Journal of Student-Run Clinics
Descriptive Report

The Design and Implementation of a Weight Management Program in Underserved Communities: A Medical Student-Led Initiative

Margaret Koester, MD, MPH[1]; Lauren Hucko, MD, MPH[1]; Laila Elias, MD, MPH[1]; Rebecca Shakour, MD, MPH[1]; Dayana Hano, MD, MPH[1]; Erin Marcus, MD, MPH[2]; Gisela Alvarez, RDN, LDN[3]; Shirin Shafazand, MD, MS[4]

[1]Miller School of Medicine, University of Miami, Miami, Florida, USA
[2]Department of Internal Medicine, University of Miami, Miami, Florida, USA
[3]Jackson Health System, Miami, Florida, USA
[4]Department of Pulmonary Critical Care and Sleep Medicine, University of Miami, Miami, Florida, USA

Corresponding Author: To contact the corresponding author, please email journal@journalsrc.org.

Published: August 31, 2025

Abstract

Background: Lifestyle change programs, like the Diabetes Prevention Program (DPP), are successful at addressing obesity and related comorbidities; however, they are often inaccessible. We describe our experience developing and implementing Healthier Together (HT), a medical student-led condensed adaptation of the DPP designed for low-income adults within Miami.
Methods: Participants, both English- and Spanish-speaking, were referred via various community partners to participate in the year-long program. Run by medical students as Lifestyle Coaches (LC), participants attended an initial 1:1 interview with their LC, six, group-based, nutrition and activity sessions, a 1:1 exit interview, followed by one year of monthly phone check-ins. Metrics such as weight, blood pressure, attendance, pre- and post-lesson quiz scores, and four standardized surveys were measured throughout the program. A 22-question Knowledge Attainment Survey measured medical student nutrition knowledge and feelings of self-efficacy with patient interactions gained through leading the program.
Results: From 2020-2023, HT completed five cohorts consisting of 23 1:1 interviews, 17 enrolled individuals, and 17 exit interviews among 45 participant referrals, with 20 additional referrals for future cohorts. The mean attendance rate across was 70%. Overall mean program satisfaction was a 5 ± 0 (1=very dissatisfied, 5=very satisfied) (n=10). Eleven medical students have led the program, with a mean of 14 ± 3 hours of hands-on experience. Medical student Knowledge Attainment mean score increased from 61% to 81%.
Conclusions: The implementation of HT demonstrates the feasibility of a medical student adaptation of the DPP for both community members and medical student facilitators.

Introduction

In the United States, 41% of adults have obesity and 29.3 million people have been diagnosed with diabetes.[1] This disease burden disproportionately impacts specific demographic groups, namely Hispanic, non-Hispanic Black (NHB), and low-income populations.[2-4] As the prevalence of obesity and type 2 diabetes continue to rise, multifaceted strategies are urgently needed.[1,5] The Centers for Disease Control and Prevention (CDC)-recognized Diabetes Prevention Program (DPP) is a year-long lifestyle change program designed to prevent type 2 diabetes and promote weight loss.[6-9] While such programming is effective at a population level, participant inclusion and outcomes vary by numerous social factors. Hispanic adults are underrepresented, NHB participants lose less weight as compared

to non-Hispanic White (NHW) participants, and financial and logistical barriers hinder participation among Hispanic and NHB individuals.[10,11] Further, low-income NHWs lose less weight as compared to higher-income NHWs.[11]

According to the CDC, the DPP's direct implementation cost is approximately $500 per participant per year, with costs primarily driven by facility and staffing expenses.[12,13] Considering these financial barriers, a condensed, healthcare trainee-led DPP adaptation offers a viable alternative. Previous programmatic adaptations with a condensed timeline and fewer sessions demonstrated substantial weight loss outcomes, albeit marginally lower than full 12-month programs.[14-18] Notably, programs led by medical professionals and those facilitated by lay community educators achieved comparable weight loss outcomes.[14] One full-scale DPP adaptation led by medical students resulted in 76.5% of participants achieving a 5% weight loss goal at one year.[19] A shortened, medical student-led DPP adaptation has yet to be described.

