

Primary Care Providers Use of 2019 American Diabetes Association Guidelines

Sarah Compton, Ashlee Bates, Stephanie DeAvila

School of Nursing College of Health Professions Texas State University

Background and Introduction

In 2015 nearly 30 million Americans were diagnosed with Type 2 Diabetes Mellitus (T2DM). The risk of developing depression in this population is two times more likely than those without T2DM. Nearly 66% of patients with depression go untreated because it is not recognized by the primary care provider. Depression is associated with decreased quality of life, reduced self-care, greater healthcare use, poorer glycemic control, and subsequently higher healthcare costs (Bogner, Morales, DeVries & Cappola, 2012; Bajracharya, Summers, Amatyā & DeBlicek, 2016; Whitworth, Bruce, Starkstein, Davis, Davis, Bucks, 2016; Stoop, Nefs, Pop & Pouwer, 2017; Salinas, Gonzalez & Al Snih, 2018; Khaldei et al., 2019).

Previous research regarding T2DM has shown an increased risk of depression and poorer health outcomes related to prognosis and care of patients with both conditions (Bogner et. al., 2012; Bajracharya et. al., 2016; Whitworth et. al., 2016; Stoop et. al., 2017; Salinas et. al., 2018; Khaldei et. al., 2019). Exercise is an intervention that can be utilized for patients with depression and T2DM either as a preventative measure and a treatment option (Wipfli, Landers, Nagoshi & Ringenbach, 2009; Knapen, Vancampfort, Moriën & Marchal, 2015; Chang, Lu, Hu, Wu & Hu, 2017; El-Kade & Al-Jiffri, 2017; Mikkelsen, Stojanovska, Polenakovic, Bosevski & Apostolopoulos, 2017). Research has also proven that exercise can decrease mental health symptoms in patients (Wipfli et. al., 2009; Knapen et. al., 2015; Chang et. al., 2017; El-Kade & Al-Jiffri, 2017; Mikkelsen et. al., 2017).

Research has demonstrated a knowledge gap in PCPs in the use of clinical guidelines for treatment of diabetic patients and suggests the need for improved continuing education (Manchester, 2008; Corriere, Minang, Sisson, Brancati & Kalyani, 2014).

Study Purpose

In 2019 The American Diabetes Association (ADA) released new guidelines for treatment of T2DM, which includes depression screening and the use of exercise as a treatment plan.

First researchers must know that the new guide and standard of care are in fact being implemented in the local T2DM patient population seeking ambulatory care with local primary care providers. Currently there is no study showing the actual rate the recommendations are being assessed or included in treatment plans currently for T2DM patient population in Central Texas and the wider United States.

Purpose

The purpose of this study is to answer the question: Are Primary Care Providers implementing current American Diabetic Association Guidelines that add the elements of exercise into treatment plans and assessing for depression.

References

Bajracharya, P., Summers, L., Amatyā, A., & DeBlicek, C. (2016). Implementation of a depression screening protocol and tools to improve screening for depression in patients with diabetes in the primary care setting. *Journal for Nurse Practitioners*, 12(10), 690-696. doi: 10.1016/j.nurpra.2016.08.009

Bogner, K., Morales, K., DeVries, H., & Cappola, A. (2012). Integrated management of type 2 diabetes mellitus and depression treatment to improve medication adherence: A randomized controlled trial. *Annals of Family Medicine*, 10(1), 15-22. https://doi.org/10.1370/afm.1344

Chang, Y., Lu, M., Hu, L., Wu, W. J., & Hu, S. C. (2017). Effects of different amounts of exercise on preventing depressive symptoms in community-dwelling older adults: A prospective cohort study in Taiwan. *BMJ Open*, 7(4), doi:10.1136/bmjopen-2016-014256

Corriere, M. D., Minang, T. B., Sisson, S. D., Brancati, F. L., & Kalyani, R. B. (2014). The use of clinical guidelines highlights ongoing educational gaps in physicians' knowledge and decision making related to diabetes. *BMC Medical Education*, 14(186). doi: 10.1186/1472-6920-14-186

El-Kade, S. M., & Al-Jiffri, O. H. (2017). Exercise alleviates depression related systemic inflammation in chronic obstructive pulmonary disease patients. *African Health Sciences*, 16(4), 1078. doi:10.4314/ahs.v16i4.25

