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REVIEW



WILEY

Views, perceptions, and experiences of type 2 diabetes or weight management programs among minoritized ethnic groups living in high-income countries: A systematic review of qualitative evidence

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Summary

Background: Prevalence of both obesity and type 2 diabetes can be higher in patients from certain ethnic groups, yet uptake and adherence to current support within these groups is lower, leading to widening health inequalities in high-income countries.

Objectives: The main objective of this study is to understand the views, perceptions, and experiences of and barriers and facilitators in relation to the uptake and adherence to weight management and type 2 diabetes programs in minoritized ethnic groups in high-income countries.

Methods: CINAHL, MEDLINE, PsycINFO, Scopus, Academic Search Complete, and PubMed were searched for English language studies undertaken in community-dwelling adults residing in high-income countries, who are from a minoritized ethnic group within the country of study.

Results: Seventeen studies were synthesized using the JBI System for the Unified Management of the Assessment and Review of Information. From these studies, 115 findings were retrieved, and seven key themes were identified: (1) family health status and program education, (2) social support, (3) challenges, (4) cultural beliefs, (5) increased awareness and dietary changes, (6) impact of psychological evaluations, and (7) considerations for future.

Conclusions: Nutritional considerations for type 2 diabetes mellitus and weight management programs in high-income countries should include social, habitual, economic, and conceptual components, which should include consideration of local ethnic and cultural norms and building community relationships while creating culturally tailored programs.

KEYWORDS

ethnicity, obesity, qualitative, type 2 diabetes, weight management

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1 | INTRODUCTION

The global prevalence of overweight and obesity is increasing, as is the risk of type 2 diabetes mellitus (T2D).¹ T2D disproportionately affects certain ethnic groups such as South Asian and Black ethnicities, with age-standardized prevalence of 13%, 20%, and 15% in people of Indian, Pakistani, or Bangladeshi ethnicity, respectively, and 11% and 14% in people of Black Caribbean and Black African ethnicity, respectively, compared with 6% in people with Chinese ethnicity and 6% in people with White British ethnicity.² In the United States, African American, Hispanic or Latino (12%), and Asian American people are at higher risk of T2D than non-Hispanic White population (7%).³ Both obesity and T2D disproportionately affect certain ethnic groups^{2,4} resulting in global health inequalities including in high-income countries.⁵

Dietary interventions for T2D may be effective for those who participate; however, high levels of nonadherence or dropout rates may lead to widening inequalities.⁶ Previous studies^{7,8} have demonstrated that increased attendance and decreased attrition lead to improved outcomes for weight management (WM) programs. There is consequently an urgent need to understand the factors that might reduce attrition rates among underserved populations, such as minoritized ethnic groups.⁹

There is a current lack of systematic review evidence examining qualitative evidence on the uptake and attrition of WM or T2D programs within ethnically diverse populations.^{10–12} Identifying the factors associated with participant uptake and adherence could help to inform how programs can be improved to facilitate behavioral and health changes. This systematic review explores the views, perceptions, and experiences of, barriers to, and facilitators of dietary-based WM and T2D programs for minoritized ethnic groups in high-income countries.

2 | METHODS

The review protocol is registered on PROSPERO (CRD42022304903), and the search was undertaken on February 24, 2022. The methods for searching, screening, data extraction, and quality assessment of studies followed the JBI manual for evidence synthesis.¹³ The review is reported using PRISMA guidelines (Table S1).¹⁴

2.1 | Selection criteria

Population: community-dwelling adults aged ≥18 years of any gender, from a community that are considered a minority population in the country; high-income countries as per <https://datahelpdesk.worldbank.org/knowledgebase/articles/906519> at the time of screening.

Intervention: WM or T2D program that include a dietary component.

Outcomes: the views, perceptions, experiences, and barriers and facilitators of ethnically diverse populations.

Studies: included results from qualitative or mixed methods which report qualitative results.

Excluded: adolescents or children (<18 years of age); studies which did not report on individuals from ethnically diverse backgrounds or minority communities; studies of either surgical or pharmaceutical programs; studies that did not include a dietary component; studies that did not report qualitative findings and studies in low- or middle-income countries; and studies not in English language.

2.2 | Search strategy

The search strategy (Table S2) aimed to locate both published and unpublished studies. The following databases were searched from inception: CINAHL, MEDLINE, PsycINFO, Scopus, Academic Search Complete, and PubMed. Study selection was based on the predefined inclusion and exclusion criteria. Papers excluded at full text are shown in Table S3, and Figure 1 illustrates the PRISMA diagram.

2.3 | Study selection and data synthesis

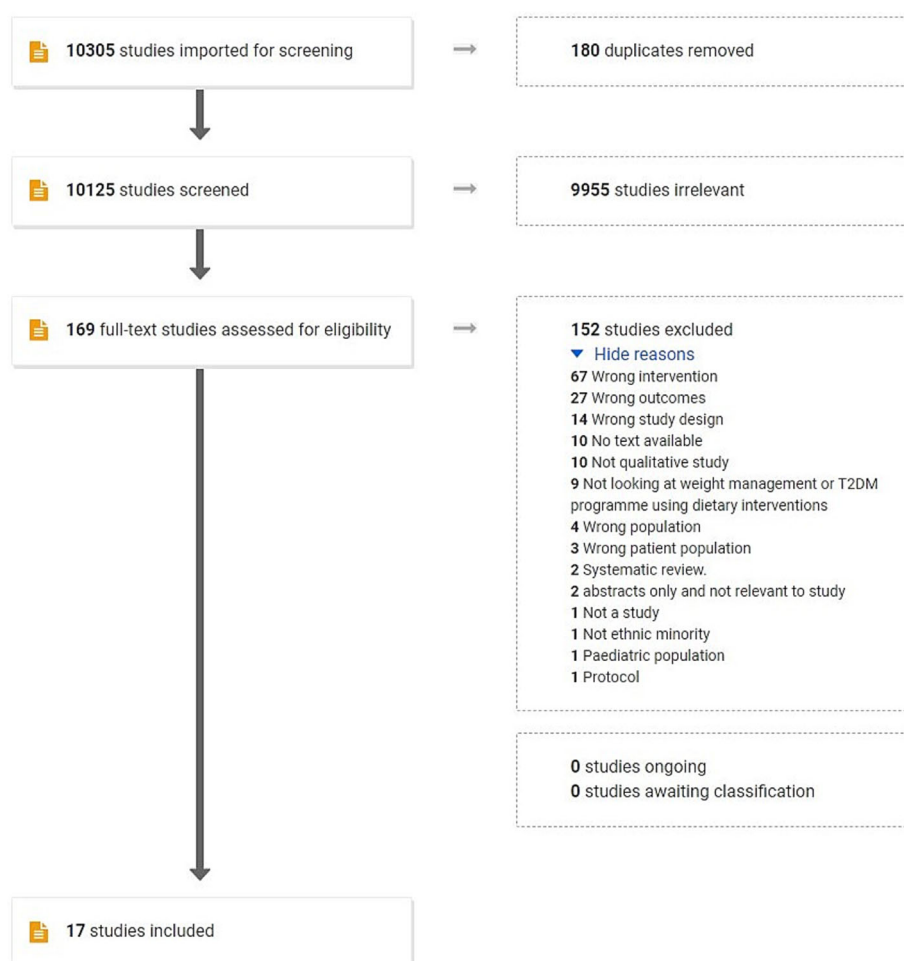
JBI methodology was used for quality appraisal, study selection, and data synthesis.¹³ Titles, abstracts, and full text articles were screened by two independent reviewers (P. D. and either T. E., K. D., C. H., M. M., L. E., or J. N.), and disagreements were resolved with a third reviewer (L. E. or M. M.). A standardized data form was used to extract data, which included methodology, phenomena of interest, setting, country, ethnicity of participants, intervention characteristics including cultural tailoring, theories used, themes, and author comments. Data extraction was conducted in duplicate by two independent reviewers (P. D. and either T. E., M. M., J. N., or C. H.).

