resulted in a significant reduction in HbA1c levels, from 10.5% to 7.1% within 12 weeks, indicating substantial improvements in glycemic control (7). In addition, a study by Upreti et al. (2021) found that this strategy not only improved patient satisfaction, but was also appreciated by healthcare workers, with 91% of them reporting that the alphabet strategy facilitated more efficient and effective care (8).

In nursing practice, nurses have a central role in implementing the alphabet strategy, given the importance of patient education and continuous monitoring in diabetes management. Nurses are responsible for ensuring that patients understand each component of the strategy and are able to apply it in their daily lives. This structured and adaptive approach also allows nurses to tailor interventions to patients' cultural and socio-economic needs, strengthening their involvement in their care (9).

OBJECTIVE

The aim of this study was to identified the impact of the alphabet strategy on people with diabetes.

METODE

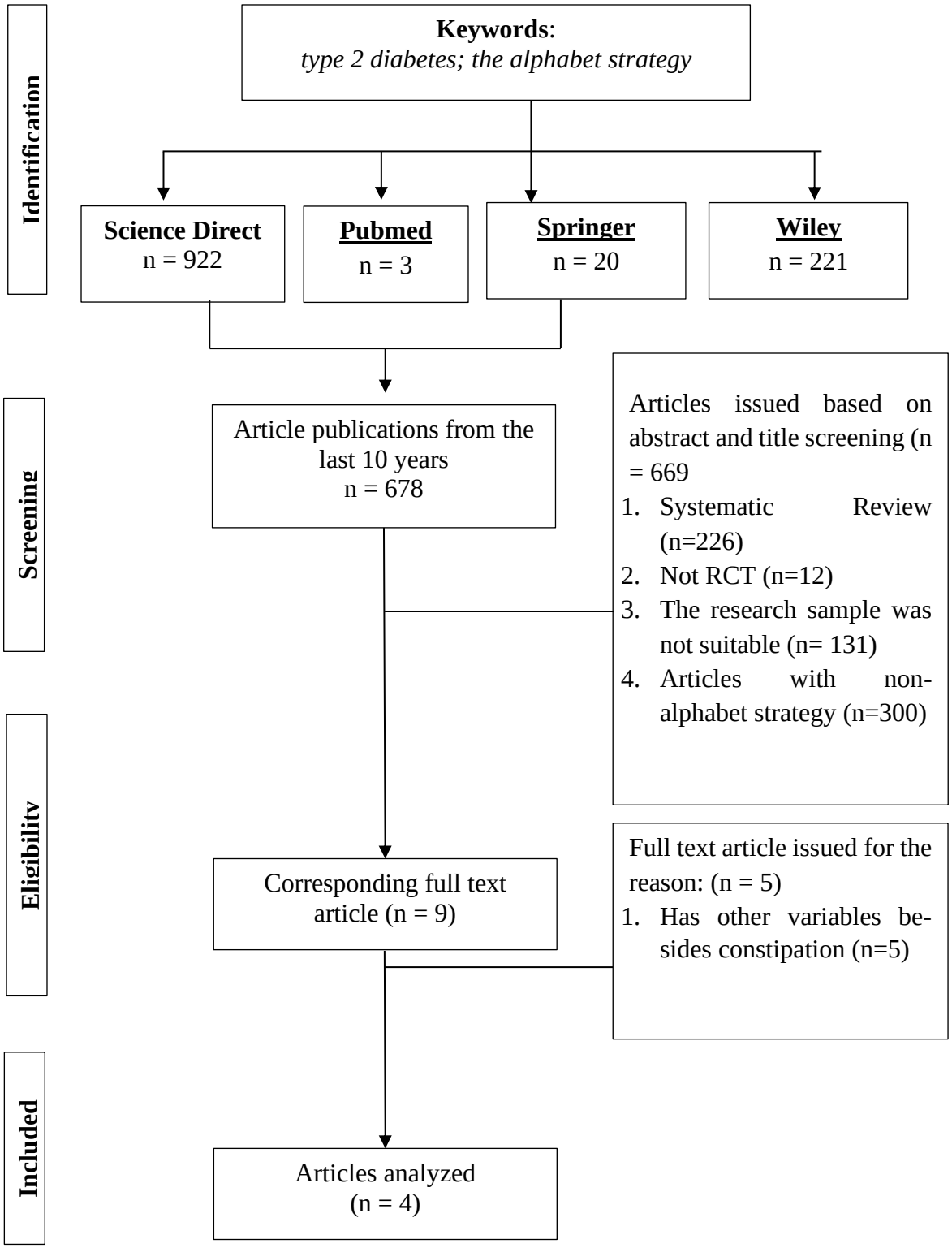
This study was a systematic literature review that followed the PRISMA (2020) guidelines and used the PICO framework to determine selection criteria. Keywords considered included “type 2 diabetes” and “the alphabet strategy.” The inclusion criteria used were: (1) quantitative studies with a randomized controlled trial (RCT) design; (2) articles published in English between 2014 and 2024; and (3) original articles available in full text and open access journals. Articles not meeting these criteria were excluded from the analysis to maintain consistency and focus.

