

**Utilizing Motivational Interviewing Intervention to Improve Compliance with Self-Care
Among Hispanic Adults with Obesity, Type 2 Diabetes Mellitus, and Hypertension**

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DNP Quality Improvement Project

April 22, 2022

Abstract

Obesity, hypertension, and type 2 diabetes mellitus (type 2 DM) have continued to plague the healthcare system and the economy of the United States of America. They are most common among African Americans and Hispanic Americans. The objective of this quality improvement project was to improve compliance to self-care regarding self-monitoring of blood glucose, blood pressure, and exercise to achieve target fasting blood glucose (FBG) ≤ 120 mg/dL, blood pressure (BP) $\leq 130/80$ mm Hg and a weight loss of ≥ 5 pounds among adult Hispanics aged 18-65 years old. A weekly motivational interviewing (MI) session was conducted for 6 weeks to achieve the set objectives, commencing in February 2022 through March 2022. The variables of weight, FBG, and BP were assessed at baseline and at the completion of the intervention. Patients' measurements with their personal equipment at each visit was crosschecked with the interviewer's hospital equipment to rule out calibration errors.

Of the 20 participants, 10 (50%) improved in the three variables, six (30%) had better BP and FBG control only, two (10%) improved in FBG and weight control only, while two (10%) dropped out, mostly among male patients in the age range of 35-55 years-old and females in the age range, 25-50 years old.

Motivational interviewing has shown to be an effective strategy for improving BP levels and increased adherence levels in individuals with obesity and Type 2 DM, thereby reducing complications and overall mortality and morbidity among adult Hispanic population.

Keywords: Motivational interviewing, diabetes type 2, obesity, hypertension, exercise, daily steps, self-care

Introduction

A common impression of most clinicians when the patients are not doing well on treatment is that they are poorly or not compliant, and this has been a source of frustration in day-to-day clinical practice. One thing we fail to realize is that our approach and therapeutic goal may not have matched the patients' motivational level or willingness to carry out the instructions given to them.

This is where motivation comes in. This has been found to increase patients' willingness to change and accept the new offer for better health outcomes. The concept of motivational interviewing (MI) is therefore invaluable and has been used across all specialties as an evidenced-based practice. It is often recommended as an evidence-based approach to behavior change.

Motivational interviewing (MI) was first introduced by William Miller and Stephen Rollnick in 1983. This led to the publication of their first book in 1991, which focused on preparing people to change addictive behavior like alcohol and drug use. They defined motivational interviewing as a "client-centered, directive method for enhancing intrinsic motivation to change by exploring and resolving ambivalence" (Miller & Rollnick, 2002, p. #). Ambivalence in this context is a state when people are stuck in mixed feelings about change even though they know the change is beneficial but because it comes at a cost. Clinicians and all healthcare practitioners must acknowledge the reluctance to change in their patients in order to achieve the goals of motivational interview. This ultimately helps to lessen provider frustrations, helps patients make the best decisions autonomously, and results in better health outcome.

The most current version of MI is described in detail in Miller and Rollnick's (2013)

Motivational Interviewing: Helping People to Change (3rd edition). Key qualities include:

- MI is a guiding style of communication that sits between following (good listening) and directing (giving information and advice).
- MI is designed to empower people to change by drawing out their own meaning, importance, and capacity for change.
- MI is based on a respectful and curious way of being with people that facilitates the natural process of change and honors client autonomy.

Background Knowledge

The prevalence of type 2 diabetes is rapidly increasing due to population aging and lifestyle changes (Yang et al., 2010). Self-management is the basis for treatment of type 2 diabetes and is critical in the prevention of complications. Despite the visible role of nurse-led health education as a tested method of helping patients to strengthen their self-management abilities, a previous study showed that health education programs that provide traditional advice have a success rate of only 5% to 10% (Carolan et al., 2014). Being overweight or outright obesity harms health in many ways. It increases the risk of developing other non-communicable diseases (NCDs) such as diabetes, hypertension, heart disease, osteoarthritis, and some cancers, eventually leading to poor quality life and reduced lifespan. Treating these common NCDs costs the U.S. health sector billions of dollars to manage them annually. By one estimate, the U.S. spent \$190 billion on obesity-related health care expenses in 2005, which amounts to double the previous estimates. (GBD, 2016). The enormity of this economic burden and the huge toll that excess weight takes on health and well-being are beginning to raise global political awareness

that individuals, communities, states, nations, and international organizations must do more to stem the rising tide of obesity, and by extension, hypertension and type 2 DM. Therefore, effective new approaches such as motivational interviewing are urgently needed to help patients improve their self-management capabilities. Motivational interviewing (MI) as a patient-centered behavior-changing strategy aims to reduce ambivalence regarding health behavior changes and improve patients' perceptions of the importance of behavior changes. MI is valuable in the treatment of addictions and other chronic medical conditions, including obesity, type 2 diabetes, and hypertension (Chaker et al., 2015). Recent studies have shown that MI can contribute to improvements in self-management abilities in patients with type 2 diabetes (Welch et al., 2011; West et al., 2007). Motivational interviewing is therefore an effective style of collaborative communication for the promotion of lifestyle modification in the management of various chronic diseases including obesity, type 2 diabetes mellitus, and hypertension.

Local Issue

Obesity, diabetes type 2 and hypertension are the core physiological, biochemical, and metabolic factors that increase the risk of cardiovascular disease. These disease constellations along with hypoglycemia form a recognizable pattern in the El Paso healthcare community. They make up a large percentage of the healthcare presentation at this local clinic. Most of the clinic patients are aware of their diagnosis and prognosis and capable of self-care but seem unmotivated. Some patients presented as ready but requiring some support or motivation to take charge of their healthcare. When interviewed about the challenges faced in their care, multiple responses pointed to the challenges posed by change. To find the right solution to these challenges, it was apparent that tertiary prevention trumps care of chronic disease with complications/disabilities. Poor patient motivation and participation were bigger issues than the

delay in getting care due to long wait time before seeing a primary care, the short provider visits and lack of community support systems and resources. Utilizing specialists in motivational interviewing, mindfulness, and psychotherapists to motivate and support patients who suffer from obesity, diabetes type 2, hypertension and other healthcare issues would result in realistic, feasible and sustainable changes.

Intended Improvement

The objective of this quality improvement project is to improve compliance to self-care regarding self-monitoring of blood glucose, blood pressure, and daily walking (exercise) to achieve target fasting blood glucose (FBG) ≤ 120 mg/dL, blood pressure (BP) $\leq 130/80$ mm Hg, and a weight loss of ≥ 5 pounds among adult Hispanics aged 18-65 years old. A weekly motivational interviewing (MI) session was conducted for 6 weeks to achieve the above stated objectives from February 2022 through March 2022. Inclusion criteria includes Hispanic patients 18 to 65 years old with a confirmed diagnosis of obesity, T2DM, and hypertension, who are undergoing treatment; possess a cell phone or wrist pedometer, glucometer, and BP machine; are able to read, write, and communicate in English, without cognitive impairment; and are able to carry out self-monitoring of blood glucose independently. Exclusion criteria includes non-English speaking individuals, those who are cognitively impaired, or individuals who are physically incapable of achieving up to 10,000 steps due to limitations arising from other medical problems and are dependent on others for activities of daily living.

Rationale

One of the guiding principles of MI is to empower people to change by drawing out their own meaning, importance, and capacity for change, with the decision to adopt change ultimately

at the discretion of the patients. Thus, this QI project is structured to encourage and enable autonomous decision by the patients without any coercion or external influence from the interviewer. This necessitated the exclusion of patients with complications and severe co-morbidities associated with obesity, type 2 DM, and hypertension.