In addition to cost savings, medical student-led DPP adaptations may also supplement essential nutrition education while in training. Students are exposed to an average of less than 20 hours of nutrition education in traditional medical school curricula, and over half of physicians do not feel competent in treating obesity, as found in one survey of 250 multispecialty, medicine-based physicians.[20,21] Participating in the delivery of nutrition education to patients through student-run initiatives has been shown to provide preclinical students with early exposure to such counseling.[22] In 2020, medical students, along with a faculty advisor, condensed and adapted the DPP framework to create Healthier Together: A Group-Based Approach to Weight Management (Healthier Together [HT]). This paper discusses the design and implementation of HT, a medical student-run program specifically designed for diet and physical activity modification within a low-income, predominantly Hispanic, and non-Hispanic Black urban population. Lessons learned can serve as a framework for adaptation by other medical student organizations.

Methods

Program Elements and Structure

Overview

HT is a year-long, cohort-based educational program that discusses nutrition and activity topics to promote weight loss and enhance well-being among participants. Medical students facilitated HT as Lifestyle Coaches (LC), and programming consists of the following in-person sessions: an initial 1:1 intake session, six, group-based education lessons, an exit interview, and monthly phone check-ins for one year. The program's timeline is detailed in Figure 1.

Program Eligibility and Referral Process

Participant inclusion and exclusion criteria are listed in Table 1. Of note, participants lived within our urban community, were at minimum 18 years of age, and had a Body Mass Index ≥ 30 kg/m^2. A previous diagnosis of type 1 or type 2 diabetes was not an exclusionary criterion. Participants were referred to by various community partners including dieticians working in primary care settings, case managers for high-risk patients, and resident and attending physicians within our health system.

Figure 1. Participant entry and pathway timeline through the Healthier Together program

Initial Interview

The 1:1 initial interview served as the participants' first entry point with the program. The following metrics were collected at this session: Specific, measurable, achievable, realistic, timely (SMART) goals,[23] baseline demographics, weight, blood pressure, diet and physical activity behaviors, self-efficacy assessment rating adapted from Stanford's SPARQTools,[24] and three standardized surveys the National Health Interview Survey, Adult Diet and Nutrition Questionnaire,[25] Parent Health Questionnaire-9 screening,[26] and Healthy Days Core Module).[27] Consent for program participation and data collection was also collected.

Weight Management Sessions

The six consecutive group sessions featured a digital slide presentation covering topics such as nutrition label literacy, portion sizing, sodium and sugar alternatives, savvy grocery shopping, individual exercise plans, and mental health. Lesson content was adapted from the DPP framework guides and supplemented by high-yield information recommended by the ambulatory clinic dietician.[28] Themed gifts such as water bottles, pedometers, exercise bands, set of various spices, cookbooks, or candles were given at the conclusion of each lesson. Metrics including weight, blood pressure, and pre- and post-session quizzes were measured at each session.

Exit Interview

The in-person program concluded with an exit interview, assessing post-program metrics including weight, blood pressure, diet and physical activity behaviors, self-efficacy, and the three

Table 1. Healthier Together participant inclusion and exclusion criteria

Inclusion Criteria		
1	Age 18 years or older	
2	Body mass index between 30 and 55 kg/m2	
3	One or more CHD risk factors: · Systolic blood pressure 130 - 200 mmHg · Diastolic blood pressure 80 - 105 mmHg · Diagnosis of Type 2 diabetes · Total cholesterol > 180 mg/dL	· LDL cholesterol > 120 mg/dL · HDL Cholesterol < 40 mg/dL · Triglycerides > 150 mg/dL · HbA1c 6.0 - 11.5% · Fasting plasma glucose 95 - 400 mg/dL
4	Live in Miami-Dade County	
5	If referred from Population Heath, the patient must be in an active participant status	
Exclusion Criteria		
1	No access to internet	
2	Do not voluntarily wish to participate and/or are unwilling to attempt weight loss	
3	Are pregnant, planning to become pregnant, or lactating less than six months	
4	Have significant medical comorbidities, including uncontrolled metabolic disorders (e.g., thyroid, renal, liver), unstable heart disease, advanced heart failure, and uncontrolled psychiatric disorders)	
5	Current or planned participation in a study that would limit full participation in the program	
6	Resident of a long-term care facility or in a drug rehabilitation facility	
7	Homeless at the time of screening	
8	Plan to move during the program period	
9	Have chronic pain that impedes physical activity	
10	Would miss more than one mandatory educational session	
11	Recent major medical procedures (e.g., major surgery/operation)	

CHD: congestive heart disease; LDL: dow density lipoprotein; HDL: high density lipoprotein; HbA1c: hemoglobin A1c

standardized surveys were assessed. A program evaluation survey measured participant satisfaction on a 5-point Likert scale (1=very unsatisfied, through 5=very satisfied).

