Interventions to Address Type II Diabetes Mellitus in African American Populations: A Literature Review

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Research Question

What interventions can be instituted to combat Type II Diabetes Mellitus in African American Populations?

Abstract

African Americans are disproportionately affected by Type II Diabetes Mellitus (T2DM). This group faces higher rates of diagnosis, treatment complications, and mortality. This literature review explores effective interventions that aim to address these disparities, focusing on community-driven, accessible, and adaptive approaches. 12 peer-reviewed articles were analyzed to determine common features of successful interventions. The findings indicate that these three approaches may be successful in improving T2DM outcomes in African Americans. Further research is needed to explore the long-term effects and scalability of these interventions.

Introduction

Roughly one in ten Americans have Type II Diabetes (T2DM) (Ajuwon, Love, 2020). This is a chronic condition where the body is unable to properly manage its blood sugar level (Mayo Clinic, 2024). While the root cause of T2DM is unknown, it results from either an issue with the production or resistance to insulin (Mayo Clinic, 2024). Insulin is a regulatory hormone which dictates the amount of sugar allowed into cells (Mayo Clinic, 2024). In those with T2DM, cells either become resistant to this hormone or the pancreas—the organ responsible for its production—fails to generate enough insulin (Mayo Clinic, 2024).

This resistance, or failure, to produce insulin continually elevates blood sugar levels, leading to an abundance of negative complications (Cleveland Clinic, 2024). From frequent urination and blurred vision to cardiovascular disease and nerve damage, these complications greatly reduce the quality of life for individuals living with T2DM (Cleveland Clinic, 2024). Both short and long-term complications arise from this condition, and it has been associated by physicians and researchers with obesity and cardiovascular disease (American Diabetes Association, 2023). In the United States, diabetes was ranked as the eighth leading cause of death. 103,294 death certificates listed it as the underlying cause (American Diabetes Association, 2023). Currently, there is no cure for diabetes; those living with it must manage blood sugar levels meticulously (Cleveland Clinic, 2024). To further exacerbate the impact of this condition, treatment is unaffordable for many (Parker et al., 2024). Diabetes-specific healthcare expenses have grown by eighty billion dollars in a ten-year period from 2012-2022 (American Diabetes Association, 2024). Total cost of diagnosed diabetes tops 400 billion dollars, with over 100 billion of that being sourced from indirect costs of this condition (American Diabetes Association, 2024).

African Americans in particular, are disproportionally affected by T2DM (Daniels et al., 2014). They are diagnosed at twice the rate of other groups and experience negative impacts at a rate from two to four times higher (Ajuwon, Love, 2020). It was found that non-Hispanic blacks die from diabetes at twice the rate of non-Hispanic whites (US Department of Health and Human Services, 2024). Furthermore, African Americans are hospitalized with diabetes at nearly three times the rate of whites (American Heart Association, 2021). Financially, African Americans incur the highest direct healthcare costs as a result of this condition (American Diabetes Association, 2023). Evidently, this specific population is experiencing abnormally high rates at every stage of this condition: diagnosis, treatment, and mortality (McCormack, Grant, 2013).

Previous research has identified this gap but fails to explain its existence or suggest a suitable solution. Genetics, physiology, policy, and lack of access to healthcare have all been named as potential causes, but it remains unknown why this gap is so large (McCormack, Grant, 2013). Additionally, lifestyle and behavioral choices, while potentially contributing to this disparity, have also not been targeted thoroughly (American Heart Association, 2021).

African Americans are underrepresented in Type II Diabetes research, particularly in clinical trials for medications and interventions (AAMC, 2021). Literature regarding successful interventions in this population is limited. By scrutinizing diabetes inequity from a unique viewpoint, strategies may be found to close this gap. The aim of this study is to analyze interventions to prevent Type II Diabetes in African Americans.

Methods

Relevant academic databases were reviewed to obtain research studies focusing on T2DM in African American populations. These include PubMed and Web of Science, which

provided a plethora of peer-reviewed literature regarding this topic. PubMed is an esteemed source for many clinical trials and medical publications and is considered the standard for medical publications. It is an open-access database overseen by the National Institutes of Health and grants access to over 37 million citations. Web of Science is a comprehensive research platform with scholarly literature focused on nearly all subsections of scientific study. This database possesses over 21 thousand peer-reviewed journals and is respected in the academic community. Both PubMed and Web of Science were searched using specific search terms and a detailed process for narrowing literature. Seven of the articles were obtained from PubMed and five of the articles were acquired from Web of Science.

