# OVERWEIGHT AND OBESITY KNOWLEDGE ASSESSMENT OF ALASKAN NURSE PRACTITIONERS

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Abstract

The purpose of this project was to describe Alaskan Nurse Practitioners (NPs) current practice and beliefs regarding overweight and obesity, and to identify barriers that may prevent evidence based management. A descriptive study was conducted using a convenience sample of 116 Alaskan NPs who completed The Treatment of Obesity Questionnaire. Findings revealed which factors NPs considered to determine risk status; their current management strategies; barriers to treatment; and, their beliefs regarding the etiology of obesity. An open-ended question revealed other treatment strategies, barriers, and beliefs regarding the treatment of overweight and obese patients.

## Introduction

Objectives of Healthy People 2020 are to improve nutritional status and reduce chronic disease through maintenance of a healthy body weight and consumption of healthful foods. With the goal of preventing weight gain, the initiative also recommends an increase to the number of primary care providers (PCPs) who regularly assess body mass index (BMI) in their patients; and, an increase in counseling and education regarding nutrition and healthy weight status (United States Department of Health and Human Services, 2014).

Obesity contributes to a number of chronic diseases that negatively affect individuals, communities, populations, and health service costs (Flodgren et al., 2010). Cardiovascular disease, hypertension, diabetes, gall bladder disease, hypercholesterolemia, degenerative joint disease, asthma, obstructive sleep apnea, depression and several types of cancer are among diseases caused or complicated by obesity (Miller, Alpert, & Cross, 2007; National Cancer Institute, 2004).

Primary care providers (PCPs) have an important role in promoting healthy behaviors;

identifying and treating obesity related co-morbidities; and counseling and educating patients regarding safe and effective weight loss and weight maintenance (Lyznicki, Young, Riggs, & Davis, 2001). Despite the consequences of overweight and obesity, PCPs often fail to collaborate with their patients to treat these conditions due to various barriers that have been identified in the literature (Ko et al., 2006; Lourerio & Nayga, 2005). Nurse practitioners (NPs) as PCPs are trained to promote healthy behaviors, thus they are suited to educate patients regarding lifestyle changes that promote nutritious food choices, weight loss and healthy weight maintenance (Reavis, 2004).

**Background and Significance**

The World Health Organization (WHO) (2014) confirmed that more than 1.4 billion adults ages 20 and over were overweight with 200 million men and close to 300 million women considered obese. The United States leads the world in the number of overweight and obese persons per capita. This epidemic is prevalent in many races and includes men and women of all ages, although there is a disproportionate amount of obesity among those of lower socioeconomic status (Go et al., 2013). Co-morbidities associated with overweight and obesity complicate treatment and are costly to individuals, families, employers, and the healthcare system as a whole (Flodgren et al., 2010).

PCPs, including NPs, have the potential to make a positive impact on their patients who are overweight and obese. Treatment of overweight and obesity by PCPs/NPs has been shown to improve outcomes, however, despite the associated complications, healthcare expenses, and decreased quality of life, PCPs/NPs often do not always adequately address the issue of overweight and obesity with their patients (Ko et al., 2006; Lourerio & Nayga, 2005). PCPs/NPs have the knowledge to educate their patients about the benefits of a healthier lifestyle as well as

the risks associated with increased body weight, however, barriers may prohibit an evidence-based treatment approach (Ko et al., 2006; Lourerio & Nayga, 2005).

The National Organization of Nurse Practitioner Faculties (NONPF) (2012) indicates that education of NPs includes competency in the practice of disease prevention and the promotion of wellness. NPs aim to improve patient health by working to change unhealthy behaviors (Summers, 2002). They are competent to analyze clinical guidelines and adapt them for individualized treatment practices that are acceptable to the patient. NPs provide "health care services to include health promotion, disease prevention, health protection, anticipatory guidance, counseling, disease management, palliative and end of life care" (NONPF, 2012, p.4).

There is an increasingly important need for NPs to provide high quality care to diverse populations in many settings in this time of health care reform (Stanik-Hutt et al., 2013). Based on the current knowledge of overweight and obesity as epidemics and the associated risk factors, NPs have opportunities to educate and treat patients regarding these conditions and play a key role in the future of health care as they are at the forefront of providing preventative care and effective treatment to the American public (American Nurses Association, 2014). Evidence-based practice guidelines in the areas of diet therapy, physical activity, behavioral therapy, pharmacotherapy, and surgery provide a basis for NPs to impact or potentially reduce the incidence of overweight and obesity.

**Prevalence Alaska**

Among Alaskan adults, the 2012 obesity rate was 26.7% and Alaska ranks 36th of the fifty states in adult obesity. In 1995, the obesity rate in Alaska was 15.7%, and has steadily increased. In 2011 Alaska was reported to have an obesity rate of 27.4%. Among genders, the rate is split about equally,

men 25.8% and women 25.5%. Obesity by age group shows: those from 18-25, 10.2%; 26-44, 25.4%; 45-64, 32.4%; and those 65+, 26.8% (Robert Wood Johnson Foundation [RWJF], 2012).

**Purpose**

The purpose of this project was to describe Alaskan NPs' current practices regarding the management and treatment of overweight and obese patients and to identify barriers that may prevent or reduce the use of evidence based guidelines on the management of overweight and obese patients.

The project aimed to answer the following questions:

1. What are Alaskan NPs doing to advise and treat overweight and obese patients?
2. What beliefs are held by Alaskan NPs regarding the assessment and management of overweight and obese patients?
3. What are the barriers that may prevent Alaskan NPs from effectively managing and treating overweight and obese patients?

**Guidelines for Treatment of Overweight and Obesity**

A combination of weight loss strategies has been the best approach to effective weight management. Like most chronic conditions, the PCP should anticipate long-term therapy with a combination of diet, physical activity and behavior modification for the best outcomes. Weight loss plans between PCPs and patients begin with a discussion of the amount of weight loss that needs to be achieved, the length of time to goal achievement, and the risks and benefits of any intervention (Veterans Administration/Department of Defense [VA/DoD], 2014). Individualized overweight/obesity treatment goals with careful consideration to the needs and values of each patient's baseline and risk factors should be considered in planning treatment and management strategies (VA/DoD, 2014). Short-term weight loss may be misleading and many individuals

tend to regain weight and often regain more than they originally lost. The degree of weight related morbidity and the potential to reverse or lessen those morbidities should drive the weight loss goals (VA/DoD, 2014). According to VA/DoD's clinical practice guideline for the screening and treatment of overweight and obesity (See Table 1):

**Table 1.** *Veterans Administration/Department of Defense Guidelines 2014*

| | |
|---|---|
| Diet Therapy | • Offer any of several diets that produce caloric deficit and have evidence for weight loss efficacy and safety<br>• Offer very low calorie diets for weight loss, but only for short durations (12-16 weeks) and under close medical supervision<br>• Offer meal replacements to achieved low-calorie or very low-calorie diets |
| Physical Activity | • Increased physical activity to help create a negative energy balance<br>• Help patient establish a safe exercise regimen that can be combined to produce a caloric deficit leading to weight loss<br>• Offer physical activity options that include short intermittent bursts (at least 10 minutes) as well as longer continuous exercise<br>• Offer, as part of a comprehensive lifestyle intervention, moderate-intensity physical activity performed for at least 150 minutes/week to result in weight loss<br>• Offer, as part of comprehensive lifestyle intervention, moderate-intensity physical activity performed for 200-300 minutes per week to prevent weight regain after initial weight loss |
| Behavioral Therapy | • Offer comprehensive lifestyle interventions for weight loss, in either individual or group setting<br>• Offer telephone-based comprehensive lifestyle intervention for weight loss, either as an alternative for weight loss, as an alternate or adjunct to face-to-face intervention |
| Pharmaco-therapy | • Offer pharmacotherapy with the combination phentermine/topiramate extended release to patients with a BMI $\geq 30 kg/m^2$ and to those with a BMI $\geq 27 kg/m^2$ who also have obesity-associated conditions, as an adjunct to comprehensive lifestyle intervention, when lifestyle interventions alone do not produce the desired weight loss<br>• Offer pharmacotherapy with orlistat or lorcaserin to patients with BMI $\geq 30 kg/m^2$ and to those with a BMI $\geq 27 kg/m^2$ who also have obesity-associated conditions, as an adjunct to comprehensive lifestyle intervention, when lifestyle interventions alone do no produce the desired weight loss<br>• Offer pharmacotherapy (i.e., orlistat, lorcaserin, combination phentermine/topiramate extended-release) as an adjunct to comprehensive lifestyle intervention, to patients with obesity-associated conditions, for its beneficial effects on type 2 diabetes, hypertension, and/or dyslipidemia<br>• Offer patients who achieve their weight loss goal a program that includes continued use of medication for weight maintenance |
| Surgical Recommenda-tions | • Offer bariatric surgery, as an adjunct to comprehensive lifestyle intervention, for weight loss in adult patients with a body mass index (BMI) > 40 kg/m2 or those with BMI 35.0-39.9 kg/m2, with one or more obesity-associated conditions<br>• Offer bariatric surgery, as an adjunct to comprehensive lifestyle intervention, to improve some obesity-associated conditions in adult patients with a body mass index (BMI) > 35.0 kg/m2<br>• Current evidence is insufficient to assess the balance of benefits and harms of offering bariatric surgery as an adjunct to comprehensive lifestyle intervention, for weight loss or to improve some obesity-associated conditions, to patients over age 65 or with a body mass index (BMI) < 35 kg/m2<br>• Engage all patients who are candidates for bariatric surgery in a general discussion of the benefits and potential risks. If more detailed information is requested by the patient to assist in the decision-making process, a consultation with a bariatric surgical team should occur<br>• Provide lifelong follow-up after bariatric surgery to monitor adverse effects and complications, dietary restrictions, adherence to weight management behaviors and psychological health |