Phone Check-Ins

Program follow-up involved monthly phone calls, where participants received continued support of their SMART goals and assistance navigating various barriers. Participants were encouraged to voluntarily share self-measured weight and blood pressure during these check-ins.

Program Completion

After one year, the program concluded with a final interview evaluating weight, blood pressure, and standardized survey responses.

Language Accessibility

The program was offered in English initially and then expanded to include Spanish-speaking participants during the fourth cohort.

Lifestyle Coach Training and Evaluation

To facilitate cohort sessions, LCs attended three, two-hour training sessions. Topics included foundational nutrition knowledge, understanding our community with cultural competence, and the preferred language for weight-inclusivity. LC competencies on nutrition and physical activity guidelines and self-reported comfort with patient interactions were measured using a 22-question, Knowledge Attainment Survey (Appendix). The survey was administered pre- and post-cohort facilitation and featured 12 nutrition and activity questions adapted from the General Nutrition Knowledge Questionnaire,[29] and 10 self-efficacy questions evaluating the LC's assessment of their patient communication skills. Cohort 3.0, 4.0, and 5.0 LCs were included in this assessment.

Funding

Funding for HT was provided by internal institutional grants. The total budget available for the initial three years of this program was $4,250. HT cohort-specific costs have totaled $1,571, with a mean cost per cohort of $314, and $90 per participant.

Statistical Analysis

Categorical values were recorded as number (percentage), and continuous variables were reported as mean and standard deviation (SD). The Lifestyle Coach Knowledge Attainment Survey was not analyzed for significance due to lack of sufficient sample size. All data was analyzed using SPSS (IBM SPSS Statistics, Version 28, IBC Corporation, Armonk, NY). Institutional Review Board at our academic institution has approved this study.

Participant definition

A "referral" represents an individual who has been referred by an organizational partner but did not complete any lessons. "Matriculant" indicates an individual who completed the 1:1 interview and attended at least one lesson. A "graduate" signifies an individual who has completed the lessons and post-program exit interview. A "final participant" indicates those who completed the above and one-year post-program exit interview.

Results

From its inception in September 2020 until September 2023, HT has completed five distinct participant cohorts. The program has received 65 total participant referrals (N=6, 13, 7, 9, 10 for each respective cohort), with 20 additional participants contacted for future cohorts.

Table 2. Baseline demographics for referred participants across all five Healthier Together Cohorts from 2020 - 2023, including total number of 1:1 interviews, matriculants, and graduates

Characteristic	Referred Participants, % (N = 65)
Age (in years), mean ± SD	51 ± 12
Female	66 (43)
Race/Ethnicity (n = 17)*	
Non-Hispanic White	12 (2)
Non-Hispanic Black	35 (6)
Hispanic	51 (9)
Primary Spoken Language	
Spanish	46 (30)
English	54 (35)
Co-morbidity Diagnoses	
Hypertension	74 (43)
Diabetes Mellitus	43 (30)
Other Significant Medical Diagnosis	51 (33)
Baseline Physical Metrics, mean ± SD	
Started Weight, pounds	225 ± 46
Starting Systolic Blood Pressure, mmHg	133 ± 18
Starting Diastolic Blood Pressure, mmHg	82 ± 8
Number of 1:1 Interviews, n = 45	51 (23)
Number of Matriculated Participants, n = 23	74 (17)
Number of Graduates, n = 17	88 (5)

**matriculated participants*

Table 3. Program evaluation ratings from program graduates (n = 8)