2.4 | Data synthesis and quality appraisal

Research findings were synthesized using the JBI System for the Unified Management of the Assessment and Review of Information using a meta-aggregation approach.¹³ This involved importing relevant studies into the software, systematically extracting data, categorizing and aggregating findings, and conducting a rigorous analysis to identify overarching themes and patterns across the studies. This approach has been described previously.¹³ The JBI quality appraisal was conducted independently by two researchers (P. D. and either T. E., M. M., J. N., or C. H.), which is summarized in Table S4. Figure 2 and Table S5 detail the JBI flowchart and list of study findings with illustrations.

For this review, the ethnicities of participants are reported as described by the authors of the included studies.

FIGURE 1 PRISMA flow diagram describing the screening process.



3 | RESULTS

3.1 | Study description

The full study characteristics are summarized in Table S6. Of the 17 studies, 10 used focus groups, four used semi-structured interviews, two used questionnaires along with interviews, and one used a focus group and 1:1 interviews. Most papers focused on T2D¹⁵⁻²⁵ and the rest on WM²⁶⁻³¹. From the papers that reported number of individuals interviewed ($n = 15$), there were a total of 418 individuals from minoritized ethnic backgrounds, with a sample size range of 4–82 individuals. The studies were conducted between 1996 and 2021 in five countries: United States^{15-23,25,28,29}, United Kingdom^{24,27}, Norway²⁶, Sweden³⁰, and Australia³¹. Most participants were female and from Black African/Caribbean^{18,19,24} and Hispanic/Latino^{15-17,20-23} ethnic groups. Within the studies, the majority ($n = 14$) used cultural tailoring in the design and delivery of the program^{15-17,19,20,22-30}, and all studies were based in a community setting. Religion was not reported in any study. The following synthesized findings (SFs) are shown below, with the number of papers, findings, and categories presented in Table S7.

3.2 | Synthesized findings

3.2.1 | Family health status and program education as motivators for program uptake and adherence (SF 1)^{15-17,25,28-30}

Motivators for program uptake and adherence included family health status, program-based education, and convenience. Family health status (i.e., family members with health problems) acted as a motivation for individuals who did not want to go through the same experiences. Individuals were described as wanting to take care of their health and complete health-related programs to support their families and feared their health could worsen without making changes:

My mom died of cancer and diabetes, it became personal to me ... I want to live more ... I have my own two kids now ...

(American Indian/Alaskan Native, USA)²⁵

Gaining an understanding and knowledge from the program through educational sessions and practical application, such as

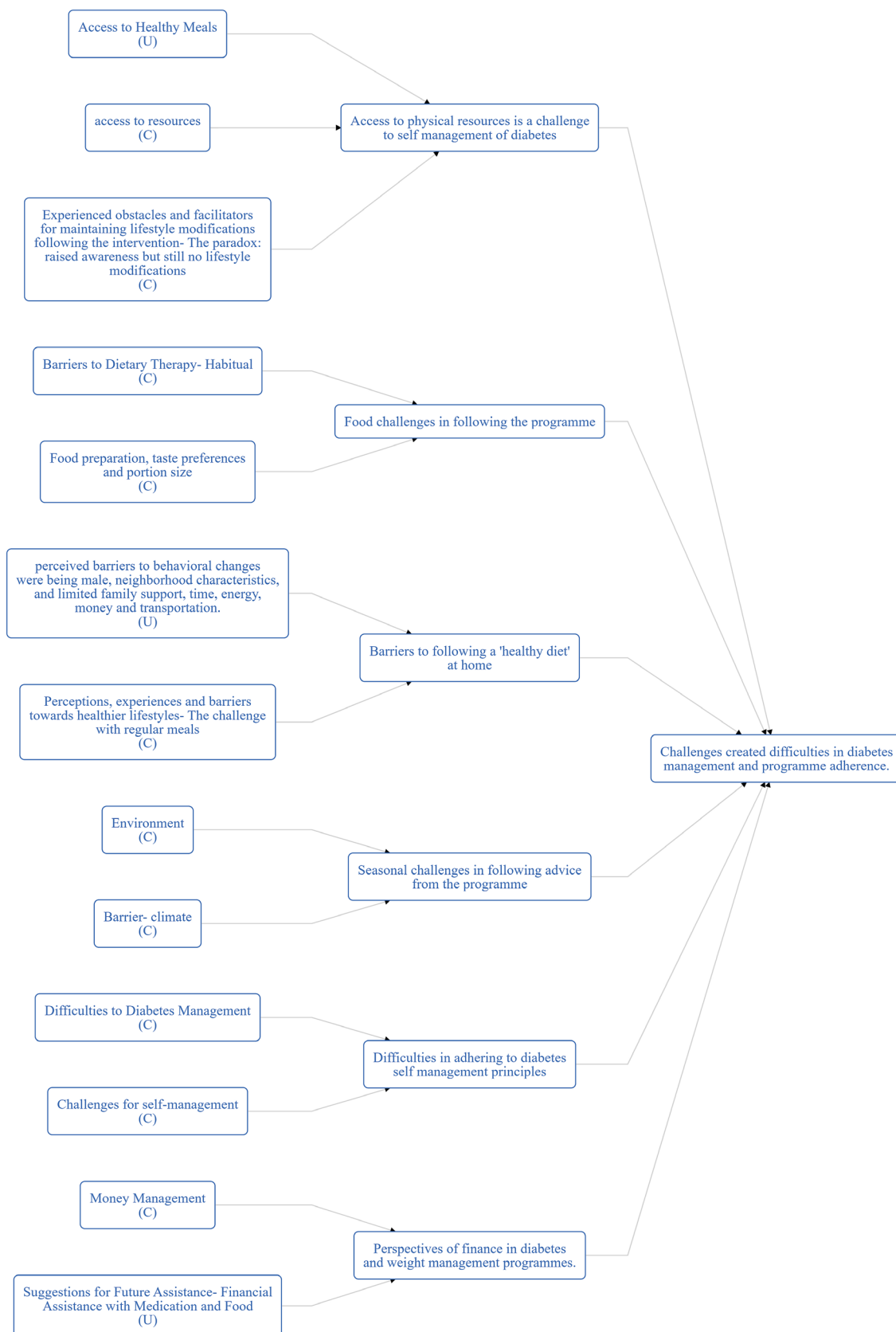


FIGURE 2 JBI flowcharts.

