Summer 8-11-2012

The Effect of Motivational Interviewing on Weight Loss on Obese Males

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The Effect of Motivational Interviewing on Weight Loss on Obese Males

Abstract

Background: Obesity is a serious health concern throughout the world. This systematic review aims to see if the use of motivational interviewing provides more successful results in weight loss in males than more traditional weight loss education.

Method: An exhaustive literature search was performed using MEDLINE, CINAHL and Web of Science databases using the keywords “motivational interviewing,” “obesity,” “weight loss,” “behavior change,” and “male”. From here, articles were chosen based on title and then abstracts were reviewed. The articles were then assessed using GRADE criteria.

Results: Only two articles that fit the topic and inclusion/exclusion criteria were included in this review. Groeneveld et al study showed a mean loss of 0.9kg (1.98 lbs) in the participants in the intervention group who received MI, versus a mean gain of 0.9kg (1.98 lbs) in the control group who did not receive MI. It is apparent in this study that motivational interviewing did have statistically significant outcomes on weight loss when compared to more traditional weight loss education, p < 0.05.

Rocha-Goldberg et al study showed that after the six week study, participants did show a mean decrease in weight of 2.9lbs. Although in this pilot study, there was no control group to measure the intervention group against.

Conclusion: Motivational interviewing does have statistically significant results on weight loss in adult males.

Degree Type
Capstone Project

Degree Name
Master of Science in Physician Assistant Studies

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Keywords
“Motivational Interviewing,” “Obesity,” “Weight Loss,” “Male”

Subject Categories
Medicine and Health Sciences

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The Effect of Motivational Interviewing on Weight Loss on Obese Males

Brandy Pestka

A Clinical Graduate Project Submitted to the Faculty of the
School of Physician Assistant Studies
Pacific University
Hillsboro, OR
For the Masters of Science Degree, August 11th, 2012

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Biography

Brandy Pestka is a native of Kauai, Hawaii. She majored in European History and focused on a premed curriculum at Saint Lawrence University in upstate New York. She also was a volunteer New York State EMT while in school. After completion of her undergraduate degree she worked as a SCRIBE in the Legacy Health System until she was accepted into Pacific University’s Physician Assistant Studies Program. She enjoys traveling abroad and reading in her spare time.
Abstract

**Background:** Obesity is a serious health concern throughout the world. This systematic review aims to see if the use of motivational interviewing provides more successful results in weight loss in males than more traditional weight loss education.

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**Keywords:** “Motivational Interviewing,” “Obesity,” “Weight Loss,” “Male”
Acknowledgements

To *my family*: This journey would not have been possible without your endless love and support. Thank you!
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TABLE I: CHARACTERISTICS OF REVIEWED LITERATURE

List of Abbreviations

MI..................................................................................................................MOTIVATIONAL INTERVIEWSING
CVD..............................................................................................................CARDIOVASCULAR DISEASE
EB..................................................................................................................ENERGY BALANCE SUBGROUP
SC..................................................................................................................SMOKING CESSATION SUBGROUP
BP..................................................................................................................BLOOD PRESSURE
KG..................................................................................................................KILOGRAMS
LBS...............................................................................................................POUNDS
RCT...............................................................................................................RANDOMIZED CONTROLLED TRIAL
RR.................................................................................................................RISK REDUCTION
RRR............................................................................................................RELATIVE RISK REDUCTION
ARR.............................................................................................................ABSOLUTE RISK REDUCTION
NNT.............................................................................................................NUMBER NEEDED TO TREAT
The Effect of Motivational Interviewing on Weight Loss on Obese Males

BACKGROUND

Obesity has become an increasingly serious health concern in the United States. “In the USA, more than 33% of adults are obese and 68% of adults are overweight with a body mass index (BMI) of 25.0 kg m\(^{-2}\) or higher.”\(^1\) Obesity has severe health consequences and significant effects on one’s quality of life. Overweight and obese adults are at greater risk of developing cardiovascular disease, type 2 diabetes, high blood pressure, osteoarthritis and some cancers.\(^1\) People who are overweight or obese also are at greater risk of suffering from psychosocial problems including functional limitations, physical disability and depression.\(^1\) Due to the severity of the health concerns that correspond to being overweight or obese, it is an important topic in health care. The need to develop effective and lasting treatment approaches for obesity is a priority in the medical field.