The Project Question

PICOT questions were developed to guide the QI project with finding an evidence-based solution that is patient centered, would allow timely access to provider, and allow patient engagement that would yield results within 6 weeks and improve patient health outcome. After a short period of investigation, this author was convinced on the effectiveness of motivational interviewing, an evidence-based strategy that has been proven effective in controlling the scourge of non-communicable diseases especially in primary health care or outpatient clinic settings. The author received training and got certified in motivational interviewing to allow her approach health concerns in a manner that is proven to be more effective than the current treatment approach. A 30-minute motivational interviewing session was deemed enough to draw from patients' inner strength and to motivate them to take charge of their health and to be more compliant to care.

P: Hispanic adults aged 18 to 65 with obesity, Type 2 Diabetes Mellitus and Hypertension

I: Weekly motivational Interviewing

C: Standardized care

O: Improved adherence to self-care, weight loss, BP, and FBG control

T: Within 6 weeks

Literature Review

Search Strategies

An integrated review of the literature and evidence was conducted to examine the impact motivational interviewing has on obesity, hypertension, and diabetes type 2 in a primary care setting. The search was conducted utilizing the engines and databases of Cochrane data base of clinical trials, the cumulative index of nursing and allied health literature (CINAHL), PubMed, the University of Texas at El Paso (UTEP) health sciences library, AND Medline Plus database. The fundamental concepts of the inquiry were used in the search. The primary search words were, motivational interviewing, weight loss, reduction in fasting blood glucose, improve glycemic control, improved blood pressure, lifestyle changes, weight loss, and increasing physical activity.

The literature review was limited to the search of articles in English that were published between the years of 2010 and 2020. The studies were identified, evaluated, screened, and included if relevant. The search of motivational interviewing and blood pressure control yielded 124 results. Lifestyle changes and weight loss 740 results. Motivational interviewing and glycemic control yielded 45 results. Weight loss and motivational interviewing produced 1,947 results and motivational interviewing in primary care produced 862 results. From the initial searches, 109 articles were identified, and the abstracts and titles were reviewed and evaluated for relevance to the project. Thirty-three articles examined the primary characteristics of hypertension, diabetes type 2, obesity and motivational interviewing or lifestyle changes in adults. Based on Melnyk's Hierarchy of Evidence, fifteen of the studies were Level I systematic reviews or meta-analysis, ten of the studies were level II randomized controlled trials, and the

remaining eight studies were a mixture of pilot studies, expert opinions, and plans for future systematic reviews (Melnyk, & Fineout-Overholt, 2015).

Reviews Discussed

To justify MI as an evidence-based practice, Rubak et al. (2005) and Rubak et al. (2011) conducted a systematic review and meta-analysis was performed on 72 randomized controlled trials using MI as the intervention. The meta-analysis showed a significant effect (95% confidence interval) for motivational interviewing for combined effect estimates for body mass index, total blood cholesterol, systolic blood pressure, blood alcohol concentration, and standard ethanol content, while combined effect estimates for cigarettes per day and for HbA1c were not significant. When using MI in brief encounters of 15 minutes, 64% of the studies showed an effect. The conclusion was that MI in a scientific setting outperforms traditional advice giving in the treatment of a broad range of behavioral problems and diseases.

Motivational interviewing (MI) is defined as a 'client-centered, directive method for enhancing intrinsic motivation to change by exploring and resolving ambivalence. (Miller WR, Rollnick S. 2010).

The definition of motivational interviewing (MI) has evolved and been refined since the original publications on its utility as an approach to behavior change. The initial description, by William R. Miller in 1983, developed from his experience in the treatment of problem drinkers. Through clinical experience and empirical research, the fundamental principles and methodologies of MI have been applied and tested in various settings, and research findings have demonstrated its efficacy. MI is now established as an evidence-based practice in the

treatment of individuals with substance use disorders.

In its most recent definition (2009), MI is described as a collaborative, goal-oriented style of communication with particular attention to the language of change. It is designed to strengthen personal motivation for and commitment to a specific goal by eliciting and exploring the person's own reasons for change within an atmosphere of acceptance and compassion (Miller & Rollnick, 2017). MI is borne out of the perspective of giving the person the freedom to make decision for change without being cajoled or giving unsolicited advice. Since it was not modeled to "get people to change" or a set of techniques to influence or manipulate the process, it takes time and practice and requires self-awareness and discipline from the clinician (Miller & Rollnick, 2013).

MI has four fundamental processes with specific core elements and core skills.

The four fundamental processes include:

- **Engaging:** This is the basic foundation of MI. The goal is to establish a productive working relationship through careful listening to understand and accurately reflect the person's experience and perspective while affirming strengths and supporting autonomy.
- **Focusing:** This is when an agenda is negotiated that draws on both the client and practitioner to agree on a shared purpose, which gives the clinician permission to move into a directional conversation about change.
- **Evoking:** This is when the practitioner explores and helps the person to build their own reason for a change through eliciting the client's ideas and motivations. This results in the normalization of ambivalence, which the person would have explored independently without judgement and, as a result, may be resolved.

- **Planning:** This explores the modalities the MI practitioner used in supporting the person to consolidate commitment to change and develop a plan based on the person's own insights and expertise.

These core elements are summarized in three increasingly detailed levels of definition (Miller & Rollnick, 2010):

- **Lay person's definition (What's it for?):** Motivational interviewing is a collaborative conversation to strengthen a person's own motivation for and commitment to change.
- **A pragmatic practitioner's definition (Why would I use it?):** Motivational interviewing is a person-centered counseling method for addressing the common problem of ambivalence about change.
- **A technical therapeutic definition (How does it work?):** Motivational interviewing is seen as a collaborative, goal-oriented method of communication with particular attention to the language of change. It is designed to strengthen an individual's motivation for and movement toward a specific goal by eliciting and exploring the person's own arguments for change.

MI core elements can be further elaborated as follows:

- **Partnership.** MI is a collaborative process. The MI practitioner is an expert in helping people change; people are the experts of their own lives.
- **Evocation.** People have within themselves resources and skills needed for change. MI helps the people to draw out their own priorities, values, and wisdom to explore reasons why they need to change their health habits.
- **Acceptance.** The MI practitioner takes a nonjudgmental stance, seeks to understand the

person's perspectives and experiences, expresses empathy, highlights strengths, and respects a person's right to make informed choices about changing or not changing.

- **Compassion.** The MI practitioner actively promotes and prioritizes clients' welfare and well-being in a selfless but objective manner.

MI has core skills termed OARS, attending to the language of change and the artful exchange of information. It is meant to consolidate the core elements.

- **Open-ended questions:** These questions draw out and explore the person's experiences, perspectives, and ideas. Evocative questions guide the patient to reflect on how change may be meaningful or feasible. Information is often offered within a structure of open-ended questions that first explore what the person already knows, seek permission to offer what the practitioner knows, and then explore the person's response.
- **Affirmation:** Affirmation is an initiative on the part of the patients to generate strengths, efforts, and past successes help to build the person's hope and confidence in their ability to change.
- **Reflections:** Reflections are based on careful listening and trying to understand what the person is saying by repeating, rephrasing, or offering a deeper guess about what the person is trying to communicate. This is a foundational skill of MI and how practitioners express empathy.
- **Summarizing:** Summarizing ensures shared understanding and reinforces key points made by the patients.

