Mount Saint Vincent University Department of Applied Human Nutrition

Canadian Registered Dietitians' Perceptions, Experiences, and Knowledge of Weight-Related Evidence in Practice: A National Questionnaire

by Rachel Lynn Waugh

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Abstract

Title: **Canadian Registered Dietitians' Perceptions, Experiences, and Knowledge of Weight-Related Evidence in Practice: A National Questionnaire**

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Background: A recent nation-wide survey conducted by Dietitians of Canada (2020) found dietitians are divided in their interpretation of (body) weight evidence. There is limited data on Canadian Registered Dietitians' (RDs') perspectives, experiences, and knowledge on this topic. Moreover, current evidence suggests Canadian RDs are predominantly female, white, and young-to-middle aged. It has been established that one's intersecting characteristics can impact how they see themselves and others, but there is limited Canadian research impacting how these factors impact weight evidence interpretation and application.

Aim: The MSc project aimed to list and describe Canadian RDs': 1) experiences, 2) perceptions, and 3) knowledge of weight-related evidence (WRE) in practice. It also aimed to test if statistically detectable relationship(s) exist between respondent demographics and these three outcomes.

Methods: A mixed-form, face, content, and construct validated questionnaire was launched online using LimeSurvey for three months (July – October, 2023). Empirical data was presented as descriptive (counts, precents) and analyzed using Fisher's Exact Test (nonparametric, categorical data) to determine associations.

Results: Fifty-two respondents completed the questionnaire, where the majority were female (sex, 96.0%, n = 48/50; gender, 90.0%, n = 45/50), White (75.5%, n = 40/49), Graduate level education (54.0%, n = 27/50), middle-aged (mean age: 42 years (SD: 12.5)), thin (BMI mean: 25.2 kg/m^2, SD: 3.8; Pulver scale A-C: 68.8%, n = 33/48), and primarily in clinical practice (66.0%, n = 33/50). Canadian RDs indicated they most frequently refer to meta-analyses and systematic reviews (94.2%, n = 49/51) and randomized controlled trials (82.7%, n = 43/52) for weight-related evidence. The majority of the sample indicated they identify with the critical/ non-weight centric paradigm (62.5%, n = 30/48), then the health/ complication-centric (50.0%, n = 24/48), and lastly dominant/ weight-centric (8.3%, n = 4/48). Almost twenty-percent (19.2%, n = 10/48) identified they identify with multiple approaches. Overall, a high neutrality rate was observed in the Likert-scale rating questions. Almost a third of the respondents (31.8%, n = 14/44) responded neutrally to their agreement with, "people with BMIs equal to or greater than 30 kg/m^2 have an increased risk for developing health problems, compared to people with lower BMIs." An association was also found between primary practice area and use of WRE tools in

practice for: BMI ($p = 0.019$), goal ($p = 0.004$), and nutrition requirement calculations ($p = 0.001$), where clinical practice most frequently indicated use of these tools. A significant association was found between primary practice area and 1) the health/ complication-centric paradigm ($p < 0.001$); and 2) the critical/ non-weight centric paradigm ($p = 0.043$). This is where those in clinical practice most frequently identified with the health/ complication-centric paradigm, and those in public health/ community most frequently identified with the critical/ non-weight centric paradigm. Notably, value for clinical practice guidelines were associated ($p = 0.013$) with primary practice area (clinical), and considering clinical practice guidelines as evidence was associated with those who identify with the health/ complication-centric paradigm ($p = 0.022$).

Conclusion: This research is essential in providing insights into Canadian RDs' perspectives, experiences, and knowledge of WRE in practice, from all practice areas. Statistical associations should be interpreted with caution, due to the study's small sample size; however, shine a light on important context to understanding professional divergence on this topic. For instance, learning that primary practice area plays a role in how weight is conceptualized and applied, could help unite RDs on this topic. The findings from this study highlight that while the profession may have its differences, there are also many similarities in how weight is understood and applied in practice.

Dedication

To my younger self who thought fat was bad – there are much, much worse things in the world.