There are many causes of obesity; “however, due to the influence of individual and personal choice in its development, psychosocial strategies to assist individual behavior change are crucial to the clinical management of obesity.”\(^1\) One way to bring about behavior and lifestyle changes is through the use of Motivational Interviewing, or MI. Although MI was originally developed for use in substance abuse therapy, in recent years it has proven effective in several lifestyle intervention studies.\(^2\) “Motivational Interviewing focuses on exploring and making explicit the reasons someone might have to engage in a particular behavior or course of action. Strongly patient-centered interviewing techniques are used to contrast the pros and cons of change, reduce sources of resistance, and identify possible barriers to change.”\(^3\) Motivational interviewing is fundamentally different from more traditional weight loss education approaches in that motivation for change is elicited from
individuals, rather than imparted to them by a health care provider. In the case of more traditional weight loss education, health practitioners are more likely to tell a patient that they are overweight, and that they need to do something to rectify this. There are often no further conversations, and it is left up to the patient to motivate themselves.

There are several articles published to date that talk specifically about the use of MI in achieving weight loss in a general population, but very few that focus specifically on the affect that motivational interviewing has on men alone. Thus, this systematic review will focus on the effects of motivational interviewing on weight loss versus more traditional weight loss education methods in adult males.

**METHODS**

An exhaustive literature search was performed using MEDLINE, CINAHL and Web of Science databases using the keywords “motivational interviewing,” “obesity” and “male”. Initial results of the combination of these terms garnered a total of 41 articles of relevance. Limitations of the search results included English language, human subjects and exclusion of duplicate or irrelevant articles. Inclusion criteria included articles that specifically looked at the effects of motivational interviewing on weight loss in men. Many articles were excluded from this systematic review due to their inclusion of both men and women, where the researchers did not separate the final weight loss data into sexes. The articles were then assessed using the GRADE criteria.

**RESULTS**

41 articles resulted from the search strategy. Two studies were included in this systematic review; the first study was a randomized controlled trial, and the second was a pilot study that observed the effects of the intervention group only. The RTC had 517 men,
while the pilot study included 7 men. The RCT was conducted in the Netherlands, while the pilot study was conducted on Latino patients that lived in Durham, North Carolina. Refer to Table I: Characteristics of Reviewed Literature for a summary of the population, intervention, comparison and outcome of each study.

The first study reviewed was performed by Groeneveld et al\(^2\) and titled, *Sustained body weight reduction by an individual-based lifestyle intervention for workers in the construction industry at risk for cardiovascular disease: Results of a randomized controlled trial*. The main purpose of this study was to determine if motivational interviewing could help reduce the risk of cardiovascular disease. One of the ways the authors chose to measure the reduction in risk of cardiovascular disease was in weight loss of the study’s participants. In this trial,\(^2\) male workers in the construction industry in the Netherlands aged 18-65 with an elevated risk of CVD were invited to the study based on their most recent health screening. The participants of this study were randomized into intervention or control groups using Random Allocation Software. “After randomization, the research assistant notified each participant to which group he had been allocated, and did not reveal the group allocation to the investigator responsible for data analysis. By asking the participants not to mention their group status during the follow-up measurements, [they] intended to blind the doctors’ assistants who performed the measurements.”\(^2\)

From here, participants were split into two subgroups for this study based on a baseline questionnaire. These subgroups were a smoking cessation (SC) subgroup that dealt with the effect of MI on smoking cessation, and an energy balance (EB) subgroup that dealt primarily with the effects of MI on weight loss. Within these subgroups, the control group received usual care, “consisting of brief oral or written information from the occupational
physician about their CVD risk profile.” Each participant in the intervention group had three 45- to 60-min face to face and four 15- to 30-min telephone contacts with an occupational physician or occupational nurse, over a 6 month period of time. These practitioners applied client-centered counseling styles using MI techniques. Afterward, the most recent health screening was used as a baseline for the weight and BMI measurements, as well as other measurements of CVD including lipid panels, HbA1c levels and smoking status. The first and second follow-up measurements took place 6 and 12 months after enrollment.

