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Booklet-Based Education in Diabetes Mellitus Patients: A Scoping Review

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SYSTEMATIC REVIEW

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ABSTRACT

Diabetes mellitus (DM) is a significant global health issue requiring effective patient self-management to prevent severe complications like cardiovascular disease and organ damage. Health education is crucial for empowering patients, and booklets offer a cost-effective, accessible, and structured medium for delivering essential information. This scoping review investigated the use and impact of booklet-based education for DM patients. Following the Arksey and O'Malley framework, researchers searched CINAHL, PubMed, and Scopus databases for original English-language studies published between 2015 and 2024, using keywords related to diabetes, education, and booklets. From the search, 11 relevant articles were selected for analysis. The findings consistently showed that using booklets as an educational intervention effectively improved DM patients' knowledge, self-efficacy, and self-care behaviours. Key themes identified included the direct impact of booklets on knowledge enhancement, the benefit of combining theoretical information with practical application advice within the booklets, and the important role of family support in successful diabetes management, which can be facilitated by shared educational materials. The success of booklets is attributed to their structured format, ease of understanding, and continuous accessibility for patients. Factors influencing the effectiveness of this educational approach include patient literacy levels, the degree of family involvement, and the frequency of educational reinforcement. In conclusion, booklet-based education is a proven, effective strategy for improving self-management components in DM patients. The review highlights booklets as affordable and flexible tools, while also suggesting areas for future research, particularly concerning long-term clinical outcomes and the potential for integrating booklet content with modern digital health technologies.

Key Messages:

- Booklet-based education is a cost-effective and accessible method to improve diabetes self-management, particularly in enhancing knowledge, self-efficacy, and daily self-care practices.
- Family involvement and patient literacy play a critical role in the effectiveness of booklet interventions, emphasizing the need for tailored educational materials.

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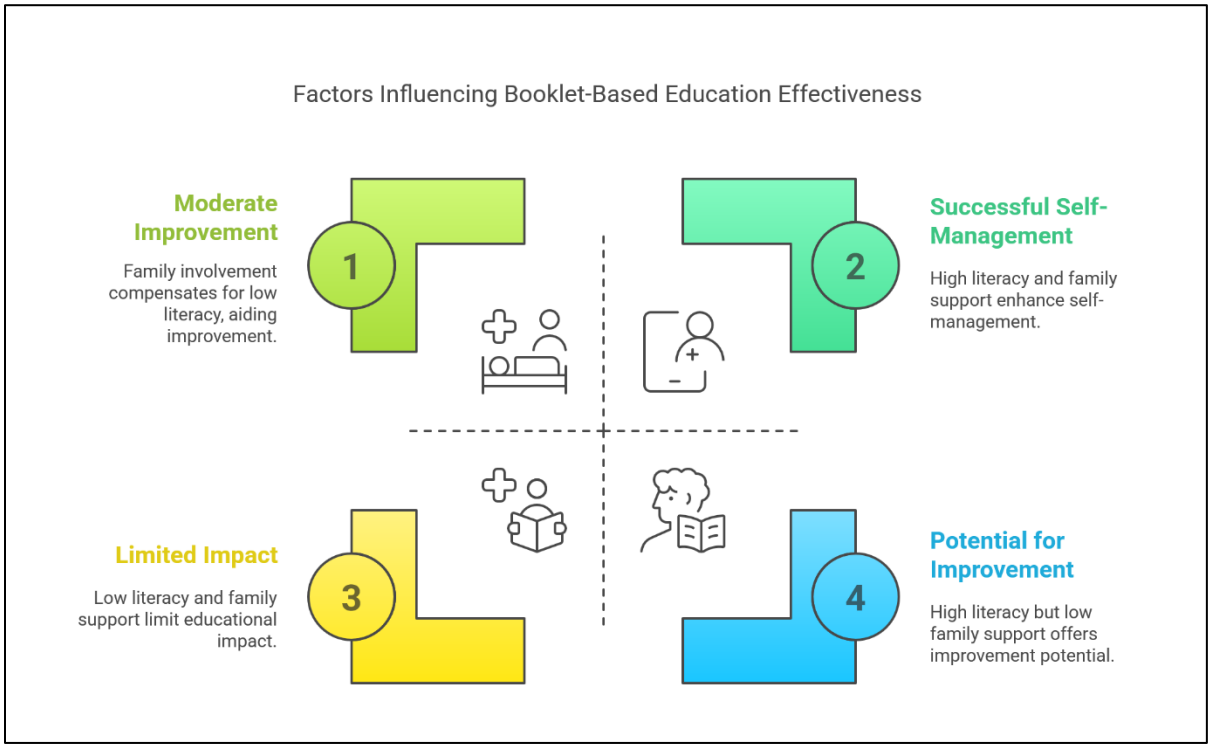
GRAPHICAL ABSTRACT