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Acronyms

ABCD	Adiposity Based Chronic Disease
AHN	Applied Human Nutrition
AFA	Anti-Fat Attitudes Questionnaire
BMI	Body Mass Index
COVID-19	Coronavirus Disease of 2019
CAO-CPGs	Canadian Adult Obesity Clinical Practice Guidelines
CPG	Clinical Practice Guideline
CRD	Canadian Registered Dietitian
DC	Dietitians of Canada
EOSS	Edmonton Obesity Staging System
HAES®	Health at Every Size
HCP	Health Care Provider
IBM SPSS	International Business Machines Corporation Statistical Package for the Social Sciences
MSVU	Mount Saint Vincent University
NCP	Nutrition Care Process
OC	Obesity Canada
REB	Research Ethics Board
RD	Registered Dietitian
UREB	University Research Ethics Board
VREP	Validation Rubric for Expert Panel
WI	Weight Inclusive
WL	Weight Liberated
WR	Weight Related
WRE	Weight Related Evidence
WRE-RDs-Q	Weight Related Evidence and Registered Dietitians Questionnaire

1.0 Introduction

Registered Dietitians (RDs) are regulated healthcare providers in Canada and known by the public as nutrition experts. Dietitians work, or practice, in a variety of settings in Canada, including but not limited to hospitals, long term care, home care, private practice, community clinics, industry, education, and research. Nutrition care can be explained by the Nutrition Care Process (NCP), a stepwise cyclical process with four key stages: assessment, diagnosis, intervention, and monitoring/ evaluation (1). Weight (or body mass) is relevant to all stages of nutrition care, for example for use in assessing or monitoring risk for chronic disease (e.g., using Body Mass Index) or for diagnosing malnutrition (e.g., using weight loss/ change). Weight is relevant to many dietetic practice areas beyond weight management, such as nutrient and fluid dosing for enteral or parenteral (i.e., tube feeding) nutrition, community education and policy, and what is taught in dietetic programming.

Traditionally, RDs are known not only as nutrition experts, but also as weight loss experts, given the common societal (ideological) tie between weight and health status. Biomedical experts agree that excess weight causes poor health outcomes; however, multidisciplinary researchers are uncovering that the relationship between weight and health is not as direct as was once thought. Current (2020) clinical practice guidelines (CPGs) are moving towards focusing on health rather than weight and encourage efforts to reduce weight bias; as weight bias has been found to impact both physical and psychological health outcomes, as well as the rate of accessing (or avoiding) health services (2).

Given the current debate regarding weight interventions, use of weight in practice, and with updated CPGs being released, it is warranted to explore current RDs' experiences, perceptions, and knowledge of weight-related evidence in practice. Dietitians have been surveyed on similar topics before, however with narrow inclusion criteria (e.g., only RDs who counsel overweight or obese clients) and 10-15 years ago. (3,4) At that time, results showed divergence in the dietetic profession and updated findings (2022) emerging from Dietitians of Canada (DC) show the same (5,6). In DC's surveys (2020), RDs expressed concerns about the divergence in the profession, fearing it could de-value their role in weight-related practice activities and that it could impact relationships/ collaboration with other healthcare providers. Surveying RDs on their forms of

identity, or intersecting demographics, as well as their experiences, perceptions, and knowledge of weight-related evidence in all practice areas, could begin to uncover what context(s) might inform weight-related practice frameworks.

This student MSc project is the second study of a two-phased research project, funded by the Canadian Foundation for Dietetic Research. Phase one was a scoping review, which followed JBI methodology and an a priori protocol (7,8). Findings of the review informed development of the study's questionnaire, also known as the Weight-Related Evidence and Registered Dietitians Questionnaire (WRE-RDs-Q). The scope of the student MSc project was development, including face, content, and construct validation, implementation, and analysis of the questionnaire's close-ended responses, using descriptive and applicable inferential statistics. The aim of the MSc project was to identify and describe Canadian Registered Dietitians' (CRDs') experiences, perceptions, and knowledge of weight-related evidence in practice; as well as identify if any statistically significant relationships exist between CRDs' demographics and the three outcomes (perceptions, experiences, knowledge). If a connection or no connection is found between CRDs' demographics and their experiences, perceptions, and knowledge of weight related evidence; it could begin to reveal more or less pieces of the puzzle that should be considered when asking why there is such a disconnect in the profession when it comes to the topic of weight. Findings will illuminate more about the current divide in the dietetic profession on the topic of weight in various practice settings, and provide many suggestions for avenues of future research.