Question	Likert-Scale Rating (1-5), mean ± standard deviation
How satisfied were you with the educational material presented in the program?	5 ± 0
How satisfied were you with the presentation of the material?	5 ± 0
How valuable did you find the lecture slide material?	5 ± 0
How valuable did you find the handout material?	5 ± 0
How helpful were the take home activities?	5 ± 0
How useful were the gifts? (Cookbook, step tracker band, planner, spices, water bottle, and candle)	5 ± 0
How comfortable did you feel participating?	5 ± 0
How satisfied were you with the group setting for lessons?	4.88 ± 0.35
Please rate your satisfaction with the lesson facility location.	4.88 ± 0.35
How challenging was the program?	3 ± 1.4
How likely is it that you would recommend Healthier Together to a friend?	5 ± 0

1=very unlikely, 5=very likely, 1=very dissatisfied, 5=very satisfied

Of the 45 participant referrals for the first five cohorts, 23 (51%) completed the initial 1:1 session, 17 of those (74%) matriculated, and 17 (88%) matriculants participated in the exit interview, thus making them program graduates. Cohort size ranged from two to five participants. Data collection and programming for final participants at the one-year exit interview is ongoing. The mean age for all referred participants (N= 65) was 51 ± 12 years, 66% (n=43/65) were female, and 46% (n=30/65) were Spanish-speaking. A physician confirmed diagnosis of hypertension, Type 2 Diabetes Mellitus and any other significant medical diagnosis was documented in 74% (n=48/65), 43% (n=28/65), and 51% (n=33/65) of referrals, respectively. Matriculated participants were 53% (n=9/17) Hispanic, 35% (n=6/17) NHB, and 12% (n=2/17) NHW. The mean baseline matriculant weight was 225 ± 46 pounds. The mean baseline systolic blood pressure was 133 ± 18 mmHg and the mean diastolic blood pressure was 82 ± 8 mmHg. (Table 2). Across all completed cohorts (N=5), 30 educational sessions, totaling 45 instructional hours, were available. Mean lesson attendance frequency across all cohorts was 70% (56%, 75%, 73%, 63%, 83% respectively for each cohort). Of the 10 program graduates able to complete the post-program evaluation survey, the mean satisfaction rating for educational material, comfort within the group setting, and usefulness of lesson gifts were all 5 ± 0 (n=10).

Table 3 presents participants' likelihood of recommending HT to a friend was a 5 ± 0 (1=very unlikely through 5=very likely). Participants' mean rating of program difficulty was 3 ± 1.3 (1=not challenging, 5=very challenging, N=10). To date, eleven medical students have led the full in-person portion of the HT program as an LC. Each student averaged 14 ± 3 hours of in-person participant interactions. These metrics do not account for time spent preparing for each session, external organizational meetings, or phone communication with participants. LCs mean pre- and post-cohort (n=6) cumulative Knowledge Attainment score increased significantly from 61% to 81%. The mean self-efficacy score increased from 81% to 94% and the nutrition and physical activity scores increased from 55% to 68%.

Discussion

The development and implementation of HT illustrates the feasibility of a medical student-led organization to adapt to a national public health curriculum within a local community. The program highlights four key successes. First, condensed DPP adaptations can be implemented by medical students, with the potential for success in other resource-limited settings. Second, nutrition and lifestyle intervention programs can be customized to cater to the specific needs of local communities. Third, the program was well received by participants with reasonable adherence and completion. Fourth, cohort leadership increased medical student skills across curricular competencies such as patient communication and nutrition knowledge.

To our knowledge, HT is the second DPP adaptation performed and implemented by medical students, and the first to showcase a condensed curriculum for a predominately Hispanic, non-Hispanic Black, low-income population within Miami-Dade County.[19]

While maintaining core DPP features, such as one-year program length and eligibility criteria, HT made adaptations, including condensing the number of lessons to six, rather than 16, and supplementing these lessons with monthly follow-up calls. Additionally, HT collected participant blood pressure rather than hemoglobin A1C and physical activity minutes. The program also includes 1:1 welcome and exit interviews which employ standardized behavior, diet, and exercise surveys to gain deeper insights into participants' behaviors and program-induced change. These adaptations were necessitated by limited funding and time constraints as a student-run initiative.