Others are:

- **Attending to the language of change:** This identifies what is being said against change (sustain talk) and in favor of change (change talk) and, where appropriate, encourages a movement away from sustain talk toward change talk.
- **Exchange of information:** This acknowledges that both the clinician and client have expertise. Sharing information is considered a two-way thing that requires the interviewer to be both attentive responsive to what the patient is saying.
- **Pulling change:** In order to “pull change,” three conditions must be present:
 - Patients must have some degree of understanding and concern about their current situation.
 - Patients must believe that there are benefits to making the change.
 - Patients must be confident that they are able to make the change.

To create these conditions, MI experts must elicit self-motivational statements from their patients so that they discover discrepancies between their current situation and their core values and goals. We want them to state their own “pros” and take the positive side of the argument. MI is framed as a method of communication rather than an intervention, sometimes used on its own or combined with other treatment approaches. There are a number of benefits of learning MI amongst other approaches to helping conversations.

MI has been applied across a broad range of settings (such as health, corrections, human services, education), populations (age, ethnicity, religion, sexuality, and gender identities), languages, treatment format (individual, group, and telemedicine) and presenting concerns (health, fitness, nutrition, risky sex, treatment adherence, medication adherence, substance use,

mental health, illegal behaviors, gambling, and parenting). It compares to other evidence-based approaches in formal research studies and is compatible with the values of evidence-based approaches in many disciplines. Although the full framework is a complex skill set that requires time and practice, the principles of MI have intuitive or “common sense” appeal and core elements of MI can be readily applied in practice as the clinician learns the approach.

Motivational interviewing was used with positive results as a standalone intervention in one study. Four sessions of motivational interviewing led to significant improvements in body mass index (BMI) and self-efficacy in overweight and obese women compared to a waiting list control (Meybodi et al., 2011). It has also been increasingly used as an adjunct to other approaches. Group motivational interviewing was also adopted as part of a behavioral weight loss program for 40 overweight/obese women, and the result showed a marked reduction in body weight and BMI than controls (Navidian et al., 2010). In other studies, with sample sizes ranging from 22 to 55, individualized motivational interviewing for participants experiencing weight loss difficulties on a behavioral weight loss program resulted in re-engagement in the program, weight loss, and increases in weekly exercise (Carels et al., 2007). Motivational interviewing as part of a group-based behavioral obesity treatment for overweight African American and Caucasian women with type 2 DM also produced more weight loss in both ethnic groups at 6 and 18 months than those randomized to an attention control group. Weight loss was mediated by enhanced adherence to the behavioral weight loss program. Although the African American participants lost weight at 6 months, they did not show the same level of maintenance at 18 months compared to the Caucasian women (West et al., 2007).

Furthermore, the majority of recently published studies of motivational interviewing in adults have focused on improving metabolic control in type 2 DM. Motivational interviewing

appears to be most effective when the interview is tailored to match the individuals' level of self-efficacy and readiness to change. In a study of 250 patients with type 2 DM, individualized motivational interviewing improved self-management, self-efficacy, quality of life, and HbA1c with over half of the participants that received motivational interviewing moving from contemplation to preparation or action stages compared with only 17% of the usual care group (Chen et al., 2012) Another study of 66 adults with uncontrolled diabetes who were offered videophone and motivational interviewing as part of diabetes self-management education showed improved HbA1c, diabetes knowledge, and diabetes self-efficacy compared to those who received healthy lifestyle education calls. Participants in the motivational interviewing group that had high self-efficacy had the greatest reductions in HbA1c. (Hawkins, 2010). These studies confirm the importance of assessing individual differences as potential moderators of tailored health interventions. Tailoring interventions based on values and other motivational constructs can enhance message impact and extend intervention reach and perceived relevance.

Motivational interviewing in ethnicity-specific groups has also been explored. Two individual, 30-minute sessions of motivational interviewing delivered over 3 weeks with residents of an American Indian reservation with type 2 DM found predictors of change in HbA1c included change in provider trust, treatment acceptance, depression, and reported hours of exercise per week (Calhoun et al., 2010). In contrast, one study showed a greater improvement in HbA1c in the non-motivational interviewing groups than in the groups receiving motivational interviewing. (Welch et al., 2011). Another study failed to show any benefit of motivational interviewing over and above usual care for either T1D or T2D (Rosenbek Minet et al., 2011). One research group has focused on the use of motivation enhancement therapy (MET) in adults with Type 1 diabetes mellitus (type 1 DM). MET is a motivational interviewing-based approach

specifically designed to increase motivation to engage with treatment. Ismail et al. (2010) found that nurse-delivered MET and CBT resulted in modest 12-month improvements in HbA1c levels compared with usual care for patients with type 1 DM but MET alone did not. In the studies reported here, the majority of them have shown improved metabolic control in adults with obesity and type 2 DM. The different outcomes in studies suggests that motivational interviewing is most effective when interventions are tailored to individual need and are based on values and other motivational constructs to enhance message impact and extend intervention reach and perceived relevance.

Achieving behavioral change through the DARN-CART approach (Miller & Moyers, 2006)

- **Setting the Agenda**

As much as it is expedient for the practitioner to be goal-oriented by beginning the MI session with goals in mind, it is also crucial from an MI perspective to engage patients in agenda-setting to ensure that their perspective is included, and they have a deep understanding of what the goals are. During agenda setting, the practitioner can have an idea of the areas of behavior change that patient may be most motivated to pursue. It is vital to also know the patients' daily routine and their current state of health or health challenges in order to set an agenda. The questions are usually framed to the patient in an open-ended format, and any form of judgmental or confrontational questions should be avoided; otherwise, the patient may become defensive, and the probability of attaining any behavior change will be drastically reduced (Heinrich et al., 2010).

- **Identifying and eliciting Change Talk**

Change talk is an MI term referring to client-generated statements that reflect some thought, suggesting the willingness to change current behavior (Miller & Moyers, 2006).

The MI counselor or practitioner has the responsibility of recognizing and eliciting change talk so that it may be amplified and reflected back to the client with the goal of enhancing momentum towards behavior change. Overall, change talk may express a concern, recognition of a problem, optimism about change, or an intention to change in the patient or any other client.

DARN-CAT (Figure 1) is an acronym summarizing the seven categories of change talk.

Figure 1

DARN-CAT Change Talk

| |
|--|
| Desire to change: <i>I really want to change my diet and start walking so I can lose weight.</i> |
| Ability to change: <i>For the first time, I really believe that I can stick to this exercise plan.</i> |
| Reasons to change: <i>When I forget my medications, I almost always feel terrible.</i> |
| Need to change: <i>I really need to get my blood sugar under control.</i> |
| Commitment to change: <i>I am definitely going to fill out my food diary every day this week.</i> |
| Activation of change: <i>I would certainly consider buying one of those little pill containers. I think that could be helpful.</i> |
| Taking steps toward change: <i>I have been keeping track of my blood sugar every day this week!</i> |

DARN is said to be the preparatory change talk reflective of ambivalence about change and represents Desire, Ability, Reasons, and Need. CAT, which refers to the forward momentum for behavior change, represents commitment, activation, or taking steps toward change. It is important for MI counselors or practitioners to recognize change talk when it is spontaneously offered. In order to elicit change talk, the following helpful steps could be adopted:

- Asking direct, open-ended questions such as those provided in Figure 2

- Helping clients look forward by considering what might happen if the behavioral status quo is maintained or changed
- Helping clients to rate and understand their motivation (e.g., “On a scale from 1 to 10, with 1 being not at all motivated and 10 being extremely motivated, how motivated are you to?” followed by “What makes you say 5 rather than 2 or 3?”)