2.0 Literature Review

2.1. Dietetic Education and Training in Canada

According to Dietitians of Canada (DC), the professional association promoting RDs to the public, "dietitians believe in the power of food to enhance lives and improve health" (9). Dietitians are regulated healthcare providers who work in a variety of clinical, community, education, research, and food-based settings. To become a dietitian, one must complete a four-year undergraduate program in foods and dietetics and an internship or practicum, covering dietetic competencies, and pass the national registration exam. Dietetic curriculum includes courses in chemistry, biochemistry, food science, nutrients, anatomy and physiology, medical nutrition therapy, counselling, business, food production, research, professional practice, food preparation, recipe design, and food skills (10,11). Similar to the three practice areas of Canadian RDs (12), dietetic internship includes placements in 1) clinical (e.g., hospital, one-on-one patient care), 2) community (e.g., community food centre, education and programming), and 3) administrative (e.g., long term care, menu design and implementation) practice responsibilities, while they receive overarching training in other competency areas such as research, education, and professional practice. The Integrated Competencies for Dietetic Practice and Education and Practice define competencies for entry-level practice and guide all dietetic education and training, and development of the national registration exam (13).

2.2. Characteristics of Dietitians in Canada

Dietitians are a growing profession. In 2011, a total of 8,975 RDs practiced in Canada, whereas in 2022, 12,688 RDs practiced in Canada (14,15). Despite this growth, the profession is perceived to be homogenous in sociodemographic characteristics, including age, gender, ethnicity, and body size (12,15). Similar to nursing, 95-100% of Canadian dietitians identify as female (12). More recent data (2017-2021) shows the same, finding 95.2-100.0% of Canadian RDs are female, with an outlier of the Northwest Territories with 84.6% female (2019, $n = 13$) (15). Data (2017-2021) shows the age of the majority of Canadian RDs (71.1-86.0%) are between 30-59 years of age (15). Few data are available on rates of ethnic diversity in the Canadian dietetic profession. Despite this, several reports and sources indicate racial diversity is an issue in Canadian dietetics, where the majority of Canadian RDs are white (16–21).

Contributing factors such as institutional racism (socioeconomic factors, internship acceptance rates, etc.) are proposed to explain this; however more research needs to be done to shed light on the experiences of racialized RDs in Canada (21). No nation-wide reports have collected data on dietitian body size. Existing research mostly focuses on weight-related experiences (e.g., of weight stigma) of students in dietetic programming in Canada (22,23). It is unclear how experiences of weight stigma, or with one's own weight, informs or does not inform RDs' practice approaches and beliefs. Of concern, research exists indicating eating disorder prevalence is higher among RDs, warranting further exploration (24,25). In 2011, it was found that 46-77% of Canadian RDs are involved with preceptoring dietetic interns (12). Another area for future research could be to explore if RDs of differing generations share similar outlooks towards weight in practice or not, and how that is translated in dietetic education and training.

The majority of Canadian RDs (2007-2011) work in clinical settings (45%; n = 1678/3749), followed by community (15%; n = 548/3749, administrative (9%; n = 339/3749, and public health (11%; n = 393/3749) (12). Continually, most Canadian RDs (49.3-85%) also have fulltime employment (2011); however, it is unclear if fulltime employment is achieved through multiple part-time positions (12). RDs often work in several areas of practice. According to Dietitians of Canada (2011), Canadian RDs' pursue graduate training for reasons other than employment or career advancement. To practice in Canada, an RD needs to complete an accredited undergraduate degree and internship, and write a qualifying examination. Graduate credentials are only required for some RD positions (e.g., research, management, academy). Research conducted in 2020 found images of dietitians online (n = 339) are most commonly female (88%), Caucasian (72%), between 26-39 years of age (63%), and pictured with food (78%) (26).

2.3. Exploring the Divide: Weight in Dietetic Practice

An area of divergence in the dietetic profession surrounds opinions, use, and interpretation of weight evidence in practice. Best illustrated by the results of a nation-wide survey data from Dietitians of Canada (2020), determined 58% of expert reviewers supported endorsing the recent 2020 Obesity Canada and Association of Bariatric Surgeons and Physician Clinical Practice Guidelines (CPGs) for Adult Obesity; however, 42% did not (6). Prior to this, research in 2004 by Barr et al. found similar divergence in the profession on weight-related priorities, this time

relating to eating disorder risk, where 39.2% disagreed that, "the current emphasis on obesity contributes to eating disorders like anorexia nervosa and bulimia nervosa," 24.1% were neutral, and 36.7% agreed with the statement (3).