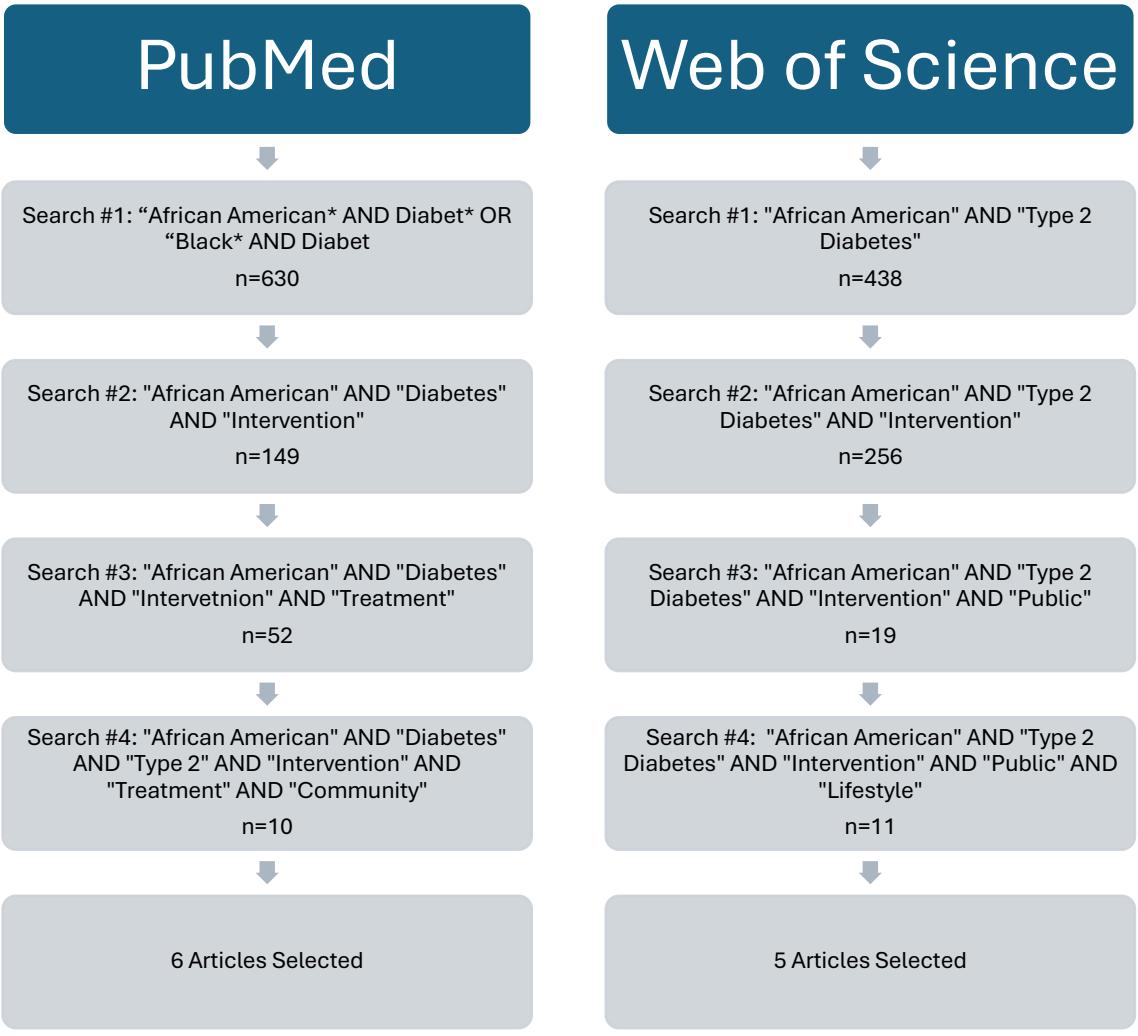
In the PubMed search, the first search terms were “African American* AND Diabet* OR “Black* AND Diabet*” which yielded 630 articles. This search included information in the topic’s general sphere and provided knowledge and research highlighting the condition and its impact on the specific population. To reduce the number of articles found, "African American*" AND "Diabet*" AND "Intervention*" OR "Black*" AND "Diabet*" AND "Intervention*" was used. This yielded 335 articles. To further narrow the results, "African American*" AND "Diabet*" AND "Intervention*" AND "Treatment*" OR "Black*" AND "Diabet*" AND "Intervention*" AND "Treatment*" was used as the search term, which led to 150 articles. Finally, "African American*" AND "Diabet*" AND "Intervention*" AND "Treatment*" AND "Communit*" AND "lifestyle" OR "Black*" AND "Diabet*" AND "Intervention*" AND "Treatment*" AND "Communit*" AND "lifestyle" was used as the search term and yielded 11 articles, six of which were included in this literature review.