Figure 2

Questions to Elicit DARN-CAT Change Talk

| Approaches to elicit each of the DARN-CAT types of change talk are provided below, but counselors should not feel that every type of change talk must be elicited to have a successful counseling session. | |
|--|---|
| Desire: | What would make you want to make the change? What's your vision of what you want to see happen if you were to lose some weight? What excites you about the possibility of increasing your physical activity? |
| Ability: | If you were to do this, what would be the best way to go about it so it would turn out as you want? How might you go about improving your adherence to your medicines to succeed? How might you manage to fit 30 minutes of walking into your day? |
| Reason: | What makes you think this might be a good time to make this change? What are your top three reasons for making the change? If you do not get a handle on your blood glucose monitoring, how do you imagine things playing out? What is your biggest reason for wanting to cut back on eating out? |
| Need: | How important is this change for you and why? On a scale from 0 to 10, how important is it for you to get your blood glucose under control? Why did you rate that a 6 and not a 3 or a 4? |
| Commitment: | What do you intend to do? How are you planning to get in 3 days of exercise this week? Given everything else that is going on, what do you feel is realistic for you to accomplish with your diet during the next month? |
| Activation: | What are you willing or ready to do? What is one step toward cutting back your calories that you are willing to make right now? What are you ready to do right now to remember to take your morning pill? |
| Taking Steps: | What have you already done? Tell me about the steps you have already taken to change your diet. What are the things you did last week that enabled you to monitor your blood glucose so consistently? |

- **Responding to Change Talk**

At this point, the practitioner should reflect and amplify clients' change talk in order to extend and strengthen their motivation for change. This can be accomplished by asking for elaboration, offering affirmations, and reflecting or summarizing the change talk.

This is to follow up change talk, to transition between topics or to move to a new phase of an encounter (e.g., transitioning into action planning). A reflection can be a restatement of what a client has said or can take a client's statement to the next step. The interviewer may use this to convey their understanding not only of the client's meaning but also of the underlying feelings. Reflections to build and amplify change talk are generally quite concise and focus on change talk that has just been expressed. Rather than attempting to reflect everything a client says, counselors should selectively reflect change talk to focus on clients' motivations to change.

When transitioning to a new phase in the counseling encounter, longer summaries can reflect the range of client-generated statements in favor of change. This type of strategic summary should weave individual strands of change talk into a more complete picture using the language offered by the client whenever possible.

Moving to Planning

Practitioners should commence this step after the patients have indicated their readiness for change.

The following indicators are needed to be in place in order to move to the planning stage:

1. Increased change talk and markedly increased proportion of change talk relative to sustain talk
2. Diminished resistance
3. Decreased discussion about the problem
4. A sense that the client has resolved to change, which is often accompanied by
5. Questions from the client about changing.

“It is important to be alert to these signs and transition into negotiating a behavior-change plan when they appear.” Transition is facilitated by providing a concise strategic summary of the client’s reasons for changing and anticipated benefits, followed by a mobilizing question such as “What are you ready to do now?”

There are several distinct components that need to be considered before negotiating a behavior-change plan. These include setting goals, considering change options, arriving at a plan, and eliciting client commitment for the plan. Whatever goals and action plans volunteered by the patient are to be respected and preferred over those generated by the interviewer because individuals are more likely to follow through with plans that they develop themselves than those imposed on them by the practitioners.

Concerning advice and suggestions, the general rule of thumb is to ask for permission, qualify the advice you give, and ask what the person makes of the advice. Counselors should aim to mobilize the client to make behavior-change plans once the client has identified a behavior change that is personally meaningful and has established a strong foundation of change talk.

The change-talk method is an objective and balanced approach to achieve a non-coercive behavioral change in our patients.

Methods

Project Context

The PICOT was derived from the 10-day clinical reflective practice as guided by the Doctor of Nursing program. The reflective practice journey helped track the clinician’s practice by the most common patient diagnosis, prognosis and highlighting evidence-based intervention

by the clinician and the patients' health outcome. During this period, patients were either observed not to be doing well clinically despite medication management, regular clinic attendance, or by the verbalization of some patients concerns and worries to the provider. From the interaction with the patients and the progress reports in their medical records, it became clear that the patients needed more than just the conventional medication management and pamphlet distribution approach to manage their conditions. Much of the realization resulted in completing the Collaborative Institutional Training initiative (CITI) training and proposal writing to the clinic and the institutional review board (IRB) at the university of Texas at El Paso (UTEP) IRB for QI project approval.

Setting

The identification of the practice problem occurred in the practice setting among hypertensive, type 2 diabetics, and obese patients attending the internal medicine clinic. The process was engaging and involved the entire clinic staff. This was necessary to promote a change in the clinic's practice style and perspectives. This author proposed this idea to the management staff and held multiple training sessions while presenting evidence from multiple scholarly articles before the QI project was approved.

Ethical Considerations

The ethical consideration of beneficence was supported through the motivational interviewing process, with the clinician and the patient being partners in a collaborative process (Salemons et al., 2020). The project upheld the ethical principles of confidentiality, autonomy, justice, and beneficence. All participants were informed of the criteria by which they were identified for this QI project utilizing motivational interviewing and were duly informed that

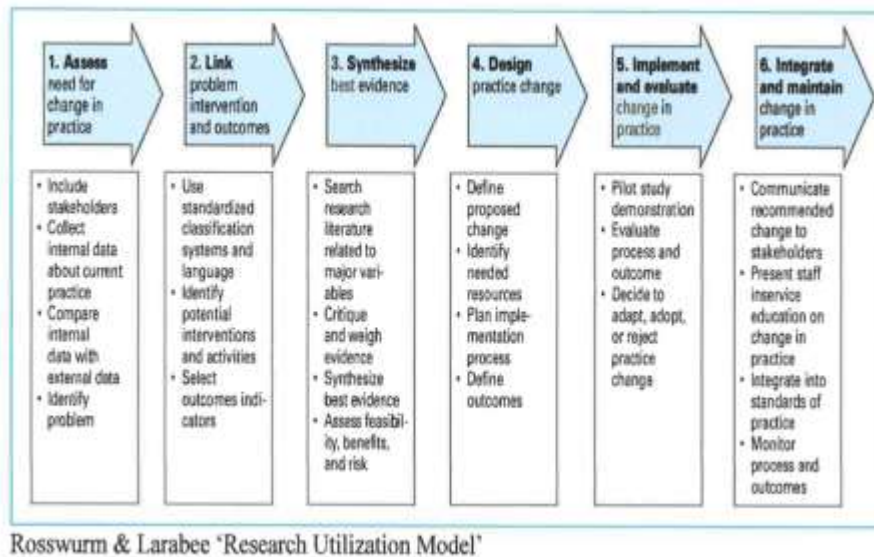
participation was optional and voluntary with the freedom to decline and or drop out at any time. Alpha-numeric identifiers were assigned to each participant to protect their identity and form a connection to the information obtained during the inquiry. The benefits, inconveniences, and risks of the intervention were discussed with the individuals during the entry phase and were reviewed every time they had questions, ensuring the ethical principle of justice (Bonnell & Smith, 2018). This was deemed important to promote the physical, emotional, and mental well-being of every participant.

Diversity Consideration

The cultural diversity of the city defines the cultural diversity of the clinic. Ninety-seven percent of the clinic population is Hispanic Americans within the ages of 9 to 100 years old. Forty-eight percent of the population is over 30, with an average age of the clinic's population 32.9 years. According to the World Population Review (n.d.), the El Paso population in 2022 was estimated to be a population of 678,815, with 80.07% of the residents being Hispanic/Latino; 3.63% Black or African American; 1.44% Asian; 0.16% Native Hawaiian and other Pacific Islander; 0.57% American Indian and Alaska Native; 2.73% Two or More Races; and some 11.40% Other Race. The diversity of the clinic population is important in the design of the quality improvement project of the clinic. It considers the socio-cultural beliefs and practices of the individual and the community as well as all available resources. This is imperative to achieve the success of the QI project and subsequently the desired health outcomes of the patient population.