Frameworks can be used to understand and explain how individuals and groups understand concepts, in this case weight/ body size (6,27). Frameworks conceptualizing weight are not exclusive to dietitians. Medical providers, patients, activists, and the public have differed interpretations of the evidence and opinions on body weight and its relationship with health and disease. Two examples of diverging theoretical frameworks, which can create *bifurcated consciousness* among the profession are: 1) obesity, or framing higher-weight as a problem needed to be managed or treated (medical model), and 2) size acceptance, or framing higher-weight as a variation in human characteristics, similar to eye color or height (social model) (28). Bifurcated consciousness, a concept from critical theory, means two diverging or conflicting perspectives within a population (28,29). For example, in the dietetic profession, several RDs who belong to professional communities like World Critical Dietetics, view weight loss and pathologizing larger bodies as unethical, biased and harmful. People holding this perspective often advocate for dismantling existing systems whom hold power, dominance, and/or oppression (28); with one recent example to the profession being an online petition against the Canadian adult obesity clinical practice guidelines, published in 2020. In theory, this contrasts with others who value intervention-based approaches for obesity like behavioural interventions, pharmacotherapy and metabolic bariatric surgery, including its positive impact(s) on disease reduction (e.g., type 2 diabetes remission, adiposity dysfunction) (30). Before going further, it is important to examine how weight is defined, and how it has historically been used in nutrition screening, assessment, diagnosis, intervention, monitoring, and evaluation in practice.

2.3.1. Weight Defined

Several words and paradigms have been formulated to describe weight. In the biomedical field, definitions, and understandings of weight exist within the patient care process. This involves measuring body mass/weight and comparing it to a standard. In this paradigm words like 'problem', 'normal', and 'abnormal' are often used to describe bodies. Secondly, weight related concepts are relevant to many dietetic practice areas and areas of clinical practice, beyond

obesity and weight management. Weight is brought into conversations related and not limited to malnutrition, diabetes, heart disease, cancer, nutrition support and fluid requirements, metabolic-dysfunction associated fatty liver disease (MAFLD, formerly known as non-alcoholic fatty liver disease (NAFLD)), polycystic ovarian syndrome (PCOS), and cystic fibrosis. In dietetic practice, weight-related referrals are very common, across weight ranges, whether it be for low or high body weight, or weight loss, gain, or maintenance body weight BMI) (31,32).

The following paragraphs in Chapter 2, Section 3 will explore four key examples/contexts of weight in nutrition care; including: 1) terms used to describe body size; 2) ways to measure of body size; 3) interventions targeting weight loss; and 4) interventions targeting weight acceptance.

2.3.2. Terms Used to Describe Body Size in Screening, Assessment, Diagnosis, and Patient-Provider Communication Considerations

In population-based research or epidemiological studies, Body Mass Index (BMI) is often used as a surrogate measure for body fat, associated with chronic disease risk. Underweight is defined by BMI as less than 18.5 kg/m^2 and as an increased risk of developing health problems (33). Normal weight is defined by BMI as 18.5 to 24.9 kg/m^2 and as the least amount of risk of developing health problems. Overweight is defined by BMI as 25.0-29.9 kg/m^2 and as an increased health risk factor (33). In popular culture and in public, overweight and obese are used as slang terms, not relating to body mass status. They are often used as negative or bad meanings and used as the butt end of jokes, similarly to how other injustices (e.g., gender, sexual orientation, race) are used in comedy. Obesity is defined as BMI above 30 kg/m^2 (33). Continually, obesity is further categorized by severity using BMI, class I (30.0-34.9 kg/m^2), class II (35.0-39.9 kg/m^2), and class III (above or equal to 40.0 kg/m^2), correlating to high risk, very high risk, and extremely high risk, respectively, for developing health problems (33). Overweight and obesity, as defined by BMI, are seen as a risk factor for over 200 conditions, mainly developing gestational and type two diabetes, heart disease, certain types of cancer, hypertension, and sleep apnea (34).

Beyond BMI categories, several other terms are used to describe body size in dietetic research and practice such as higher/ lower weight, large(r)/ small(er) body size, and fat. “Higher weight” and “larger body” are often terms used by those disagreeing with the medicalization and stigma of size that terms such as “obesity” and “overweight” provide. Despite this, “higher weight” and “larger body” can continue to perpetuate a standard or norm for body weight and/ or size; because due to their nature, they are describing a “higher” or “larger” weight/ size than a standard or norm. “Fat” is a recent term intended to be reclaimed from the fat activist community, similar to how the queer community has reclaimed the word “queer” (35,36). While “fat” has negative connotations, reclamation aims to use the word as a neutral or positive descriptor. Like all things, critiques exist, as not everyone is aware of the reclamation and can assume its use is in the common negative intention of the term.

