Role of Chatbot-Based Artificial Intelligence in Resolving Interprofessional Conflict in the Management of Type 2 Diabetes Mellitus with Obesity: A Scoping Review

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Abstract. This scoping review systematically mapped the literature on the role of artificial intelligence-based chatbots in resolving interprofessional conflict in the management of type 2 diabetes mellitus with obesity. A comprehensive search was conducted in Scopus using a combination of targeted queries for chatbot, artificial intelligence, type 2 diabetes, obesity, and interprofessional collaboration. The screening process followed PRISMA-ScR guidelines and included deduplication, title and abstract review, and full-text assessment. Despite an initial pool of 212 articles, no studies met all inclusion criteria, which required a focus on AI chatbots, type 2 diabetes with obesity, and interprofessional conflict or collaboration. Most excluded articles addressed only one or two aspects, such as chatbot use for patient education or diabetes management, without integrating interprofessional dynamics. This review highlights a significant research gap, as no empirical evidence was found on the integration of AI chatbots for conflict resolution among healthcare teams managing type 2 diabetes with obesity. The findings underscore the urgent need for primary research and development of digital interventions specifically designed to support multidisciplinary collaboration and conflict resolution in complex chronic disease care.

Keywords: Artificial Intelligence, Chatbot, Interprofessional Conflict, Obesity, Type 2 Diabetes

INTRODUCTION

Type 2 diabetes mellitus (T2DM) accompanied by obesity has emerged as a major public health challenge worldwide, including in Indonesia. Obesity is recognized as a principal risk factor for T2DM, contributing to increased morbidity and mortality through mechanisms such as insulin resistance and adipose tissue dysfunction [1]. The rising prevalence of obesity, driven by unhealthy dietary patterns and sedentary lifestyles, has led to a surge in T2DM cases, particularly among high-risk groups. In Indonesia, diabetes is now the third leading cause of death, with obesity prevalence among individuals with diabetes reaching 32.9%. Factors such as female gender, younger age, urban residence, and hypertension further exacerbate this situation[2], [3]. Low physical activity and elevated body mass index highlight the urgent need for more intensive lifestyle interventions [4].

The coexistence of obesity and T2DM not only elevates the risk of cardiovascular complications but also imposes a significant economic burden on healthcare systems[3]. Managing these conditions requires comprehensive strategies that extend beyond glycemic control to include weight management and metabolic optimization[1]. Clinical challenges are further complicated when managing "diabesity," as pharmacological interventions like insulin and sulfonylurea may worsen obesity, necessitating careful selection of therapeutic regimens to avoid adverse effects[5] While bariatric surgery can be effective for weight reduction and glycemic improvement, it carries long-term risks such as nutritional deficiencies and diabetes relapse, requiring ongoing monitoring [6]. Non-pharmacological approaches, including dietary modification and increased physical activity, also face challenges, particularly due to

a lack of consensus on optimal macronutrient composition and the necessity for personalized interventions. In patients with early-onset T2DM, who often also have obesity, the disease progresses more rapidly and complications arise earlier, demanding more aggressive and integrated management strategies [7].

Optimal management of T2DM with obesity necessitates the involvement of interprofessional teams, including physicians, dietitians, nurses, mental health practitioners, and exercise specialists[8] , [5]. Each team member contributes unique expertise, enabling shared decision-making and comprehensive care plans tailored to individual patient needs. Interprofessional collaboration has been shown to improve patient satisfaction, enhance the effectiveness of diabetes and obesity management, and promote mental well-being [9],[10]. However, structural and operational challenges persist, such as lack of continuity among providers, limited interprofessional training opportunities, and ambiguity in roles and referral processes [8],[10]. In many cases, team composition is driven more by financial considerations than clinical needs, often excluding mental health practitioners or exercise specialists [8]. Such interprofessional conflicts can significantly impact care quality, with unclear responsibilities, ineffective communication, and inadequate training leading to fragmented services and suboptimal outcomes [11], [12]. Evidence suggests that interactive and collaborative teams are more successful in achieving metabolic control and improving patient and provider experiences [8]. Addressing role ambiguity, enhancing collaborative training, and ensuring adequate institutional support are thus strategic steps toward optimizing team-based care for diabesity [11],[12].