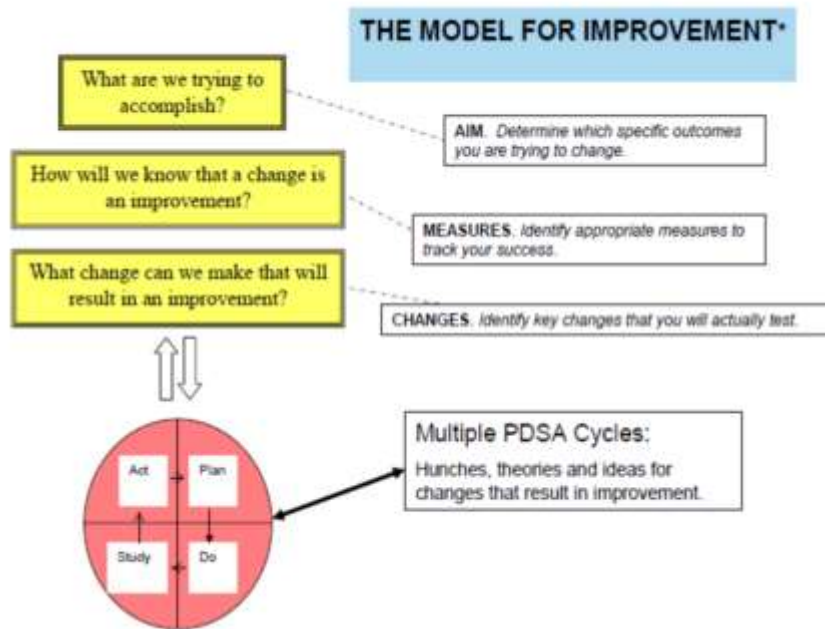
Translational Framework

To evaluate and translate the health behavior in the QI project, this author utilized the Research Utilization Model (RUM) introduced by Rosswurm and Larabee in 1999. This translational framework is an evidence-based theoretical and research framework that uses standardized language to guide proper understanding, interpretation, and use of evidence-based research. To support the process of intentional decision making, it uses the six stages of change starting with a critical assessment of the need for change. It explored stakeholders needs, compared internal and external data, then assessed the link between the problem and solution closely before embarking on the design of the method for behavior change of the clinic practice and the patients. After exploring all evidence-based materials obtained from various sources, a training in motivational interviewing was obtained, and a face-to-face individualized session was implemented for each volunteering patient. Each stage of change describes an individual's present intention and willingness to progress towards a health-related behavior or goal (Prochaska & DiClemente, 1983; Romain et al., 2018). The change behavior of each individual goes through phases over time, utilizing the six stages of change, which are cyclical and evolve until regression is preventable.

Figure 3

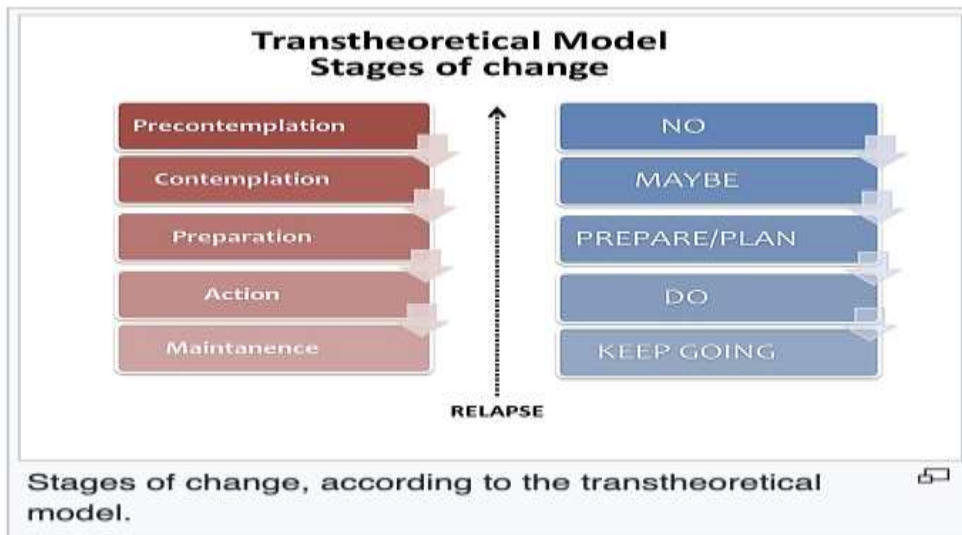
Evidence-Based Practice Model

To promote careful decision making and decrease impulsivity, which may result in regression, the model for improvement (MFI) was the theoretical framework adopted for this QI project. This model provides a platform for developing, testing, and careful implementing, which results in improvement. Also known as the Plan-Do-Study-Act (PDSA) method, this evidence-based practice model allowed for the flexibility to carefully think through the quality improvement plan and measure the changes while allowing for further changes as necessary. This model allowed for the author to obtain baseline biometric using clinic devices and to compare with biometrics from the patients' devices. It also allowed for patients who missed days of activities and/or documentation to get back into participating in the QI project without falling out completely.

Figure 4

Organizational Change Model

The transtheoretical model (TTM) of health behavior change was found beneficial in exploring the impact of motivational interviewing on the healthcare participation and lifestyle modification of Hispanic adult patients with the diagnosis of hypertension, Diabetes mellitus type 2, and obesity. The model explains and focuses on the process of autonomous decision making and intentional change. It incorporates elements from multiple psychotherapy and behavioral change theories and assumes that individuals change behaviors through a process and not rapidly (Peterson & Bredow, 2017). This QI project aims to provide additional support with the benefit of using motivational interviewing thus providing a specific framework for further research and interventions in Hispanic and other patients diagnosed with obesity, hypertension, and type 2 DM in this primary care clinic.

Figure 5

Project Design and Methods

The institutional review board (IRB) utilized was the university of Texas at El Paso (UTEP) IRB. This project did not include research on human subjects, and IRB viewed the project as a quality improvement project. A letter of project approval for conducting the project at the site was obtained from the clinic director. The project was designed to increase the knowledge of the influence MI has on lifestyle changes in patients diagnosed with overweight or obesity, hypertension, diabetes type 2 who are struggling to gain control of their healthcare to improve the health of the patients at the clinic. The individuals were identified through voluntary convenience sampling of a 10-days reflective practice with either or all the three afore mentioned diagnosis. They could choose to participate or continue to receive the standard care. The QI project was designed to utilize MI in providing support as well as the traditional standard of care and patient education. Each participant received a 30-minute one-on-one MI session on the first visit and 20-minute follow-up MI sessions each for 5 weeks. During this time, patients discussed

their desires, abilities, limitations, the reasons, and their healthcare needs were addressed. The providers, listened, learned, and motivated the patients on their journey to lifestyle changes. Goals were developed and supported while offering resources that can be beneficial to promote and maintain the change.

Analysis of the Intervention

MI was provided to patients in the QI project group by a trained and qualified professional who acted as the interviewer. The intervention plan was formulated by the interviewer and generally comprised two steps. First, the patients were assisted in strengthening their internal motive for behavior changes. Second, the patients were assisted in consolidating their commitment to and carrying out the plan for these behavior changes. This was done from an advantaged position drawing from previous knowledge and experience of patient self-care management and thus was able to compare the two interventions styles to ascertain which one was more beneficial for the patients.

