1-21-2026

Staff Education to Improve Diabetes Management Knowledge for Primary Healthcare Providers

Helen Njoku
Walden University

Walden University

College of Nursing

This is to certify that the doctoral study by

Helen Njoku

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

Review Committee
Dr. Melanie Braswell, Committee Chairperson, Nursing Faculty
Dr. Robert McWhirt, Committee Member, Nursing Faculty

Chief Academic Officer and Provost
Sue Subocz, Ph.D.

Walden University
2025

Executive Summary: Staff Education Project

Staff Education to Improve Diabetes Management Knowledge for Primary Healthcare Providers

by

Helen Njoku

MS, Charles R. Drew University 2019

BS, University of Phoenix, 2014

Executive Summary Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Nursing Practice

Walden University

November 2025

Summary

I developed this Doctor of Nursing Practice staff education project to improve primary healthcare providers' knowledge of diabetes management. Given the vital role nurses, advanced practice providers, and physicians play in patient education, chronic illness management, and care coordination, this issue must be addressed within nursing practice. The practice-focused question guiding this project was: Among primary healthcare providers, does implementing a structured diabetes education training program, compared to the current standard practice, improve provider knowledge in diabetes management? The purpose of this project was to develop, implement, and evaluate a targeted education intervention session. As analytical strategies, I employed expert evaluation to ensure content validity, paired *t*-test analysis to determine the significance of change, and pre- and posttest assessments to measure participant knowledge gains.

Project findings revealed that the knowledge of primary healthcare providers improved after the education session. Statistical Package for the Social Sciences, Version 29.0, was used to perform a sample paired *t*-test. The participants' average pretest score was 8.70, and their average posttest score was 14.20. Statistical analysis produced a *p*-value < .001. The project's implications for nursing practice include decreased clinical variability, increased interdisciplinary teamwork, and better ability to provide evidence-based diabetic care. The implications for social change include fostering equitable access to diabetes care and motivating medical staff to advocate for patients who face obstacles to care due to their cultural background, financial situation, or level of health literacy.

Background

Optimal management of diabetes remains underutilized in primary healthcare, despite the existence of recognized standards (Aldahmashi et al., 2024). Diabetes is a significant source of morbidity and mortality globally (Lewing et al., 2022). According to national data from the Centers for Disease Control and Prevention (2022), over half of persons with diabetes meet recommended A1C levels, and many more do not obtain prompt screening for complications. Similar patterns at the local level reveal gaps in providers' adherence to evidence-based care, resulting in unnecessary hospital stays, increased expenses, and a lower standard of living for patients (Lewing et al., 2022). These results underscore the need for urgent practice reform to enhance provider knowledge in managing diabetes. I conducted this staff education project aimed at improving provider knowledge through a systematic educational program to address this gap. Enhancing provider knowledge of diabetes care can help bridge the gap between evidence and practice, promoting sustained improvements in patient outcomes (Rodriguez et al., 2022).

Several factors contribute to the underutilization of diabetes treatment techniques, including inadequate training for primary healthcare providers, conflicting primary healthcare priorities, clinical inertia, and a lack of awareness of new guidelines (Lewing et al., 2022). Compared to other chronic diseases, diabetes management may make providers feel less confident, especially when addressing pharmacologic therapy, lifestyle modifications, and psychological demands (American Diabetes Association, 2021). Furthermore, many physicians may not regularly obtain the ongoing education necessary to keep pace with the rapid evolution of treatment alternatives, which includes new drug

classes and technologies, such as continuous glucose monitoring (American Diabetes Association, 2021).

There are serious repercussions if evidence-based diabetic care is not implemented (Rodriguez et al., 2024). Patients experience a worse quality of life, more problems, and higher medical expenses (Lewing et al., 2022). Because nurse practitioners, clinical nurse specialists, and other advanced practice nurses commonly provide primary healthcare and are leaders in patient education and chronic illness management, nursing practice is particularly well-positioned to address this challenge (Rodriguez et al., 2022). The nursing mission to provide safe, efficient, and equitable care is supported by ensuring that providers have up-to-date knowledge on diabetes.

The practice-focused question guiding this project was: Among primary healthcare providers, does implementing a structured diabetes education training program, compared to the current standard practice, improve provider knowledge in diabetes management? The purpose of the project was to implement an evidence-based education intervention aimed at improving primary healthcare providers' knowledge of diabetes management.