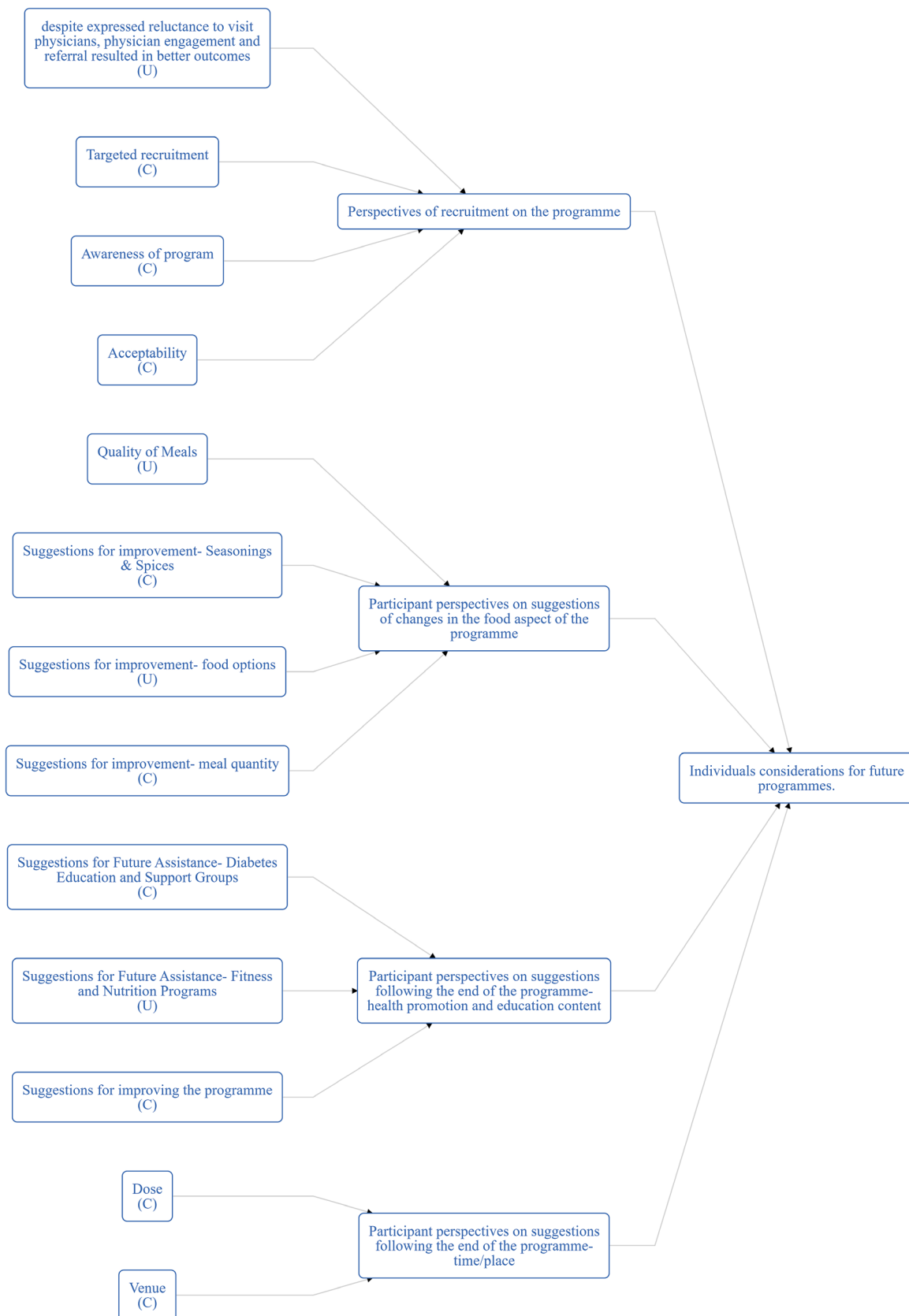


FIGURE 2 (Continued)