The emergence of artificial intelligence (AI) based chatbots in healthcare marks a significant shift in how medical services are delivered and accessed. These technologies have introduced new efficiencies in symptom monitoring, appointment scheduling, and psychological support, thereby expanding access and expediting responses to patient needs [13],[14]. AI chatbots can handle large data volumes, provide real-time medical information, and reduce administrative burdens on primary care providers. Their 24/7 availability enables patients to access health education and symptom checks at any time, allowing healthcare facilities to focus on cases requiring direct intervention. Nevertheless, the integration of chatbots into healthcare must be approached with caution, considering ethical, privacy, and accuracy concerns, as AI currently lacks the empathy and intuition inherent to human providers [15]. In practice, AI chatbots now support not only patient-provider communication but also interprofessional collaboration and education. They streamline administrative tasks, summarize patient information, and assist in developing more cohesive care plans. Features such as medical jargon translation and conversational cues facilitate cross-disciplinary communication and enhance patient understanding of their conditions and treatments. In health education, chatbots offer personalized learning experiences, up-to-date medical information, and professional development through interactive case simulations [16]. Furthermore, chatbots support team collaboration by assisting with planning, monitoring, scheduling, and task management, thus improving interprofessional care coordination. Despite these advances, challenges remain, including data privacy, system reliability, and the impact on human interaction quality [17]. The lack of emotional intelligence in chatbots can limit the depth of patient-provider relationships and may result in less personalized care experiences [17] Therefore, to optimize the integration of AI chatbots, clear strategies and regulations are needed to ensure that these technologies complement rather than replace the human touch in healthcare [15].

Recent research developments indicate that AI chatbots are increasingly being integrated into health systems as innovative solutions for promoting behavioral change, weight management, and the management of T2DM with obesity [18]. Studies highlight their effectiveness in supporting healthy lifestyle changes and smoking cessation through real-time feedback and theory based consultations, though their effectiveness varies [19]. In weight management, conversational agents have been used for personalized counseling, but existing evidence remains limited and further research is required to confirm their clinical impact [20]. Chatbots and avatars have also shown potential in encouraging

positive dietary and physical activity behaviors, though more robust controlled trials are needed to substantiate their benefits for diabetes and hypertension[18]. In diabetes management, tools such as ChatGPT and interactive programs like "My Diabetes Coach" have demonstrated potential in enhancing patient education and quality of life for those with T2DM, although statistically significant improvements in clinical parameters such as glycated hemoglobin have not always been observed[8],[20]. Conversely, the use of chatbots in resolving interprofessional conflicts remains in its infancy, with few studies directly evaluating their effectiveness in supporting team collaboration in the management of T2DM with obesity. The main challenges include the need for stronger evidence of safety and effectiveness, as well as the customization of chatbot features to meet the diverse needs of patients and healthcare professionals. Thus, while AI chatbot innovation appears promising for multidisciplinary health interventions, further research is necessary to ensure their efficacy and safety in clinical practice.

Despite rapid advancements in the application of AI chatbots in healthcare, there remains a significant gap in research specifically addressing their role as mediators of interprofessional conflict in the management of T2DM with obesity. This scoping review offers novelty by integrating analyses of chatbot applications not only in patient education or behavioral management but also in multidisciplinary collaboration and conflict resolution an aspect rarely explored in previous literature. Earlier studies have predominantly focused on the effectiveness of chatbots for lifestyle modification or knowledge enhancement, while issues related to team dynamics and interprofessional communication are often overlooked. The knowledge gap identified in the current literature includes a lack of empirical evidence on the effectiveness of chatbots in reducing interprofessional conflict, limited studies evaluating their impact on team decision-making quality, and the absence of comprehensive frameworks for assessing the long-term benefits of these technologies in daily clinical practice. Moreover, few studies address the need to adapt chatbot features to the complexities of diabesity cases and the specific characteristics of diverse health systems. This review aims to fill these gaps by mapping the latest findings, identifying implementation challenges, and providing recommendations for developing more effective digital interventions to support interprofessional collaboration in the management of T2DM with obesity.