(VHA/DoD, 2014, pp. 17-19).

## Role of Primary Care Providers

Though the US leads the world in obesity rates, studies indicate that PCPs are not always assessing, educating, and promoting behavior changes in their overweight and obese patients (Hauberman & Boweman, 2001; Ko et al., 2006). Several studies have shown overweight and

obese people only receive weight loss advice from their PCPs approximately 40% of the time. PCPs have the ability to make a difference in reducing obesity and associated co-morbidities, and bring awareness to the populations they serve (Ko et al., 2006; Lourerio & Nayga, 2005). Rose, et al. (2013) performed a meta-analysis of twelve studies that evaluated the effectiveness of PCPs advice in weight loss. All twelve of those studies found some positive associations between advice from the provider and actual weight loss by the patient. The meta-analysis included a total of 207,226 individuals, all took place in the United States were published between 1999 and 2011. With the exception of one study, all showed a positive association between PCP advice and patient participation in weight loss efforts. Overall, the random effects mean weighted effect size for weight loss efforts for all of the studies was "OR = 3.85 (95% CI 2.71, 5.49; $Z = 7.47$, $P < 0.01$), indicating a statistically significant impact of weight loss advise on efforts at weight loss".

Using the data from the 2001-2003 Behavioral Risk Factor Surveillance System (BRFSS), Loureiro and Nayga (2005) looked at results of physician's advice on the effect of persuading people to lose weight. Their sample consisted of 64,388 respondents categorized into overweight and obese groups and used self-reported BMI from the survey. When asked about weight reduction strategies 40% of the overweight group and 46% of the obese group reported eating less fat and limiting calories to lose weight. Sixty-nine percent of the overweight and 64% of the obese reported increased physical activity to attempt weight loss. When asked about receiving physician's advice to lose weight, only 15.2% of the overweight sample reported they had received advice from their physicians; and 40.3% of the obese group received advice from their physician to lose weight.

In another attempt to investigate weight loss advice that obese adults receive from PCPs, data was collected from the National Physical Activity and Weight Loss Survey (NPAWLS), from September – December 2002. The survey used random-digit-dial to reach households with telephones in a manner similar to the BRFSS survey. To achieve racial and ethnic target percentages, they used a replicate design that mixed telephone numbers from three independent samples ($N$ = 11,211) Their findings among obese adults who had visited a PCP within the last year, estimated that 39% had been advised to lose weight. Women, adults aged 40-49, and respondents from the Northeast and South were more likely to receive advice to lose weight from the PCP. Also, those who reported co-morbidities or poor health, as well as extremely obese individuals received advice to lose weight.

In 2004 Garvis performed a descriptive study that looked at NPs assessment and management of obesity in Idaho. She found the majority of respondents practiced in family medicine (69.1%) or women's health (13.4%) and typically saw 11-20 patients per day. The majority of the obese patients were between the ages of 31-50 years with one third classified as moderately obese (33.0%); 15.9% were very obese, and 7.8% morbidly obese. The majority of those surveyed (81.5%) believed that obesity is strongly influenced by genetics; and just over one half of the sample (50.4%) believed that obesity was a reflection of lack of motivation and discipline. In the survey there was an assessment of 15 risk factors that NPs considered when assessing their overweight and obese patients. The findings showed that NPs used 'presence of Type 2 diabetes' ($M$ = 3.14, on a scale of 0 to 5); 'level of physical activity' ($M$ = 3.14); 'blood glucose levels' ($M$ = 3.08); and 'presence of coronary heart disease' ($M$ = 3.08) the most frequently when assessing risk. 'Measurement of waist circumference' and 'waist to hip ratio' were rarely used or not used at all ($M$ = 1.34 and 1.09, respectively). BMI was the most widely

used level of classification of obesity, 57.2% reported BMI was used was used more than twice the extent of other classification tools such as waist circumference, levels of body water, or body potassium. Of the diet options NPs offered to their patients, 56.9% suggested participation in a commercial program such as Weight Watchers or Take off Pounds Sensibly (TOPS). These two options were the most recommended. Extreme diets that limit a certain food groups including Atkin's, low carbohydrate or high protein diets were rarely recommended. Medical weight loss programs such as Nutrisystems or Optifast were also rarely recommended, which was consistent with guidelines. Nearly the entire sample (95.4%) reported that they recommended the incorporation of physical activity into their weight loss plans (Garvis, 2004).

**Barriers to Treatment**

Despite co-morbidities and health care expenditures associated with obesity, public health initiatives that focus on overweight and obesity have been slow to be adopted (Withrow, & Alter, 2011). Some PCPs believe that treatments for overweight and obesity are futile and labor intensive while others may lack the specific skills knowledge to manage overweight and obesity among their patients (Loureiro & Nayga, 2005). Several barriers to the assessment and management of obesity have been identified.

In a cross-sectional, self-administered survey of patients and providers of a Veteran's Administration Primary Care Clinic, patients were surveyed over a one-week period during their regularly scheduled visits ($N = 435$). The PCPs, included medical doctors (MDs), physician's assistants (PAs) and NPs who were given surveys during a regularly scheduled staff meeting ($N = 48$, 96% response rate). Results of their study found similarities and differences in the perceived barriers to treatment among patients and PCPs. Both patients and PCPs agreed that providers are not less friendly to overweight and obese patients; and also believed that patients

were not embarrassed to talk about their weight problems. The findings identified two areas where PCPs and patients disagreed: (1) PCPs were more likely than patients to believe that patients were not able to maintain a diet plan based on lack of self-control; and (2) PCPs also believed, more so than patients, that weight gain was due to the availability of fattening foods and lack of time for physical exercise. Patients reported that they were not as interested in the help of their PCP regarding management of their weight only because they believed it was an issue they should address on their own. In contrast providers reported a high level of interest in their willingness to help manage their patient's weight. Patients were also more likely to feel that PCPs blamed them for their weight problems. In dealing with the time to manage weight, PCPs felt there was not adequate time and patients felt there was enough time in a visit to provide weight loss advice. Despite research to the contrary, the study found that more than 40% of patients and PCPs believe that some people cannot lose weight no matter how little they eat. Medical conditions preventing weight loss was another topic where incorrect beliefs were shared by patients (70%) and PCPs (84%) alike who put more belief in the thought that many medical conditions actually prevent weight loss. Some medications and medical conditions may contribute to weight gain, however "research has shown that medical conditions causing obesity are either rare or account for only modest weight gain seen in those patients" (Bray, 2014; Ruelaz et al., 2007). The authors of this study recommend that PCPs make themselves aware of the beliefs held by their patients in order to improve weight management interventions. Limitations of this study were primarily due to the fact that the authors used an opportunistic sample rather than a random sample, however they did find that the sample was representative of the population served at that clinic as a whole. There were also no demographics associated with

race, so it is unknown if differences exist between ethnicities in this survey's results (Ruelaz et al., 2007).