A substantial body of research supported the use of structured diabetes education programs for primary healthcare professionals to enhance their clinical management and understanding of diabetes in primary healthcare settings. I found seven peer-reviewed articles examining the impact of structured educational interventions on provider knowledge and diabetes care practices using a targeted literature search of the CINAHL, PubMed, and EBSCO databases. The Johns Hopkins Evidence-Based Practice Model for Nursing and Healthcare Professionals Tool was used to rate the located articles of

literature from Levels I experimental studies, Level II Quasi-experimental studies, Level III non-experimental, including qualitative studies, Level IV clinical practice guidelines or consensus panels, and Level V literature reviews, quality improvement projects, case reports, and expert opinions. The articles comprised four Level IV clinical practice guidelines or consensus panels, one Level V expert opinion or literature review, one Level II quasi-experimental study, and one Level III non-experimental study.

Evidence consistently supports the need for structured diabetes education and training for primary healthcare professionals working in primary healthcare settings to overcome knowledge and practice gaps in diabetes treatment. Following structured continuing education programs, Lim et al. (2020) and Almetahr et al. (2020) (both Level II and of good quality) demonstrated notable improvements in provider knowledge, skills, and clinical behaviors. According to descriptive studies, such as those by Hulbert et al. (2022) and Kudlová & Kočvarová (2020) (both Level III–IV and of good quality), providers underutilize evidence-based therapies because they lack a basic understanding and awareness of diabetes programs. The necessity of systematic provider education to guarantee consistent adherence to guidelines and fair patient outcomes is further supported by expert consensus and white papers (Das et al., 2022). Overall, the evidence is of excellent to strong quality (i.e., Levels II–IV) and shows a consistent pattern indicating that the identified practice gap is addressed when primary healthcare providers get systematic, continuous education that enhances their clinical practice and knowledge of diabetes.

Staff Education Project Development

At the project site, 10 licensed primary healthcare providers participated in the staff education program. The participants, who ranged in age from 29 to 55 years old, consisted of four male and six female providers. The sample comprised three White providers, two Hispanic/Latino providers, and five African American providers. This diversity enabled the intervention to be applied more broadly across patient populations and contributed a variety of viewpoints to the research.

To measure participant knowledge improvements, I administered a pretest (Appendix A) before training to gather baseline information on knowledge scores. A posttest (Appendix B) was then used to assess participants' knowledge gain after training. Participants received handouts to aid in their learning (see Appendix C). The session was facilitated using a PowerPoint presentation (Appendix D). To assess the training's applicability, viability, and potential integration into standard clinical practice, participants also completed a feedback form. I analyzed participant pre- and posttest scores using the Statistical Package for the Social Sciences, Version 29.0, to assess provider knowledge gains. The training's applicability was evaluated through qualitative feedback. I used a sample paired *t*-test to compare the pre- and post-implementation knowledge test scores. The outcomes confirmed the viability and effectiveness of the organized diabetes education program, showing a notable increase in provider confidence and knowledge. The success and probable sustainability of the program were highlighted by the participants, who also expressed interest in additional training opportunities and emphasized the importance of incorporating evidence-based practices into their daily work.

Results

Ten primary healthcare providers completed the pre- and posttests (see Table 1). The average score on the pretest was 12.20, while the average score on the posttest increased to 14.20 (see Table 2). After the organized diabetes education intervention, provider knowledge significantly improved, according to statistical analysis, which produced a p-value < .001. There was also participant feedback that supported these findings, with providers reporting that the structured education project increased their knowledge of utilizing evidence-based diabetes management strategies.

Table 1

Pre- and Posttest Scores by Participant

Participant	Pretest score	Posttest Score	Difference
P1	12	14	+2
P2	13	15	+2
P3	10	13	+3
P4	13	14	+2
P5	12	14	+2
P6	13	15	+2
P7	12	14	+2
P8	13	15	+2
P9	13	14	+1
P10	11	14	+3

Table 2

Descriptive Statistics and Paired t*-Test Results for Pre- and Posttest Scores (*N = 10*)*

	Minimum	Maximum	Sum	*M*	*SD*
Provider knowledge before the education program	10	13	122	12.20	1.033
Provider knowledge after the education program	13	15	142	14.20	.632

The increase in provider knowledge had a significant impact on the organization. The staff education project equips primary healthcare providers with high-quality,

standardized knowledge on diabetes management that is evidence-based and up to date. Indirectly, the project leads to better patient outcomes. Adopting this intervention aligns with the organization's strategic objectives of enhancing quality indicators, managing chronic diseases more effectively, and reducing healthcare expenses associated with hospital stays and long-term, diabetes-related effects. Additionally, the project fosters professional growth and establishes the company as a learning-centered, evidence-based, practice-committed environment.