In the Web of Science Search, the first search terms used identically and in the same sequence. The first search terms were “African American* AND Diabet* OR “Black* AND

Diabet*” which yielded 4032 articles. "African American*" AND "Diabet*" AND "Intervention*" OR "Black*" AND "Diabet*" AND "Intervention*" was used as the next search term, lowering the results to 1904 articles. After this, "African American*" AND "Diabet*" AND "Intervention*" AND "Treatment*" OR "Black*" AND "Diabet*" AND "Intervention*" AND "Treatment*" was used as the search term, which led to 401 articles. Finally, "African American*" AND "Diabet*" AND "Intervention*" AND "Treatment*" AND "Communit*" AND "lifestyle" OR "Black*" AND "Diabet*" AND "Intervention*" AND "Treatment*" AND "Communit*" AND "lifestyle" was used as the search term and yielded 18 articles, five of which were included in this literature review.

In both databases, comparable inclusion and exclusion criteria were applied. To be included, studies had to be published from 2012 to 2024. Research had to focus on African American populations in the United States. Those that did not were excluded. Only Type II Diabetes research was included. Literature studying children under the age of 18 was included; research focusing on either or both genders was included. Further information regarding this process is described in *Figure 1*.

Figure 1: Literature Review Article Selection Process



Results

Despite efforts to curb risk factors for diabetes, these twelve articles highlight the current interventions addressing disparities that African Americans face with Type II Diabetes. The available research conveys three overarching findings. First, successful interventions in the cited literature tend to be peer-led and involve community support. Second, successful interventions often involve telehealth and mobile health formats to augment provider care. Third, successful interventions focus on dietary changes and exercise improvements. See *Table 1.* for a detailed summary of the articles used for this literature review.

Community Based Peer-led Interventions

In the reviewed literature, researchers have emphasized the importance of tailoring Type 2 Diabetes Mellitus (T2DM) interventions to the unique cultural and community contexts of the populations they serve, particularly in peer-led and community-based settings. A key strategy across multiple studies involved leveraging trusted community environments, such as churches, and incorporating faith-based elements to foster engagement and improve outcomes. Chuch-based interventions are associated with reductions in Metabolic Syndrome (MetS) prevalence. Significant improvements in waist circumference, blood pressure, and cardiovascular risk factors were also observed in those receiving faith-based interventions (Mamun et al., 2020). Notably, faith-based education provided by pastors or church leaders contributed to even greater odds of being MetS-free compared to standard interventions led by trained peers (Mamun et al., 2020).

Similarly, peer-led approaches in various settings showed substantial benefits in diabetes management, reinforcing the impact of cultural sensitivity and social support. For instance, interventions led by peers achieved statistically significant improvements in diet and blood glucose monitoring compared to control groups without peer involvement. Additional reductions

in both systolic and diastolic blood pressure were also observed (Ewen et al., 2024). African American males with T2DM benefited from peer led interventions (Hawkins et al., 2018). These included culturally tailored materials with presentations by racially concordant healthcare providers and yielded positive outcomes. Participants experienced decreases in LDL, waist circumference, and body mass, despite limited changes in physical activity (Collins-McNeil et al., 2013). Improvements were also noted in medication adherence, underscoring the role of culturally relevant, community-centered approaches in enhancing diabetes self-management (Collins-McNeil et al., 2013).