INTRODUCTION

Diabetes Mellitus (DM) is a significant global health problem, with a prevalence that continues to increase in recent decades. According to data from the International Diabetes Federation (IDF), in 2021, it is estimated that there are around 537 million adults worldwide living with diabetes, and this figure is projected to reach 783 million by 2045.(1). This disease is not only a public health challenge in developed countries, but also in developing countries, including Indonesia, where the prevalence of DM shows a worrying trend. Based on data from the 2018 Basic Health Research (Riskesdas), the prevalence of DM in Indonesia reached 10.9%, with the highest figures found in urban areas due to sedentary lifestyles and unhealthy diets.(2). Diabetes Mellitus not only impacts the quality of life of individuals due to chronic complications such as cardiovascular disease, kidney failure, and neuropathy, but also places a large economic burden on the patient's family and the health care system.(3).

DM is a serious global health threat due to its impact on morbidity, mortality, and quality of life of patients. DM often causes chronic complications such as cardiovascular disease, neuropathy, nephropathy, and retinopathy, which increase the risk of death up to two times compared to individuals without DM.(4). In addition, DM reduces the quality of life of patients physically, psychologically, and socially due to activity limitations and mental stress in long-term disease management.(5). However, DM can be controlled through various strategies, one of the most important of which is daily self-management. DM self-management includes regulating diet, physical activity, monitoring blood glucose levels, managing medications, and foot care. Health education plays an important role in supporting this self-management, helping patients understand and manage their condition effectively.(6).

Education in DM patients has a very important role in improving knowledge, compliance, and self-management skills of patients in managing their daily disease. Various educational strategies have been implemented to support DM self-management, including face-to-face counseling, group education, use of printed media such as booklets, and digital technologies such as health applications and educational videos. These strategies have been shown to have a positive impact on improving glycemic control, compliance with treatment, and quality of life of patients.(7). Communication barriers, such as the use of difficult-to-understand medical terms, are a major barrier, especially for patients with low health literacy. This causes difficulty in understanding important information related to DM management, such as diet, physical

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activity, and medication use.(8). In addition, the limited interaction time between health workers and patients is often not enough to provide in-depth explanations and personalized education according to individual needs. However, this challenge can be overcome by utilizing innovative and affordable educational media, such as booklets, videos, applications, or other technology-based platforms.(9). This media not only helps to convey information in an interactive and engaging way, but also allows patients to access and understand education at their own pace.

Booklet media has several advantages that make it an effective educational tool for DM patients. Booklets are designed with simple information and easy-to-understand language, making them suitable for patients with various levels of health literacy.(10). In addition, the use of attractive visuals, such as illustrations and diagrams, helps convey the message more clearly and attracts the attention of the reader.(11). Other advantages are ease of access, where the booklet can be given directly to the patient without the need for special devices, as well as the flexibility to be used as a recurring reference whenever needed. Previous studies have shown that booklets are effective in increasing patient understanding of patient knowledge and self-efficacy.(12).

Booklets as educational media have high relevance for DM patient populations, especially because of their suitability to various levels of health literacy. The information presented in booklets is usually designed in simple language and equipped with informative visuals, so that it can be easily understood by patients, including those with low health literacy.(7). In addition, booklets are very useful for patients with limited access to technology, such as the elderly or those living in areas with minimal digital infrastructure. Unlike technology-based media, booklets do not require electronic devices or internet connections, so they can be accessed anytime and anywhere.(13). With its practical and flexible nature, the booklet provides an inclusive and effective educational solution to support self-management of DM patients across various social and economic backgrounds.