Based on the background, technological developments, and identified knowledge gaps, the main research question in this scoping review is: How does the scientific literature describe the contribution of AI-based chatbots in resolving interprofessional conflicts in the management of type 2 diabetes mellitus with obesity, including the range of interventions used, key findings, implementation challenges, and areas that remain underexplored? This research question guides a systematic mapping of the literature to identify intervention patterns, effectiveness, and challenges in implementing AI chatbots in multidisciplinary clinical settings. In line with this, the aim of the review is to map and identify scientific evidence regarding the role of AI-based chatbots in resolving interprofessional conflicts in the management of type 2 diabetes with obesity. This review seeks to document the range of interventions applied, evaluate reported outcomes, and identify implementation barriers and research gaps. In doing so, it is hoped that the findings will provide new insights for the development of more effective digital interventions to support interprofessional collaboration in clinical practice, as well as a foundation for future research.

METHODS

This study employed a scoping review approach to map literature on the role of artificial intelligence-based chatbots in resolving interprofessional conflicts in the management of type 2 diabetes mellitus (T2DM) with obesity. The scoping review was chosen for its ability to synthesize diverse evidence from various study designs and contexts, making it suitable for a multidimensional and

underexplored topic [21]. The review process followed the PRISMA-ScR guidelines to ensure methodological transparency and replicability [22]

2.1 PCC Framework (Population, Concept, Context)

The review focus was defined using the PCC framework [21]. The population included interprofessional healthcare teams such as physicians, nurses, dietitians, mental health practitioners, and other health professionals involved in T2DM with obesity care. The concept centered on the use of AI-based chatbots to support communication, education, and particularly as mediators for interprofessional conflict. The context covered T2DM with obesity management across various healthcare settings requiring intensive team coordination.

2.2 Inclusion and Exclusion Criteria

Eligible studies were primary or secondary research quantitative, qualitative, or mixed-methods explicitly addressing AI chatbot roles in resolving interprofessional conflict in T2DM with obesity management. Only peer-reviewed, full-text English publications from 2020 to 2025 were included. Studies not relevant to the population, concept, or context, as well as editorials, commentaries, conference abstracts without full-text, and case reports, were excluded to ensure data relevance and quality[21].

2.3 Literature Search Strategy

Literature searches were conducted using Scopus due to its comprehensive coverage and indexing quality [23]. Keywords were grouped into four main domains: chatbot/artificial intelligence, interprofessional conflict/collaboration, T2DM, and obesity. Searches were performed in stages, starting with individual domains and ending with combined Boolean queries, e.g., TITLE-ABS-KEY(chatbot AND diabetes), TITLE-ABS-KEY(chatbot AND obesity), TITLE-ABS-KEY(chatbot AND "type 2 diabetes"), TITLE-ABS-KEY(chatbot AND ("type 2 diabetes" OR obesity)), and TITLE-ABS-KEY(chatbot AND ("type 2 diabetes" OR obesity) AND (interprofessional OR conflict OR collaboration)). Filters were set for publication year (2020–2025), English language, and peer-reviewed full-text documents. Initial screening was based on titles and abstracts, followed by full-text review for inclusion compliance.

2.4 Study Selection Process

Five researchers conducted the study selection. At each screening stage, two independent reviewers assessed articles, with a third reviewer resolving disagreements and a fourth consulted if consensus was not reached. The fifth reviewer validated and documented the process. Mendeley Desktop was used for reference management and recording inclusion/exclusion reasons [24]. Numbers of articles at each stage were documented and visualized using a PRISMA flow diagram [22]. A 10% piloting of articles was conducted prior to full screening to ensure reviewer consistency.

2.5 Quality Appraisal

Methodological quality was assessed using validated tools: JBI Critical Appraisal Tool for Analytical Cross-Sectional Studies for quantitative research, JBI Critical Appraisal Tool for Qualitative Research, and Mixed Methods Appraisal Tool (MMAT) for mixed-methods studies[25],[26]. Two reviewers independently appraised each article, with consensus or a third reviewer resolving differences. Quality scores were used as supplementary information and not as exclusion criteria.