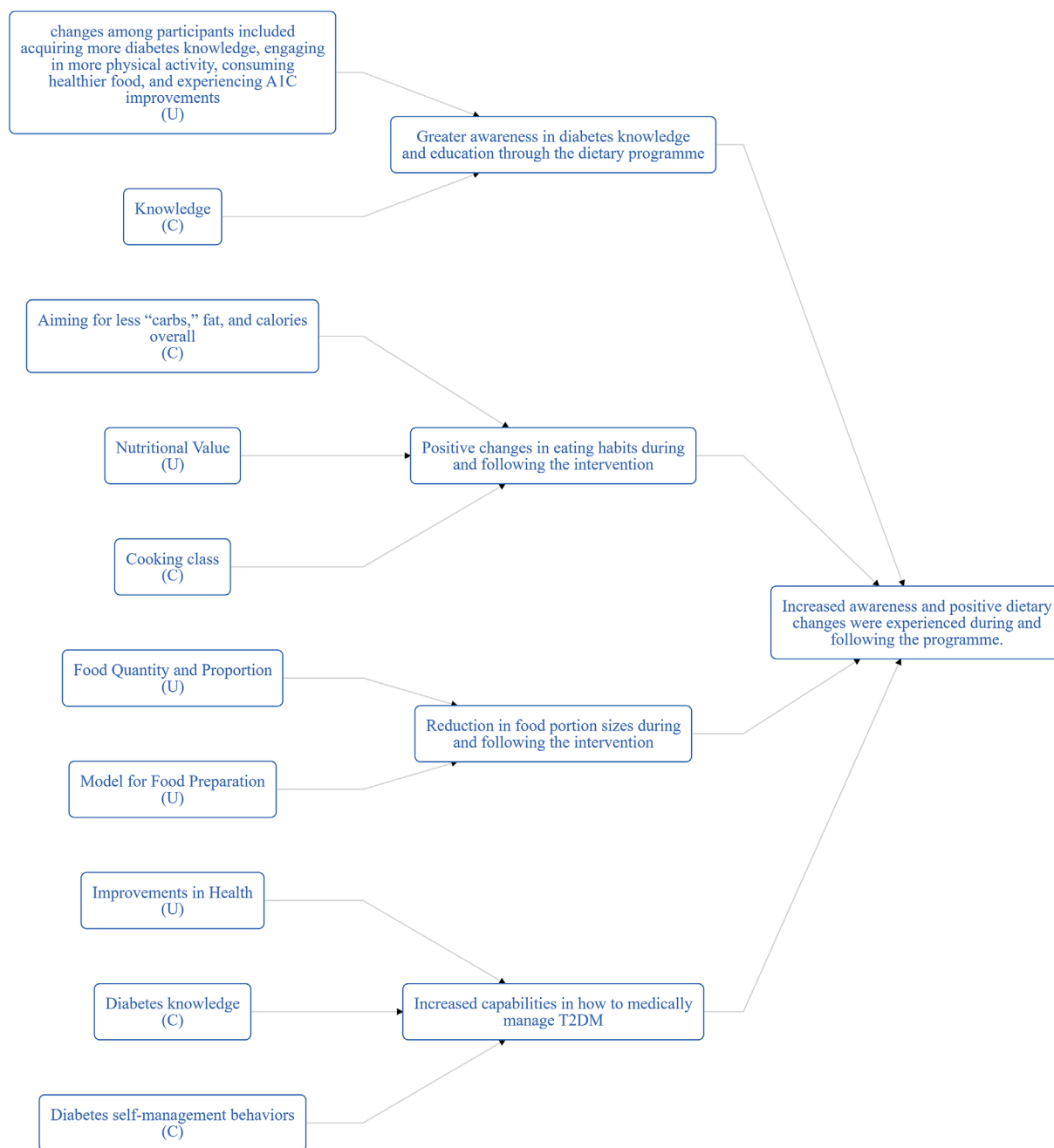


FIGURE 2 (Continued)

understanding the nutritional value of foods, acted as a motivator. Education and knowledge also encompassed program-specific activities, such as keeping a food record at home, which supported the application of knowledge and accountability for changes. The ease in following advice (i.e., convenience), such as the use of prepackaged meals and using wearable technology, was also a motivator. For example, pre-packaged meals supported dietary adherence, saved money, and reduced household barriers in making changes.

The most, I like the special diet I was on for 12 weeks. It helped me a lot and it was done in the very easy for

the customer manner because the food was delivered to my door....

(Hispanic, USA)¹⁵

3.2.2 | Social support in making and maintaining positive changes during the program (SF 2)^{15,17,20–24,26–30}

Social support from family, friends, and individuals attending and delivering the program was important in making dietary changes.

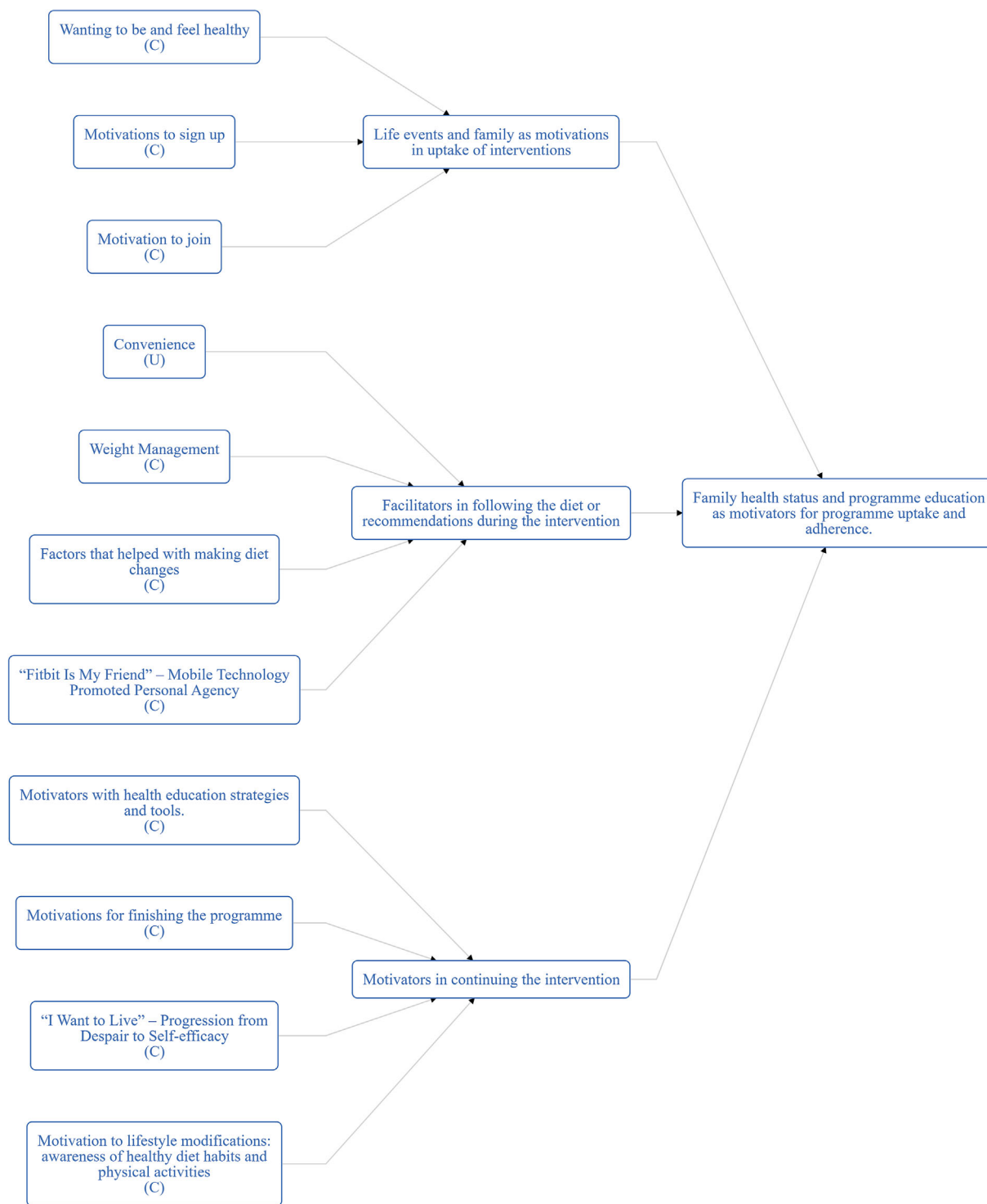


FIGURE 2 (Continued)

Encouragement, attending sessions with individuals, and helping with household dietary changes were described as family support. This was valued for improving individuals' adherence to diabetes meal plans and "healthy eating" advice, which led to dietary changes for the entire family. When family and friends attended sessions, study participants felt it increased their understanding and awareness, which

helped the participant and their family make dietary changes, thus providing further cultural adaptation.³²