The project had multiple limitations. The sample size was relatively small (N = 10), and it was implemented at a single practice site, which limited the generalizability of the findings. Another limitation of the project was that the evaluation measured immediate knowledge gains among providers rather than the long-term retention of knowledge. The final limitation I identified was that provider feedback may have been subject to bias because it was self-reported, and participants could have overstated the impact of the structured education intervention.

Implementing this structured diabetes education program for primary healthcare providers has significance beyond the local practice. The practice problem that contributes to differences in diabetes outcomes is the underutilization of diabetes treatment by primary healthcare providers. This project demonstrated how a structured, provider education program can effectively enhance confidence, expand knowledge, and facilitate improved care delivery (see Aldahmashi et al., 2024). It may be possible to improve population health outcomes, advance diversity, equity, and inclusion in the management of chronic diseases, and lessen disparities by implementing and expanding this paradigm in other healthcare institutions.

Conclusions

This project showed that primary healthcare providers' understanding of diabetes improved significantly and measurably as a result of a structured diabetes staff education program. According to these findings, the organization may improve patient outcomes, increase adherence to evidence-based guidelines, and enhance the quality and consistency of services by implementing targeted staff education. The intervention also fosters a culture of continuous learning, helping the facility achieve its goals of reducing avoidable problems and related healthcare expenses.

Several recommendations can be considered to ensure the project's sustainability and continued benefit to primary healthcare providers. To ensure that all clinicians receive regular updates on changing diabetes treatment standards, I recommend that the organization should first incorporate a structured diabetes education program into its regular professional development. Future projects should incorporate longitudinal follow-up to assess knowledge retention and examine patient-level outcomes, such as glycemic control, hospitalization rates, and patient satisfaction. I also suggest that interdisciplinary teams might be included in the program, guaranteeing thorough and cooperative diabetic care. Lastly, the creation of valuable tools, such as electronic decision-support systems or quick-reference guides, may further improve provider efficiency and adherence.

This project highlighted the importance of provider education in promoting evidence-based practice and high-quality care in nursing practice. Structured training that prepares nurses and nurse practitioners to provide more efficient, culturally sensitive care directly benefits them because they are frequently at the forefront of patient education and chronic illness management (Lim et al., 2020). Closing provider knowledge gaps that

perpetuate health inequities fosters beneficial social change that extends beyond local practice. The intervention promoted diversity, equity, and inclusion in healthcare delivery by providing providers with tools for inclusive patient education and culturally sensitive communication. Consequently, this project enhances patient confidence in the healthcare system, lessens inequalities in diabetes outcomes, and advances population health overall (see Rodriguez et al., 2022).

References

Aldahmashi, H., Maneze, D., Molloy, L., & Salamonson, Y. (2024). Nurses' adoption of diabetes clinical practice guidelines in primary care and the impacts on patient outcomes and safety: An integrative review. *International Journal of Nursing Studies*, *154*, 104747. https://doi.org/10.1016/j.ijnurstu.2024.104747

Almetahr, H., Almutahar, E., Alkhaldi, Y., Alshehri, I., Assiri, A., Shehata, S., & Alsabaani, A. (2020). Impact of diabetes continuing education on primary healthcare physicians' knowledge, attitudes, and practices. *Advances in Medical Education and Practice*, 781-790. https://doi.org/10.2147/AMEP.S275872

American Diabetes Association. (2021). 5. Facilitating behavior change and well-being to improve health outcomes: Standards of medical care in diabetes—2021. *Diabetes Care*, *44*(Supplement_1), S53-S72. https://doi.org/10.2337/dc21-S005