2.6 Data Extraction

Data extraction was performed systematically using a pretested table template. Extracted data included authorship, year, country, population, chatbot type, intervention features, measured outcomes, implementation challenges, and other PCC-relevant variables. Extraction was supported by Scopus and Mendeley Desktop 4[24], AI SciSpace for key information identification, and Microsoft Excel for tabulation and analysis. Two independent reviewers extracted data, with consensus achieved through discussion or a third reviewer if discrepancies arose.

2.7 Data Analysis

Data were analyzed narratively and descriptively, grouped by themes, categories, or key variables relevant to the research objectives [21]. Results were presented in tables, diagrams, and narrative summaries to map patterns, trends, and insights. Microsoft Excel was used for data tabulation and visualization, while Scopus features and AI SciSpace assisted in identifying patterns and mapping variable relationships. The analysis aimed to describe findings, identify research gaps, and provide recommendations for future digital intervention development.

RESULTS AND DISCUSSION

3.1 Literature Search and Screening Process

The literature search and selection process in this study was conducted systematically and transparently to ensure each stage could be scientifically justified. Every step, from initial database searching, deduplication, to title, abstract, and full-text screening, was documented in detail. This data presentation aims to provide a comprehensive overview of the effectiveness of the search strategy and the strict application of inclusion and exclusion criteria in this scoping review.

Table 1. Summary of Literature Search and Screening Process

Selection Stage	Query Search	Search Date	Initial Results	After Scopus Filter	After Deduplication	After Title/Abstract Screening	After Full-text Screening
Initial search	TITLE-ABS-KEY(chatbot AND diabetes)	16-06-2025	66	23			
Initial search	TITLE-ABS-KEY(chatbot AND obesity)	16-06-2025	51	11			
Initial search	TITLE-ABS-KEY(chatbot AND "type 2 diabetes")	16-06-2025	23	9			
Initial search	TITLE-ABS-KEY(chatbot AND ("type 2 diabetes" OR obesity))	16-06-2025	69	18			
Initial search	TITLE-ABS-KEY(chatbot AND ("type 2 diabetes" OR obesity) AND (interprofessional OR conflict OR collaboration))	16-06-2025	3	2			
Total combined results			212	63			
After deduplication in Mendeley Desktop					32		
After title/abstract screening						0 included (32 excluded)	
After full-text screening							0