Overweight and obesity are multifactorial illnesses with proven health consequences for patients. Clinical guidelines for the treatment of obesity provide effective treatment options to minimize the effects of overweight and obesity. The barriers that may prevent nurse practitioners from providing effective treatment include the time it takes to make changes, the lack of knowledge regarding effective treatment, and the social stigmas associated with being overweight. These factors may prevent successful outcomes.

## Methods

### Design

This study was performed using a quantitative descriptive design. An eleven question survey was used for data collection, 10 Likert scale questions and one open-ended question.

### Instrument

The survey (*appendix A*) adapted from Garvis' The Treatment of Obesity Questionnaire was used to collect data and general demographics (Garvis, 2004). The survey used for this project was reduced to 10 multi-answer Likert scale questions and one open ended question. Permission was granted for the use and modification of her survey for this project by personal communication (*appendix B*).

The survey was shortened to include only the items pertinent to answer research questions for this project. One question was added regarding a known barrier to the treatment of overweight and obesity, which was not addressed in the original survey. An open-ended question was added to the end of the survey to allow participants to add any information they felt was pertinent to the topic. Original modifications to the survey were made following

recommendation from committee members and University of Alaska School of Nursing faculty. The survey was pilot tested among ten NPs in the local area and resulted in minor changes to the language that did not affect the content.

The survey was mailed to 611 Alaskan Nurse Practitioners with Alaska addresses. Included in the mailing was an introduction letter that explained the survey and the implied consent. Also included was a self-addressed stamped envelope provided for the return of the survey. Data was collected over a three-week period resulting in 116 surveys included in the analysis. Those providers who did not consider themselves primary care providers were informed that they did not need to complete the survey and were thanked for their time.

### Rights and Protection of Human Subjects

Project data files and documents were only available to the principal investigator committee chair, and committee member. A cover letter explaining the project to potential respondents was sent (*appendix* C). The Institutional Review Board (IRB) at the University of Alaska Anchorage approved the project. There was no identifying information on the surveys.

## Results

### Analysis

Analysis of the data was performed using SPSS version 22 in order to determine the frequency of the responses to the Likert scale questions. All responses were scored from one to five. A response of one indicated that factor was ‘not at all’ used and a response of five indicated that factor was used ‘to a great extent’. Answers to the open-ended question were grouped into three categories: treatment strategies, beliefs about obesity, and barriers and summarized in a narrative format.

**Respondents**

There were 167 surveys returned, 116 of which satisfied the inclusion criteria yielding a response rate of 19%. The majority of respondents were female, (94%, *n* = 109), 5% were male (*n* = 6), and one respondent did not list a gender. When asked about specialty area of practice, 77.6% (*n* = 90) reported Family Nurse Practitioner as their specialty. Other specialties were identified as: Adult Nurse Practitioner, 6% (*n* = 7); Pediatric Nurse Practitioner, 3.3% (*n* = 4); Women's Health Nurse Practitioner, 13.8% (*n* = 16); and other, 2.6%, (*n* = 3). All but 3 of the inclusive respondents currently practice (97.4%, *n* = 113) and three were recently retired. Regarding location of practice those in urban locations represented the majority (57.8%, *n* = 67), 18.1% reported sub-urban (*n* = 21), 9.5% reported a rural location on the road system (*n*=11), 12.1% reported a rural location off the road system (*n* = 14), and one respondent was located on a military base.

**Risk Status**

Respondents were asked to what extent they use the following thirteen factors to assess the risk status of their overweight and obese patients: BMI and/or waist circumference; blood pressure/hypertension; serum triglycerides; HDL, LDL, or total cholesterol; type 2 diabetes; coronary heart disease; sleep apnea; and level of physical activity. The factor most often considered was the presence of hypertension. Other factors often considered in assessing patient's risk status in overweight and obesity were: type II diabetes, increased hemoglobin, level of physical activity, BMI and waist circumference, and the presence of coronary heart disease (see Figure 1).

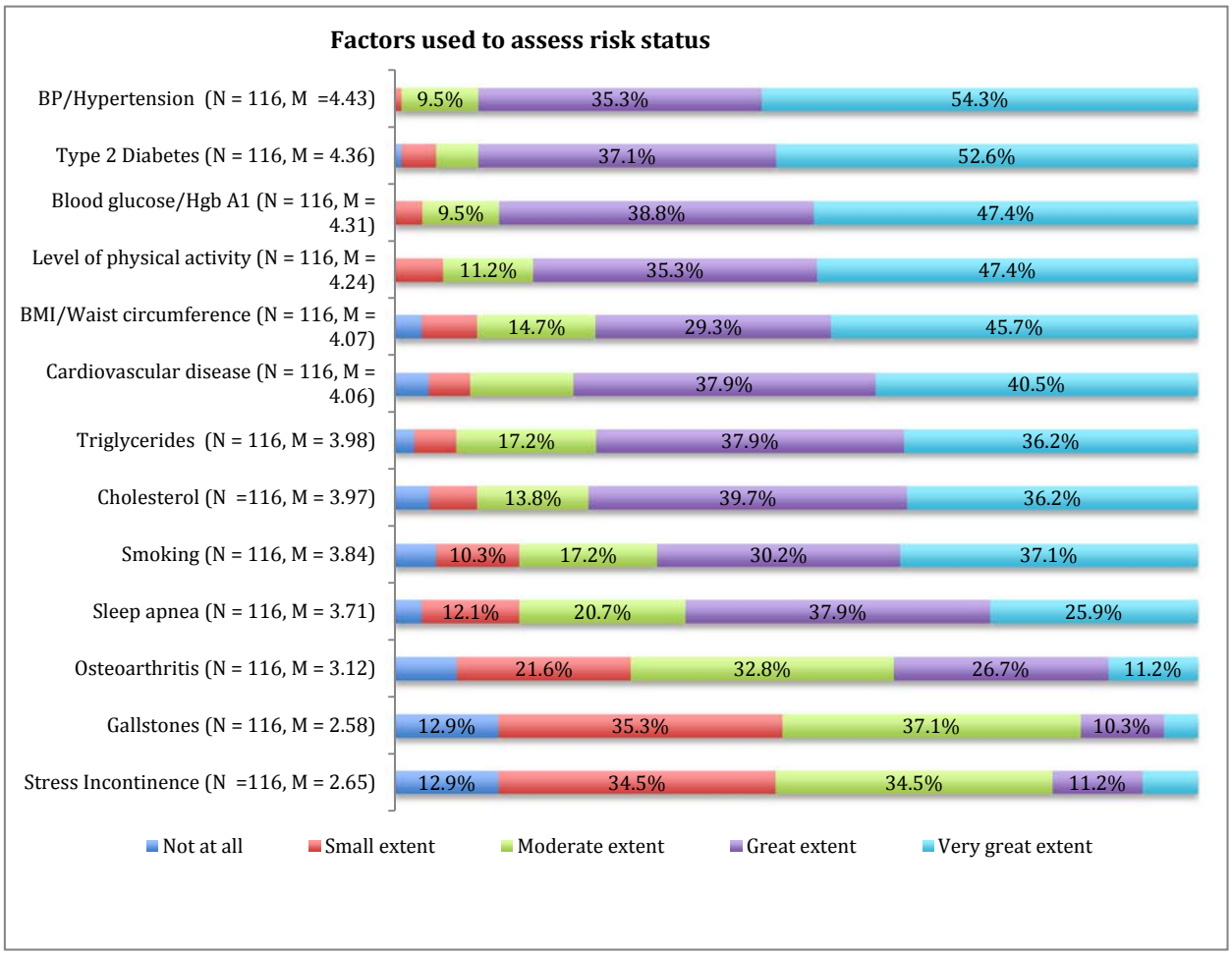


**Figure 1.** Factors to assess risk status of overweight/obese patients.

## Motivation

With regard to factors that assess the motivation of the patients' willingness to participate in a weight loss plan, the majority of the respondents indicated they were very likely to assess their patient's individual level of motivation and physical activity. Patient's knowledge of the causes of obesity, existing support systems, history of failed weight loss attempts, and financial considerations were also addressed in this question (see figure 2).