Although several studies have shown that booklets are effective in improving knowledge and self-efficacy in patients with DM, there is still a gap in understanding how this media can be optimally implemented in various clinical contexts (7,14). Existing studies generally focus on short-term impacts on certain aspects, such as increasing patient knowledge or compliance, without exploring in depth the factors that influence sustainability, long-term effectiveness, and adaptation of booklets to various characteristics of DM patients.(13,15). In addition, there is still limited evidence that integrates findings from various studies to provide evidence-based guidance on the design, implementation, and evaluation of booklets as an effective educational medium. Therefore, this scoping review was conducted to map concepts, identify types of interventions, and explore available evidence related to the use of booklet-based education in patients with diabetes mellitus (DM). Specifically, the review seeks to answer the question: How is booklet-based education implemented for DM patients, and what outcomes have been reported? This review also aims to identify research gaps that still need to be addressed to improve the effectiveness of such educational tools in the future.

METHODS

Study Design

The Review Framework by Arksey and O'Malley (2005) was used in this review (16). This framework was chosen to map the available evidence, identify research trends, and reveal gaps in knowledge related to booklet-based education in patients with diabetes mellitus (DM), namely the impact of booklets on changes in self-care behavior and factors that influence the success of booklet implementation in various clinical contexts. In addition, there is limited understanding of the adaptation of booklet design to various levels of health literacy and the specific needs of DM patients. This approach is appropriate for answering broad research questions and exploring various perspectives from the available literature. The stages taken in the Arksey and O'Malley approach include: (1) formulating research questions, (2) identifying relevant studies, (3) selecting studies, (4) extracting data, and (5) compiling, summarizing, and reporting results. All stages are carried out systematically to ensure transparency and reliability in the implementation of the study.

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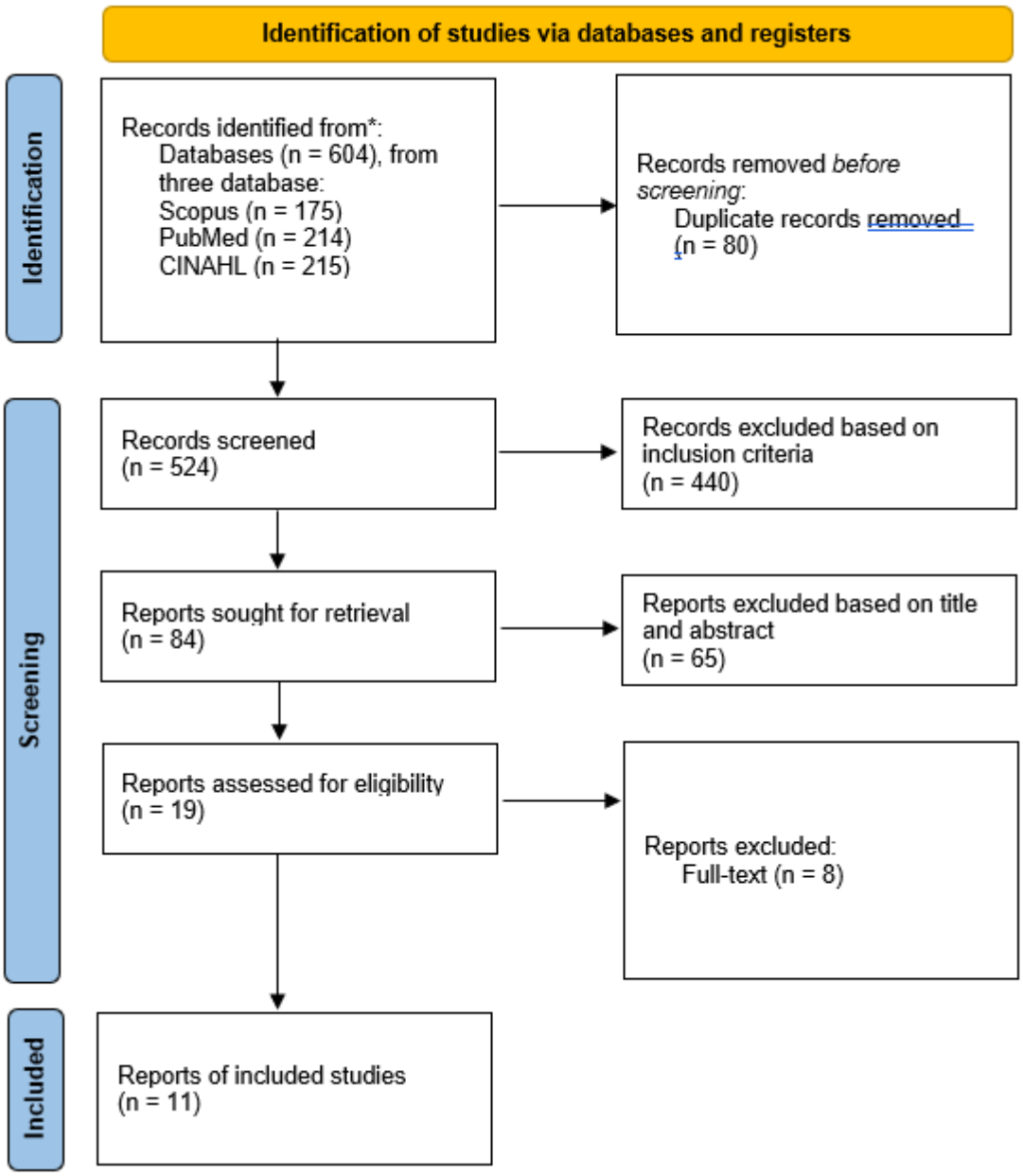