Table 1. summarizes the number of articles at each stage, while the following PRISMA flow diagram visually illustrates the study selection process.
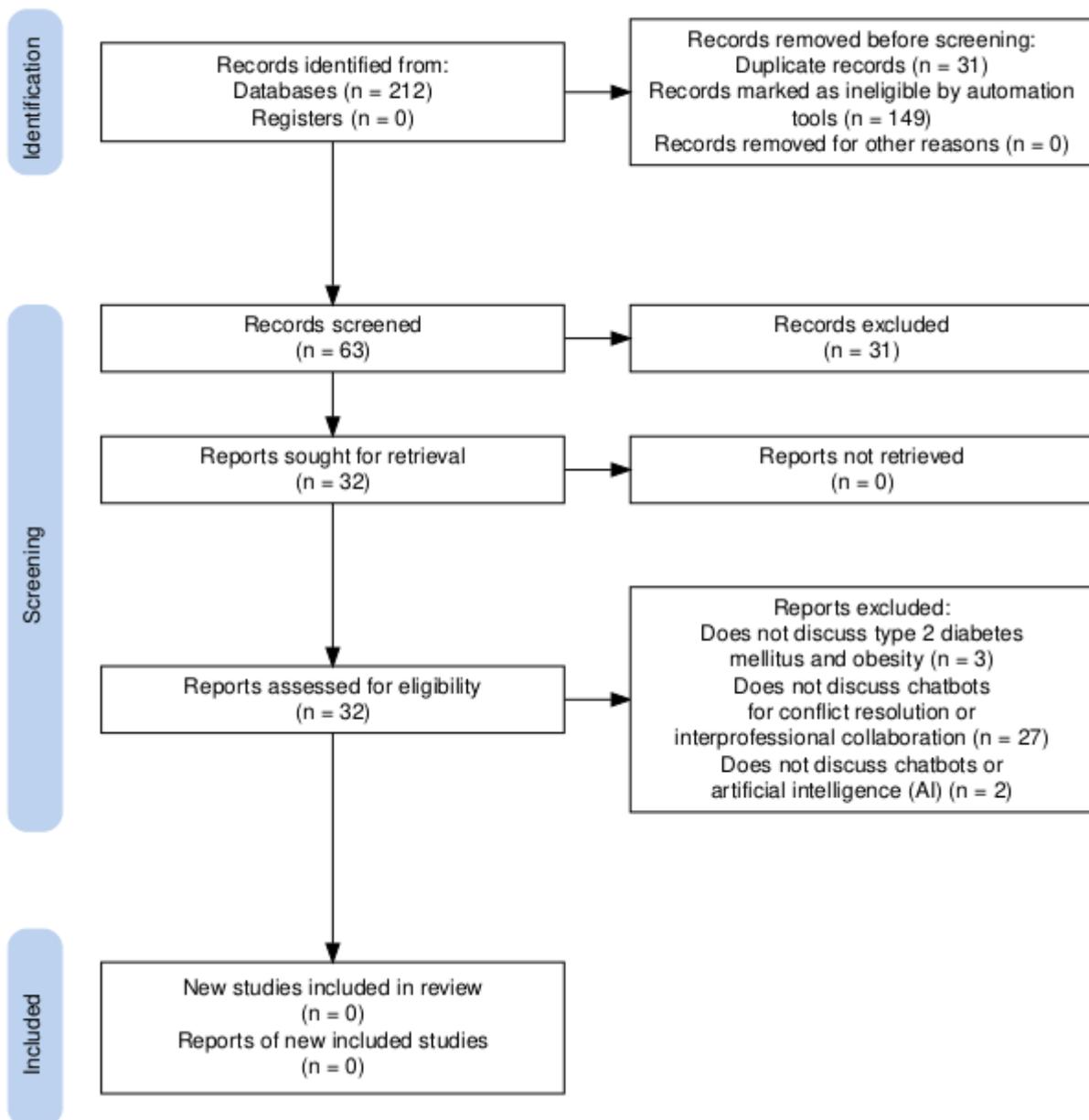
Figure 1. PRISMA flow diagram

3.2 Screening Results Summary

The title and abstract screening was conducted systematically on 32 articles that remained after deduplication of the initial search results. Each article was independently evaluated by two reviewers using predetermined inclusion criteria, focusing on four main aspects: use of AI-based chatbots, management of type 2 diabetes mellitus, obesity, and interprofessional conflict resolution or collaboration in healthcare. At this stage, all articles were excluded for not meeting these criteria in full. Most studies addressed only one or two of the four main aspects, such as chatbots for general diabetes education, obesity management without a clear link to T2DM, or chatbot applications for lifestyle management without reference to interprofessional dynamics.

The main reasons for exclusion included: articles did not specifically address type 2 diabetes, did not mention interprofessional conflict resolution or collaboration, or focused solely on patient education

and behavioral aspects without integrating a multidisciplinary context for diabetes management with obesity. There were also articles discussing chatbots for other chronic diseases, mental health education, or general lifestyle promotion, which were not relevant to the focus of this review. Consequently, after title and abstract screening, no articles met all inclusion criteria to proceed to full-text review. This finding highlights the significant research gap in the literature regarding the explicit role of AI chatbots in resolving interprofessional conflict in the management of type 2 diabetes with obesity.

Quality appraisal is a key stage in scoping reviews to assess the strength and limitations of available evidence. However, in this review, quality assessment could not be performed as no articles met all inclusion criteria up to the synthesis stage. Thus, there was no empirical data available for further analysis using the planned critical appraisal tools. This situation confirms that the literature on the role of AI-based chatbots in resolving interprofessional conflict in the management of type 2 diabetes with obesity remains very limited and requires further research in the future.