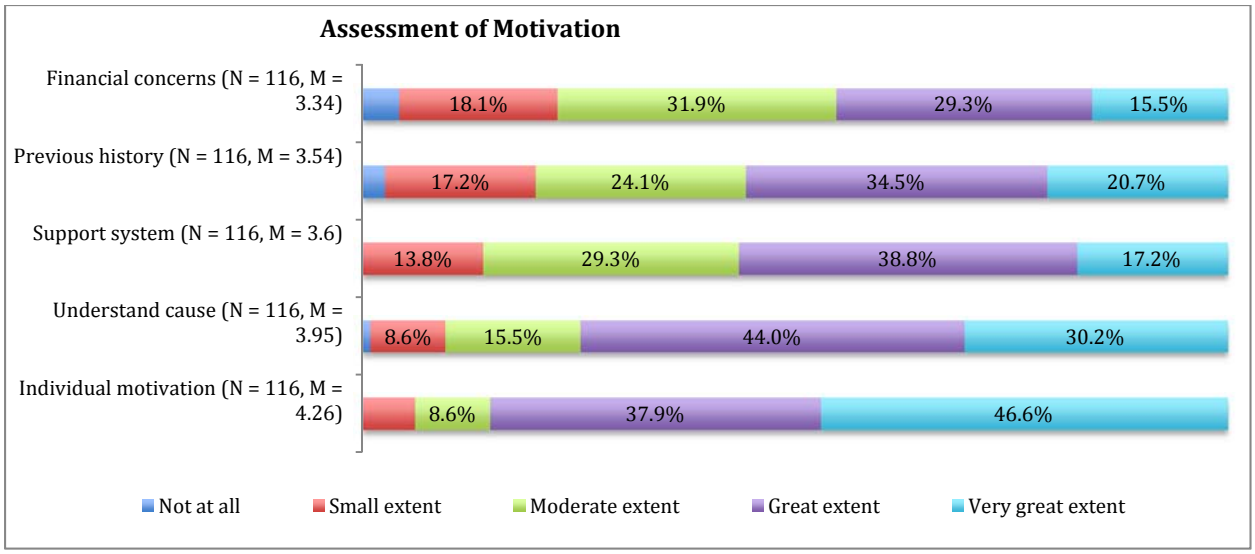


**Figure 2.** Factors to assess motivation of patient's to lose weight.

## Dietary therapies

The next question on the survey asked NPs to what extent they recommend following dietary therapies when advising overweight and obese patients: diet style (low carb/high protein OR vegetarian/vegan); group weight loss programs (Weight Watchers, Jenny Craig, etc.) and, medically supervised liquid diets (Optifast, Medifast) (see figure 3).

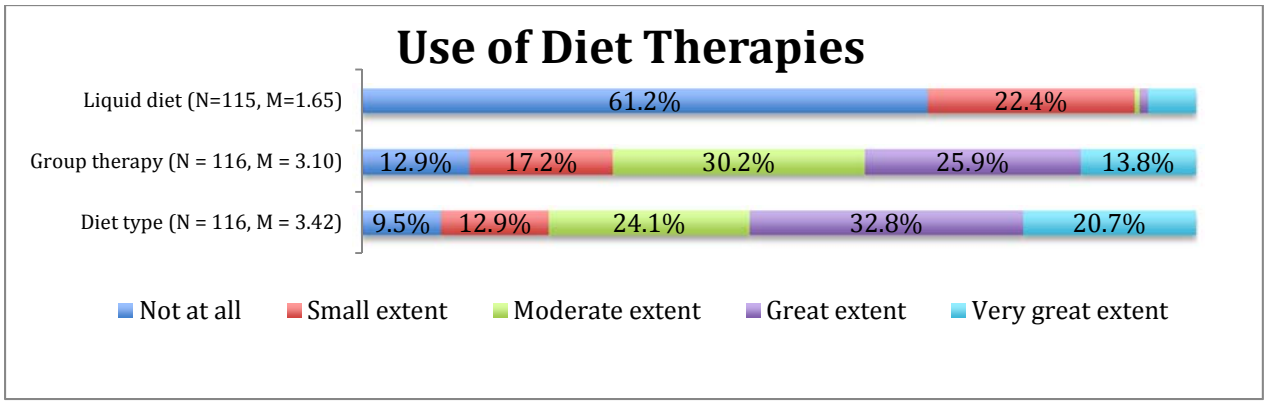


**Figure 3.** Use of dietary therapies.

### Increase physical activity

Respondents were asked to what extent they recommend their patients increase their level of activity (see figure 4).

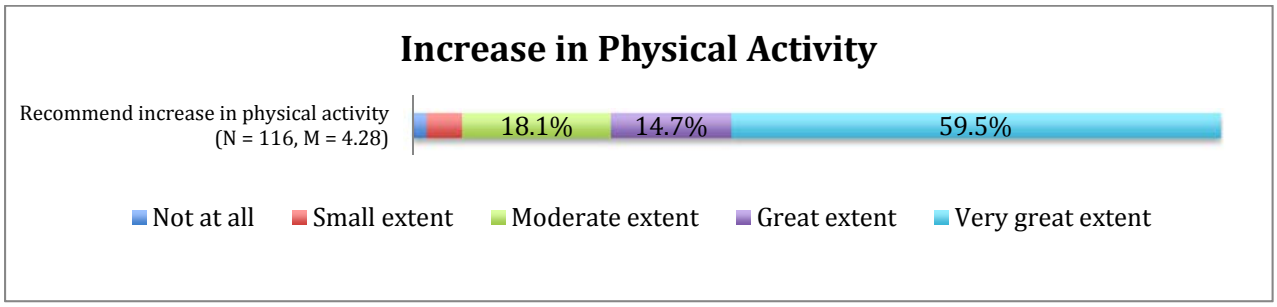


**Figure 4.** Number of NPs who recommend an increase in physical activity.

### Behavioral therapies

Respondents were asked to what extent they recommend the following behavioral therapies when treating their overweight/obese patients: self-monitoring (i.e. cell phone applications and logs); stress management; stimulus control; problem solving; cognitive restructuring; and, social support (see figure 5).

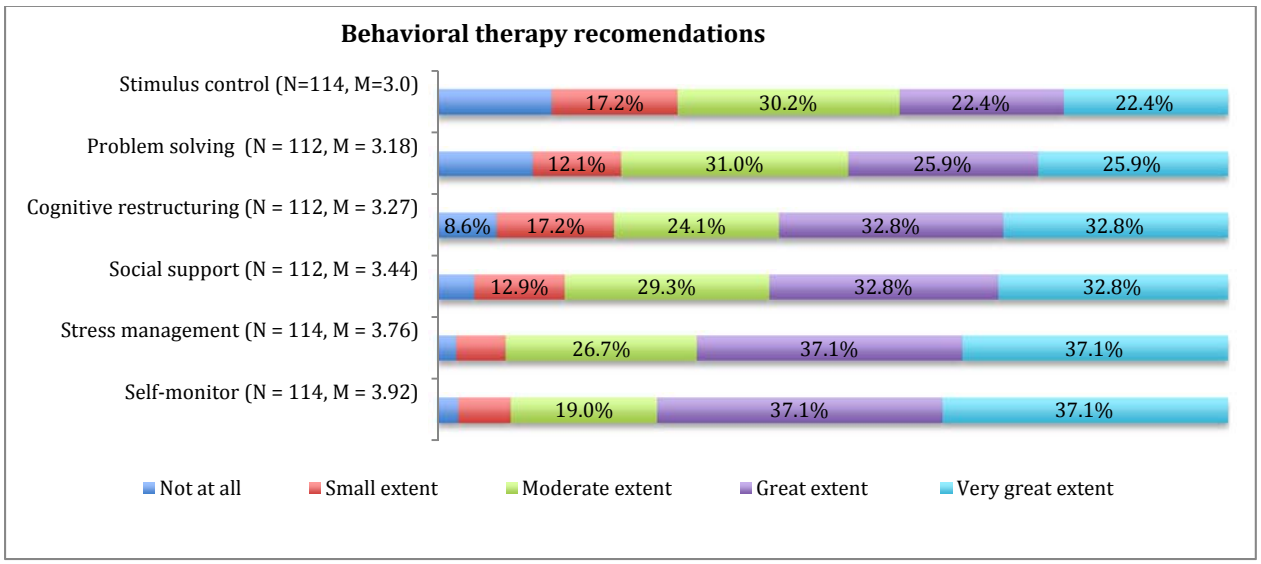


**Figure 5.** Recommended behavioral therapies recommended for weight loss.

## Drug therapy

Next respondents were asked to what extent they recommend drug therapy to their overweight and obese patients. There were 5 categories in this question: those who ask about the use of medication when all efforts on the patient's part have not produced weight loss; when the patient has associated co-morbid conditions; when the patient has a BMI > 30); and, when the patient has a BMI > 40 (see figure 6).