Khaldei, M., Haghghardoust, F., Feizi, A., & Aminmorayya, A. (2019). The prevalence of comorbid depression in patients with type 2 diabetes: An updated systematic review and meta-analysis on huge number of observational studies. *Acta Diabetologica*, 1-20. https://doi.org/10.1007/s00592-019-01295-9

Knapen, J., Vancampfort, D., Moriën, Y., & Marchal, Y. (2015). Exercise therapy improves both mental and physical health in patients with major depression. *Disability & Rehabilitation*, 37(16), 1490-1495. doi:10.3109/09638288.2014.972579

Manchester, C. S. (2008). Diabetes education in the hospital: Establishing professional competency. *Diabetes Spectrum*, 21(4), 268-271. doi: 10.2337/diaspect.21.4.268

Mikkelsen, K., Stojanovska, L., Polenakovic, M., Bosevski, M., & Apostolopoulos, V. (2017). Exercise and mental health. *Maturitas*, 106, 48-56. doi: 10.1016/j.maturitas.2017.09.003

Salinas, J., Gonzalez, J., & Al Snih, S. (2018). Type 2 diabetes, depressive symptoms and disability over a 15-year follow-up period in older Mexican Americans living in the southwestern United States. *Journal of Diabetes & its Complications*, 32(1), 25-32. doi: 10.1016/j.jdiacomp.2016.08.029

Stoop, C., Nefs, G., Pop, V., & Pouwer, F. (2017). Screening for and subsequent participation in a trial for depression and anxiety in people with type 2 diabetes treated in primary care: Who do we reach? *Primary Care Diabetes*, 11(3), 273-280. doi: 10.1016/j.pcd.2017.02.006

Whitworth, S., Bruce, D., Starkstein, S., Davis, W., Davis, T., Bucks, R. (2016). Lifetime depression and anxiety increase prevalent psychological symptoms and worsen glycemic control in type 2 diabetes: The Fremantle diabetes study phase II. *Diabetes Research and Clinical Practice*, 122, 190-197. doi: 10.1016/j.diabres.2016.10.023

Wipfli, B., Landers, D., Nagoshi, C., & Ringenbach, S. (2009). An examination of serotonin and psychological variables in the relationship between exercise and mental health. *Scandinavian Journal of Medicine & Science in Sports*, 21(3), 474-481. doi:10.1111/j.1600-0838.2009.01049.x

Methods

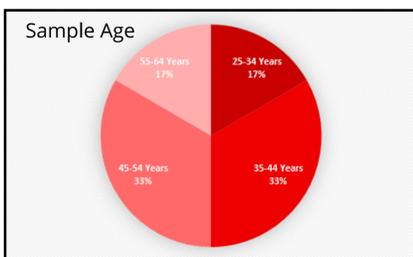
Study Design

Researchers at Texas State University developed a pilot study to collect data from consenting primary care physicians, using a self-reporting, descriptive, cross-sectional survey. A survey questionnaire was designed and distributed by snowball effect through email, paper and the use of social media. Inclusion criteria was licensed providers (Medical Doctor, Nurse Practitioner, Physician Assistant or Doctor of Osteopathic Medicine) that provided primary care to patients with Type 2 Diabetes Mellitus. Exclusion criteria was all other adult care providers in other settings who provided exclusive emergency or specialty care to patients with or without Type 2 Diabetes Mellitus. The data was collected and analyzed through Qualtrics and an Excel spreadsheet.

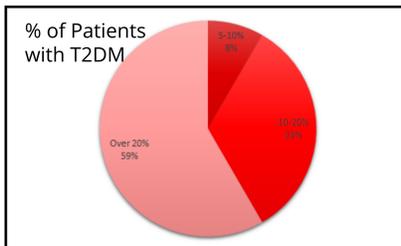
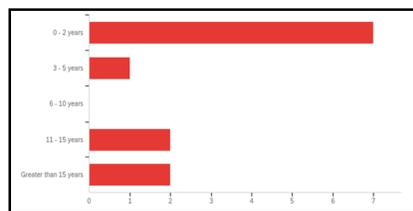
Sample

The researchers received completed surveys from 18 providers, however 6 providers did not meet the inclusion criteria, leaving a total of 12 providers (which includes 11 nurse practitioners and 1 physician assistant) who met the qualifications.