The outcomes of the Groeneveld et al study, for both the EB and SC participants, showed that there was a benefit of weight loss in the intervention group 12 months after their initial health screening. There was a mean loss of 0.9kg (1.98 lbs) in the participants in the intervention group who received MI, versus a mean gain of 0.9kg (1.98 lbs) in the control group who did not receive MI. It is apparent in this study that motivational interviewing did have statistically significant outcomes on weight loss when compared to more traditional weight loss education, p < 0.05. This study showed that “motivational interviewing techniques … can result in sustained beneficial changes in body weight.”

The second study reviewed was performed by Rocha-Goldberg et al, and titled, Hypertension Improvement Project (HIP) Latino: results of a pilot study of lifestyle intervention for lowering blood pressure in Latino adults. This pilot study used a pretest-posttest design that included 10 adult females and 7 adult males, and was conducted over 6 weeks to investigate if culturally adapted behavior interventions, including the use of MI, could be used to influence decreases in systolic blood pressure, weight loss and increase in exercising in the Latino population in Durham, North Carolina. The mean age of the males in this study was 46.1 years old. The primary purpose of this initial pilot study was to
“assess feasibility, as determined by recruitment, retention, and attendance at intervention sessions.” Eligibility criteria for this study was overweight Hispanic/Latino adults, age 18 years or older, with Spanish as their primary language, and with pre-hypertension or hypertension defined as BP > 120/80 mmHg or taking anti-hypertensive medication. There were three primary recruitment methods for this study; first, healthcare providers identified patients that fell under the inclusion criteria and referred them to the study. Second, printed media was used throughout the Hispanic/Latino community advertising this trial; and third, direct contact was established with possible participants during events in the community. Once informed consent was obtained they were enrolled in the intervention. This pilot study did not include a control group; every participant that was eligible received the intervention. This study then separated the data into mean weight loss for men and women, respectively.

The intervention included six weeks of weekly group sessions that lasted 90-120 minutes. The weekly sessions started with recording attendance and weight loss measurements being taken. Throughout the sessions, motivational interviewing techniques were used to encourage participants to identify areas of their own daily life that needed attention in order to incorporate changes to their lifestyle. Participants were also encouraged to make their own personal goals and action plans each week. Every other week participants were given recipe demonstrations of healthy food they could prepare. On the alternate weeks, 20 minutes of moderate exercise was incorporated into the group meetings. Participants were also encouraged to maintain some level of physical activity outside of the group meetings as well.

After the six week study, male participants did show a mean decrease in weight of 2.9lbs. The baseline mean weight for the men participating in this trial was 201.6 lbs; at the
six week follow up the mean weight was 198.7 lbs. As there is no control group to compare the interventions outcomes against, it is difficult to say how much of a difference MI and culturally adapted lifestyle modifications had in this pilot study, although one can speculate that the weight loss achieved by the participants indicates that there is a possible connection.

DISCUSSION

The purpose of this systematic review was to evaluate the effects of motivational interviewing on weight loss compared to more traditional weight loss education. In the case of the Groeneveld et al, the RCT, there was a statistically significant weight reduction in the patients in the intervention group as compared to those in the control group. In the pilot study conducted by Rocha-Goldberg et al, the effects of the intervention were only “measured as within-subject changes rather than comparing effects to a control group.” Due to this study’s lack of a control group it is difficult to determine if MI was directly related to the participants weight loss, or if there were other influences responsible. See Table I: Characteristics of Reviewed Literature for a summary of the main findings in both of the studies that were appraised for this systematic review.