Figure 1. PRISMA Flow Diagram

Search Strategy and Eligibility Criteria

The search strategy was conducted using electronic databases such as Scopus, PubMed, and CINAHL. The selection of these databases was based on their extensive reputation, coverage of relevant literature in the health field, and access to high-quality articles. Keywords were arranged using a combination of Boolean operators, such as "diabetes mellitus OR DM type 2 OR diabetes" AND "education OR knowledge OR training" AND "booklet OR book" to ensure the completeness of the search results. The research question used was: What are the characteristics, implementation strategies, and impacts of booklet-based education in improving self-management in patients with diabetes mellitus? The search results were reported using a PRISMA flow diagram to illustrate the article selection process, from identification to the final selection of relevant studies.(17).

Inclusion and Exclusion Criteria

The inclusion criteria were determined based on the PCC (Population, Concept, Context) framework. The population was patients with diabetes mellitus, the concept was the use of booklets as educational media, and the context included various healthcare settings. The inclusion criteria included: original research, English-language articles, a publication period of the last 10 years (2015–2024) to

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capture contemporary evidence and practices, and research samples that included DM patients, and research samples that included DM patients. Meanwhile, the exclusion criteria were non-research articles (such as narrative reviews), articles with limited access. These criteria were selected to ensure relevant and up-to-date results, and to consider the reader's literacy ability in understanding the article.

Data Extraction

The data extraction process was performed manually using a table that included the following elements: authors, study objectives, study design, sample size, country where the study was conducted, instruments used, interventions, and study results. Extraction was performed independently by two authors (NS and HH) who had expertise in their fields to ensure data accuracy and validity. If there was a difference of opinion between the two authors, a discussion was conducted to reach a consensus. If the difference could not be resolved, a third author who was also an expert in the related field was invited to provide additional analysis and make a final decision (KI).

Eligibility and Data Analysis

The collected data were analyzed descriptively qualitatively with a thematic analysis approach. The stages of analysis include: (1) reading the data in depth, (2) identifying initial codes, (3) grouping codes into main themes, (4) reviewing themes to ensure relevance, and (5) compiling a thematic narrative that describes the results of the study. The analysis was conducted by two authors independently to increase the validity of the results. If there are differences in data interpretation, a third author will be involved to provide additional perspectives and help reach consensus. The results of the analysis aim to describe the main themes related to the effectiveness and application of booklets as educational media for DM patients.

RESULTS

The initial research results from three databases obtained 604 articles. The author eliminated articles based on duplication using Mendeley, there were 80 duplicate articles. Then, the author screened the inclusion criteria, there were 440 articles that did not meet the inclusion criteria. After that, the author read the title and abstract, there were 65 articles that did not meet the research objectives. The results of reading full-text articles obtained 11 articles discussing booklet-based education in diabetes mellitus patients (Table 1).