Centers for Disease Control and Prevention. (2022, December 30). *Imputed state-level prevalence of achieving goals to prevent complications of diabetes in adults with self-reported diabetes – United States, 2017–2018.* https://www.cdc.gov/mmwr/volumes/69/wr/mm6945a1.htm

Das, A. K., Saboo, B., Maheshwari, A., Banerjee, S., Mohan, A. R., Potty, V. S., & Kesavadev, J. (2022). Health care delivery model in India with relevance to diabetes care. *Heliyon*, *8*(10). https://doi.org/10.1016/j.heliyon.2022.e10904

Hulbert, L. R., Zhang, X., Ng, B. P., Nhim, K., Khan, T., & Cannon, M. J. (2022). Health care providers' knowledge, attitudes, and practices and the association with referrals to the national diabetes prevention program lifestyle change

program. *American Journal of Health Promotion*, *36*(2), 236-247. https://doi.org/10.1177/08901171211044937

Karam, M., Chouinard, M. C., Poitras, M. E., Couturier, Y., Vedel, I., Grgurevic, N., & Hudon, C. (2021). Nursing care coordination for patients with complex needs in primary healthcare: A scoping review. *International Journal of Integrated Care*, *21*(1), 16. https://doi.org/10.5334/ijic.5518

Kudlová, P., & Kočvarová, I. (2020). Knowledge and self-assessment of general practitioner nurses in the area of diabetes mellitus. *KONTAKT-Journal of Nursing & Social Sciences Related to Health & Illness*, *22*(3). https://doi.org/10.32725/kont.2020.031

Lewing, B., Sansgiry, S., Abughosh, S. M., Lal, L. S., Essien, E. J., & Sansgiry, S. S. (2022). Effect of inadequate care on diabetes complications and healthcare resource utilization during management of Type 2 diabetes in the United States. *Postgraduate Medicine*, *134*(5), 494-506. https://doi.org/10.1080/00325481.2022.2061260

Lim, S. C., Mustapha, F. I., Aagaard-Hansen, J., Calopietro, M., Aris, T., & Bjerre-Christensen, U. (2020). Impact of continuing medical education for primary healthcare providers in Malaysia on diabetes knowledge, attitudes, skills, and clinical practices. *Medical Education Online*, *25*(1), 1710330. https://doi.org/10.1080/10872981.2019.1710330

Rivera-Ávila, D. A., Esquivel-Lu, A. I., Salazar-Lozano, C. R., Jones, K., & Doubova, S. V. (2021). The effects of professional continuous glucose monitoring as an adjuvant educational tool for improving glycemic control in patients with Type 2

diabetes. *BMC Endocrine Disorders*, *21*(1), 79. https://doi.org/10.1186/s12902-021-00742-5

Rodriguez, K., Ryan, D., Dickinson, J. K., & Phan, V. (2022). Improving quality outcomes: The value of diabetes care and education specialists. *Clinical Diabetes, 40*(3), 356-365. https://doi.org/10.2337/cd21-0089

Rodriguez, P., San Martin, V. T., & Pantalone, K. M. (2024). Therapeutic inertia in the management of Type 2 diabetes: A narrative review. *Diabetes Therapy*, *15*(3), 567-583. https://doi.org/10.1007/s13300-024-01530-9

Willie, M. M. (2025). Strategies for enhancing training and development in healthcare management. *Advances in Human Resource Management Research*, *3*(1), 44-59. https://doi.org/10.60079/ahrmr.v3i1.408

Appendix A: Pretest

Diabetes Knowledge Pretest for Healthcare Providers 4-digit de-identifying number _____