2.3.3. Measuring Body Size in the Nutrition Care Process: Screening, Assessment, Monitoring, and Evaluation

Body size can be quantified in numerous ways, such as in mass, circumferences, and skin folds. In mass, weight is measured by total body size using scales and measured using pounds (lbs) or kilograms (kgs). Mass, or weight, is used in medicine by several providers to measure loss, gain, risk assessment, and determine medication, nutrient, and fluid dosing. Weight history and repeated measurements are also used in all stages of the NCP, but are most relevant to screening, assessment, monitoring, and evaluation in nutrition care.

Anthropometrics are measurements of the physical human body, and are used to compare growth and size to relative standards (37). Anthropometrics can be used in clinical practice to assess and evaluate under and overnutrition and growth. For example, in pediatric practice, the World Health Organization and Centre for Disease Control and Prevention’s growth charts are used to compare growth and size (weight and height) of an infant to the general population. Length measurements (from head to heels) are also common in pediatrics (37). Circumferences measured the total length around a portion of the body (e.g., waist) and are typically measured using a flexible measuring tape recorded in centimeters and/ or inches. Skin folds are measured by using two fingers to pinch a section of skin and adipose tissue, using calipers which measure width using centimeters and millimetres. Circumferences and skin folds have a higher rate of

inconsistency in their measurement compared to weight and height [3, p111]; however, can be used to estimate weight (when scale measurements are impossible) and risk (e.g., waist circumference and heart disease, type 2 diabetes, hypertension, hyperlipidemia) (38). Waist circumference is also a required criteria (above or equal to 102 centimetres (40 inches) in men; above or equal to 88 centimetres (35 inches) in women) for the diagnosis of Metabolic Syndrome, a group of health conditions that increase risk for heart disease, diabetes, and stroke (39). Additionally, waist circumference is a measure used in screening, assessment, and diagnosis of obesity, as defined in the 2020 CAO-CPGs, and cut-off standards differ between ethnic groups (e.g., for African American and Korean men greater cardiovascular risk increases at 95 (37 inches) and 90 centimeters (35 inches), respectively; and for African American and Korean women at 99 (39 inches) and 85 centimeters (33 inches), respectively) (40, p. 5).

Body Mass Index (BMI) was created by a European mathematician, statistician, sociologist, and astronomer in the 1830s to estimate/ establish a pattern of death among a population, instead of risk for an individual (41). Originally called the Quetelet Index, after the mathematician, it was derived from his interest to find the "average" citizen (41). In 1972, it was adapted to be BMI (42). Critiques of BMI by activists, journalists, and healthcare providers are not novel (41, 43-46), and can be easily found when empirically searching, "BMI history." For instance, though BMI has been updated over the years, its origins describes size of the "average" white man from the 1830s, which has arguably limited application in adaptation to life stages/ populations such as pregnancy, athletes, and ethnicities other than White (40,41). The BMI's risk classifications should not be considered in isolation; instead, other lifestyle and genetic factors should be considered in total health risk (33).

Another tool used to assess individual health risk is the Edmonton Obesity Staging System (EOSS), which was proposed in 2009 by Drs. Arya Sharma and Robert Kushner (47,48) and is a more comprehensive approach to assessing and classifying obesity beyond BMI or body size status. Included in the 2020 CPGs, the EOSS Staging Tool (49) classifies "obesity" in five stages (0 to 5; low to high risk), depending on presence/ absence of physical symptoms, psychological symptoms, functional limitations, and/or impairments of well-being and quality of life (49,50). EOSS is not a measure of (does not stage) body size, but instead uses metabolic, mental, and

functional outcomes to stage individual health risk from “low” to “high” severity, irrespective of body size (49).

2.3.4. Weight-Related Approaches in Practice

Medical framing(s) of body weight and size have traditionally led narratives related to weight in dietetic practice and society. Obesity Canada (OC) is Canada’s leading registered obesity charity association, and is engaged with research, education, and advocacy on the topic, with an aim to “improve the lives of Canadians living with obesity” (50). OC advocates for the recognition and public acknowledgement of obesity as a chronic disease in Canada (50). Research supporting the obesity as a chronic disease framework draws on evidence supporting connections between excess weight causing harm to health, hormonal changes (e.g., leptin, GLP-1, insulin, etc), and neurobiology (e.g., hypothalamus, mesolimbic area, cognitive lobe), all impacting appetite and metabolic regulation (51).