HT can be examined in the broader context of student-led DPP adaptations. Huszagh et al describes how health professions students at Vanderbilt University successfully integrated a full 16-lesson DPP program into a pre-existing student-run clinic.[19] A key advantage of student-run adaptations lies in the time and preliminary skillset these trainees have. Moreover, the financial advantage is noteworthy, with our average cost of $90 per participant substantially below the DPP's

estimate of $500 per person. Consequently, student-led adaptations are both cost-effective and facilitate regular communication with participants, aligning with obesity-management guidelines that emphasize frequent patient-provider interactions.[30] Despite the advantages offered by student-run programs, notable variation exists between HT and prior DPP adaptations conducted by trainees. While the Vanderbilt program represents a robust adaptation, HT may present a more feasible model for student-run groups, especially those operating independently without the support of an established student-run clinic. As a free-standing organization, HT's community partners played a critical role in identifying and referring participants to ensure adequate group size for each cohort.

Participant Experience Review of a Tailored Program

As evidenced by high participant program satisfaction ratings and attendance rates, HT programming was well received by participants. While results may be affected by the Hawthorne effect, these ratings are of particular significance as our cohort participants are primarily low-income, Hispanic, and NHB individuals—groups who are presently and historically marginalized and face discrimination within the healthcare system.[31] In recognition of systemic barriers identified by participants, Supplemental Nutrition Assistance Program benefits, mental health centers accepting uninsured patients, and transportation funding were integrated into our program. Further, 67% of the population in Miami-Dade County speaks Spanish, and 46% of our total referral volume is Spanish-speaking.[32] HT expanded to include Spanish-speaking participants in Cohort 4.0 to ensure linguistic inclusivity of all interested participants. Implementation was feasible through translated materials, culturally informed curricular adjustments, and targeted recruitment of Spanish-speaking LCs. Retrospective analysis of the pilot Spanish-speaking cohort is ongoing.

Harm Reduction in the Future Physician Workforce

A secondary goal of the program was to engage in harm reduction by developing physicians equipped to integrate nutrition and activity education into their practice. As demonstrated by the Knowledge Attainment Survey results, medical students participating as LCs increased their nutrition and physical activity guideline knowledge and saw improvements in their confidence ratings with patient communication. Early exposure to lifestyle counseling for patients with obesity equips students with insights into the complexities of weight management, obesity treatment guidelines, and available community resources to support patients' goals.

Challenges and Sustainability

As a longitudinal program, participation is a time-intensive investment from all stakeholders. While the mean attendance rate across all cohorts was 70%, we were unable to reach our goal of 100% attendance. Common reasons for absences included sickness or injury, medical appointments, or work conflicts. We found that consistent session times, frequent reminders, and compassion in the event of an absence helped mitigate attendance challenges.

As a student-run program, HT faces unique challenges such as finite funding, reliance on volunteers, and limited LC clinical experience. While the organization is effective with minimal costs, a low-budget operation may restrict participant opportunities. Organizational leaders, faculty advisors, and LCs all volunteer their time, making sustainability contingent upon extracurricular commitment. HT's internal structure and succession plan address these concerns to ensure long-term stability. Further, our LCs are preclinical students with limited patient care experiences. Special care is taken to train our LCs in lesson content, motivational interviewing, and discussing weight status when invited by participants.

Limitations

HT has several limitations that should be considered when interpreting program findings. Key elements of program design were developed to best address the unique needs of our population within Miami-Dade County, and therefore, may not be universally generalized. Further, patient

participation in HT cohorts remains low. To date, 17 participants have entered the program, making it difficult to draw conclusions about programmatic outcomes. HT contains key differences from the traditional DPP framework, and therefore, is not representative of the DPP organization and should not be interpreted as such. Lastly, as a trainee-run program, the professional knowledge and skills may be constrained due limited experience in the field. Despite these limitations, HT remains an innovative avenue for a medical student-sponsored support network for patients to reach their health goals.

Conclusion

The development and implementation of HT demonstrates the plausibility of a medical student adaptation of a national public health framework to meet the needs of a low-income Miami-Dade population with obesity. As there is a lack of programming available to lower-income patients, this adaptation provides a viable alternative for successful lifestyle intervention programs within resource-limited contexts. Through medical student engagement with HT programming, we provide opportunities for training future physicians to be informed on harm-reduction and evidence-based practices in weight management. We encourage medical students and other professionals to use HT as a blueprint for implementing similar community-level programs to best serve patient needs.