- Inclusion criteria: licensed providers (Medical Doctors, Nurse Practitioners, Physician Assistants, and Doctors of Osteopathic Medicine) that provided primary care to patients with T2DM. .
- Exclusion criteria: all other adult care providers in other settings who provided exclusive emergency or specialty care to patients with or without T2DM.



Years of Practice

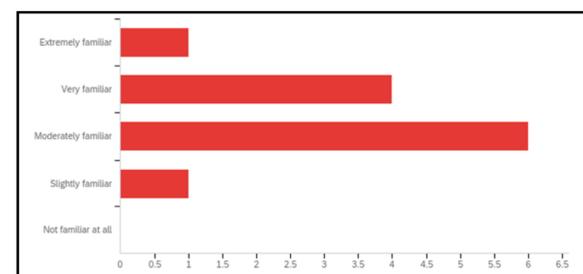


Results

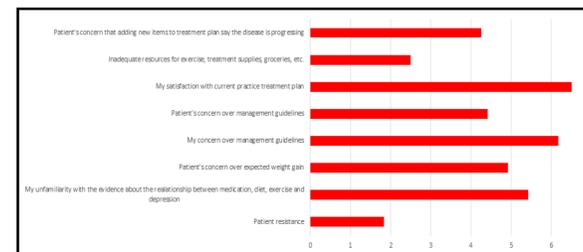
Statistical analysis was run in Qualtrics. Descriptive statistics are reported below.

Major Findings

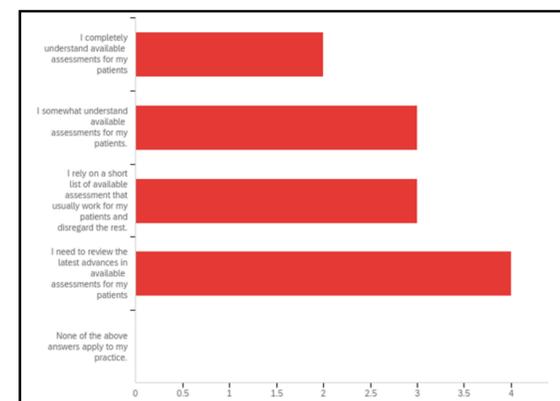
- How familiar are you with the amount of exercise recommended for patients with Type 2 Diabetes Mellitus?



- Participants were asked to rank the following barriers of early implementation from 1 (most) to 8 (least) seen in their practice. The following chart shows the average placement of the barriers discussed. According to this study, patient resistance and inadequate resources were the most seen barriers to early implementation of the 2019 ADA guidelines.



- How would you describe your current understanding of available diet, exercise, and depression assessment instruments to utilize with patients diagnosed with Type 2 Diabetes Mellitus?



Discussion and Conclusion

Conclusion

Continuing education on current guidelines is recommended as more than 50% of providers demonstrated they were moderately or less familiar with the amount of exercise recommended for patients with T2DM; more than 25% of responses stated they were moderately or less familiar with current guidelines and risk of MDD in patients with T2DM; only 16.67% of participants completely understood assessments available for their patients. Additionally, more than 50% of participants stated that continuing education of the 2019 ADA guidelines is a factor encouraging use of 2019 ADA guidelines. The most reported barriers toward early implementation of ADA guidelines were patient resistance and inadequate resources which further highlights the need for continuing education not only in providers but in patients with T2DM as well.

Recommendations

A larger scale study is recommended to assess true rates of provider knowledge of current ADA guidelines. This pilot study demonstrated difficulties in gathering participants through the use of snowball sampling. Results were skewed so that the majority of participants were female nurse practitioners with greater than 10% of patients with T2DM in their practice. In a larger scale study use of stratified sampling would be better suited for this research study so that various populations are represented within the sample. Additionally, the use of incentives in future research may be indicated to persuade providers to complete the survey. Recruiting at conventions or provider meetings may assist with gathering a larger number of responses.

Clinical Implications

The results of this pilot study mirror larger scale studies in the prevalence of depression in patients with T2DM and depressive symptoms in patients who exercise regularly. The pilot study demonstrated continuing need of education to fill knowledge gaps in provider knowledge of current guideline recommendations for treatment of patients with T2DM

Recognition

Thank you to Dr. Barbara Covington, Sarah Ayala, the anonymous survey participants, and Texas State University for your contributions to this pilot study in making this pilot study possible.