At the synthesis stage, there were no data available for narrative, tabular, or visual analysis, as no studies fulfilled all inclusion criteria through the final selection stage. The entire search and screening process was conducted systematically and transparently according to the planned methodology. This underscores that, to date, there is no scientific evidence specifically addressing the role of AI-based chatbots in resolving interprofessional conflict in the management of type 2 diabetes with obesity. Therefore, no mapping or further analysis could be performed in this review.

This scoping review clearly demonstrates a substantial research gap related to the integration of AI-based chatbots for interprofessional conflict resolution in the management of type 2 diabetes with obesity. The absence of studies meeting all inclusion criteria indicates that this topic remains largely unexplored in the scientific literature, both in terms of digital intervention development and evaluation in multidisciplinary clinical practice. This finding highlights the urgent need for more in-depth primary research, including the development and testing of evidence-based AI chatbots specifically designed to support collaboration and resolve interprofessional conflict in the management of complex chronic diseases such as type 2 diabetes with obesity. Such efforts are expected to fill the existing knowledge gap and make a meaningful contribution to future healthcare innovation.

3.3 Discussion

The findings of this scoping review clearly demonstrate that, to date, there is no literature explicitly addressing the role of artificial intelligence-based chatbots in resolving interprofessional conflict in the management of type 2 diabetes mellitus with obesity. The absence of studies meeting all inclusion criteria indicates that the integration of AI chatbot technology in the context of multidisciplinary healthcare team collaboration for complex chronic diseases remains a highly underexplored area. This phenomenon can be interpreted through the lens of Diffusion of Innovation Theory, which suggests that the adoption of innovation in healthcare is often hindered by organizational resistance, limited empirical evidence, and concerns about shifting professional roles [27],[28] Furthermore, interprofessional collaboration theory emphasizes that developing effective digital interventions requires not only advanced technology but also a deep understanding of team dynamics, cross-disciplinary communication, and the sociocultural context within clinical environments 3. Therefore, despite rapid advancements in digital health technologies, their application to support interprofessional conflict resolution in the management of T2DM with obesity remains far from optimal and warrants focused research in the future.

Compared with the existing literature, most studies on AI-based chatbots in healthcare have focused on patient education, therapy adherence, and self-management support for diabetes and obesity 4, [7]. These studies typically highlight the effectiveness of chatbots in helping patients adopt healthy lifestyles, monitor blood glucose, and access evidence-based information on chronic disease management. However, very few publications examine the role of chatbots in supporting collaboration or resolving interprofessional conflict within clinical teams. Even in recent systematic reviews and

meta-analyses, interprofessional aspects and team dynamics are often mentioned only briefly or identified as areas for future development [11], [13]. This underscores that, while AI chatbots have been widely adopted for patient-centered interventions, their evaluation as tools for facilitating interprofessional collaboration or conflict resolution in the management of T2DM with obesity remains almost untouched in global research. Thus, the findings of this review highlight a clear distinction between previous research foci and the need for more integrative innovation in multidisciplinary healthcare services.

The lack of studies explicitly addressing the integration of AI-based chatbots for interprofessional conflict resolution in the management of T2DM with obesity has important implications for research, clinical practice, and health policy. From a research perspective, this finding underscores the urgent need for further exploration of the design, implementation, and evaluation of digital interventions that not only focus on patient education but also facilitate collaboration and address team conflict dynamics [27]. For clinical practice, these results suggest that the use of AI chatbots is not yet optimal for supporting cross-professional communication, despite their significant potential to enhance coordination efficiency, reduce miscommunication, and improve the quality of shared decision-making [29]. In terms of health policy, the identified research gap can serve as a basis for developing national or institutional strategies to promote the adoption of evidence-based digital solutions that foster effective interprofessional collaboration, especially in managing complex chronic diseases like T2DM with obesity. Therefore, this scoping review not only underscores the need for technological innovation but also highlights the importance of integrated, multidisciplinary approaches in modern healthcare delivery.