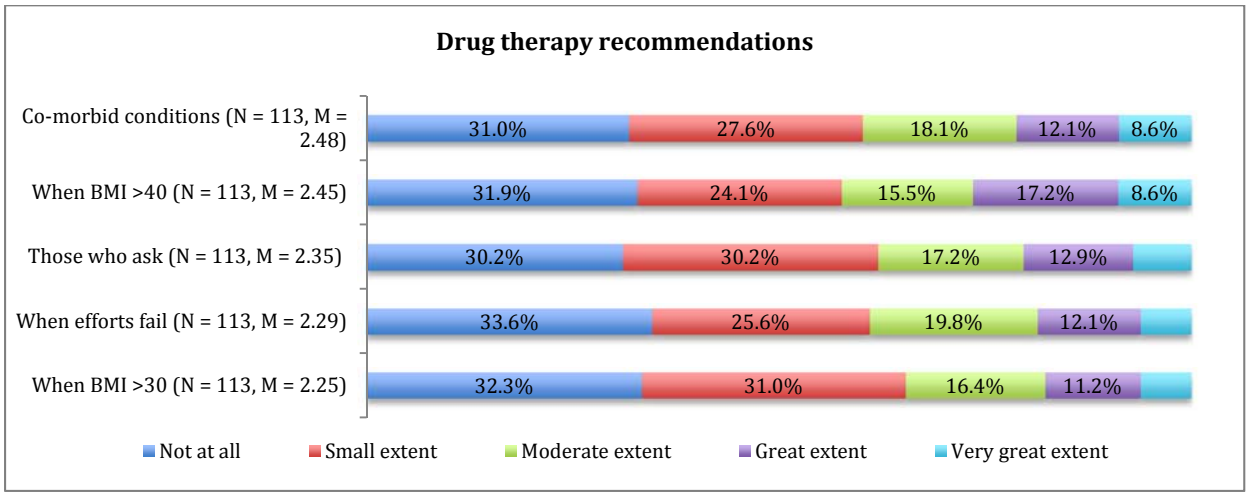


**Figure 6**. Drug therapy recommendations for weight loss.

## Surgical recommendations

Next respondents were asked to what extent they recommend surgical therapy to their overweight and obese patients. There were 5 categories in this question: those who ask about the surgical options; when all efforts on the patient's part have not produced weight loss; when the patient has associated co-morbid conditions; when the patient has a BMI > 30; and, when the patient has a BMI > 40. In general, scores ranged toward the low end of the scale indicating that surgery was not often recommended (see figure 7).

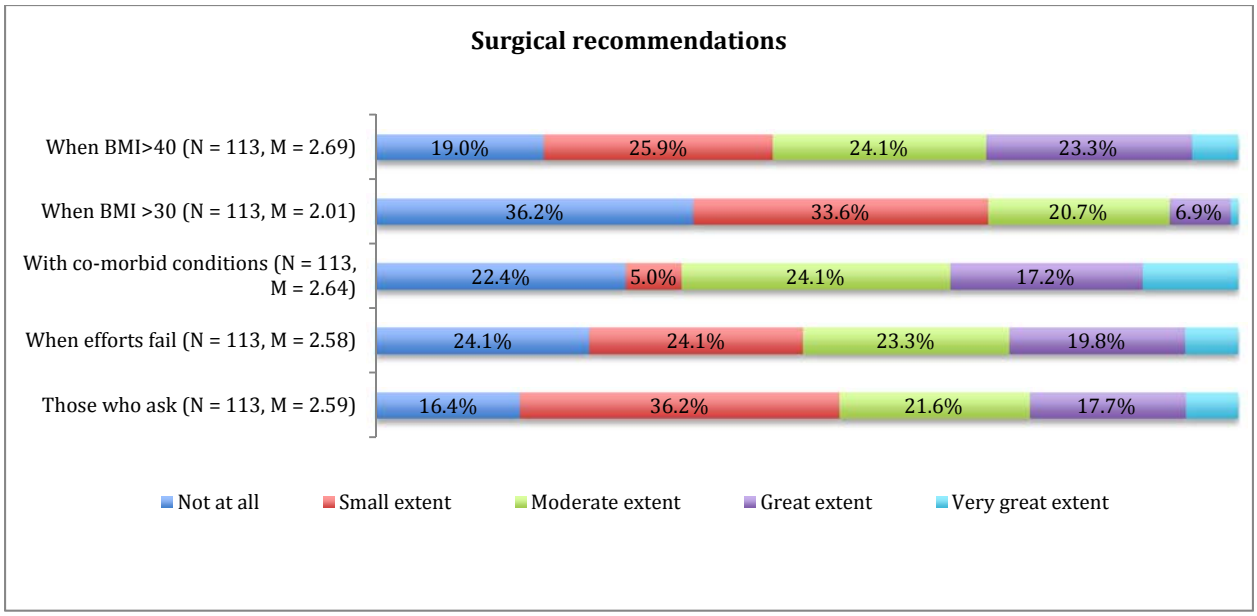


**Figure 7.** Factors considered when recommending surgical intervention for weight loss.

## Obesity management

The next question on the survey asked NPs about the following approaches they use to manage their obese patients: discuss weight management strategies with patients with a BMI > 30; frequent visits with close patient monitoring; use of current treatment guidelines; and a team approach with one or more professionals (dietician, exercise therapist, behavioral therapist, etc.). The most commonly used approach was to discuss weight management strategies with patients whose BMI exceeded thirty (see figure 8).

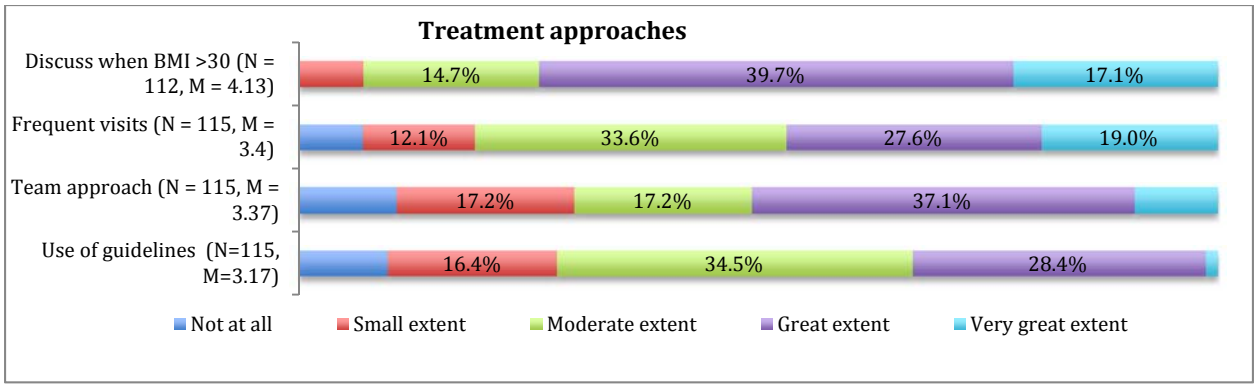


**Figure 8.** Treatment approaches to overweight/obesity.

## Barriers

In order to help determine which barriers may prevent effective management of obesity, NPs were asked about seven areas that may prevent successful management of their obese patients. The seven areas were: worry about losing their business; lack of payment from insurance companies; lack of time; skepticism about the long term success of medical treatment; lack of data on long-term safety of pharmacotherapy; lack of will power or readiness for treatment; lack of knowledge about the treatment (see figure 9).