Table 1. Data Extraction

No	Author	Objective	Country	Design	Sample	Intervention	Results
1.	(18)	Testing the effects of education on self-management and self-efficacy of type 2 diabetes.	Türkiye	RCT	78 participants (40 intervention, 38 control), mean age 59.91 years.	Education consists of 3 main sessions containing: diet management, exercise, foot care, and glucose control. The duration of education is 6 months with monthly telephone reminders. Conducted by nurses using a guidebook and interactive discussions.	Significant increase in self-management, self-efficacy, and metabolic values of the intervention group compared to the control ($p<0.01$).
2.	(19)	Evaluating the effect of e-booklet on medication adherence in type 2 diabetes patients.	Indonesia	Quasi-experiment	100 patients with type 2 diabetes, age not reported.	Education using e-booklets for 3 months. Contents of the e-booklet: diet management, the importance of taking medication, light exercise, and blood sugar control. Conducted by hospital medical	Low compliance decreased from 83.6% to 61.8% ($p=0.003$).

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No	Author	Objective	Country	Design	Sample	Intervention	Results
						personnel in individual and small group sessions.	
3.	(20)	Assessing the effects of Health Belief Model-based education on self-efficacy of diabetes patients.	Iran	RCT	240 patients (120 intervention, 120 control), aged 30-65 years.	Education for 3 months, 8 sessions (2 hours/session). Content: healthy diet, importance of exercise, blood sugar management, risk of complications, and medication compliance. Education is provided in the form of presentations, discussions, and booklets by nutritionists at the hospital.	Significant improvement in metabolic profile and self-efficacy in the intervention group compared to control ($p<0.05$).
4.	(21)	Assessing the influence of DSME on diabetes knowledge, self-care, and self-efficacy.	Ethiopia	Quasi-experiment	116 patients (intervention group) and 104 controls, age not reported.	6 DSME sessions (conducted over 6 months). Content: diet management, physical activity, blood sugar monitoring, and the importance of medication. Activities include discussions, homework, and written guidance. Conducted by nurses in health facilities.	Significant increase in diabetes knowledge, dietary adherence, and foot care in the intervention group compared to control ($p=0.044$).
5.	(22)	Comparing DSME booklet method vs WhatsApp group.	Indonesia	Quasi-experiment	30 type 2 diabetes patients (15 WhatsApp groups, 15 booklet groups), age not reported.	DSME booklet method: 4 sessions (every 2 weeks) with diet, exercise, blood sugar management content. WhatsApp: interactive discussion every week for 4 weeks with similar topics. Conducted by community nurses.	WhatsApp groups are more effective in increasing self-care behavior than the booklet method ($p=0.001$).
6.	(23)	Assessing the effects of pattern management on self-care and self-efficacy of diabetes patients.	South Korea	Experiment (with control)	44 patients with type 2 diabetes, age not reported.	CGMS result-based education (3 times in 6 months). Content: blood sugar pattern analysis, diet management, physical activity, and individual intervention. Education is provided by endocrinologists through technology-based individual counseling.	Significant increase in self-efficacy in the intervention group compared to control ($p<0.05$).

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No	Author	Objective	Country	Design	Sample	Intervention	Results
7.	(24)	Assessing the effects of a self-efficacy education intervention on type 2 diabetes management.	China	Quasi-experiment	46 type 2 diabetes patients (23 intervention, 23 control), age not reported.	6 education sessions (1 hour/session for 6 weeks). Content: osteoporosis education, blood sugar management, physical activity, and calcium intake. Conducted by community nurses through discussion and written guidance.	Significant increase in self-efficacy, physical activity, and blood glucose control in the intervention group compared to the control ($p<0.001$).
8	(14)	Measuring the effect of self-management education through booklets on self-care commitment of type 2 DM.	Indonesia	Pre-experimental (one group pretest-posttest)	57 type 2 DM patients, age not reported.	Education through booklets for 3 months. Booklet contents: diet, exercise, foot care, and glucose management. Education is done through individual and group sessions by nurses.	Significant increase in self-care commitment from 61.5 to 81.9 ($p=0.000$).
9	(25)	Assessing the impact of health education guidelines on knowledge, self-efficacy, and management practices of type 2 DM patients.	Egypt	Quasi-experiment	50 type 2 DM patients, aged 37-75 years.	6 months education using booklets. Content: diet, exercise, medication management, foot care, and blood sugar control. Theory (3 sessions) and practice (9 sessions). Conducted by community nurses in a university hospital.	Significant increases in knowledge, self-efficacy, and self-management practices ($p<0.001$).
10	(26)	Developing and validating a booklet for elderly patients with type 2 DM.	India	Content validation	10 participants (7 aged <60 years).	Development of a booklet with 5 sections: diabetes information, healthy diet, physical exercise, foot care, and fall prevention. The book was validated by a team of experts (11 people) and evaluated by elderly participants.	Participants rated the booklet as easy to understand and helpful in improving self-care practices ($p=0.002$).
11	(27)	Assessing the effectiveness of the booklet on family knowledge of hypoglycemia management.	Indonesia	Quasi-experiment	70 families of type 2 DM patients (35 intervention, 35 control).	Education using booklets containing information on hypoglycemia management (prevention, signs, and treatment). Education is provided in group sessions by nurses at the Community Health Center.	Significant increase in family knowledge from 58.8 to 77.2 ($p=0.028$).