Although this scoping review was designed and conducted systematically in accordance with PRISMA-ScR guidelines [28], several limitations should be acknowledged. First, the literature search was limited to a single main database, Scopus, which may have led to the omission of relevant articles indexed elsewhere. Additionally, restricting the review to publications from 2020 to 2025 and including only English-language, peer-reviewed articles may have reduced the scope of findings, particularly from non-English-speaking countries that may also be developing similar innovations [22] The strict inclusion criteria requiring explicit discussion of AI chatbots, T2DM with obesity, and interprofessional conflict resolution were intentionally applied to maintain the review's focus and relevance but may have resulted in the exclusion of studies addressing related aspects only partially or indirectly.

Furthermore, while independent reviewers supported by software and piloting ensured systematic screening and data extraction, the potential for subjective bias cannot be entirely eliminated [25],[28]. Another limitation is the absence of studies advancing to the synthesis stage, which precluded narrative, tabular, or visual analysis of empirical findings. Nevertheless, transparency in reporting the process and reasons for exclusion at each stage was maintained to strengthen the credibility of the review results. These limitations should be considered when interpreting the findings and formulating recommendations, and they may inform the design of future research.

Based on the findings of this scoping review, there is an urgent need to initiate primary research specifically aimed at developing and evaluating the effectiveness of AI-based chatbots in supporting interprofessional conflict resolution in the management of T2DM with obesity. Future studies are recommended to adopt mixed-methods designs, enabling the exploration of both quantitative outcomes (clinical results, team behavior changes, user satisfaction) and qualitative aspects (experiences, barriers, and perceptions of interprofessional teams using AI chatbots in clinical collaboration) [26], [30], . Moreover, digital intervention development should involve co-design processes with active participation from various health professions to ensure that solutions are truly adaptive to the needs of multidisciplinary teams and diverse healthcare contexts [30],[23].

From a practical perspective, healthcare institutions should begin to consider integrating AI chatbot technology into team collaboration protocols, at least as a tool to support interprofessional

communication and education. However, implementation must be accompanied by training, data security evaluation, and monitoring of impacts on team dynamics and patient outcomes. Policymakers are also encouraged to provide clear regulations and guidelines to guide the development and adoption of evidence-based digital technologies in clinical settings. As such, cross-disciplinary collaboration, technological innovation, and local needs assessment are key to the successful digital transformation of future healthcare practice.

In summary, this scoping review highlights the urgent need for further exploration of AI chatbot integration to support interprofessional conflict resolution in the management of T2DM with obesity. The absence of studies meeting inclusion criteria confirms that this area remains largely uncharted in digital health research, opening substantial opportunities for future innovation. With the rapid advancement of technology and the increasing need for effective multidisciplinary collaboration, more focused research on the development and evaluation of evidence-based digital interventions is essential. The findings of this review are expected to serve as a foundation for researchers, practitioners, and policymakers in designing adaptive, safe, and impactful digital transformation strategies to improve the quality of care for complex chronic diseases.

CONCLUSIONS

This scoping review systematically mapped the literature concerning the role of artificial intelligence-based chatbots in resolving interprofessional conflict within the management of type 2 diabetes mellitus with obesity. The findings indicate that, to date, no studies have explicitly integrated all four major aspects AI chatbot use, type 2 diabetes management, obesity, and interprofessional conflict resolution into a single investigation. Most available literature remains limited to applications of chatbots for patient education, self-management support, or the separate management of diabetes and obesity, without addressing the dynamics of interprofessional collaboration or conflict resolution in clinical settings. These results highlight a significant research gap and reinforce the urgency of developing evidence-based digital interventions that can bridge the needs of multidisciplinary collaboration in managing complex chronic diseases.

The absence of studies meeting all inclusion criteria not only reflects the current limitations in technology adoption within the healthcare sector but also provides a strong rationale for researchers and policymakers to foster innovation in this area. There is a clear need for primary research specifically examining the design, implementation, and effectiveness of AI chatbots as mediators of conflict and facilitators of interprofessional collaboration, involving multiple stakeholders in their development and evaluation. Consequently, this review is expected to serve as a strategic foundation for the advancement of more adaptive, collaborative, and outcome-oriented digital health technologies in the management of type 2 diabetes mellitus with obesity.

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