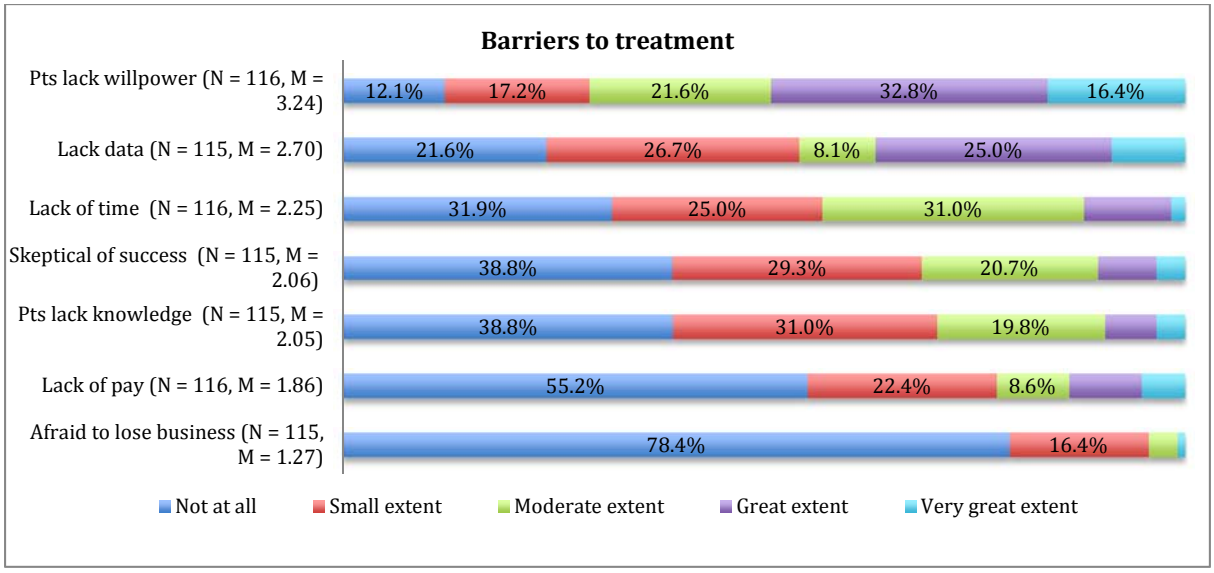


**Figure 9.** Barriers to the treatment of overweight/obesity.

## Beliefs

The final Likert scale question on the survey asked NPs to what extent they believe the following statements represent their beliefs about the etiology of obesity. The first described obesity as a pathophysiological process complicated by the lack of motivation by the patients to manage their own weight. The second statement asked respondents if they believed obesity was strongly influenced by genetics. The last statement asked respondents if they believed obesity reflected a lack of motivation and discipline in eating and exercise (see figure 10).

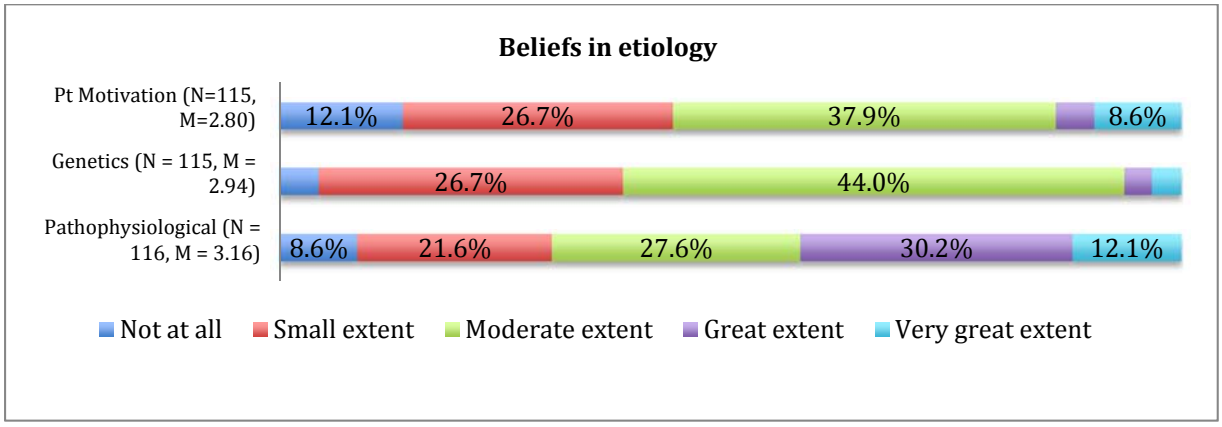


**Figure 10.** Beliefs in the etiology of obesity.

## Open-ended Questions

The final question on the survey was an open-ended question that asked: Are there any other specific treatments, barriers to treatment, or beliefs about the treatment of overweight and obesity that you regularly use or encounter?' Fifty-nine respondents added their input to the open-ended question. Responses were then grouped into 3 areas: barriers to treatment, specific treatments, and beliefs about etiology and treatment. Those answers were discussed in a narrative format below.

**Barriers.** Limited time and resources was the most common response among the open-ended response answers (*n* = 13). NPs reported lack of time at appointments and lack of resources in their clinics, community health centers, and the Department of Corrections. Financial concerns included limited payment options from insurance companies and Medicaid/Medicare, expensive follow up visits, and lack of affordable healthy food choices. Lack of knowledge, motivation, and society's acceptance of obesity was also mentioned often as a barrier to the treatment of obesity (*n* = 13). According to some respondents (*n* = 2) certain ethnic groups accept overweight and obesity as normal and feel that if society accepts them, why should they change? They claim that their "husbands, friends and people at church" do not care if they are overweight. Some report that patients are unwilling to attempt weight loss while others think providers should be responsible "to fix them". Several other respondents (*n* = 5) mentioned the availability of inexpensive fast food and junk food choices and the lack of healthy food in the rural communities around Alaska. In several responses (*n* = 7) the relationship between psychological disorders such as: emotional overeating, and sugar addiction, depression and other undiagnosed eating disorders were mentioned as common causes of obesity.

**Specific treatments.** There were several NPs who recommended specific diet plans (n = 7) such as plant based diets, removing dairy form the diet, the Forks over Knives video, and balanced diet. Recommendations to increase exercise (*n* = 4) were listed as a treatment option including the use of fitness applications (i.e. My Fitness Pal and Lose It). Women's Health NPs (*n* = 2) recommended breastfeeding for weight loss. Motivational interviewing was also mentioned. There was one respondent who looks forward to more FDA approved weight loss medications that provide assistance with a variety of contributing factors (overeating, binge

eating, emotional eating). One NP mentioned the use of bio-identical hormone replacement and one regularly uses the HcG diet.

**Beliefs.** Several NPs ($n$ = 6) reported that people who are surrounded by overweight people in their communities do not often realize they are overweight. One respondent reported false beliefs that obese patients need to gain weight during pregnancy. One respondent believed sugar was the root cause of obesity and it needs to be treated like an addiction.

## Discussion

The respondents of this study rarely used clinical guidelines for the treatment of overweight and obese patients. The guidelines recommend a combination approach to the treatment of overweight and obese patients and suggest individualized treatment plans be generated with the input of the patient. The 2014 guidelines also provide easy to follow algorithms with corresponding treatment options.

Regarding the assessment of risk factors, NPs acknowledged the presence hypertension, type II DM, cardiovascular disease, and elevated blood glucose or hemoglobin A1C, placed their overweight and obese patients at higher risk. Assessment of level of activity and BMI/waist circumference were reported as valuable assessment tools, these findings are consistent with goals of Healthy People 2020. Findings were similar to those found in Garvis (2004), on NPs in Idaho. In that study BMI, type II DM, level of physical activity, blood glucose levels, and coronary heart disease were most often reported. Presence of elevated serum triglycerides and cholesterol, smoking and sleep apnea were also likely to be used in assessing risk status. This may be a positive indication that the NPs in Alaska are increasingly aware of the association between these factors and the risk status associated with being overweight or obese. Also, similar to the Garvis findings, stress incontinence and gallstones were the least frequently chosen. The

2014 VA/DoD guidelines list hypertension, type 2 diabetes, dyslipidemia, metabolic syndrome, obstructive sleep apnea, degenerative joint disease and non-alcoholic fatty liver disease as conditions commonly associated with obesity. The guidelines also inform us that these conditions can be modified or improved with weight loss.

The patient's individual level of motivation to lose weight and increase physical activity was likely chosen most often because without the patient's cooperation weight loss efforts are futile. Many respondents commented on this point in the open-ended question at the end of the survey. The other factors: previous history of failed weight loss attempts; a support system; understanding the cause; and, financial concerns were chosen less often but at a higher rate than in the 2004 survey which may indicate a greater understanding of weight loss motivators. According to the 2014 guidelines, a mutual understanding should be developed between provider and patient. Risks and benefits of treatment and treatment options as well as the patient's motivation level need to be considered. For patients unwilling to commit to weight loss initiatives, a bi-annual follow up is suggested. For those who are committed to weight loss goals, providers should work with patients to develop an individualized weight loss plan with achievable short and long term goals and frequent follow-up (VA/DoD, 2014).