Measured Treatment Outcomes

The variables of weight, FBG, and BP were assessed at baseline and at the completion of the intervention and patients' diaries were checked during the weekly visit. Patients' measurement logs were reviewed by the interviewer's documented accordingly. Treatment adherence focused on behavioral measures of adherence monitored throughout the 6-week program. This included attendance at individual meetings, logs turned in, revealing blood glucose, blood pressure and weight measurements, and exercise frequency with distance covered.

RESULTS

Findings, Outcomes, and Interpretations

Of the 54 patients on file at the time of this project as shown in Table 1, 20 of them were Hispanic and were recruited for the project. Of the 20 participants, 65% (13) were males, age range 18-65 years old with mean (\pm SD) as 37.2 ± 12.0 years old; while 35% (7) were females, age range 19-50 with mean (\pm SD) as $36\pm (12.0)$ years old. (Table 2). Ten of the patients, 7 males and 3 females, accounting for 50% of total improved in the three variables—i.e., better BP, FBG, and weight control. Six of them, 3 males and 3 females, accounting for 30% of total had better BP and FBG control only, two participants, both male patients account for 10% of total patients studied, improved in FBG and weight control only while the last two patients account for 10% of total patients, one male and one female dropped out by the third week. This shows a predominant compliance among male patients in the age range of 35-55 years old and females in the age range, 25-50 years old. The weekly logs of the three groups of patients have also been included as Tables 4, 5, and 6.

Motivational interviewing has proven to be an effective strategy for improving weight loss, BP levels and increased adherence levels in individuals with Type 2 DM, thereby reducing complications and overall mortality and morbidity among adult Hispanic population

Table 1*Racial Distribution in the Outpatient Clinic During Project Period*

| Race/ Ethnicity | Male | Female | Total |
|------------------------|------------------|------------------|------------------|
| | No (%) | No (%) | No (%) |
| White (Non-Hispanic) | 7 (13.0) | 3 (5.6) | 10 (18.5) |
| Hispanic/Latino | 13 (24.1) | 7 (13.0) | 20 (37.1) |
| Black/African American | 4 (7.4) | 2 (3.7) | 6 (11.1) |
| Native American/Indian | 5 (9.3) | 1 (1.9) | 6 (11.1) |
| Asian | 5 (9.3) | 2 (3.7) | 7 (13.0) |
| Multiracial | 4 (7.4) | 1 (1.9) | 5 (9.3) |
| TOTAL | 38 (70.5) | 16 (29.8) | 54 (≈100) |

Table 2*Demographic Characteristics Among Hispanic population*

| | Male | Female | Total |
|-------------------------|--------------|---------------|--------------|
| Sex distribution No (%) | 13.0 (65.0) | 7.0(35.0) | 20 (100) |
| Age range (Years) | 18 – 65 | 19 – 50 | 18 – 65 |
| Mean (SD) | 37.2 (±12.0) | 34.0 (±9.2) | 36.0 (±11.0) |

- ✓ 10 patients (50%) complied with the 3 variables (BP, FBG, Weight)
- x 6 patients (30%) complied with 2 variables (BP, FBG)
- 2 patients (10%) complied with 2 variables (FBG, Weight)

- 2 patients (10%) dropped out

Improvement seen mostly among male patients in the age range of 35-55 years-old and females in the age range, 25-50 years old.

Table 3

| Patient | Age | Sex | Variables | | |
|---------|-----|-----|------------------------|-----------------------|---------------|
| | | | Blood pressure (mm/Hg) | Blood glucose (mg/dl) | Weight (lbs.) |
| 1 | 35 | M | ○ | ○ | ○ |
| 2 | 19 | F | x | x | |
| 3 | 35 | M | ✓ | ✓ | ✓ |
| 4 | 35 | M | ✓ | ✓ | ✓ |
| 5 | 33 | F | x | x | |
| 6 | 36 | M | ✓ | ✓ | ✓ |
| 7 | 25 | F | ✓ | ✓ | ✓ |
| 8 | 33 | F | ✓ | ✓ | ✓ |
| 9 | 18 | M | | ● | ● |
| 10 | 38 | F | x | x | |
| 11 | 24 | M | | ● | ● |
| 12 | 38 | F | ○ | ○ | ○ |
| 13 | 50 | F | ✓ | ✓ | ✓ |
| 14 | 28 | M | x | x | |
| 15 | 36 | M | ✓ | ✓ | ✓ |
| 16 | 30 | M | x | x | |
| 17 | 42 | M | ✓ | ✓ | ✓ |
| 18 | 45 | M | ✓ | ✓ | ✓ |
| 19 | 65 | M | x | x | |
| 20 | 55 | M | ✓ | ✓ | ✓ |

Table 4

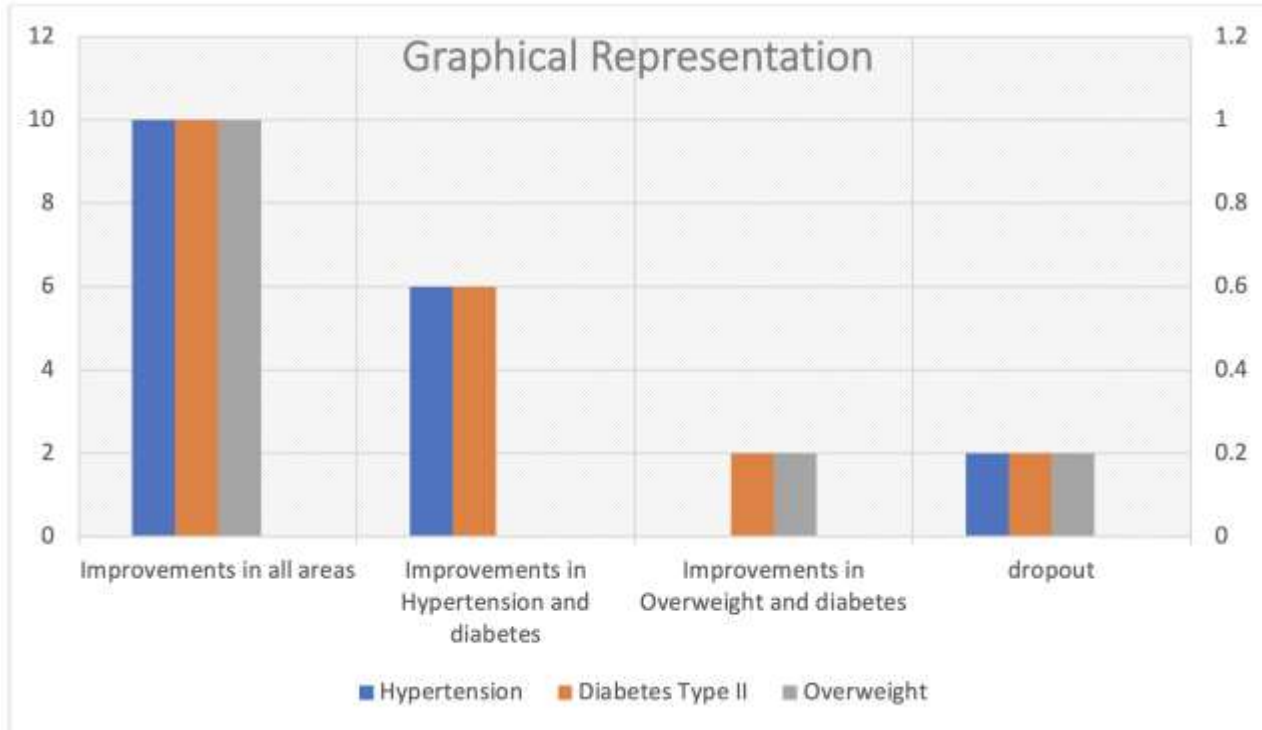


Table 5: (One-week full entry)