Telehealth-Augmented Interventions

The reviewed literature highlights the effectiveness of provider-led interventions, particularly those utilizing telemedicine and mobile health consulting. Approaches led by clinical pharmacists and health coaches with these techniques resulted in statistically significant reductions in HbA1c levels, with these improvements sustained over 24 months (Gerber et al., 2023). Diabetes medication adherence also improved as a result of this intervention (Gerber et al., 2023). Similarly, pharmacist-led interventions were associated with greater reductions in HbA1c when compared to usual care (Narain et al., 2020).

When providers distributed tailored health education videos and a survey regarding T2DM management, medication adherence improved. Further, a sample of African Americans with T2DM expressed a preference for related online modules that facilitated communication with their providers (Schoenthaler et al., 2020).

Community healthcare worker-led lifestyle weight loss (LWL) interventions also demonstrated improvements in multiple metabolic parameters. Participants in the LWL group

experienced significantly lower waist circumference, diastolic blood pressure, fasting blood glucose, and HDL. Triglyceride levels also decreased significantly at one year in the LWL group compared to the enhanced usual care (EUC) group. **with a lower prevalence of metabolic syndrome at both one and two years compared to the EUC group (Pedley et al., 2018).

Diet and Exercise-Focused Interventions

Diet and exercise-focused interventions consistently emerged as effective strategies for managing T2DM among African Americans. Incorporating both dietary adjustments and physical activity leads to meaningful health improvements. For instance, interventions using Mediterranean, Healthy US, and Vegetarian diets showed significant weight loss among participants (Turner-McGrievy et al., 2022) . Diverse dietary strategies resulted in positive outcomes across different dietary patterns (Turner-McGrievy et al., 2022). Broader lifestyle programs that combined diet with exercise saw significant A1c reductions at six months (Lynch et al., 2019). While certain improvements lessened by 12 and 18 months, participants reported better diabetes medication adherence (Lynch et al., 2019). Those who attended more than half of the session experienced lower diabetes-related distress (Ewen et al. 2024). Reduction of this distress was often paired with improvements in weight and blood sugar (Ewen et al., 2024). Programs emphasizing both diet and physical activity also reduced waist circumference and fasting blood glucose levels (Pedley et al., 2018).

Table 1: Detailed Summary of Articles Reviewed

	Authors	Publication Date	Article Title and Journal	Purpose	Sample Info	Type of Research	Research Findings	Limitations of Article
1	Turner-McGrievy, Wilson, Carswell, Okpara, Aydin, Bailey, Davey, Hutto, Wilcox, Friedman, Sarzynski, Liese	2022	A 12-Week Randomized Intervention Comparing the Healthy US, Mediterranean, and Vegetarian Dietary Patterns of the US Dietary Guidelines for Changes in Body Weight, Hemoglobin A1c, Blood Pressure, and Dietary Quality among African Americans *Journal of Nutrition*	To identify dietary-related factors impacted by 3 US Dietary Guideline dietary patterns on African Americans at risk of T2DM	63 eligible participants divided between 3 groups 83% female 17% male	Randomized Control Trial	Within each group, weight loss was significant, but there was no significant difference between the groups.	Participant number was small and majority female and educated, limiting generalizability. No control group as all participants received intervention. Short (12-week) study, so participants may not experience full effects of change. Participants randomly assigned to group regardless of dietary preference, values, or experiences.
2	Gerber, Biggers, Tilton, Marsh,	2023	Mobile Health Intervention in Patients With Type 2	To identify the impact	221 adults	Randomized Clinical Trial	Hemoglobin A1c decreased by an average of 0.79 percentage points in	Intervention involved pharmacists, health coaches,

	Lane, Mihailescu, Lee, Sharp		Diabetes: A Randomized Clinical Trial *JAMA Open Network*	of pharmacist and health-coach mobile health interventions in African American and Latinx adults with Type II Diabetes and A1c levels 8% or higher.	Received mobile diabetes support for 1 year 148 African American adults and 73 Latinx adults		the intervention group, whereas the A1c mean for the control group dropped 0.24 percentage points	videoconferencing, and text messaging, so the individual impact of any of these factors cannot be determined. Due to COVID-19 restrictions, information regarding secondary outcomes (BMI, blood pressure, etc) was not collected.
3	Lynch, Mack, Avery, Wang, Dawar, Richardson, Keim, Ventrelle, Appelhan	2019	Randomized Trial of a Lifestyle Intervention for Urban Low-Income African Americans with Type 2 Diabetes	To compare changes in A1c between two groups: Lifestyle Improvement	211 participants A1c measured at 6, 12, and 18 months	Randomized Control Trial	At 6 months, A1c decreased significantly more in the intervention than control group, but by 12 and 18 months, the difference was not significant. The comparison group had more	Diet and physical activity was measured only at 12 and 18 months, so the significant difference observed at 6 months cannot be fully attributed to the difference in intervention.