Tabel 1. Criteria PICOS

Criteria	Determinant
Population/People	Type 2 diabetes mellitus
Intervenion	The alphabet strategy
Comparator	None
Outcome	Glycaemic control, blood glucose control, blood pressure, cholesterol, creatinine, fasting blood glucose,eye examination, foot examination, medicine adherence
Study type	Randomized controlled trial, experimental trial, prospective study, mix-methods study

The search across four databases resulted in 922 articles from ScienceDirect, 3 from PubMed, 20 from Springer, and 221 from Wiley. Screening these articles based on relevance and inclusion criteria reduced

the number to 678. We then reviewed abstracts and titles, excluding 669 articles due to being systematic reviews (226), qualitative studies (12), unsuitable research samples (131), or not focusing on the alphabet strategy (300). Finally, 9 full-text articles were evaluated in depth, with 5 articles excluded due to irrelevant variables, leaving 4 articles analyzed.



RESULT

Table 1. Article Extraction Results

No	Title, Author, Year	Method	Intervention	Outcome
1	*Impact of the Alphabet Strategy on Improving Diabetes Care at a Free Health Clinic. Robinson, Jamie. Lang, Betty. Clippinger, Davi (Robinson, et al., 2019)* 2019	- Intensive intervention - Aim to increase the number of uninsured patients who receive diabetes care and treatment - The population under study comprised individuals with diabetes who had visited free healthcare clinics - The respondent were patients who had visited the free service clinic within 12-weeks research period - To be eligible for inclusion in the study, respondent were required to be able to speak in English or Spanish, be aged over 18, and suffer from diabetes - Total of respondents are 34	1. The clinic assesses the availability of resources for implementing the alphabet strategy, including items such as BMI wheels, foot examination form, monofilaments, ADA booklets, eye examination format, educational material, and HbA1c kits. Subsequently, all personnel must undergo training on the alphabet strategy checklist, which will be conducted by the nurse clinician until the conclusion of the research 2. The nurse will conduct an assessment of the respondents in accordance with an alphabetical checklist 3. Subsequently, the clinician provides each respondent with an educational intervention based on the initial results of the alphabet checklist 4. It is at the discretion of the respondents whether or not they wish to participate in diabetes self-care education classes. The fundamental aspects	1. The alphabet strategy can be implemented in 91% of patients with diabetes who are seen by healthcare professionals 2. A total of 59% of patients who attended educational classes demonstrated an increase in their knowledge scores 3. It is recommended that 100% of patients with hypertension be captured. The respondents are required to attend the research facility on at least two occasions within 12-weeks period 4. There was a statistically significant reduction in systolic blood pressure (from 135 mmHg to 125 mmHg), instantaneous blood glucose (from 185 mg/dl to 164 mg/dl) and body weight (from 223 lbs to 218 lbs) 5. A reduction in HbA1c was observed, as

			of diabetes self-care education are rooted in the principles of nutrition of self-care strategies, which are organised in an alphabetical sequence 5. A pre- and post-knowledge assessment will be conducted for respondents who participated in diabetes seld-care education classes 6. A chart is conducted on a regular basis, typically every one to two weeks	evidenced by a statistically significant result (t(2)=4,556) in accordance with the paired t-test. The results were statistically significant (p<0,05) with a mean pre-post value of 10,5 and a mean post-test value of 7,1 (standard deviation pre 2,356 to post 1,053)
2	*Alphabet strategy for diabetes care: A checklist approach in the time of COVID-19 and beyond.* *Upreti, Rajeev.* *Lee, James D.* *Kotecha, Satyan.* *Patel, Vinod* *(Upreti, et al., 2021)* 2021	- Intensive multifactorial intervention therapy care plan. The sample comprised outpatients from UK regional hospital, with 1,071 respondents having followed them for a period of seven years.	1. It is recommended that an alphabet strategy be developed for educational materials in the form of slides, documents, and videos. The educational packages, which consist of patient education posters and patient care plans, a diabetes guide sheet and supporting guides containing suggestions for blood sugar control, optimising drug use, diabetes prevention and achieving fiabtes care through the health team, are distributed.	1. Significant improvements (p<0,05) were observed in lipid values, blood pressure, HbA1c, and in the results of eye and foot examination A notable increase in satisfaction was observed among both diabetes patients and professional health workers. Specifically, 91% of respondents reported a positive influence on their diabetes care.
3	*ABC's of diabetes education: An interprofessional education model.*	- A mixmethode pre – posttest on diabetes disease. It contained quantitative data in the	There are three session: 1. Diabetes education in the form of interprofessional simulation activities. Apre-test	There was a statistically significant increase in knowledge about diabetes-specific education (p=0,0001)