Week #1 Entry: 2/11 – 2/18/22 Home biometrics: Weight 308lbs, BP:162/96, FBG:280mg/dl
Clinic biometrics: Weight: 305lbs, BP:158/92, FBG: 267mg/dl
Week #6 Exit: 3/18 – 3/24/22 Home biometrics: Weight:294lbs, BP: 125/75, FBG:190mg/dl
Clinic biometrics: Weight: 293lbs, BP:126/77, FBG:188mg/dl

Weekly Patient Logbook

Identification #: BMG004

| | | Weight | Blood Pressure | | Blood Glucose | | Daily Steps | | Other |
|----------------------|---|--------|----------------|--------|---------------|-----|-------------|-------|-----------|
| | | | AM | PM | AM | PM | Steps | Miles | |
| Fri. 2/11 | Comments: | 308 | 162/96 | 142/82 | 280 | 305 | 6,754.1 | 3.2 | +Dance |
| | Clinic information | 305 | 158/92 | | 267 | | | | |
| Sat. 2/12 | Comments: | 305 | 154/90 | 147/89 | 277 | 311 | 7,453 | 3.6 | |
| Sun. 2/13 | Comments: | 304 | 151/89 | 150/90 | 265 | 296 | 8,341 | 3.9 | +Dance |
| Mon. 2/14 | Comments: | 302 | 146/95 | 143/91 | 247 | 286 | 9,341 | 4.4 | + Sit ups |
| Tue. 2/15 | Comments: | 301 | 146/91 | 130/87 | 267 | 231 | 14,741 | 7.02 | +Dance |
| Wed. 2/16 | Comments: Walked too far yesterday and danced for 1hr, had headache due to low glucose. | 301 | 132/87 | 129/84 | 212 | 244 | 11,641 | 5.5 | |
| Thur. 2/17 | Comments: Increased water intake and cutting out carbs and carbonated drinks | 299 | 127/86 | 129/87 | 231 | 247 | 12,841 | 6.1 | +Dance |

General goal post MI session:

Weight loss: >5lb Patient desires 10 - 20lbs weight loss in 6 weeks
Blood glucose: Fasting: 80mg/dL to 120mg/dL. **Post prandial:** 150 mg/dL to 180 mg/dL.
Blood Pressure: <= 130/80
Daily Steps: 10,000 - 15,000

Disclaimer: All goals are individualized following the above targets.

Table 6:

Weekly Patient Logbook

Identification #: BMG004

Week #1 Entry: 2/11 – 2/18/22 Home biometrics: Weight 305lbs, BP:162/96, FBG:280mg/dl
 Clinic biometrics: Weight: 308lbs, BP:158/92, FBG:267mg/dl
 Week #6 Exit: 3/18 – 3/24/22 Home biometrics: Weight:294lbs, BP: 125/75, FBG:190mg/dl
 Clinic biometrics: Weight: 293lbs, BP:126/77, FBG:188mg/dl

| | Comments: | Weight | Blood Pressure | | Blood Glucose | | Daily Steps | | Other |
|---------------------|--|--------|----------------|--------|---------------|-----|-------------|-------|-----------|
| | | | AM | PM | AM | PM | Steps | Miles | |
| Fri. 2/18 | End of week #1 | 308 | 162/96 | 142/82 | 280 | 305 | 6,754.1 | 3.2 | +Dance |
| | | 305 | 158/92 | | 267 | | 8,025 | 3.8 | |
| Sat. 2/19 | | 307 | 143/90 | 154/89 | 277 | 311 | 7,392 | 3.5 | |
| Sun. 2/20 | Comments: Increased Losartan to 100mg daily | 304 | 132/86 | 132/89 | 265 | 301 | 7,814 | 3.9 | +Dance |
| Fri. 3/04 | End of week #3 | 302 | 129/85 | 133/81 | 240 | 276 | 9,082 | 4.3 | + Sit ups |
| Sat. 3/05 | | 301 | 127/79 | 130/87 | 240 | 276 | 14,784 | 7.0 | +Dance |
| Sun. 3/06 | Comments: Walked too far yesterday and danced for 1 hr, had headache due to low glucose. | 301 | 132/87 | 129/84 | 235 | 269 | 10,560 | 5.0 | |
| Fri. 3/25 | End of week #6 | 299 | 127/86 | 129/87 | 231 | 247 | | 6.3 | |

General goal post MI session:

Weight loss: >5lb. Patient desires 10 - 20lbs weight loss in 6 weeks

Blood glucose: Fasting: 80mg/dL to 120mg/dL. Post prandial: 150 mg/dL to 180 mg/dL. Desires FBG goal ≤ 200

Blood Pressure: ≤/≤ 130/80

Daily Steps: 10,000 - 15,000

Disclaimer: All goals are individualized following the above targets.

Table 7:

Weekly Patient Logbook

Identification #: BMG019

Week #1 Entry: 2/11 – 2/18/22 Home biometrics: Weight 285lbs, BP:149/88, FBG:267mg/dl
 Clinic biometrics: Weight: 282lbs, BP:145/88, FBG: 262mg/dl
Week #6 Exit: 3/18 – 3/24/22 Home biometrics: Weight:283lbs, BP: 127/75, FBG:185mg/dl
 Clinic biometrics: Weight:281lbs, BP:125/72, FBG:180mg/dl

| | Comments: | Weight | Blood Pressure | | Blood Glucose | | Daily Steps | | Other |
|------------------|--|--------|----------------|--------|---------------|-----|-------------|-------|-------|
| | | | AM | PM | AM | PM | Steps | Miles | |
| Fri. 2/18 | End of week 1 Amlodipine 10mg daily | 285 | 149/89 | 150/82 | 267 | 292 | 8,659 | 4.1 | |
| | | 282 | 145/87 | | 262 | | 8,659 | 4.1 | |
| Sat. 2/19 | | 285 | 143/90 | 146/86 | 265 | 289 | 9,504 | 4.5 | |
| Sun. 2/20 | | 287 | 140/89 | 141/83 | 259 | 290 | 10,349 | 4.7 | |
| Fri. 3/04 | End of week #3 | 282 | 135/86 | 138/79 | 233 | 278 | 12,460 | 5.9 | |
| Sat. 3/05 | Decreased carbohydrate intake | 301 | 131/86 | 138/87 | 231 | 229 | 12,460 | 5.9 | |
| Sun. 3/06 | | 301 | 132/87 | 129/84 | 221 | 266 | 13,728 | 6.5 | |
| Fri. 3/25 | End of Week 6 | 299 | 128/86 | 132/87 | 215 | 247 | 13,939 | 6.6 | |

General goal post MI session:

Weight loss: >5lb. Patient desires 10lbs weight loss in 6 weeks
Blood glucose: Fasting: 80mg/dL to 120 mg/dL. Post prandial: 150 mg/dL to 180 mg/dL. Desires FBG goal ≤ 200
Blood Pressure: <= 130/80
Daily Steps: 10,000 - 15,000

Disclaimer: All goals are individualized following the above targets.