	s, Tahsin, Fogelfeld		*Journal of General Internal Medicine*	through food and exercise; standard of care comparison group receiving two diabetes self-management education classes			participants with improved medication adherence.	Participants measured their diet via self-reporting, potentially introducing bias.
4	Schoenthaler, Leon, Butler, Steinhaeuser, Wardzinski	2020	Development and Evaluation of a Tailored Mobile Health Intervention to Improve Medication Adherence in Black Patients With Uncontrolled Hypertension and Type 2 Diabetes: Pilot	To develop and measure the acceptability of a tailored mobile intervention plan for medication	42 African American patients Mobile support was tailored based on survey, adherence profile, adherence-	Pilot Study	Five barriers to adherence were found: disruptions in daily routine, forgetfulness, concerns about adverse effects, preference for natural remedies, burdens of medication taking Participants recommended	Small sample reduces generalizability. Researchers noted that by using an AC intervention group, that itself may have served as an intervention, which would decrease their ability to measure the difference between

			Randomized Feasibility Trial *JMIR mHealth and uHealth*	adherence, systolic blood pressure, diastolic blood pressure, and A1c in African Americans who are initially not adhering to their medication. This is compared to a non-tailored attention control intervention (AC)	promoting modules; AC included tailoring survey and health education videos		inclusion of modules that focus on patient-provider communication and stress-reduction strategies to improve medication adherence. At 3 months, both the AC group and tailored mobile support group showed significant improvements in adherence, but there was not a significant difference between the two groups.	the AC and tailored group. Both interventions were only implemented once, respectfully, so it is unknown if more long-term exposure to these programs would better help those with hypertension or Type 2 Diabetes.

5	Lu, Liu, Krumholz	2022	Racial and Ethnic Disparities in Financial Barriers Among Overweight and Obese Adults Eligible for Semaglutide in the United States *Journal of the American Heart Association*	To assess financial barriers and social determinants of health by race and ethnicity for adults eligible for semaglutide in the United States	13,711 adults included in final analysis Data from the 2015-2016 and 2017-2020 NHANES series of cross sectional surveys were used. Individuals were considered eligible for semaglutide if they met either of the following FDA label	Cross Sectional	Black adults were the highest group eligible for semaglutide (54.2%-59.1%) Among eligible adults, 11.9% were uninsured, 12.0% had medicare, 19.4% had Medicaid/public insurance 13.3% lacked a usual source of care, 33.6% had low family income The percentages who were uninsured, lacked a usual source of care, had low family income, or lacked higher education was highest among Hispanics, followed by Blacks Compared with White adults, Hispanic and Black	Data on medication use were self-reported, which introduces recall bias. A decrease in survey response rates over time introduced nonresponse bias (although sampling weights were introduced to limit this). Cross sectional nature does not allow researchers to establish a cause and effect relationship or measure behavior over time.

					criteria for use of the medication for weight reduction: BMI at least 30 kg/m^2 or BMI at least 27 kg/m^2 with at least 1 weight-related condition (hypertension, Type II Diabetes, or hypercholesteremia)		adults were younger, included a higher percentage of women, were current smokers and heavy drinkers, and were physically inactive and obese	
6	Mamun, Kitzman, Dodgen	2020	Reducing metabolic syndrome through a community-based lifestyle	To measure the effectiveness of lifestyle	221 African American women obese or	Cluster-randomized community-based trial	Prevalence of MetS was 42.08% before DPP intervention and 31.22% after intervetion	No control (non-intervention) group was present, limiting the ability to establish causal association