1. According to the ADA 2024 guidelines, which of the following is a key standard of care in diabetes?

A. Strict glucose control only

B. Routine insulin use for all patients

C. Diagnosis and classification of diabetes

D. Elimination of carbohydrates from the diet

2. What diabetes management strategy should be personalized to cultural preferences and comorbidities?

A. Insulin regimen

B. Physical activity plan

C. Nutrition therapy

D. Use of diabetes technology

3. What should be closely monitored to avoid drug dosing issues in older diabetic patients?

A. Cholesterol levels

B. Cognitive function

C. Renal function

D. Electrolytes

4. What is considered a first-line medication for managing type 2 diabetes?

A. Insulin

B. Metformin

C. GLP-1 RAs

D. SGLT-2 inhibitors

5. GLP-1 receptor agonists and SGLT-2 inhibitors should only be used in patients with low cardiovascular risk.

A. True

B. False

6. Which of the following is a short-term complication of diabetes?

A. Peripheral artery disease

B. Retinopathy

C. Hypoglycemia

D. Nephropathy

7. What lifestyle recommendation is emphasized in diabetes care?

A. Eliminate all fats from the diet

B. Smoking cessation and alcohol moderation

C. Avoid exercise to prevent hypoglycemia

D. High-protein, zero-carb diet

8. Which complication is classified as a macrovascular long-term complication of diabetes?

A. Retinopathy

B. Nephropathy

C. Heart Disease

D. Neuropathy

9. Which statement reflects a key "Clinical Diabetes Pearl"?

A. Focus on insulin only

B. Recommend the same treatment for all patients

C. Reassess regimen every 3–6 months

D. Minimize cost concerns over medication side effects

10. Which of the following best describes the Plate Method for diabetes-friendly meals?

A. ½ whole grains, ¼ lean protein, ¼ fruit

B. ½ fruits, ¼ lean protein, ¼ healthy fats

C. ½ vegetables, ¼ whole grains, ¼ lean protein

D. ⅓ vegetables, ⅓ protein, ⅓ starches

11. Which of the following foods should be limited or avoided in a diabetes-friendly diet?

A. Brown rice, olive oil, grilled chicken

B. Soda, white bread, fried foods

C. Berries, legumes, leafy greens

D. Quinoa, unsweetened tea, tofu

12. Healthy fats such as avocados, olive oil, and nuts are part of a diabetes-friendly diet.

A. True

B. False

13. Which of the following is considered an additional complication of diabetes beyond blood sugar issues?

A. Improved wound healing

B. Reduced risk of infection

C. Foot ulcers and dental disease

D. Increased muscle strength

14. All patients with diabetes should receive the same standardized treatment regardless of comorbidities or preferences.

A. True

B. False

15. Which of the following is NOT a recommended advocacy role for healthcare providers in diabetes care?

A. Engaging in patient education

B. Promoting culturally responsive care

C. Avoiding discussions about care access

D. Participating in professional organizations

Appendix B: Posttest

Diabetes Knowledge Posttest for Healthcare Providers 4 digit de-identifying number _____

1. According to the ADA 2024 guidelines, which of the following is a key standard of care in diabetes?

A. Strict glucose control only

B. Routine insulin use for all patients

C. Diagnosis and classification of diabetes

D. Elimination of carbohydrates from the diet

2. What diabetes management strategy should be personalized to cultural preferences and comorbidities?

A. Insulin regimen

B. Physical activity plan

C. Nutrition therapy

D. Use of diabetes technology

3. What should be closely monitored to avoid drug dosing issues in older diabetic patients?

A. Cholesterol levels

B. Cognitive function

C. Renal function

D. Electrolytes

4. What is considered a first-line medication for managing type 2 diabetes?

A. Insulin

B. Metformin

C. GLP-1 RAs

D. SGLT-2 inhibitors

5. GLP-1 receptor agonists and SGLT-2 inhibitors should only be used in patients with low cardiovascular risk.

A. True

B. False

6. Which of the following is a short-term complication of diabetes?

A. Peripheral artery disease

B. Retinopathy

C. Hypoglycemia

D. Nephropathy

7. What lifestyle recommendation is emphasized in diabetes care?

A. Eliminate all fats from the diet

B. Smoking cessation and alcohol moderation

C. Avoid exercise to prevent hypoglycemia

D. High-protein, zero-carb diet

8. Which complication is classified as a macrovascular long-term complication of diabetes?

A. Retinopathy

B. Nephropathy

C. Heart Disease

D. Neuropathy

9. Which statement reflects a key "Clinical Diabetes Pearl"?

A. Focus on insulin only

B. Recommend the same treatment for all patients

C. Reassess regimen every 3–6 months

D. Minimize cost concerns over medication side effects

10. Which of the following best describes the Plate Method for diabetes-friendly meals?

A. ½ whole grains, ¼ lean protein, ¼ fruit

B. ½ fruits, ¼ lean protein, ¼ healthy fats

C. ½ vegetables, ¼ whole grains, ¼ lean protein

D. ⅓ vegetables, ⅓ protein, ⅓ starches

11. Which of the following foods should be limited or avoided in a diabetes-friendly diet?

A. Brown rice, olive oil, grilled chicken

B. Soda, white bread, fried foods

C. Berries, legumes, leafy greens

D. Quinoa, unsweetened tea, tofu

12. Healthy fats such as avocados, olive oil, and nuts are part of a diabetes-friendly diet.

A. True

B. False

13. Which of the following is considered an additional complication of diabetes beyond blood sugar issues?

A. Improved wound healing

B. Reduced risk of infection

C. Foot ulcers and dental disease

D. Increased muscle strength

14. All patients with diabetes should receive the same standardized treatment regardless of comorbidities or preferences.