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Use of Booklets as Educational Media

Booklets are educational media that are often used to improve knowledge and self-management skills of type 2 diabetes patients. The booklet content includes important information such as diet management, exercise, foot care, and blood sugar monitoring. Some studies also add specific information such as hypoglycemia prevention.(23), physical exercise guide(27), and family education to support patients(20). The effectiveness of using booklets has been shown to be significant in various studies, where patients who received this education showed increased knowledge, self-efficacy, and self-care practices.(24).

Booklet-Based Education Concept for Diabetes Mellitus Patients

Based on the results of the analysis of 11 articles collected, booklet-based education has been widely applied in the management of diabetes mellitus. The concept of booklet-based education generally aims to provide systematic and structured information on diabetes management. The articles analyzed showed that the material in the booklet covers various important aspects in diabetes management, such as diet management, exercise, blood sugar control, medication, and prevention of complications.(18,19). In addition, this education is often carried out by medical personnel such as nurses, doctors, or nutritionists in individual or group sessions, and is supported by additional methods such as telephone reminders, interactive discussions, and practical practice sessions to ensure deeper understanding.(20,25).

Interventions Used

The types of interventions used in booklet-based education programs vary widely, including combinations of booklets, telephone reminders, group discussions, and practical training sessions. Booklet-based education with additional monthly telephone reminders to reinforce the material taught and ensure continuity of patient understanding of diabetes management(18). In addition, Wahyuni (2024) used an e-booklet method containing material on managing diet, exercise, and the importance of taking medication, which was delivered over three months with individual and small group sessions.(19). On the other hand, Mohammadi et al. (2018) developed a Health Belief Model-based intervention, which focused on improving the perception of risks and benefits of diabetes management, and involved 8 booklet-based education sessions conducted by nutritionists in the hospital.Hailu et al., (2019)combining group discussions and homework with booklets in the DSME program to improve patient understanding of holistic diabetes management, including diet, physical activity, and medication. In addition, the booklet-based education method with WhatsApp groups in improving self-care behavior, which showed significant effectiveness in the WhatsApp group(14,22,23).

The Impact of Booklet-Based Education on Diabetes Mellitus Patients

Based on the findings of various studies analyzed, the impact of booklet-based education on diabetes mellitus patients showed positive results in various aspects of diabetes management. Booklet-based education supported by telephone reminders can improve self-management.(24), self-efficacy(23,25), and metabolic control in patients with type 2 diabetes(18). Another study byMohammadi et al., (2018)also reported a significant increase in self-efficacy and metabolic profile of patients who received booklet-based education, with $p<0.05$. The same was also found in another study that reported an increase in knowledge, self-efficacy, and self-management practices in type 2 diabetes patients after participating in a booklet-based education program.(26,27). The use of e-booklets increases patient compliance in taking medication.(21), with a significant decrease in the rate of non-compliance from 83.6% to 61.8% ($p=0.003$)(19). Similar results were found in another study that noted a significant increase in self-care commitment in type 2 diabetes patients after they received booklet-based education.(22) (23), which shows that this education can improve patients' lifestyle habits in the long term.(14). Increased knowledge and management of hypoglycemia in families of diabetes patients also occurred after receiving booklet-based education, with a significant increase in family knowledge about the signs of hypoglycemia ($p=0.028$)(25).

Educational targets

The target of education is not only patients, but also their families. Family education plays an important role in helping patients prevent diabetes complications, such as hypoglycemia. For example, families who were educated through booklets showed increased knowledge about preventing and treating

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hypoglycemia.(25). In addition, other studies highlight the importance of education designed for specific groups, such as the elderly, with the use of simple language and visual illustrations to facilitate understanding.(19).