Study Limitations

While the study conducted by Groeneveld et al was a randomized control trial, there were still limitations to its design and presentation. The blinding that was conducted did not include patients, due to the fact that there was no way participants were not going to know what kind of intervention they were receiving, whether it was MI or more traditional education. There was also no way to assure concealment of each participants group to the practitioners. The article notes that they ask that participants not tell their practitioners what group they were randomized into, but there is no guarantee that the participants would keep
this information to themselves. Also, the data reported in this study only included mean values of weight loss in the intervention and control groups, making it impossible to calculate further data.

In the pilot study conducted by Rocha-Goldberg et al,⁴ there were several limitations to the study, including a short-term follow up of only 6 weeks, a small sample size of participants and no control group to use as a comparison against the intervention group’s weight loss values. Also, the fact that this study was conducted with both males and females, even though their mean weight loss values were kept separate, does raise some questions as to how the weight loss results would compare in a study comprised of solely males.

In order to improve these studies, researchers would want to attempt to eliminate as much bias and confounding as possible. An ideal study would blind participants as to which group they had been randomized into. This could be accomplished by providing the control group with a type of “fake” motivational interviewing, so that everyone was under the impression they were in the intervention group. Another possibility to improve these studies would be to extend the study length to ensure adequate data and follow up time, as well as only including males in this ideal study. It would also be beneficial for the future researchers to include more raw data in the articles so that further calculations can be made.

**Grading the Evidence**

To judge the validity of the two articles included in this review the Grading of Recommendations Assessment, Development and Evaluations (GRADE) tool⁵ developed by the GRADE Working Group was utilized to evaluate the studies included. The following is a definition of quality as state by the GRADE Working Group:
High quality – Further research is very unlikely to change our confidence in the estimate of effect, Moderate quality – Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate, Low quality – Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate, Very low quality – Any estimate of effect is very uncertain.

The RCT conducted by Groeneveld et al\(^2\) started with its grading as High Quality due to its randomized design, and was not downgraded as there was no serious risk of bias, inconsistencies, indirectness or imprecision noted when the article was critically appraised.

The pilot study conducted by Rocha-Goldberg et al,\(^4\) started with a grade of Low as it was considered an observational study. It was then downgraded to a grade of Very Low due to its risk of bias, inconsistencies, indirectness and imprecision, because of the lack of control group and the small sample size of the study. See Table I: Characteristics of Reviewed Literature to see the complete evidence profile for these two studies.

This results in a moderate grade and a weak recommendation for the use of motivational interviewing in weight loss in adult males. While there is a definite benefit in the use of MI in weight loss, it takes quite a bit of time to correctly facilitate motivation and results. While the benefit is clear, the cost of increased time to practice motivational interviewing many not be worth the benefit when one weighs the cost/benefit ratios for the use of MI in weight loss in males.

CONCLUSION
The use of motivational interviewing in weight loss in males has been found to be beneficial when one takes the time to facilitate its use. With a moderate quality grade of the evidence, clinicians can feel reassured that there is a connection between motivational interviewing and weight loss in adult males. While researchers can be encouraged that further time spent on this topic could add more information to this current recommendation. A moderate quality of evidence also suggests that there may be further evidence in the future that sheds more light on this topic.
REFERENCES


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<td>517 overweight men (BMI &gt;30), age 18-65</td>
<td>Client centered counseling style using motivational interviewing techniques</td>
<td>Traditional weight loss education, consisting of brief oral or written information from the physician</td>
<td>Intervention group experienced mean loss of 1.98lbs at 12 month follow-up. Control group experienced mean gain of 1.98lbs at 12 month follow-up.</td>
<td>MI provides statistically significant results on weight loss.</td>
<td>RCT</td>
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<td>Culturally specific lifestyle modification using motivational interviewing</td>
<td>None</td>
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<td>VERY LOW</td>
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*Only the weight loss information for the male participants were included in this table.
1 Study failed to include control group
2 Low Sample Size