A. True

B. False

15. Which of the following is NOT a recommended advocacy role for healthcare providers in diabetes care?

A. Engaging in patient education

B. Promoting culturally responsive care

C. Avoiding discussions about care access

D. Participating in professional organizations

Appendix C: Handout

The Practice Gap

Diabetes is recognized as a significant factor in both mortality and morbidity worldwide, affecting various demographics regardless of geographic location, age group, or gender.

Although most practitioners follow current practice guidelines, there is underutilization of diabetes management by healthcare providers.

Learning Objectives

- Improve knowledge on diabetes management.
- Improve knowledge on current ADA Standards of Care to practice.
- Identify key components of lifestyle and pharmacologic aspects in diabetes management.
- Importance of evidence-based diabetes care.

Improving Diabetes Management Knowledge for Primary Healthcare Providers

This knowledge will be practically applied to DM care as well as other aspects of clinical practice.

As a healthcare provider, your knowledge directly impacts patient outcomes.

Current Guidelines (ADA 2024)

ADA Standards of Care in Diabetes

- Diagnosis and Classification of Diabetes
- Comprehensive Evaluation and Assessment of Comorbidities
- Facilitating Positive Health Behaviors and Well-being to Improve Health Outcomes
- Diabetes Technology
- Diabetes Advocacy

Pharmacologic Approaches to diabetes.

- First-line: Metformin
- Use of GLP-1 RAs, SGLT-2 inhibitors in high-risk patients
- Addressing barriers: adherence, cost, side effects.
- When to initiate insulin

Lifestyle Management Essentials

Nutrition Therapy- Tailored to cultural preferences, health literacy, and comorbidities.

Physical Activity Recommendations

Weight Management

Strongly advise smoking Cessation & Alcohol Moderation

"In diabetes care, knowledge isn't just power—it's prevention, control, and hope."

Clinical Diabetes Pearls

- ✓ Personalize treatment to comorbidities and patient preferences.
- ✓ Minimize hypoglycemia risk, especially in older adults.
- ✓ Monitor renal function for drug dosing.
- ✓ Reassess regimen every 3–6 months for efficacy and tolerability.

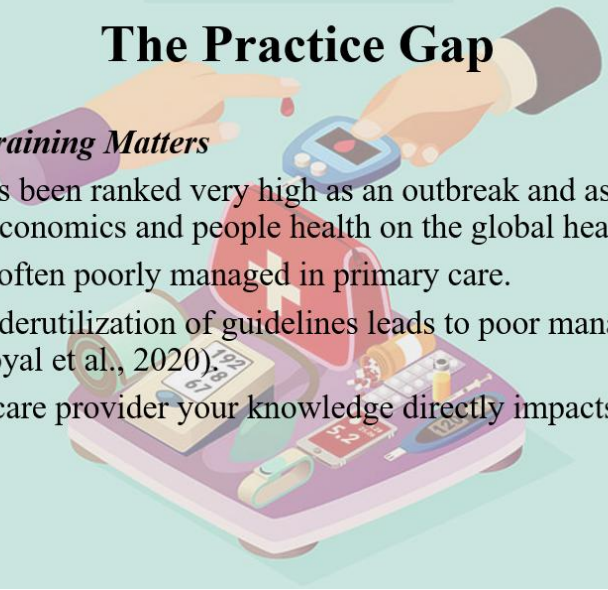
Appendix D: PowerPoint Presentation

Improving provider knowledge in diabetes management- Education Session Presentation

Helen Njoku
Walden University
Phase 2 Step 1:NURS 8703
Dr Braswell Melanie
Date 7/31/2025

DIABETES CONTROL

The Practice Gap



- ***Why This Training Matters***

❖Diabetes has been ranked very high as an outbreak and as a hazard to worldwide economics and people health on the global health agenda.