			intervention in African American women *Nutrition, Metabolism, and Cardiovascular Diseases*	interventions among African American women who are overweight or obese	overweight Standard diabetes prevention program and faith-enhanced diabetes prevention program were delivered by 1 or 2 trained peers from each church		Waist circumference reduced 1.64 inches, systolic blood pressure 3.86mmHg, diastolic blood pressure 2.10mmHg, triglyceride 16.29mg/dL reduced No statistically significant difference between F-DPP intervention outcomes and S-DPP intervention outcomes	Short-term nature of the study eliminated the possibility of monitoring long-term impacts
7	Pedley, Case, Blackwell, Katula, Vitolins	2018	The 24-month metabolic benefits of the health living partnerships to prevent diabetes: A community-based translational study	To measure the effectiveness of a group-base, behavioral weight-loss program	301 obese or overweight participants with elevated fasting glucose levels	Randomized control trial	Of 135 LWL participants, 6 developed the metabolic syndrome while 29 with the metabolic syndrome did not have it post-intervention; of 138 EUC participants, 14 developed syndrome, 25 who started with it	Participants were highly educated and from a mid-sized city in North Carolina, so the results are not fully generalizable to the population of interest

			Diabetes & Metabolic Syndrome: Clinical Research and Reviews	led by community health workers monitored by personnel from a local diabetes education program	2 groups: group based lifestyle weight loss (LWL) or enhanced usual care (EUC)		did not have it post-intervention At the one year measurement mark, 14% fewer LWL participants met the waist circumference criteria, 15% fewer had elevated fasting blood glucose, 14% fewer had elevated triglycerides, and 12% fewer had low HDL levels At the one year measurement mark, 53% of LWL participants had the syndrome, while 69% of EUC participants had it	
8	Ewen, Hawkins, Kloss, Nwankwo, Funnell, Sengupta,	2024	The Michigan Men's Diabetes Project Randomized Clinical Control Trial: A Pilot/Feasibility	To evaluate the feasibility, acceptability,	25 black men aged 55 years or older with self-reported or	Pilot randomized control trial	Participants in the intervention group showed statistically significant improvement in general diet and blood glucose	The small sample size limits the generalizability of the findings Participants were not randomly

	Francois, Piatt		Study of a Peer-Led Diabetes Self-management and Support Intervention for Black Men with Type 2 Diabetes *American Journal of Mens Health*	and potential impact of a peer-led and empowerment-based Diabetes Self-management Education (DSME) and Support (DSMS) intervention for black men with type 2 diabetes in Metro Detroit	medically-verified type 2 diabetes (T2D) residing in the Metro Detroit Area Program was conducted virtually via Zoom 13 participants were randomized to the enhanced usual care group (EUC) and 12 to the intervention group		monitoring; this improvement was not statistically significant in the EUC participants For participants who attended more than 50% of the sessions, a statistically significant reduction in diabetes distress was observed among participants	selected, which may introduce self-selection bias Because the format was virtual, it could present challenges for older participants which could have affected engagement
9	Narain, Doppee, Li,	2020	An Effectiveness Evaluation of a	To evaluate the	379 black or African American	Quasi-experimental	The UCMyRx group experienced a statistically	This study was short term, limiting the conclusions

	Moreno, Bell, Do, Follett, Mangione		Primary Care-Embedded Clinical Pharmacist-Led Intervention Among Blacks with Diabetes *Journal of General Internal Medicine*	effectiveness of a primary-case embedded clinical pharmacist-led management intervention (UCMyRx) on HbA1c and systolic blood pressure among black patients with type 2 diabetes	patients with type 2 diabetes 18 years or older and receiving care at University of California Los Angeles healthcare system	effectiveness study	significant 0.40% reduction in HbA1c levels compared to the usual care group The reduction in HbA1c levels was more pronounced among individuals who had more frequent contacts with UCMyRx pharmacists	about long-term impacts of this program The study was conducted in a large academic healthcare system, which means the results may not be generalizable to other settings The participants in the UCMyRx program may have been more motivated about managing their diabetes, introducing self-selection bias
10	Hawkins, Mitchell, Piatt, Ellis	2018	Older African American Men's Perspectives on Factors that Influence Type	To advance the understanding of	12 African American males with type 2 diabetes	Qualitative phenomenological study	Participants expressed that community norms of masculinity, such as the expectation to	This study only included 12 participants, which limits the