	Wildermuth, Anne. Cook, Kristen. Timmerman, Megan. Wheelhouse, Carey (Wildermuth, et al., 2022)	alphabet model mix with the qualitative data from students perspective and from the standardized patients utilized - The sample comprised students pursuing a degree in health-related disciplines, including medicine, nutrition, and pharmacy. Potential respondents are informed about the research project and may participate in the study if they arrive before the quota is met. A total of 39 students participated in the study, comprising 12 individuals pursuing a Master of Physician Assistant studies, 11 Doctor of Pharmacy students, and 6 Master of Medical Nutrition students.	will be conducted to assess the participants knowledge about alphabet strategies and diabetes epidemiology. The respondens are divided into six small groups; each of which will introduce themselves and engage in a discussion about letters in the alphabet strategy, guided by one mentor 2. The content of this session is identical to that of session 1, with the exception of the addition of teaching on health literacy and the alphabet strategy. This session will focus on teaching the participants about the importance of selecting an effective checklist system for the diabetes management. Following this, the participants will regroup and engage in discussion. Subsequent to the aforementioned educational programme, a posttest will be conducted.	and public health knowledge (p=0,0017)
4	*Quality of diabetes care worldwide and feasibility of implementation of the Alphabet strategy: GAIA project (Global Alphabet Strategy*	- A preliminary prospective study of the alphabet strategy in low0resources areas of India. - Subsequently, a four-months prospective audit was	1. Data from 4,537 patients in 32 countries were converted into quality and outcome framework (QOF) scores. 2. A comparison is made between the QOF score and two other	1. There is a positive correlation between GDP and THE and QOF 2. 91% of health workers indicated that the alphabet strategy was a practical approach to

	Implementation Audit) *Lee, James D. Saravanan, Ponnusamy. Varadhan, Lakshminarayanan. Morrisey, John R. Patel, Vinod (Lee, et al., 2014)* 2014	conducted to evaluate the impact of the aforementioned changes on the quality of care A retrospective audit was conducted over a nine-month period, during which data were obtained from 4,537 patients in 32 countries.	economic indicators: gross domestic product (GDP) and the percentage of total health expenditure (THE) A structured qualitative questionnaire was employed to ascertain the opinions of health workers regarding the implementation of the alphabet strategy in health services.	implement. Patients have indicated that the alphabet strategy checklist is an efficacious educational instrument. Significant improvements were observed in multiple domains of the alphabet strategy, including blood glucose level, total cholesterol, serum lipid profile, renal function, proteinuria, and insulin maintenance drug compliance. This was followed by a notable increase in the quality and outcomes framework (QOF) score, from 45% to 61% ($p < 0,001$).

DISCUSSION

The study describes the strength and weakness of the alphabet strategy based on the result from each research. From the table 2 can show that alphabet strategy has many strengths, which are improve the glicaemic control and clinical components of the alphabet strategy, easy to adapt in many aspect of the diabeters life, cost effective, practical to memories and straightforward to understand for both of patients yet health workers.

1. Glicaemic control

Glycaemic control has been shown to significantly improve following the implementation of the alphabet strategy The implementation of the alphabet strategy effectively reduced HbA1c levels, as evidenced in various reviewed studies (5, 6). This improvement results from a comprehensive and structured approach to diabetes management. The alphabet strategy integrates important elements in diabetes care, such as regular monitoring and personalized education, which allows patients to better understand and manage their blood glucose levels.