❖Diabetes is often poorly managed in primary care.

❖Provider underutilization of guidelines leads to poor managed diabetes (Goyal et al., 2020).

❖As a healthcare provider your knowledge directly impacts patient outcomes.

Learning Objectives

- ***Learning Objectives:***
  - ❖Improve knowledge on diabetes management.
  - ❖Improve knowledge on current ADA Standards of Care to practice.
  - ❖Identify key components of lifestyle and pharmacologic aspects in diabetes management.
  - ❖Importance of evidence-based diabetes care.

Current Guidelines (ADA 2024)

- ***ADA Standards of Care in Diabetes***
  - ❖Diagnosis and Classification of Diabetes
  - ❖Comprehensive Medical Evaluation and Assessment of Comorbidities
  - ❖ Facilitating Positive Health Behaviors and Well-being to Improve Health Outcomes
  - ❖Diabetes Technology
  - ❖Diabetes Advocacy

Medication Management

- ***Pharmacologic Approaches to diabetes.***
  - ❖First-line: Metformin
  - ❖Use of GLP-1 RAs, SGLT-2 inhibitors in high-risk patients
  - ❖Addressing barriers: adherence, cost, side effects.
  - ❖When to initiate insulin (American Diabetes Association. (2021).

Lifestyle Management Essentials

- ***Behavior Change, Nutrition and Exercise***
  - ❖Motivational interviewing basics
  - ❖SMART goal setting for patient behavior
  - ❖Importance of Medical Nutrition Therapy (MNT)
  - ❖Physical activity recommendations (Ferreira et al., 2023).

Diabetes Management: Nutrition and Diet Basics

- Importance of patient education on dietary choices
- Role of diet in managing blood glucose
- Dispelling common myths

❖Avoid or Limit:

- Sugary drinks- soda, juice, energy drinks
- Refined carbs- white bread, pasta, rice
- Fried/processed foods-
- Alcohol (Limit intake).
- High-sodium foods
- Fried and fatty foods

What to Include in a Diabetic Diet

- **1. High- Fiber Carbohydrates**-Whole grains (brown rice, oats, quinoa), Legumes (beans, lentils), Fruits (berries, apples – in moderation), Non-starchy vegetables (broccoli, spinach)
- **2. Lean Proteins**- Skinless poultry, fish, eggs, Tofu and tempeh, Beans and legumes
- **3. Healthy Fats**- Avocados, olive oil, Nuts & seeds, Fatty fish (salmon, mackerel), Low-fat (2%) milk
- **4. Non-Starchy Vegetables**- Leafy greens, cabbage, cucumbers, cauliflower
- **5. Fluids**- Water, Unsweetened teas, Infused water (e.g., lemon, cucumber)
- 📌 **Tip: Use the Plate Method□□ ½ vegetables | □□ ¼ whole grains | ● ¼ lean protein**

Leveraging Technology in Diabetes Management

- Continuous Glucose Monitoring (CGM)
- Mobile Apps & Wearables
- Telehealth & Remote Monitoring
- Insulin Pumps & Smart Pens.

Our role in Advocacy in Diabetes Care

- **What is our role as healthcare providers in advocacy in diabetes care**

❖Advocate for access

❖Promote culturally responsive care

❖Participate in professional organizations

❖Engage in patient education to empower patients.

References

- American Diabetes Association. (2021). 9. Pharmacologic approaches to glycemic treatment: Standards of Medical Care in Diabetes—2021. Diabetes care, 44(Supplement_1), S111-S124. https://doi.org/10.2337/dc21-S009
- Ferreira, P. L., Morais, C., Pimenta, R., Ribeiro, I., Amorim, I., & Alves, S. M. (2023). Empowerment and knowledge as determinants for quality of life: a contribution to a better type 2 diabetes self-management. International Journal of Environmental Research and Public Health, 20(5), 4544. https://doi.org/10.3390/ijerph20054544
- Goyal, Y., Verma, A. K., Bhatt, D., Rahmani, A. H., & Dev, K. (2020). Diabetes: perspective and challenges in the modern era. Gene Reports, 20, 100759. https://doi.org/10.1016/j.genrep.2020.100759