Table 8:

Week #1 Entry: 2/11 – 2/18/22 Home biometrics: Weight 290lbs, BP:158/96, FBG:301mg/dl
Clinic biometrics: Weight: 292lbs, BP:155/96, FBG:298mg/dl
Week #6 Exit: 3/18 – 3/24/22 Home biometrics: Weight:277lbs, BP: 135/87, FBG:194mg/dl
Clinic biometrics: Weight:270lbs, BP:134/72, FBG:191mg/dl

Weekly Patient Logbook

Identification #: BMG007

| | | Weight | Blood Pressure | | Blood Glucose | | Daily Steps | | Other |
|---------------------|----------------------------|--------|----------------|--------|---------------|-----|-------------|-------|-------|
| | | | AM | PM | AM | PM | Steps | Miles | |
| Fri. 2/18 | Comments: End of week 1 | 290 | 158/96 | 160/88 | 301 | 343 | 10,982 | 5.2 | |
| | | 292 | 155/87 | | 298 | | 10,982 | 5.2 | |
| Sat. 2/19 | Comments: | 291 | 150/88 | 145/88 | 295 | 339 | 11,616 | 5.5 | |
| Sun. 2/20 | Comments: | 289 | 150/89 | 145/83 | 259 | 285 | 12,461 | 5.9 | |
| Fri. 3/04 | Comments: End of week #3 | 282 | 135/86 | 138/79 | 233 | 278 | 10,137 | 4.8 | |
| Sat. 3/05 | Comments: | 279 | 133/86 | 135/87 | 221 | 266 | 13,305 | 6.3 | |
| Sun. 3/06 | Comments: | 301 | 132/87 | 129/84 | 221 | 266 | 12,038 | 5.7 | |
| Fri. 3/25 | Comments: End of Week 6 | 299 | 128/86 | 132/87 | 215 | 247 | 12,460 | 5.9 | |

General goal post MI session:

Weight loss: >5lb. Patient desires 20lbs weight loss in 6 weeks
Blood glucose: Fasting: 80mg/dL to 120 mg/dL. Post prandial: 150 mg/dL to 180 mg/dL Desires FBG goal ≤ 150
Blood Pressure: <= 130/80
Daily Steps: 10,000 - 15,000

Disclaimer: All goals are individualized following the above targets.

Discussion

Summary

The effect of the burden of non-communicable diseases (NCDs) in the United States cannot be overstated. Obesity, hypertension, and type 2 diabetes mellitus (type 2 DM) are NCDs that have continued to plague the healthcare system and the economy of the United States. Studies show a total loss of USD \$94.9 trillion (in constant 2010 USD) due to all non-communicable diseases (NCDs) among which are obesity, hypertension, and type 2 DM (Bloom et al, 2011). This roughly corresponds to an annual tax rate of 10.8% on aggregate income. They pose serious public health problems to the nation. They are most common among African Americans and the Hispanic Americans. The projected macroeconomic burden for all NCDs in 2015–2050 in the United States is large at the aggregate and per capita levels as shown in Table 6 (Bloom et al., 2017.) A notable comparison is the 39% contribution that the treatment cost effect (total economic burden of treatment cost–induced savings reductions) makes to the total economic burden of NCDs that we find for the United States against 56%, 22%, and 38% in China, Japan, and South Korea. The United States has an exceptionally high share of health expenditures in terms of GDP, which in 2015 was as high as 17% compared with around 10% globally, 11% in Japan, 7.4% in South Korea and 5.3% in China (OECD, 2018; World Bank Database, 2018.)

Figure 6*Projected Disease Burden of NCDs in the U.S 2015-2050***Disease burden (100% of prevalence averted) due to all NCDs in the United States in 2015–2050 for different measures of economic performance.**

| | Total disease burden (trillions of 2010 USD) | % of 2015 GDP | Per capita loss (2010 USD) | % of total GDP in 2015–2050 |
|---|---|--------------------------|---------------------------------------|--|
| Estimates for 100% reduction of disease burden | 94.9 | 569% | 265,000 | 10.8% |

Interpretations

This project shows that motivational interviewing in a scientific setting effectively helps clients change their behavior and it outperforms traditional advice and the giving of pamphlets for education purpose. It shows significant effects of motivational interviewing at improving the blood pressure and blood sugar parameters and weight loss above the target value of ≥ 5 pounds. In particular, the magnitude of the decrease of the three variables achieved in 50% of participants overall is of clinical relevance and implies that motivational interviewing is highly effective and therefore can and should be used in place of the traditional/conventional approach. However, it should be reiterated that motivational interviewing is based on making the patients themselves aware of the potential for change in behavior, resulting in improved health parameters, which means that small changes may also be of interest if they mark the beginning of a changing process for the patient. The nature of changes in the patient is almost always related to both adherences to prescribed medication and to the type of changes the patient makes in their lifestyle. This project also debunks the impression that the effectiveness of motivational interviewing depends upon the interviewer's profession. There are studies to show that the effect

was not related to the interviewer's educational background as medical doctor, nurse, or psychologist. (Dan Song et al., 2014.) Overall, this project has further confirmed the effectiveness of MI in improving quality of life through lifestyle modification via a collaborative effort between the practitioner and the patient.

Project Strengths

The strength of this study was created by the challenge of the lock downs, quarantines, and separation experienced during the COVID-19 pandemic. The clinic has been sparsely populated since the pandemic thus decreasing the pressure of time constraint and allowing longer visit time with patients. The providers are more comfortable spending time with patients. This pandemic experience also provided an opportunity for telephonic and telehealth to be considered alternative means of delivering the motivational interviewing intervention. Both alternative means to the traditional face to face motivational interviewing intervention were safe, convenient, time saving, cost efficient, and viewed as the preferred methods for some participants.

Project Limitation

This project partly reveals that a follow-up period longer than 3 months increases the risk of counseling failure, probably due to time constraints, patients' absenteeism, and or lack of intervention. Secondly, the use of indirect measures versus direct measures should also be scrutinized. This project showed that an effect of motivational interviewing can be demonstrated by indirect measures such as questionnaires but also by direct objective measures such as blood pressure, blood glucose, weight, and length of hospital stay. When it is possible to measure effect

by epidemiological as well as clinical direct measures and to capture effect by clinical endpoints, this should be done to ensure the reliability of the results.

Sustainability

Monthly telephone, telehealth, or face to face MI sessions with patients regarding blood pressure, and blood glucose measurement, weight loss and lifestyle modification is sustainable for the long term. This quality improvement project is realistic, feasible, efficient, and without additional cost. The technology implemented during the COVID-19 pandemic remains incorporated into this improvement project without additional technology, the face-to-face session remains on their clinic scheduled date and does not require additional personnel.

Conclusions

Motivational interviewing (MI) is an evidence-based counseling style aimed at helping individuals to explore and enhance motivation to change a range of behaviors. Its sine qua non includes a collaborative counselor-client relationship that emphasizes recognizing, eliciting, and elaborating on client-generated reasons for change; respecting autonomy; and supporting self-efficacy for change. With proper training and appropriate use of its tools, MI strategies can be readily incorporated into counseling encounters to promote action toward behavior changes such as improving medication adherence, increasing physical activity, and eating a healthier diet in patients with type 2 DM, obesity, and hypertension. MI-consistent behaviors exhibited by counselors increase the likelihood of increased change talk, concrete health behavior change, and improved health outcomes among individuals with type 2 diabetes, obesity, and hypertension.

Research has been mixed on the benefits of MI on these NCDs across the range of health behaviors and specific populations. At the same time, methods of its implementation and

delivery have also varied widely, with MI implemented by clinicians with differing professional backgrounds, different types and intensity of MI training, disparate MI doses provided, and a variety of practice settings. In the light of these, it is essential that more research should be conducted to establish the conditions under which MI may enhance behavior change efforts and improve outcomes for the individuals. Equally important would be a more definitive research to offer guidance as to whether there are subgroups or target behaviors for which MI may prove deleterious or whether inadequately training in MI could adversely affect health outcomes in the population studied.

Funding

This project was funded by Paseo Del Norte. The author also declares that there are no conflicts of interest.

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