			2 Diabetes Self-Management and Peer-Led Interventions	how various factors influence type 2 diabetes (T2D) self-management among older African American men	55 years of age or older Participants were recruited via the Michigan Center for the African American Aging Research Participant Resource Pool		endure pain, often led to delayed symptom reporting and avoidance of healthcare visits Participants reported challenges related to financial constraints, limited access to healthcare, and financial limitations regarding treatment Participants showed a preference for peer-led diabetes interventions	generalizability of the findings. Non-random sampling may introduce selection bias. The group setting may have affected participants' willingness to share personal or sensitive information, which could result in incomplete or filtered responses.
11	Collins-McNeil, Edwards, Batch, Benbow, McDougald, Sharpe	2013	A Culturally Targeted Self-management Program for African Americans with Type 2 Diabetes Mellitus	To examine the effects of a 12-week church-based culturally targeted diabetes	12 African American Adults (10 women, 2 men) Aged 35-68 Southeastern US	Pilot non-randomized trial	Participants showed significant improvements in medication adherence, healthy eating, and foot care Participants experienced a mean reduction in systolic blood pressure of 9mmHg, a reduction	Small sample size limits the generalizability of findings Non-randomized design reduces the ability to make causal inferences about effectiveness

				self-management education intervention for middle aged and older African Americans with Type 2 Diabetes Mellitus	Six participants were unmarried		in LDL by 10mg/dL, and a reduction in triglycerides by 26 mg/dL Average reduction of 5.3cm in waist circumference Average weight loss of 2.2 pounds	Sample had limited gender diversity, which limits generalizability to the African American population

Discussion

Type II Diabetes Mellitus disproportionally affects African Americans. They are diagnosed at twice the rate of other groups and die at twice the rate of non-Hispanic whites from this disease and its complications (US Department of Health and Human Services, 2024). Diabetes care is a 400 billion dollar industry, and its complications are not only costly but negatively impact quality of life for an affected individual (Parker et al., 2024). While the root causes of this condition are understood, it continues to affect this group at higher rates than others. This literature review discusses the aspects and implementations of interventions to combat this issue in African Americans.

Successful interventions are peer-led and community-tailored. By incorporating aspects of African American culture and community into diabetes education, these interventions become more successful in addressing disease-related complications and risk factors. Faith based-interventions saw reduced waist circumference, systolic and diastolic blood pressure, triglyceride level, and 10-year cardiovascular disease risk score in participants (Mamun et al., 2020). Providing racially concordant healthcare professionals to lead the intervention also yielded statistically significant improvements (Ewen et al., 2024). Culturally targeted materials presented by peers led to participants exhibiting a decrease in LDL, waist circumference, and body mass and an increase in medication and insulin administration and adherence (Ewen et al., 2024); Collins-McNeil et al., 2013). When interviewed, African American men also showed a preference for peer-led interventions, which improved diabetes-related health (Hawkins et al., 2018; Pedley et al., 2018). Both the data and population of interest indicate that community-tailored and peer-led interventions are ideal for African Americans. Public health officials can

develop materials and approaches that align with this community and its values to better address T2DM.

Incorporating telehealth and mobile health to increase accessibility to healthcare professionals and treatment is beneficial. Mobile health interventions involving pharmacists and health coaches led to significant reductions in HbA1c levels, which were maintained for up to 24 months (Gerber et al., 2023). Despite these positive findings, significant barriers to healthcare access are present for African Americans. Approximately 13.3% of Black adults lack a usual source of care and 11.9% are uninsured (Lu et al., 2022). Incorporating strategies that make accessing care easier can allow practitioners to better reach patients. Individuals who live far from affordable providers can receive the care they need at a lower expense. Since disparities in diagnosis, treatment, and mortality remain for this population, accessibility is a critical aspect of T2DM interventions. (McCormick, Grant, 2013). By incorporating telehealth and visiting communities through mobile health clinics, providers may be more effective in accessing this population.

Successful interventions focused on improving diet and increasing exercise. For example, dietary patterns resulted in significant weight loss (Turner-McGrievy et al., 2022). Combining diet and exercise led to initial improvements in A1c levels (Lynch et al., 2019). Those who showed statistically significant improvements in diet also saw similar improvements in blood glucose levels and glucose monitoring (Ewen et al., 2024). By addressing multiple risk factors, such as obesity and high cholesterol, interventions can increase the quality of life for individuals. Understanding that these strategies can be coupled with community-tailored approaches can help public health officials and practitioners maximize the effect of interventions. Diet and exercise

are historically successful approaches, and by incorporating cultural material, T2DM and its complications can be addressed.