One of three strategic goals the association has is to improve, “access to evidence-based prevention and treatment resources” (50). This could include a combination of interventions and services, such as pharmacological, surgical, and/or lifestyle-based support (i.e., healthcare provider access, including RDs), of which currently are not affordable or easily accessible to all Canadians (52) . In addition to this, OC is also committed to denouncing weight bias and discrimination in Canada (50). Also specific to Canada, the Canadian Medical Association recognized obesity as a chronic disease in 2015, with several provincial medication associations in agreement, such as Doctors of British Columbia (2021) and Nova Scotia (2023), and the Medical Associations of Yukon (2019), Saskatchewan (2015), Ontario (2020), Alberta (2021), New Brunswick (2021), and Newfoundland & Labrador (2021) (53,54). Despite positive claims for its impact on healthcare access in Canada, it is unclear how or what impacts obesity classified as a disease will have on health and nutrition care provision in Canada (55–57).

Similar to obesity as a chronic disease, Adiposity-Based Chronic Disease (ABCD) is a medical diagnosis based on the idea that adipose tissue is not benign, it is biologically active. For example, adipose-tissue secretes proteins and hormones (e.g., leptin, adiponectin), further

impacting energy homeostasis and appetite (51). Adiposity in this context is typically described by amount, distribution, and function (59). Similar to other assessment approaches, physical and non-physical (e.g., culture, beliefs) environments, also known as contexts, are considered in ABCD assessment and care management, as well as presence/ absence of adiposity-based complications and disease states (i.e., burden) (59). The new definition of obesity in the CAO-CPGs (2020) draws from this perspective, rooting into adiposity dysfunction
Along with this, people living with obesity are also reclaiming the term "obesity" as a disease based on adipose tissue dysfunction and as a neutral medical term, instead of based on body size, shame, and bias, which has historically framed "obesity" (60,61).

2.3.4.1. Weight Loss Interventions

Three key classes of interventions exist in medicine for weight loss; 1) lifestyle, 2) pharmacology, and 3) surgery. Lifestyle interventions include changes in diet (e.g., caloric-restricted, Mediterranean, vegetarian, and other dietary patterns (62)) and exercise (i.e., increasing calories burned), which target someone's caloric balance. Discourse surrounding lifestyle approaches to weight loss, such as "eat less, move more" have historically been the most distributed and socially accepted for how to lose weight, especially by fitness/ weight loss personalities like Jillian Michaels. Advancement of weight science has shown approaches beyond "eat less, move more" are needed to target obesity at an individual and population level.

Pharmacological and surgical-based interventions target neurohormonal connections between the gut and brain by improving adipose tissue dysfunction (adiposopathy) in a patient (63,64). Pharmacological interventions (i.e., medications) exist to target biochemistry and metabolism of an individual, thereby inducing weight loss (63). Four prescription weight loss medications, approved by Health Canada for long-term use of obesity management are Saxenda® (liraglutide), Xenical ® (orlistat), Ozempic ® or Wegovy ® (semaglutide), and Contrave ® (naltrexone/bupropion), which are becoming more socially accepted with gaining popularity among celebrities in the United States. Despite social acceptance growing, the popularity of GLP-1 medications in celebrity and pop-culture can exacerbate the esthetic narratives of what society views obesity treatments as (i.e., a "quick fix"), which is not aligned with the evidence or

clinical indications of medications for obesity (63). Even the slogans for these medications refute the, “eat less, move more” mentality and that excess weight is only because of a lack of will power, an example being the slogan for Sazenda®: “we’ve always had the will, now we have another way” (65). While these medications aim to support weight loss, they are very costly to a Canadian patient. For example, Canada’s Drug Agency describes the annual cost (2021) per patient for liraglutide to be $4,389 in the first year, and $4,564 after year one, and for semaglutide to be $4,726 per year (66,67).