One of the key factors contributing to the reduction in HbA1c is the emphasis on consistent patient education. By organizing diabetes management tasks in an easy-to-remember alphabetical order, healthcare providers can ensure that patients understand the importance of each component, such as monitoring blood pressure and cholesterol levels, medication adherence, and scheduling regular foot and eye exams. These tasks collectively improve patient adherence to self-care routines, which ultimately helps keep blood glucose levels stable (10).

The observed reduction in HbA1c levels was attributed to the strategy's emphasis on regular assessments and timely interventions, ensuring optimal glycemic outcomes. A statistically significant reduction in HbA1c was observed, from 10.5% to 7.1% within 12 weeks after implementation of the alphabet strategy. These results confirm the effectiveness of a systematic and frequent assessment approach, where treatment plans can be adjusted based on real-time data to ensure optimal glycemic outcomes. The alphabet strategy also encourages a proactive approach, where education and preventive measures are integrated into daily life. With more accessible and culturally customizable diabetes care, patients become more involved in the management of their health. This active involvement not only improves adherence to lifestyle modifications, but also empowers patients to make informed decisions, ultimately lowering HbA1c levels and reducing the risk of complications. Therefore, structured and multifaceted interventions from the alphabet strategy are essential to achieve long-term glycemic control (7).

2. Clinical components of the alphabet strategy

Several clinical components measured in the alphabet strategy experienced significant improvement The efficacy of the alphabet strategy in normalizing various clinical parameters has been widely demonstrated in the reviewed studies, which show the impact of this method through a structured and multifaceted approach. The strategy comprehensively addresses important health parameters in diabetes management, such as glycemic control, blood pressure, cholesterol, renal function, and preventive screening. Not just a mnemonic tool, the alphabet strategy is also a well-organized and patient-centered intervention, ensuring consistent monitoring and management of key diabetes indicators.

The main success of this strategy lies in its emphasis on continuous individual assessment and comprehensive education. For example, regular monitoring of blood pressure and cholesterol as part of this strategy allows for early detection and timely intervention, thereby reducing the risk of cardiovascular complications (7). In addition, comprehensive eye and foot examinations help prevent and manage microvascular complications that often occur in people with diabetes. By integrating these important components into routine care, the alphabet strategy enables healthcare professionals to promptly address abnormal parameters, ultimately improving patient outcomes.

The uniqueness of the alphabet strategy lies in its focus on empowering patients and healthcare workers through clear and applicable guidance. The strategy makes it easier for patients to adhere to treatment regimens, with customized educational materials delivered in an easy-to-understand format, as evidenced by significant improvements in patient adherence and knowledge (8). Furthermore, the strategy promotes a holistic approach that integrates lifestyle modifications along with clinical interventions, which contributes to sustained reductions in HbA1c and other metabolic markers. In other words, the strength of the alphabet strategy lies in its systematic yet flexible framework, which allows for customization in its implementation while ensuring that all important aspects of diabetes management are covered. This flexibility, coupled with an evidence-based focus on measurable outcomes, has proven effective in converting abnormal clinical values to normal, ultimately improving the overall quality of diabetes care.

3. Easy to adapt

Studies have shown that the Alphabet Strategy is easily adaptable to a variety of patient conditions (6). Its ability to adapt to diverse patient demographics is crucial in ensuring effective diabetes management in various environments. From an age perspective, for example, older adults often face challenges related to memory and physical health, which can complicate diabetes self-management. However, the mnemonic design of the Alphabet Strategy simplifies the recall process, making it more accessible to elderly patients. Meanwhile, younger patients, who are generally more familiar with technology, can easily integrate this

approach into their routine through digital reminders and health apps. The universal design of this strategy ensures that all age groups can apply its principles effectively (7).

In addition, the Alphabet Strategy proved to be culturally flexible, with the ability to respect and integrate cultural beliefs related to health. For example, in communities where eating habits are influenced by cultural norms, the strategy can be adapted to provide advice on healthy food choices that remain relevant, while still emphasizing the importance of consistent blood glucose monitoring. This cultural sensitivity increases patient adherence to the strategy and encourages their active engagement (4, 6).

Belief systems also play an important role in health behaviors, and the Alphabet Strategy's patient-centered approach allows for modifications based on individual beliefs. For example, in communities where religious practices influence healthcare decisions, the strategy can be customized to accommodate faith-based dietary restrictions or spiritual healing practices. The educational component of the strategy is delivered with respect for such beliefs, encouraging patients to take an active role in managing their diabetes (10).