Many of these findings align with public health initiatives and current research on T2DM in African Americans. For example, the Affordable Care Act of 2010 (ACA) aimed to increase coverage for Americans who lacked access to affordable employer-sponsored healthcare (Sullivan, Orris, Lukens, 2024). Particularly, increases in coverage have been observed since the implementation of the ACA, especially for individuals of color (Sullivan, Orris, Lukens, 2024). CDC's National Diabetes Prevention Program (DPP) and "Health People 2030" have also recognized the value of increasing accessibility, adaptive care, and community-level approaches in addressing diabetes (CDC, 2024). For example, CDC supports telehealth programs to give those without access opportunities for chronic disease prevention and management (CDC, 2024). Consumption of healthy foods and increased physical activity is also recommended for those with T2DM, regardless of ethnicity (CDC, 2024). Those programs are effective in improving diabetes self-management and clinical outcomes for the public, particularly when they are tailored to the healthcare provider and patient population (Dhediya et al., 2022).

However, there are contradictions present between these findings and previous knowledge. Traditional diabetes management has often emphasized an approach focusing on medication development and adherence combined with standardized exercise and diet improvement (Mudaliar, 2023). Sufficient attention to social determinants of health and cultural factors is a relatively new perspective. The reviewed literature provides support for interventions that address these factors. Incorporating a holistic approach that goes beyond clinical diagnosis and pharmaceutical treatment could be successful in addressing the disproportionality of T2DM in African Americans.

Limitations

There are several limitations of this literature review. Only 12 articles were reviewed, meaning it is difficult to capture all the knowledge on this topic. A handful of studies had low numbers of participants or a sample that was restricted to one socioeconomic or geographic group, limiting generalizability of the findings. Pilot studies were included, which may have a small sample size and limited generalizability. Studies with participants who were not randomly selected were included, introducing self-selection bias. In the selection and exclusion process, selection bias may also have been introduced as studies may have been excluded with participants who met the inclusion criteria. Some studies were short-term, meaning the long-term effects of their interventions are unknown. Certain study types, including cross-sectional methods, do not allow for the establishment of causation. Generalizability of findings is limited, as studies conducted in urban or suburban settings may not reflect the realities of rural African Americans. Finally, due to the plethora of literature available regarding T2DM in African Americans, certain search terms were included to narrow the results, which may introduce publication and search bias.

Implications

Further Research

Interventions that are community-based and peer-led, incorporate telehealth and other methods to improve accessibility, and are diet and exercise based can be effective in addressing T2DM in African Americans. To better understand the long-term effects of these strategies and their ability to be implemented, more research is necessary. Retrospective studies can determine which elements of multi-component interventions were most associated with improvements in diabetes-related health measurements. These could shape future interventions to focus on the

most effective facets. They also may determine if short-term improvements are sustained. Prospective studies could test different combinations of intervention components to determine their relative effectiveness. They could continue to explore the use of new technologies, such as AI, wearable health monitors, or telehealth, which have shown effectiveness for T2DM (Gerber et al., 2023).

Further Practices

In practice, community leaders and healthcare professionals can educate populations on the risk factors and treatments for T2DM. They can continue to host interventions and encourage members to seek out care and self-educate themselves on this condition. Public health officials can partner with healthcare offices and hospitals to direct individuals to appropriate treatment. They can go into African American communities and conduct needs assessments to identify who could benefit from various types of interventions. Public health agencies can write grant proposals to direct funding to research on the effectiveness and implementation of interventions. Nonprofits and government organizations can open offices in African American communities and provide resources, support, and direction. Education through schools could take place to address this issue at an early age. Screening for T2DM and related conditions could be made easily accessible through affordable, mobile clinics.

Conclusion

This literature review analyzed the effectiveness of interventions to address T2DM in African American populations. The reviewed studies identified three aspects of successful interventions: peer-led and community-tailored, telehealth-augmented, and diet and exercise focused. This review contributes to the existing body of literature by synthesizing findings from multiple sources and highlighting the importance of three aspects of successful interventions. By

emphasizing the need for accessible, focused, and community-tailored interventions, this review supports ongoing public health initiatives. Government agencies, community leaders, and healthcare professionals are encouraged to collaborate and address the disparities in T2DM in African American populations.

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