The increase in recommendations in vegetarian/vegan diet or a low carb/high protein diet may be due to the 2014 guidelines which suggest offering any diet that produces a caloric deficit and that has evidence for efficacy and safety (VA/DoD, 2014). There has also been increase in media attention from plant-based diets such as Forks over Knives, the Mediterranean Diet, and low carb diets such as the Paleo Diet. Very low calorie diets should be offered by only for short durations (12-16) weeks and under close medical supervision (VA/DoD, 2014).

Guidelines for physical activity suggest the importance of increasing the level of physical activity in order to create a negative calorie balance and to offer many options including short bursts of exercise in addition to longer periods for at least 150 minutes per week (VA/DoD, 2014). The majority of the respondents do recommend increased physical activity as they did in the 2004 study.

When considering behavioral therapy approaches to treatment, NPs were most likely to recommend self-monitoring (i.e. cell phone applications and food/exercise logs) and stress management. Behavioral therapies were much more likely to be chosen over pharmacotherapy and surgical intervention. At the time of publication of the 2014 guidelines, there was insufficient evidence to support Internet based weight loss interventions, however it is suggested that lifestyle interventions in either group or an individual setting should be considered (Va/DoD, 2014).

Most NPs were not likely to recommend drug therapy to their patients. The 2014 guidelines suggest providers increase the use of pharmacotherapy to treat overweight and obese patients. The suggestion is to offer pharmacotherapy to those with a BMI > 30 or with a BMI > 27 in the presence of co-morbid conditions. NPs in this project were most likely to offer medications for weight loss for patients with BMI > 40. These findings are consistent with those from the 2004 study. Medications for weight loss have changed in recent years but it does not appear that NPs in Alaska feel comfortable with their use for the majority of their overweight and obese patients.

Surgical considerations were recommended more often than pharmacotherapy though the means are still below the median for all groups considered. NPs were most likely to recommend

surgical interventions for those with a BMI > 40 or to those with co-morbidities. These findings are consistent with 2014 guideline recommendations and with findings from the 2004 study.

Several approaches to obesity management were addressed in the survey. NPs were most likely to discuss weight management strategies with patients who have a BMI > 30. They were slightly less likely to recommend frequent patient visits, a treatment plan based on current guidelines or a team approach to weight loss. These findings represent an increase in use of these approaches over the findings from the 2004 study.

Lack of patient motivation was the most commonly encountered barrier to the successful treatment of overweight and obesity. Providers did not report a large concern over lack of time, payment, knowledge, or sufficient data supporting pharmacotherapy. In addition, NPs were not concerned about losing their patient's business if they discussed their patient's weight. Many of these same barriers were listed in the narrative responses. In the 2004 study, lack of reimbursement for overweight and obesity services was the most frequently reported barrier.

NPs believe that obesity is caused by a pathological process complicated by lack of motivation; is strongly influenced by genetics; and that obesity reflects a lack of motivation and discipline in eating and exercise. There was no one etiology that stood out although slightly more respondents reported the combination of pathophysiology and lack of motivation is the likely cause of obesity.

## Limitations

Survey respondents reflect the views of a relatively small, convenience sample of NPs in Alaska that limits the generalizability of the findings. There is the possibility that those who regularly treat overweight and obese patients or those who have an interest in the topic were more likely to respond. There was no incentive provided for participation in the project. The

mailing was done in December and the return period for the surveys took place over the Christmas and New Year holiday, which may have limited the number of surveys returned. There was no reminder mailing.

## Conclusions

NPs in Alaska report they are unlikely to use current guidelines for the treatment of overweight and obese patients. It would be helpful to understand why NPs in Alaska choose not to incorporate the use of newly published clinical guidelines concerning the treatment of their overweight and obese individuals. It would also be beneficial to know how the medias' portrayal of overweight and obesity affects the treatment plans of providers and how it affects the weight loss attempts of patients.

Alaskan NPs are aware of most risk factors and co-morbidities associated with overweight and obesity, however they do not always recommend all available therapies to treat these diseases. Research consistently shows improved outcomes when PCPs manage and treat their overweight and obese patients (Ko et al., 2006; Lourerio & Nayga, 2005). It would be interesting to compare the findings of this study to findings of other types of PCPs in Alaska, such as MDs and PAs, to see if they are treating more aggressively.

In addition, since research show that quality of life is greatly decreased as BMI increases, it would be beneficial for NPs to explore their overweight and obese patient's quality of life as part of a holistic treatment approach (Hauber, Johnson, & Curtis, 2010).

## Recommendations

Due to the increased incidence; associated co-morbidities; and, increasing health care costs, it is imperative that NPs use their knowledge and skills to identify, treat, and continue to manage overweight and obese patients. Clinical guidelines provide a multi-factorial approach to

the management of these patients. Guidelines also inform PCPs of the many co-morbidities that they may not consider as risk factors associated with their overweight and obese patients, which may provide insight for the development of a more comprehensive treatment plan.

More aggressive treatment approaches with a focus on dietary choices and increased levels of physical activity should be standard practice with most patients to maintain healthy weight, prevent additional weight gain, and support weight loss. There are also several studies that address quality of life for overweight and obese individuals. It would be beneficial for NPs to explore their patient's quality of life in addition to co-morbid conditions. This holistic approach to treatment is a critical part of disease management and prevention as well as the promotion of wellness.

Additional recommendations based on this project include the encouragement of continuing education opportunities dealing with overweight and obesity. This may be partially accomplished by inviting specialists on the topic to speak at local NP conferences; an increase in the amount educational articles in local NP journals and publications; and publication of the findings from his study in a poster presentation at the Alaskan NP conference in 2015.

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# Appendix A

## Treatment of Obesity Questionnaire

I am interested in the role that Alaskan Nurse Practitioners take in advising and treating adult overweight and obese patients. The information gathered will be reported as group data and will be kept confidential. Reponses will be coded and identified only by a number.

### Section I: Demographic Information

**1. Gender: ☐Male ☐Female**

**2. Specialty Area:**

**☐Family NP ☐Adult NP ☐Pediatric NP**

**☐Women's Health NP ☐Other: _____**

**3. Do you currently practice as a Nurse Practitioner? ☐Yes ☐No**

**4. Practice location: ☐Urban (i.e. Municipality) ☐Suburban (i.e. Borough)**

**☐Rural community ON road system ☐Rural community OFF road system**

**5. Do you consider yourself a primary care provider? ☐Yes ☐No ***

* The literature reviewed for this project focuses on primary care providers. If you do not consider your self to be a primary care provider, you may stop here. Thank you for your time.

**Section II:** For each question in this section, circle the number that best describes your situation.

| **6. To what extent do you use the following factors to assess the risk status of your overweight and obese patients?** | *Not at all* | *Small Extent* | *Moderate Extent* | *Great Extent* | *Very Great Extent* |
|---|---|---|---|---|---|
| BMI and/or waist circumference | 1 | 2 | 3 | 4 | 5 |
| Blood pressure/hypertension | 1 | 2 | 3 | 4 | 5 |
| Serum triglycerides | 1 | 2 | 3 | 4 | 5 |
| Cholesterol | 1 | 2 | 3 | 4 | 5 |
| Blood glucose levels | 1 | 2 | 3 | 4 | 5 |
| Type 2 Diabetes | 1 | 2 | 3 | 4 | 5 |
| Coronary heart disease | 1 | 2 | 3 | 4 | 5 |

| | | | | | |
|---|---|---|---|---|---|
| Sleep apnea | 1 | 2 | 3 | 4 | 5 |
| Osteoarthritis | 1 | 2 | 3 | 4 | 5 |
| Gallstones | 1 | 2 | 3 | 4 | 5 |
| Stress incontinence | 1 | 2 | 3 | 4 | 5 |
| Smoking | 1 | 2 | 3 | 4 | 5 |
| Level of physical activity | 1 | 2 | 3 | 4 | 5 |