In addition, the Alphabet Strategy considers seasonal variations that can affect diabetes management, particularly in regions with extreme weather conditions that limit physical activity or affect food availability. The strategy provides customizable advice, such as encouraging patients to find alternatives to indoor exercise during winter or planning meals that remain balanced despite seasonal limitations. This flexibility ensures that diabetes management can remain sustainable and effective throughout the year, confirming the practicality of this strategy in a variety of environmental contexts (6). Overall, the design of the Alphabet Strategy allows for optimal adaptation to age differences, cultural contexts, belief systems, and seasonal changes. Such flexibility attests to the strategy's effectiveness in promoting sustainable diabetes self-care across a wide range of patient conditions and environments.

4. Cost effective

Cost-efficiency is one of the key benefits of implementing the alphabet strategy, especially for economically challenged individuals who require lifelong diabetes management (6). Managing diabetes requires ongoing financial support, and the alphabet strategy effectively optimizes care without the need for expensive technology. The strategy can be implemented using simple, low-cost materials, such as educational posters, BMI wheels, foot examination forms, and HbA1c testing kits, which can be easily accessed by healthcare providers. When combined with targeted education, these resources empower patients to manage diabetes independently and efficiently (7).

The ability of the alphabet strategy to adapt to different socioeconomic conditions. Instead of relying on expensive diagnostic equipment, the strategy emphasizes simple yet essential health checks, such as blood pressure monitoring and cholesterol testing. By utilizing existing resources and educating patients on medication adherence, the strategy ensures sustainable health outcomes while reducing the cost of care. For example, the reductions in HbA1c and systolic blood pressure achieved with these interventions indicate the potential for significant long-term cost savings, due to reduced risk of complications and hospital visits (8).

Research by Lee et al. (2014) highlights another aspect of cost efficiency: scale of implementation. The alphabet strategy can be easily integrated into existing healthcare systems, even in resource-constrained environments, with minimal expenditure. Its standardized and repeatable process makes it easy to train health workers, so it can be applied consistently. The simplicity of the strategy also contributes to low training costs, as demonstrated in a region that used the alphabet strategy and saw significant health improvements without additional financial burden (11).

In conclusion, the cost-effectiveness of the alphabet strategy lies in the use of easily accessible resources, comprehensive patient education, and a focus on preventive care. By prioritizing inexpensive yet effective monitoring and management techniques, healthcare systems can maintain glycemic control, blood pressure stabilization, and improved medication adherence without high costs. This strategy is an ideal solution for resource-constrained environments, as it ensures equal access to diabetes management while maintaining optimal health outcomes.

5. Practical to memories and straightforward to understand for both patients and health workers

The alphabet strategy is a mnemonic tool that aligns with the key targets of diabetes mellitus management. This approach emphasizes the importance of patient focus, with each letter representing an important health parameter for diabetes management. For example, “A” symbolizes 'Advice' on lifestyle changes, while “B” refers to 'Blood pressure monitoring', creating a structured pathway for consistent patient assessment. Research by Robinson et al. (2019) showed that implementation of this strategy increased patient knowledge scores by 59%, confirming its educative value (7). In addition, Upreti et al. (2021) reported that healthcare workers appreciated its easy-to-use format, which facilitates efficient communication and encourages collaboration between multidisciplinary teams (8).

More than just mnemonics, the alphabet strategy also integrates culturally adaptable elements. Dr. Lee highlights the flexibility of this strategy, which can be adapted based on the patient's socioeconomic and cultural background, making it an inclusive and versatile tool. Such flexibility ensures that patients from various populations can be actively engaged and benefit from the intervention, contributing to improved health outcomes in various care settings. The combination of mnemonic components and practical application makes the alphabet strategy a robust framework to support patient and health worker engagement. GAIA project findings revealed that 91% of health workers found the strategy to be efficient and impactful, resulting in significant improvements in clinical measurements such as HbA1c, blood pressure and lipid profiles. Thus, the alphabet strategy is not only easy to remember but also empowers healthcare teams to deliver consistent, high-quality diabetes care (6).

CONCLUSION

The alphabet strategy is an effective, adaptable, and cost-efficient intervention for managing diabetes mellitus. It significantly improves glycaemic control, blood pressure, and medication adherence while being culturally sensitive and easy to implement. The findings support the integration of this evidence-based approach into diabetes care practices, emphasizing its practicality and wide applicability.

CONFLICT OF INTEREST

The authors declare no potential conflicts of interest in relation to the research, authorship and/or publication of this article.

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