Disclosures

The authors have no conflicts of interest to disclose.

References

1. Tsao CW, Aday AW, Almarzooq ZI, et al. Heart Disease and Stroke Statistics—2023 Update: A report from the American Heart Association. *Circulation*. 2023/02/21 2023;147(8):e93-e621. doi:10.1161/CIR.0000000000001123 LINK
2. Stierman B, Afful J, Carroll MD, et al. National Health and Nutrition Examination Survey 2017–March 2020 prepandemic data files—development of files and prevalence estimates for selected health outcomes. *National Health Statistics Reports*. 2021;(158):1-21. doi:10.15620/cdc:106273 LINK
3. Friedan TR. CDC health disparities and inequalities report - United States. *Morb Mortal Wkly Rep Suppl*. 2013;62(3):1-2. https://pubmed.ncbi.nlm.nih.gov/24264482/ LINK
4. Khan MAB, Hashim MJ, King JK, Govender RD, Mustafa H, Al Kaabi J. Epidemiology of type 2 diabetes - global burden of disease and forecasted trends. *J Epidemiol Glob Health*. Mar 2020;10(1):107-111. doi:10.2991/jegh.k.191028.001 LINK
5. Tronieri JS, Wadden TA, Chao AM, Tsai AG. Primary care interventions for obesity: Review of the evidence. *Curr Obes Rep*. Jun 2019;8(2):128-136. doi:10.1007/s13679-019-00341-5 LINK
6. Knowler WC, Barrett-Connor E, Fowler SE, et al. Reduction in the incidence of type 2 diabetes with lifestyle intervention or metformin. *N Engl J Med*. Feb 7 2002;346(6):393-403. doi:10.1056/NEJMoa012512 LINK
7. Spratt SE, Batch BC, Davis LP, et al. Methods and initial findings from the Durham Diabetes Coalition: Integrating geospatial health technology and community interventions to reduce death and disability. *J Clin Transl Endocrinol*. Mar 2015;2(1):26-36. doi:10.1016/j.jcte.2014.10.006 LINK
8. US Preventive Services Task Force, Curry SJ, Krist AH, et al. Behavioral weight loss interventions to prevent obesity-related morbidity and mortality in adults: US preventive services task force recommendation statement. *JAMA*. 2018;320(11):1163-1171. doi:10.1001/jama.2018.13022 LINK
9. Goode RW, Styn MA, Mendez DD, Gary-Webb TL. African Americans in standard behavioral treatment for obesity, 2001-2015: what have we learned? *West J Nurs Res*. 2017/08/01 2017;39(8):1045-1069. doi:10.1177/0193945917692115 LINK
10. Saju R, Castellon-Lopez Y, Turk N, et al. Differences in weight loss by race and ethnicity in the PRIDE Trial: a qualitative analysis of participant perspectives. *J Gen Intern Med*. 2022/11/01 2022;37(14):3715-3722. doi:10.1007/s11606-022-07521-5 LINK
11. Kim SE, Castro Sweet CM, Gibson E, et al. Evaluation of a digital diabetes prevention program adapted for the Medicaid population: Study design and methods for a non-randomized, controlled trial. *Contemp Clin Trials Commun*. Jun 2018;10:161-168. doi:10.1016/j.conctc.2018.05.007 LINK
12. National DPP Coverage Toolkit: Cost & Value. CDC National Diabetes Prevention Program. Accessed September 8, 2023. https://coveragetoolkit.org/cost-value-elements/ LINK
13. Ali MK, Echouffo-Tcheugui J, Williamson DF. How effective were lifestyle interventions in real-world settings that were modeled on the Diabetes Prevention Program? *Health Aff (Millwood)*. Jan 2012;31(1):67-75. doi:10.1377/hlthaff.2011.1009 LINK
14. Pagoto SL, Kantor L, Bodenlos JS, Gitkind M, Ma Y. Translating the diabetes prevention program into a hospital-based weight loss program. *Health Psychol*. Jan 2008;27(1s):S91-8. doi:10.1037/0278-6133.27.1.S91 LINK
15. Jaber LA, Pinelli NR, Brown MB, et al. Feasibility of group lifestyle intervention for diabetes prevention in Arab Americans. *Diabetes Res Clin Pract*. Mar 2011;91(3):307-15. doi:10.1016/j.diabres.2010.11.032 LINK