Duration and Frequency of education

The duration and frequency of educational interventions greatly influence their success. Most studies used interventions with a duration of between 3 and 6 months, which showed significant results in increasing knowledge and self-efficacy.(25). Studies involving repeated education sessions have also shown better results in maintaining long-term behavior change compared to one-time interventions.(26).

DISCUSSION

Type 2 diabetes is one of the most common chronic diseases in the world, characterized by metabolic disorders due to insulin resistance or insufficient insulin production. This disease often develops slowly without obvious symptoms in the early stages, but can lead to serious complications such as cardiovascular disease, kidney damage, neuropathy, and visual impairment if not managed properly.(28). Because of its chronic nature, management of type 2 diabetes requires a long-term approach that includes lifestyle changes, such as a healthy diet, regular physical activity, blood sugar monitoring, and adherence to medication. Patient education is a key element in this management, as adequate knowledge and skills enable patients to take an active role in managing their disease.(29). Education not only increases patients' understanding of their disease, but also strengthens their ability to make health-promoting decisions, such as adhering to a diet, maintaining blood sugar levels, and recognizing early signs of complications.(7).

Booklets can be designed in a simple format, using easy-to-understand language, and equipped with visual illustrations that help patients understand complex concepts about diabetes management, such as diet, the importance of exercise, blood sugar monitoring, and foot care.(30). Booklets have been shown to improve patients' self-care skills. Education using booklets significantly increased self-care commitment in type 2 diabetes patients, with an increase in self-care scores from 61.5 to 81.9 after the intervention. The use of booklets for six months not only increased patients' knowledge, but also improved their self-efficacy and self-care practices. The booklet's effectiveness is also supported by its flexibility, allowing patients to read and refer back to the information at any time as needed, making it an ideal tool to support ongoing health education.(31).

Self-efficacy, or the belief in one's ability to complete a specific task, is a key factor in managing type 2 diabetes because it plays a role in encouraging self-care behaviors such as adhering to medication, maintaining a healthy diet, and monitoring blood sugar. High self-efficacy allows patients to be more confident in facing the challenges of managing their disease, while low self-efficacy often becomes a barrier to behavioral change.(32). Booklets as an educational medium have been proven effective in increasing self-efficacy by providing clear, simple, and structured information, as well as practical steps that make it easier for patients to understand and implement diabetes management strategies. Previous studies have shown that booklet-based education significantly increases patients' confidence in managing their disease.(33).

An educational approach that combines theoretical and practical sessions has been shown to be more effective in improving the understanding and skills of patients with type 2 diabetes compared to theoretical methods alone. The theoretical sessions provide basic knowledge about the disease, such as the mechanisms of diabetes, the importance of diet, and the dangers of complications, while the practical sessions allow patients to directly apply what they have learned. An educational intervention that included theoretical sessions on diabetes management, followed by practical exercises such as blood sugar monitoring, insulin injections, and wound care, significantly improved patients' self-care skills.(34). In addition, practical training such as light physical exercise and how to maintain foot hygiene have a positive impact on patient compliance with diabetes management.(35).

Involving families in educational interventions plays an important role in supporting the management of type 2 diabetes, especially in preventing complications. Families are often an integral part of patients' daily lives, and thus have a significant influence in helping patients adhere to treatment recommendations, such as diet, medication schedules, and blood sugar monitoring. Education involving

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families not only increases their knowledge of the disease but also strengthens emotional and practical support for patients. An intervention using a booklet on hypoglycemia management significantly improved family knowledge, with the mean knowledge score increasing from 58.8 to 77.2 after the intervention.(36). A more educated family is able to recognize the signs of complications such as hypoglycemia and provide timely assistance, which can ultimately prevent more serious conditions.(37).

Booklet-based education has a significant impact on self-care behavior changes in type 2 diabetes patients, especially in improving adherence to diet, exercise, and foot care. After receiving structured education, patients tend to better understand the importance of following medical recommendations to maintain stable blood sugar levels and prevent complications. Patients who participated in the booklet-based education program showed significant improvements in healthy eating patterns and commitment to physical activity, which contributed to better blood sugar management.(32). In addition, patients involved in practical sessions for foot care and blood sugar monitoring experienced significant improvements in self-care behavior, with positive impacts on blood sugar control and foot ulcer prevention.(26). Education that focuses on strengthening self-care skills not only improves the patient's quality of life but also reduces the risk of long-term complications, making it an effective approach in the management of type 2 diabetes.(30).