| **7. To what extent do you use the following factors to assess the motivation of your patients to lose weight?** | *Not at all* | *Small Extent* | *Moderate Extent* | *Great Extent* | *Very Great Extent* |
|---|---|---|---|---|---|
| Individual level of motivation to lose weight and increase physical activity | 1 | 2 | 3 | 4 | 5 |
| Previous history of failed weight loss attempts (yo-yo dieting) | 1 | 2 | 3 | 4 | 5 |
| Support from family, friends, co-workers | 1 | 2 | 3 | 4 | 5 |
| Understanding of the causes of obesity and how obesity contributes to several diseases | 1 | 2 | 3 | 4 | 5 |
| Financial considerations | 1 | 2 | 3 | 4 | 5 |

| **8. To what extent do you recommend the following dietary therapies in treating overweight and obese patients in your practice?** | *Not at all* | *Small Extent* | *Moderate Extent* | *Great Extent* | *Very Great Extent* |
|---|---|---|---|---|---|
| Low carb diet and/or high protein diet | 1 | 2 | 3 | 4 | 5 |
| Group weight loss programs (TOPS, Weight Watchers, Jenny Craig. etc.) | 1 | 2 | 3 | 4 | 5 |
| Medically supervised liquid diet (Optifast, Medifast) | 1 | 2 | 3 | 4 | 5 |

| **9. To what extent do you recommend increasing the level of physical activities to your overweight and obese patients?** | *Not at all Small* | *Extent Moderate* | *Extent* | *Great Extent* | *Very Great Extent* |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |

| **10. To what extent do you recommend the following behavioral therapies in treating obese patients in your practice?** | *Not at all* | *Small Extent* | *Moderate Extent* | *Great Extent* | *Very Great Extent* |
|---|---|---|---|---|---|
| Self-monitoring of eating and physical activity (keeping logs) | 1 | 2 | 3 | 4 | 5 |
| Stress management | 1 | 2 | 3 | 4 | 5 |
| Stimulus control | 1 | 2 | 3 | 4 | 5 |
| Problem solving | 1 | 2 | 3 | 4 | 5 |
| Cognitive restructuring (changing how one thinks about food) | 1 | 2 | 3 | 4 | 5 |
| Social support | 1 | 2 | 3 | 4 | 5 |

| **11. To what extent do you recommend drug therapy for your overweight/obese patients**? | *Not at all* | *Small Extent* | *Moderate Extent* | *Great Extent* | *Very Great Extent* |
|---|---|---|---|---|---|
| Those who ask about use of medication | 1 | 2 | 3 | 4 | 5 |
| When all efforts on the patient's part have not produced weight loss | 1 | 2 | 3 | 4 | 5 |
| When the patient as associated co-morbid conditions | 1 | 2 | 3 | 4 | 5 |
| When the patient has a BMI of >30 | 1 | 2 | 3 | 4 | 5 |
| When the patient has a BMI of >40 | 1 | 2 | 3 | 4 | 5 |

| **12. To what extent do you advise weight loss surgery for overweight/obese patients?** | *Not at all* | *Small Extent* | *Moderate Extent* | *Great Extent* | *Very Great Extent* |
|---|---|---|---|---|---|
| Those who ask about surgical options | 1 | 2 | 3 | 4 | 5 |
| When all efforts on the patient's part have not produced weight loss | 1 | 2 | 3 | 4 | 5 |
| When the patient as associated co-morbid conditions | 1 | 2 | 3 | 4 | 5 |
| When the patient has a BMI > 30 | 1 | 2 | 3 | 4 | 5 |
| When the patient has a BMI >40 | 1 | 2 | 3 | 4 | 5 |

| **13. To what extent do you use the following approaches to obesity management?** | *Not at all* | *Small Extent* | *Moderate Extent* | *Great Extent* | *Very Great Extent* |
|---|---|---|---|---|---|
| Discussing weight management strategies with patients who have a BMI > 30 | 1 | 2 | 3 | 4 | 5 |
| Frequent patient visits, close monitoring | 1 | 2 | 3 | 4 | 5 |
| Plan based closely on current obesity treatment guidelines | 1 | 2 | 3 | 4 | 5 |
| Team approach with one or more professionals: dietician, exercise therapist, behavioral therapist, etc. | 1 | 2 | 3 | 4 | 5 |

| **14. To what extent do the following barriers keep you from effectively treating obesity?** | *Not at all* | *Small Extent* | *Moderate Extent* | *Great Extent* | *Very Great Extent* |
|---|---|---|---|---|---|
| Worry about losing their business | 1 | 2 | 3 | 4 | 5 |
| Lack of payment from insurance companies | 1 | 2 | 3 | 4 | 5 |
| Lack of time | 1 | 2 | 3 | 4 | 5 |
| Skepticism about the long-term success of medical treatment | 1 | 2 | 3 | 4 | 5 |
| Lack of data on long-term safety of pharmacotherapy | 1 | 2 | 3 | 4 | 5 |
| Lack of will power and/or readiness for treatment | 1 | 2 | 3 | 4 | 5 |
| Lack of knowledge about the treatment of obesity | 1 | 2 | 3 | 4 | 5 |

| **15. To what extent do you believe the following statements represent your beliefs about the etiology of obesity?** | *Not at all* | *Small Extent* | *Moderate Extent* | *Great Extent* | *Very Great Extent* |
|---|---|---|---|---|---|
| Obesity is a pathophysiological process complicated by the lack of motivation of the patient to manage their weight | 1 | 2 | 3 | 4 | 5 |
| Obesity is strongly influenced by genetics | 1 | 2 | 3 | 4 | 5 |
| Obesity reflects a lack of motivation and discipline in eating and exercise | 1 | 2 | 3 | 4 | 5 |

**16. Are there any other specific treatments, barriers to treatment, or beliefs about the treatment of overweight and obesity that you regularly use or encounter?**

_____

_____

Thank you for taking the time to complete this survey. Please return in self-addressed stamped envelope with in the next 10 days.

## Appendix B

## Letter of Explanation and Consent

December 8, 2014

Dear Alaskan Nurse Practitioner,

I am a graduate student at the University of Alaska Anchorage working on my Family Nurse Practitioner Degree. My evidence based practice project is concerned with the epidemic of adult overweight/obesity and how Alaskan nurse practitioners assess and manage their overweight and obese patients. I would also like to know the approach NPs take in the treatment of overweight and obese patients as well as any barriers that prevent effective treatment. The Treatment of Obesity Questionnaire contains 10 multi-answer Likert style questions and one open ended question. Participation in this survey is voluntary. There is no expected benefit to the participants for returning the survey. There is no expected risk to the participants.

This survey is being mailed to 611 NPs in Alaska. Addresses were obtained from the Alaska Board of Nursing. Research for this project included all Primary Care Providers and deals with an adult population; therefore if you do not consider your self a primary care provider or only see pediatric patients, you can discard this mailing. I realize your time is limited and valuable; the questionnaire should take about 10 minutes of your time. Would you please take a few minutes to complete the enclosed questionnaire in order to help me complete my studies? Upon completion, please return the questionnaire in the provided self-addressed, stamped envelope no later than December 23, 2014.

By completing the form and returning it to me you are also providing informed consent that this information will only be used for the purpose of this study. Please retain a copy of this letter and survey for your own records. All results will be confidential and will be kept in a secure location for 3 years then destroyed. Findings will be grouped for data analysis, no names will be identified or collected. In return, I would like to share my study findings to all NPs via a poster presentation at the 2015 Alaska Nurse Practitioner's Conference.

If you have questions or concerns, feel free to contact me at kcerutti@alaska.edu or at 907-301-3196.

Thank you for your assistance.

Sincerely,

Kelly M Cerutti, RN, FNPs, Primary Investigator
kcerutti@alaska.edu
907-301-3196

Faculty Advisor
Elizabeth Driscoll
emdriscoll@uaa.alaska.edu
907-786-4594

If you have any questions about your rights as a research subject, please contact Sharilyn Mumaw, Compliance Officer, at (907) 786-1099.

## Appendix C

### Emailed Letter of Permission to use Survey

Kelly

Thank you for your inquiry. I think it would be a great opportunity for you to use my survey and feel it an honor for you to consider using it. At the time I did my thesis, obesity was beginning to be more and more of an issue. As you recognize obesity is still a huge issue. I still have an interest in the topic and would like for you to share your findings with me when they are completed.

I graduated from Gonzaga University in 2004. I have fond memories of my time in school. My graduation has brought me great joy over the years that have followed. I wish you the same.

Feel free to call me if I can be of any further assistance.

Sincerely,

Muriel Garvis RN FNP
208 851-2177