16. Mau MK, Keawe'aimoku Kaholokula J, West MR, et al. Translating diabetes prevention into native Hawaiian and Pacific Islander communities: the PILI 'Ohana Pilot project. *Prog Community Health Partnersh*. Spring 2010;4(1):7-16. doi:10.1353/cpr.0.0111 LINK
17. Cramer JS, Sibley RF, Bartlett DP, Kahn LS, Loffredo L. An adaptation of the diabetes prevention program for use with high-risk, minority patients with type 2 diabetes. *Diabetes Educ*. May-Jun 2007;33(3):503-8. doi:10.1177/0145721707301680 LINK
18. Meredith H, Jeremy H, Carolina Gomez G, et al. Evaluation of a diabetes prevention program implementation in a student-run free clinic setting. *J Student-Run Clin.* Feb 2022;8(1). doi:10.59586/jsrc.v8i1.259 LINK
19. Jay M, Kalet A, Ark T, et al. Physicians' attitudes about obesity and their associations with competency and specialty: a cross-sectional study. *BMC Health Serv Res*. Jun 24 2009;9:106. doi:10.1186/1472-6963-9-106 LINK
20. Adams KM, Kohlmeier M, Zeisel SH. Nutrition education in US medical schools: latest update of a national survey. *Acad Med*. Sep 2010;85(9):1537-42. doi:10.1097/ACM.0b013e3181eab71b LINK
21. Thuy-An T, Nancy Y, Natalie D, et al. nutrition counseling by medical students at a student-run free clinic using goal-setting and the MyPlate method. *J Student-Run Clin.* 05/03 2017;3(1)doi:10.59586/jsrc.v3i1.22 LINK
22. Doran GT, Miller A, Cunningham J. There's a S.M.A.R.T. way to write managements's goals and objectives. *Management Review*. 1981;70(11):35-36. LINK
23. New General Self-Efficacy Scale. Stanford University: SPARQtools. https://sparqtools.org/mobility-measure/new-general-self-efficacy-scale/#all-survey-questions LINK
24. Dietary screener questionnaire in the national health interview survey cancer control supplement 2015. National Institute of Health. https://epi.grants.cancer.gov/diet/shortreg/instruments/dsq-in-nhis-ccs-2015-english-version.pdf LINK
25. Kroenke K, Spitzer RL, Williams JB. The PHQ-9: validity of a brief depression severity measure. *J Gen Intern Med*. Sep 2001;16(9):606-13. doi:10.1046/j.1525-1497.2001.016009606.x LINK
26. Moriarty DG, Zack MM, Kobau R. The Centers for Disease Control and Prevention's Healthy Days Measures - population tracking of perceived physical and mental health over time. *Health Qual Life Outcomes*. Sep 2 2003;1:37. doi:10.1186/1477-7525-1-37 LINK
27. National Diabetes Prevention Program, Implementation Toolkit. 2018. https://www.naco.org/sites/default/files/documents/LAC%20National%20DPP%20Provider%20Implementation%20Toolkit%20updated%2010%202018.pdf LINK
28. Parmenter K, Wardle J. Development of a general nutrition knowledge questionnaire for adults. *Eur J Clin Nutr*. 1999/04/01 1999;53(4):298-308. doi:10.1038/sj.ejcn.1600726 LINK
29. Fitzpatrick SL, Wischenka D, Appelhans BM, et al. An Evidence-based guide for obesity treatment in primary care. *Am J Med*. Jan 2016;129(1):115.e1-7. doi:10.1016/j.amjmed.2015.07.015 LINK
30. Hamed S, Bradby H, Ahlberg BM, Thapar-Björkert S. Racism in healthcare: a scoping review. *BMC Public Health*. 2022;22(1):988. Published 2022 May 16. doi:10.1186/s12889-022-13122-y LINK
31. Population Data for County: Miami-Dade. Miami-Dade Matters. Accessed May 25, 2023. https://www.miamidadematters.org/demographicdata?id=414&sectionId=935 LINK