Conversely, social challenges such as cooking for others, cooking separate meals, and socializing with friends made it difficult to implement dietary changes. Social contexts within a household sometimes prevented individuals from implementing program-based dietary

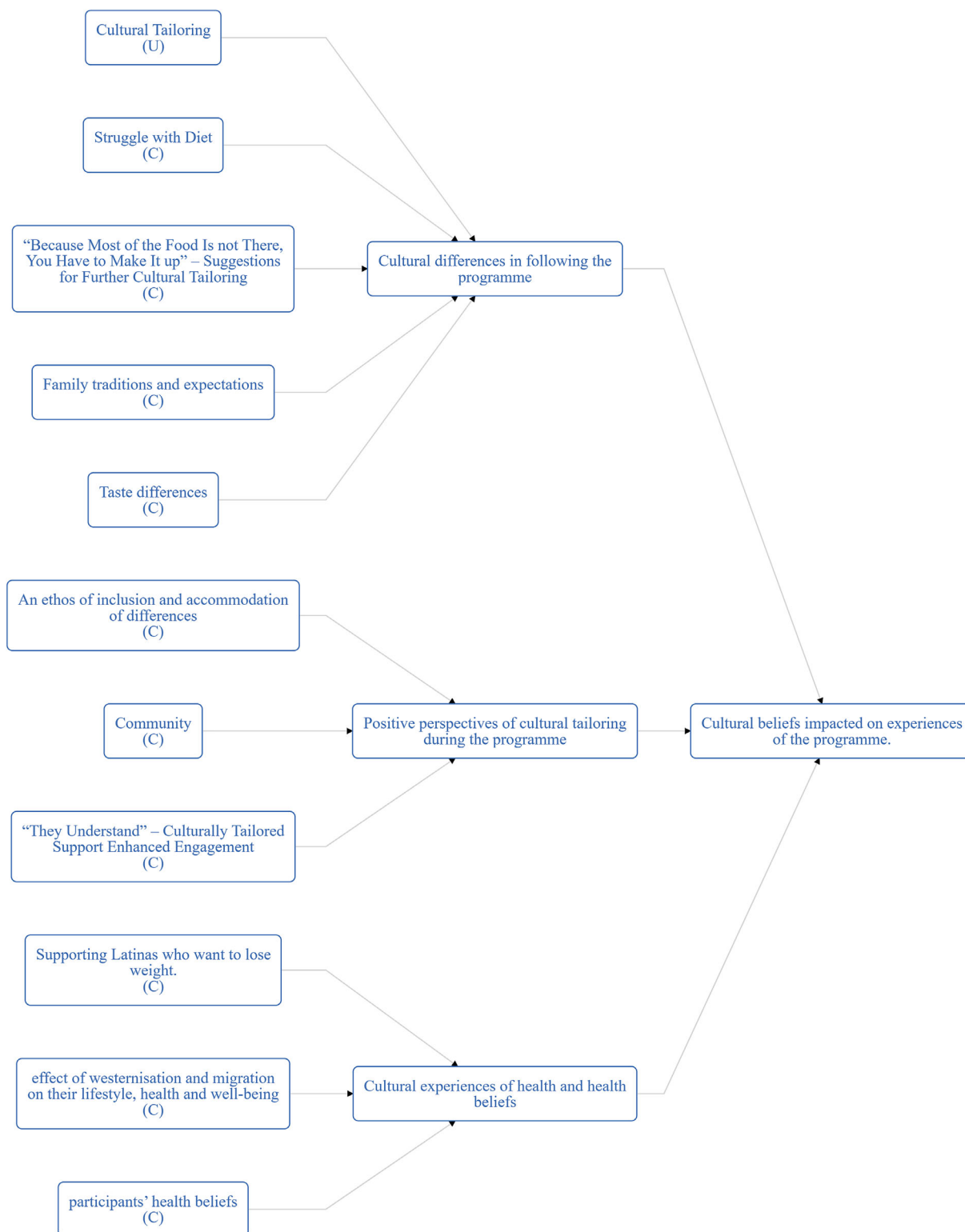


FIGURE 2 (Continued)

changes because they were harder to implement at a family level. Studies highlight the significant influence that social context has on individual attempts to make lifestyle changes to improve the diabetes

management. Rather than solely focusing on supporting individuals with diabetes, support needs to be extended to the entire family or household:

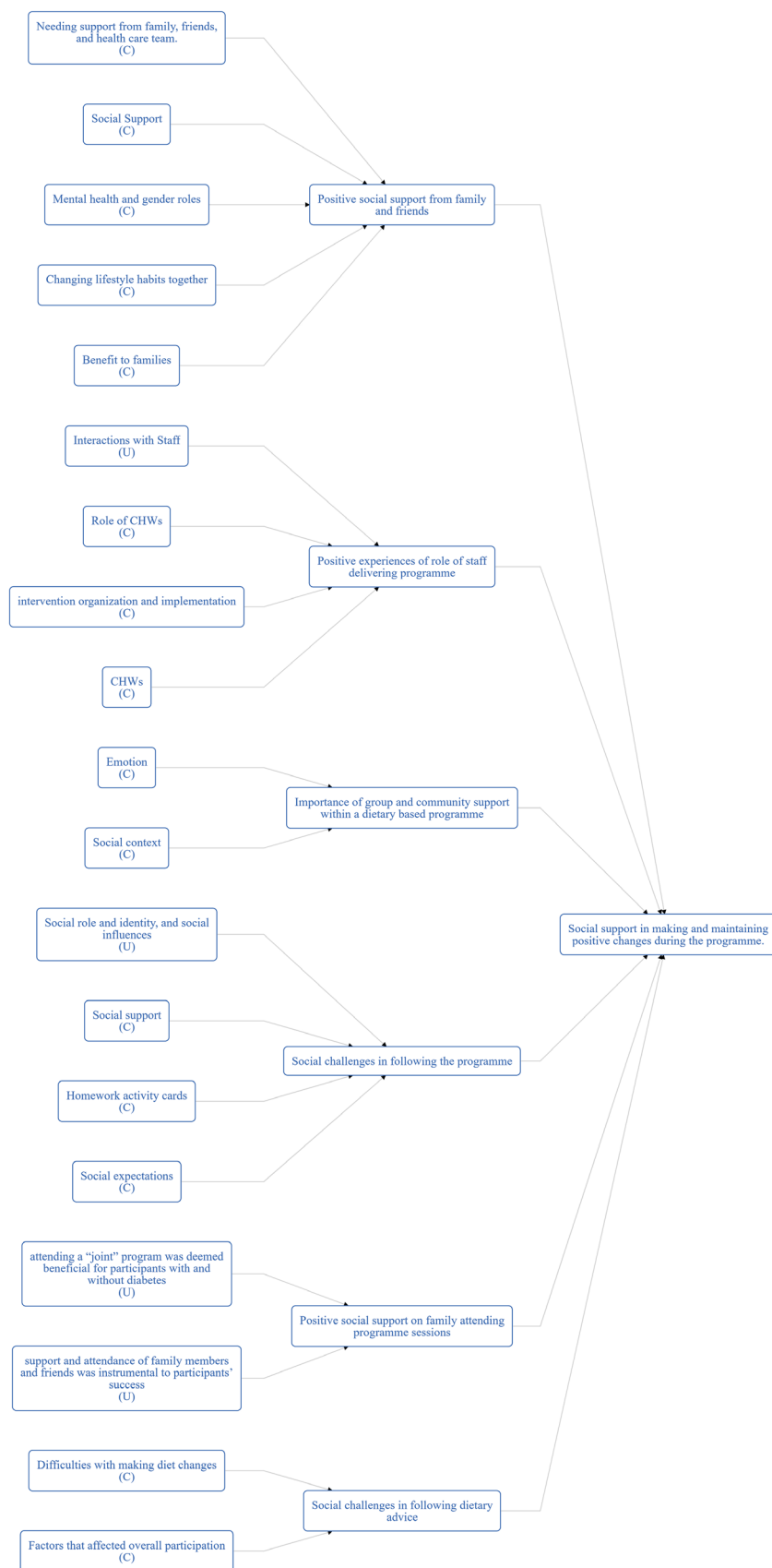


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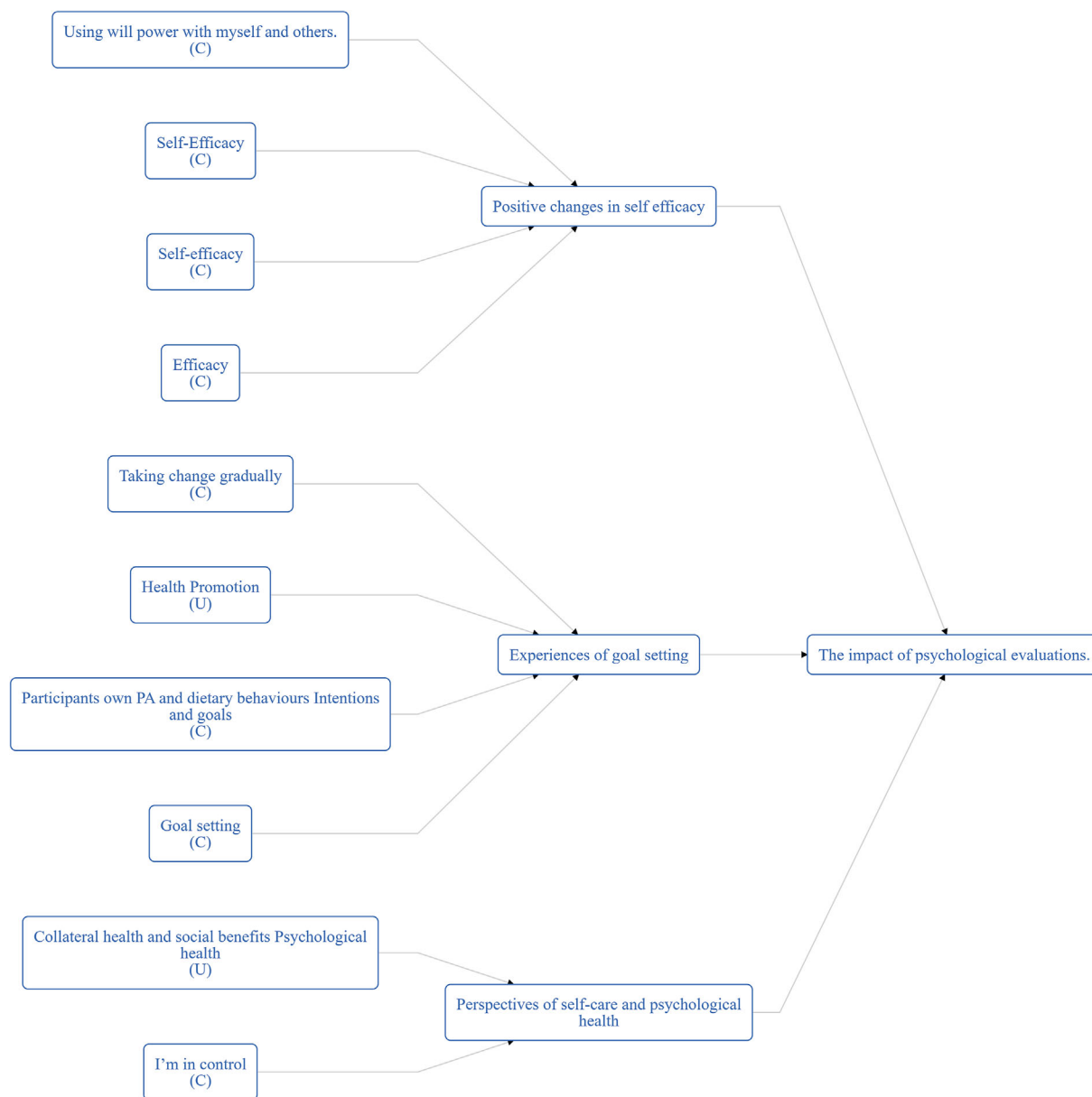


FIGURE 2 (Continued)

I would accompany my mother in her process ... so ... she would drink juice with no sugar ... I was with her when she exercised; when she was more active, she would lower her blood sugar.

(Hispanic/Latino, USA)²⁰

Staff from the same ethnic group that understood the cultural background of individuals and tailored their delivery were viewed positively: leveraging their knowledge of community resources and religious networks to provide individualized support. The role of program staff was also viewed positively where they provided encouragement and reminders to attend the sessions and were easy to talk to:

The CHW [Community Health Worker] would call, remind about classes, and make sure we attended. Even when you couldn't make it she would make it up

(Sikh Indian, USA)²⁹

Peer support was recommended as it supported program adherence, with participants reporting that it would raise their self-efficacy: making it acceptable to challenge traditions and create confidence to resist social pressures:

We recommend things to each other ... "you should eat this; it helped me"

(Hispanic, USA)²¹

3.2.3 | Challenges created difficulties in diabetes management and program adherence (SF 3)^{15,18,20,21,23,27,30}

Environmental challenges in making dietary changes included physical resources (such as access to programs, gyms, and lack of cooking skills) and dietary preferences and cultural beliefs which resulted in food-based challenges such as disliking program-provided foods and food flavors outside of cultural norms:

I don't like that type of food because it doesn't have enough flavour for me.