Surgical interventions primarily target the amount of nutrient intake, absorption and/or digestive organs, resulting in weight loss and cardiometabolic improvements (64). Surgical options targeting caloric restriction, absorption and/or digestive organs, such as the Roux-en-Y gastric bypass, the sleeve gastrectomy and the biliopancreatic diversion with duodenal switch, impact metabolism, appetite regulation and weight through surgical changes in anatomy and physiology (64). Recently (2023), the American Association of Pediatrics (AAP) has released new pediatric obesity CPGs, recommending pharmacological and surgical interventions for children and adolescents living with obesity (68). In early 2025, Canadian Pediatric CPGs will be published (69). A key difference between the American and Canadian pediatric CPGs is that instead of weight loss as targets, Canada focused on patient-reported outcome measures (PROMs), cardiometabolic improvements, and Health Related Quality of Life (68,69). At this stage, only time will tell the full content, recommendations, and implications of these guidelines on Canadian pediatric weight management practices, including surgical interventions.

2.3.4.2. Weight-Inclusive, -Neutral, or Acceptance Approaches

With the example of the new American pediatric guidelines in mind, critical RDs and fat activists have lead the critique through media of such weight-focused interventions, claiming the guidelines are fatphobic and promote eating disorder development (70,71). Fat activism is a field of its own and is advocating against the injustices enacted on fat people, related to rights, policies, and interpersonal interactions (72). In this context, the term “fat” has been reclaimed by the fat community as a neutral and empowering term rather than shameful, similarly to how the 2SLGBTQIA+ community has with the term “queer” (36). Fat activists often align with size

acceptance of fat liberatory approaches in dietetic practice, where higher weight/ larger body sizes are celebrated.

Weight-inclusive and weight-neutral practices are a middle ground between weight-centric obesity medicine and size acceptance approaches, and is a common practice approach utilized by Canadian RDs. While few resources exist defining and comparing the terms, research has been conducted on their application in practice (27,73-76). From their origins, "weight inclusive," "weight neutral," and "non-weight-focused approaches," aim to promote health behaviors for all weights, without using weight to guide their practice activities. Continually, Health at Every Size (HAES®) is a set of principles and theoretical framework, stemming from the idea that health should be a focus rather than weight change (77). HAES® can also be used as an intervention in nutrition care, where it is guided by five key principles (2013): 1) weight inclusivity, 2) health enhancement, 3) eating for well-being, 4) respectful care, and 5) life-enhancing movement (74). The principles and framework have evolved over time (2024), led by the Association for Size, Diversity, and Health (also known as ASDAH) (78). Research examining HAES® as an intervention has shown overall improvements in both physical and psychological outcomes of patients (79–81). Common arguments against HAES® are its commercialization and author dishonesty, where it was built off of the backs of fat activists (82,83). Arguably different than other medical diagnoses or health concerns, individual and sub-communities of Canadian RDs (e.g., critical theorist aligning RDs, biomedical focused RDs) vary in their level of agreement with weight-related interventions and thus the evidence supporting them.

2.4. Exploring Perceptions, Experiences, and Knowledge on Weight Evidence in Canada: Study-Specific Rationale

A scoping review (7,8) was completed to list and map the existing peer-reviewed and grey literature on Canadian RDs' perceptions and knowledge of, and experience with, weight-related evidence in practice. In the protocol development stage, the study's three primary outcomes were co-defined and conceptualized (
Figure *1*) by the co-Principal Investigators and graduate student reviewers, specific to this multi-phased research project (7,8). Experience was defined as, "an event that occurred in the past

when awake and/or cognizant; recall and description of experiences are limited to working memory" (7-8,84). Knowledge was defined as, "awareness and recall of a concept or phenomena. Knowledge informs skill" (7-8,85). Finally, perception was defined as, "informed by experience and knowledge, an individual's view, paradigm, or outlook on a topic or issue" (7-8,86). To add, through a constructivist (post-positivist) lens, all three are related to power and discourse, and in an individual, can inform each other (7-8,87). Other outcomes that are frequently used to describe RD interactions with practice include attitudes, beliefs, view, and practices (3,88-89).

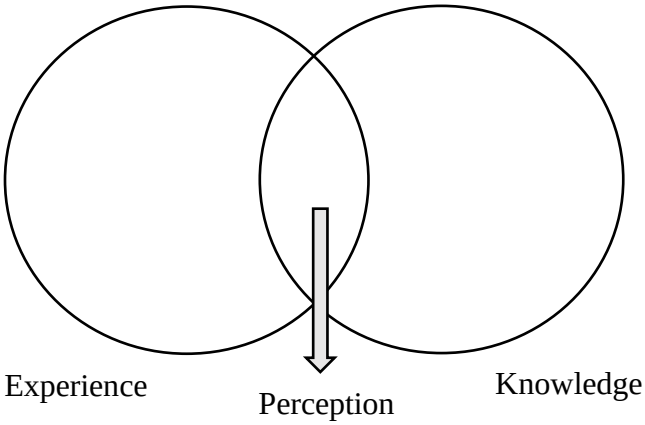

Figure 1. Pictorial representation of conceptualized overlap between experience and knowledge to inform an individual's perception (7).