Although many studies have shown the effectiveness of booklet-based education in improving self-care knowledge and behavior in patients with type 2 diabetes, most studies are limited in terms of the duration of the evaluation. Most interventions only evaluate short-term effects, usually within a period of 3 to 6 months, so the long-term impact on behavior change and health outcomes is not fully understood.(28). In addition, studies often focus on increasing knowledge and self-efficacy as indicators of success, but pay little attention to more concrete clinical outcomes, such as reduced HbA1c levels, metabolic profiles, or reduced long-term complications such as neuropathy and nephropathy. These limitations highlight the need for further studies that not only evaluate behavioral changes but also measure long-term clinical outcomes to provide stronger evidence of the benefits of booklet-based education in diabetes management.

Tailoring educational booklets to the specific needs of different age groups is essential to enhance their effectiveness and relevance in diabetes management. Older adults, for example, may benefit from booklets that use larger fonts, simplified language, and culturally familiar illustrations to accommodate age-related visual or cognitive limitations (38). In contrast, younger patients or those of working age may prefer more concise, goal-oriented content with practical tips that can be integrated into a busy lifestyle. Some studies emphasize the need for age-appropriate delivery strategies, such as combining booklet use with verbal explanations or interactive discussions for the elderly, or integrating QR codes and digital links for younger users who are more tech-savvy (39). Customizing the design and delivery of booklet-based education can improve engagement, comprehension, and ultimately adherence to diabetes self-care practices (40). Thus, future interventions should consider age-specific preferences and capabilities to ensure the educational materials are inclusive, accessible, and impactful across all age demographics.

Although the 11 articles analyzed demonstrated the success of using booklets as an educational medium for patients with type 2 diabetes, there are several scientific gaps that need further investigation. Most studies only evaluated short-term impacts (3-6 months), so the long-term effects on behavioral change and clinical outcomes, such as HbA1c reduction or prevention of diabetes complications, are still not fully understood. In addition, studies generally focused on specific populations, such as outpatient clinic patients or the elderly, but paid little attention to groups with limited access to health services, such as rural communities or patients with low literacy levels. Booklet-based approaches have also not been comprehensively compared with modern technologies, such as health apps or online platforms, which have the potential to reach a wider audience. Furthermore, research is still minimal in exploring the role of culture, social norms, and community beliefs in the success of interventions, especially in a country with high cultural diversity such as Indonesia. Thus, further studies that are more inclusive, long-term, using stronger clinical indicators, and integrating modern technologies with culture-based approaches are needed to produce more effective and sustainable educational strategies.

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CONCLUSION

This scoping review analyzed 11 articles discussing the use of booklet-based education in patients with type 2 diabetes mellitus with the aim of mapping concepts, identifying types of interventions, exploring impacts, and identifying research gaps. The results of the analysis showed that booklet-based education often included materials on diet management, exercise, blood sugar control, and prevention of complications. The types of interventions used varied, including individual or group sessions supplemented by supporting methods such as telephone reminders, discussions, and practical training sessions. The impacts resulting from booklet-based education included increased knowledge, self-efficacy, and self-care behavior of patients, as well as involving families in supporting diabetes management, especially in preventing complications.

Nurses play an important role as educators in supporting type 2 diabetes management, and the use of booklets can be an effective tool in providing education. With booklets, nurses can deliver structured and easily understood information to patients, helping them understand the steps of self-managing diabetes. In addition, nurses can also combine the use of booklets with repeated education sessions and direct practice, such as blood sugar monitoring, foot care, and physical exercise, to strengthen patient understanding and improve their self-care skills. Further research needs to focus on long-term evaluation to measure the impact of booklet-based education on clinical outcomes, such as decreased HbA1c levels, improved metabolic profiles, and prevention of long-term complications. In addition, further research is needed to compare the effectiveness of booklets with digital media or online platforms, which have the potential to reach more patients.

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CONFLICTS OF INTEREST

The authors declare no conflict of interest.

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