(Black American, USA)¹⁸

Participants suggested that a lack of local programs, time to make changes, and difficulties in managing change at a household level made it challenging to follow a healthier diet: describing wanting to make changes but struggling with access to physical resources such as a female-only gym.^{27,30} At a household level, the difficulty in getting the family on board with changes was described, resulting in the need to prepare two separate meals which was difficult and time-consuming:

... at least cooking something—that everyone will like that is also healthy ... that's challenging.

(American Indian/Alaskan Native, USA)²⁸

“Healthy” foods were also viewed as more expensive, and in some households, not all family members would eat the same foods which resulted in buying additional foods. Some studies therefore found that programs which provided financial support or free meals received positive feedback because they reduced the financial burden of participation:

And you can open up my refrigerator and there's food there. Not that there wasn't food before, but when I went out, I'd spend a lot of money on junk and foods that maybe I shouldn't have been eating....

(Hispanic, USA)¹⁵

3.2.4 | Cultural beliefs impacted on experiences of the program (SF 4)^{15,17,21,25–28,30,31}

Individuals described their own pre-program experiences of health and health beliefs, which included their understanding of diabetes and how they felt it adversely affected them. Some health beliefs were tied to socio-cultural beliefs, such as gendered employment norms, and that in certain cultures, (Latino) women may be considered “selfish” for looking after their own health:

They are not being selfish if they are trying to lose weight in order to better their lives. They're being

positive about their lives. They are fighting for the health of their bodies.

(Male Latino, USA)¹⁷

It was important that programs addressed cultural norms and beliefs, such as tailoring education materials and advice, and providing culturally appropriate foods which provide “surface level” cultural adaptations,³² and can enhanced participant engagement. Program delivery by staff from a similar culture also increased not only participants' comprehension of educational materials but also their comfort in sharing culture-related challenges in diabetes management and strengthen staff–participant relationships.

.... There's not a one size fit-all weight-loss plan, but that it is has to be conducive specifically to certain people's biology and cultural ways of doing.

(Filipino, USA)²⁵

However, one study²⁴ reported that both individuals and educators did not have to match individuals ethnically/culturally providing they showed cultural competence:

As I said I am from Haiti. Sometimes some food they gave me, I eat them, they're good for my body. But I think maybe if they can maybe add a little bit more island food, that would be much better.

(Haitian, USA)¹⁵

The importance of social influences and the perceived social role and identity within program development was illustrated, with consideration required for family traditions that may impose cultural and social norms on individuals:

Yes, when I meet relatives, they invite me [to eat] all the time, and I cannot say no ...; this is considered impolite not to eat the food when offered

(Middle East-Iraqi, Sweden)³⁰

3.2.5 | Increased awareness and positive dietary changes were experienced during and following the program (SF 5)^{15,17,20,23,24,27,28}

The evidence demonstrated improvements in diabetes and WM education. Improvements in knowledge were demonstrated through an increased understanding of appropriate food portion sizes and “healthier” choices through education. “Healthier” choices were described as consuming less fat and sweet foods and eating more vegetables. Understanding the importance of fruit and vegetables and how to incorporate them in the diet provided practical support and confidence for individuals:

.... I learned to check the food labels, 'cause I never knew about these; portions

(Hispanic/Latino, USA)²⁰

Participants in studies^{20,23,27} also described individuals medically managing their health and T2D through increased capabilities, such as blood glucose monitoring and understanding the impact of diet. Studies described the positive impact of blood glucose and HbA1c improvements and the motivation gained by feeling better:

I learned that medication, exercise, and diet have to go together to improve diabetes.

(Hispanic/Latino, USA)²³

3.2.6 | The impact of psychological evaluations (SF 6)^{15,17,21–24,27,29}

Studies that focused on psychological constructs to describe program impacts reported increases in self-efficacy and self-motivation. Self-efficacy was described as an important factor in adhering to a diabetes meal plan and goal setting an important technique. However, one study¹⁷ found individuals may struggle with goal setting and self-care if too many goals are set at once, thus suggesting a need for gradual change. Focusing on fewer goals, based on clinical significance or client preference, may aid individuals achieving goal-based success:

... little by little I have established goals, and slowly I am achieving those goals.

(Latino, USA)¹⁷

Programs targeting psychological constructs such as self-empowerment and self-efficacy through techniques, such as goal setting and coping skills training, helped participants replace a negative state of mind about their diabetes management, with a more proactive stance and responsibility for their self-care. However, social support was again deemed important, with individuals feeling unable to make the necessary changes without support from their household.

It's not so much the information, but that they are instilling in us the importance of self-care. ... they are helping us take care of ourselves so that we can live a little, a little longer

(Hispanic, USA)²²

3.2.7 | Individual considerations for future programs (SF 7)^{15,20,23,24,28,29}

One paper²¹ emphasized individuals' desire for further education on the long-term impact of diabetes on health and the importance of

making changes. Nutritional counselling was highlighted for future programs along with education on portion sizes and foods that should be consumed, with a cultural consideration:¹⁵

I think nutritious [sic?] counseling would be excellent

....

(Hispanic, USA)¹⁵

There was a need for future programs to address taste preferences, variety, and portion size, to appeal to different palates, address hunger/satiation, and real food alternatives, particularly when on meal replacement food programs:

Because most of the food is not there. So you have to make it up. Filipino food is not really there even in the (handbook)

(Filipino, USA)²⁵

Other suggestions for improvement included the program structure: improving the program timing, frequency, and venue recruitment process. Proposals included longer sessions but reduced frequency, use of non-clinical community venues such as faith organizations, and tailoring program advertisement to enhance reach:

—you need to get it out there more to the natives ... more advertising—you know, get out there in the communities and look for the people who do need help and stuff.

(American Indian/Alaskan Native, USA)²⁸

4 | DISCUSSION

The purpose of this qualitative systematic review was to synthesize the best available evidence of minoritized ethnic groups experiences, perceptions, and perceived barriers and facilitators to T2D and WM programs. It highlights the impact of culture, beliefs, and social situations on adherence to dietary programs in different ethnic groups.

4.1 | Social support

Group support contributed to a sense of belonging and social connection, aided in sharing of information and experiences, and increased engagement. Findings emphasized improved adherence when program support was provided by staff that understood the cultural background of individuals and had a shared understanding of challenges and how to overcome them. External support from family and friends is a significant contributory factor for participation and is impacted by cultural norms.

These findings are similar to a narrative review by Patel et al.³³, which found cultural expectations such as the importance of serving culturally relevant foods and expectations of family and the wider

social circle were barriers in making dietary changes. However, in the review,³³ all included studies focused on South Asian individuals and therefore may not be generalizable to other minoritized ethnic groups. Nevertheless, Patel et al.'s³³ results are supported by a systematic review³⁴ which demonstrated the importance of families in maintaining dietary changes for T2D management at home and the barriers presented by social pressure to eat during social events. Similarly, common barriers to a healthy diet described in other studies^{34,35} were lack of awareness and general misconceptions of a healthy diet, alongside competing cultural expectations.

4.2 | Access to services

Wider determinants of attrition in T2D or WM highlighted in the SFs presented included access to local services and resources such as local gyms and WM services. Although this finding was not extensively studied, it is supported by other research which demonstrate the need for an adequate environment, as well as education and access to ongoing support in order to engage in health-enhancing behaviors.³⁶

4.3 | Cultural tailoring and education

Many of the studies used “surface level” cultural adaptation such as matching resources to target populations, providing the program in other languages, and using coaches from similar backgrounds.³² However, some also demonstrated “deep structure” adaptations, which through an understanding of social and cultural factors and use of social support, family involvement, and co-production of materials with target communities are thought to increase intervention salience and success.³² Similarly, a previous systematic review³⁷ found that a lack of understanding of cultural norms and beliefs by program providers impeded minoritized ethnic groups from accessing and adhering to diabetes programs. The themes identified from the review³⁷ were participants' strong adherence to culture, different beliefs about health and illness, and low accessibility of culturally appropriate services. It is important to note that facets of religion and culture are bound within broad definitions of ethnicity,³⁸ but the role of religion in program experiences is not reported in any of the studies in this systematic review.

Lack of cultural understanding by program providers has been highlighted as a barrier to engagement in a qualitative study³⁹ in which Pakistani women described their obesity-related concerns. This study reported barriers such as lack of practical, culturally appropriate dietary advice and health professionals giving contradictory advice due to the lack of cultural awareness of foods consumed.³⁹ Conversely, an example of good practice in a diabetes education intervention targeting health promotion in a UK South Asian population is reported by Gill et al.⁴⁰ The intervention embedded health ambassadors and provided educational sessions with bilingual professionals in settings which were culturally appropriate such as mosques, resulting

in positive learning.⁴⁰ This approach is supported by a systematic review⁴¹ which recommended dietary programs should be informed and sensitive to individual culture, involve faith leaders, and include training programs to those delivering the intervention.

4.4 | Dietary advice

Within ethnically diverse settings, cross-cultural food practices are also likely to take place, and cultural food practices become less distinct as a result.⁴² Previous studies^{43–45} describe a need for dietary advice to be centered on traditional foods and ingredients, as was identified in this present review. However, it is important to note that eating habits and dietary decisions vary within, as well as between, ethnic groups, over time and with changing circumstances.³⁸ Thus, the varying dimensions of individuals' lived experience and diversity within broad ethnic categories should be considered in the design of tailored interventions.³⁸

While this review focused on adults, Ells et al.⁴⁶ also found that interventions may not be engaging families in underserved communities due to poor communication and a lack of cultural and language sensitivity from healthcare providers. The review also reported similar themes to the present study, in terms of how programs can be improved to facilitate uptake and retention. Common themes included ensuring programs are tailored to the needs of target populations and ensuring programs fit around family commitments and are delivered by staff from the target communities.⁴⁶

4.5 | Insights on program modifications

The incorporation of co-design and cultural tailoring within healthcare services is imperative for ensuring the delivery of effective and equitable care to minoritized ethnic populations in high-income countries. Co-design, involving active collaboration between healthcare providers and communities, allows for the development of services that are not only culturally sensitive but also responsive to the unique needs and preferences of specific ethnic groups. Previous research has highlighted the challenges faced by minority populations and emphasized the need for tailored interventions.^{47,48} This systematic review builds upon these foundations, aiming to provide a comprehensive analysis by synthesizing evidence from diverse populations and providing recommendations for future research and practice.

4.6 | Strengths and limitations

This review employed gold standard methodology and reporting standards. Independent, dual assessment of study screening, data extraction, and quality assessment also enhanced the trustworthiness of the findings, which provide an in-depth and novel assessment of the qualitative literature. A strength of this systematic review lies in its confirmation of the existing literature, offering assurance to

researchers and practitioners regarding the universal applicability of established principles such as appropriate design for robust lifestyle behavior interventions and cultural tailoring of nutrition and related lifestyle programs to ethnic minority populations in high-income countries.^{47,48}

The systematic review's approach of aggregating studies from various countries and ethnic groups could be considered both a strength and a limitation; while it provides insights into culturally and potentially socioeconomically diverse populations, it does not yield findings specific to any particular population or set of population characteristics and does not capture the diversity within cultures and traditions.

A limitation of this review is that ethnicity information and categorization was gathered inconsistently between studies. This has been acknowledged as problematic within health research and an issue associated with the terminology used which can suggest a reductionist view of ethnicity.⁴⁹ Another limitation is that it was not possible to distinguish between barriers and facilitators in the targeted studies that worked with only one ethnic group compared with those that were inclusive of several groups as the papers were aggregated and it was not possible to pull data separately for different ethnicities. Most of the evidence came from the United States which makes it difficult to generalize across other countries with different contexts, ethnic groups, and cultural norms.

4.7 | Implications for future research and practice

Future programs should consider the following:

- Dietary advice and information that is affordable, culturally sensitive, and takes account of the importance of food in an individuals' ethnic and social context, in addition to their religious, cultural, and health/illness beliefs⁵⁰;
- The co-production of program materials and design with target communities: tailoring program materials and communications strategy to cultural needs and the expectations;
- The importance of peer support, bringing the whole family/support network on board and using venues and timings that fit with everyday life;
- A focus on overall well-being as a result of improved diabetes management/dietary changes, rather than just improved clinical outcomes (i.e., outcomes that are relevant to participants); and
- Ensuring programs set tailored, incremental, achievable goals to support self-efficacy of participants.

Future research is needed to understand what helps to improve referral, engagement, persistence, and effectiveness of T2D and weight loss services and programs for minoritized ethnic populations, particularly in the United Kingdom and other countries outside of the United States.⁴⁶ Future health policies should be aimed toward improving cultural competence training to facilitate partnership working between individuals and their healthcare providers.

5 | CONCLUSION

For WM and T2D programs to be effective, it is imperative that programs are sensitive to the needs of the population group, while also being implementable within the community. Dietary programs for T2D and WM programs should consider social, habitual, economic, and conceptual factors, which include consideration of local ethnic and cultural norms and community relationships that facilitate the creation of culturally tailored programs co-designed with target communities.

AUTHOR CONTRIBUTIONS

P. D., M. M., C. H., K. D., and L. E. provided substantial contributions to the design of the work. All authors P. D., M. M., K. D., C. H., L. E., T. E., and J. N. drafted the work and provided revisions. All authors provided final approval of the version to be published and provided agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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CONFLICT OF INTEREST STATEMENT

The views expressed in this paper are those of the authors and not necessarily those of the NHS or the National Institute for Health Research. All authors confirm that they have no conflicts of interest to declare.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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