Existing research on RDs' experiences, often pairs it with perception (90-94). Traditionally, research exploring RD experiences, perceptions, and knowledge utilizes survey-methods, such as questionnaires (90–92,95–102), focus groups (103), and interviews (93-94,99,104–111). Knowledge among RDs is more frequently measured using questionnaire (99,102,110–116) surveying methods, rather than interviewing (117). Knowledge in dietetic literature is typically measured using close ended questions, including scales such as Likert scaling, (114) or modified version of previously validated questionnaires (e.g., bariatric nutrition knowledge questionnaire) (111)). Furthermore, some studies utilize multi-phased surveying approaches, with stepwise recruitment for a questionnaire and interview (98), or an interview and focus group (100). All three outcomes (experiences, perceptions, knowledge) among RDs are often paired with other

related concepts such as patterns, attitudes, practices, confidence, behaviour, and application (99,102,110–117).

Personal experience is a specific form of experience happening in a healthcare provider's personal life, compared to their professional activities. Personal experience is valued in research which informs clinical practice. Participatory action research is one example of research methods where respondent voice and experience are consulted in tandem with the researchers to inform the research (118). Healthcare provider personal experience of illness, and for illnesses they provide care/ advice to patients for, has been studied in physicians (119–121). For instance, questionnaire-based research conducted in Brazil has shown physicians' (n = 3337) personal experience of using the emergency contraceptive pill was found to increase the likelihood of the physician to inform and prescribe it to patients (121).

3.0 Project Details & Methodology

3.1. Research Problem/ Rationale

Scholarly, empirical data, and current popular media all showcase conflicting paradigms exist in weight science and "obesity" dialogues. Data from Dietitians of Canada (DC) (2020) describes disagreement and alignment between Canadian dietitians with three self-selected weight paradigms (5). The close-ended data led DC to not endorse the new Adult Obesity CPGs (2020), due to the current divide in the profession. Effects of the endorsement decision cannot be prematurely determined; however, some suggest it could create further uncertainty of RDs' roles and value in weight-related dialogues and be underutilized by other regulated health professionals, such as physicians. While the CPGs are one piece of weight evidence where divergence exists among the profession (2020), it is unknown how this pertains to other forms of weight evidence (e.g., qualitative research) since surveying completed in the early 2000s (2004-2007) (3,4,122). Canadian RDs are trained using accredited programming and core competencies, yet there is known divergence among the profession when weight and body size come into conversation. Several RDs question if weight paradigm practices change or vary across dietetic practice areas (e.g., inpatient vs outpatient settings; or bariatric clinics vs eating disorder clinics) or if personal experience with respondents' own weight impacts their weight paradigm. It is unclear in current literature if or how Canadian RD demographics, such as practice setting, body size, age, ethnicity, and years in practice impact their experiences, perspectives, and knowledge of weight evidence in practice. Why is it that Canadian RDs have such differences of opinions on this topic, when they are trained the same nationally?

3.2. Theoretical Frameworks

Three key theoretical frameworks guided this research study: 1) grounded theory; 2) intersectionality; and 3) ecological systems theory and contextual change.

3.2.1. Grounded theory

Grounded theory is a research approach or methodology, aiming to generate new theory or concept(s), rather than test a known theory. Grounded theory (123,124) was used in the study as the research topic aligns with inductive approaches, to discover new information and theory

about Canadian RDs' experiences, perceptions, and knowledge of weight-related evidence. While the research is not qualitative, the research question is inductive by asking, "what are…", and questions such as "what is weight-related evidence?" Comparatively, the participants could have been provided with a definition of weight-related evidence that they are tested on, which would have been a more deductive approach. Deductive research is used to test existing theory or knowledge, whereas inductive research is used to generate theory (125). Drawing from the scientific method, both utilize step-wise processes. For inductive approaches, an observation is made, which is explored, then a pattern is recognized, before reaching a conclusion or theory on the topic at hand. For deductive approaches, existing theory is used to formulate a hypothesis, then collect data, analyze the data, whereby the hypothesis is finally accepted or rejected (125).

While the research and questionnaire development was framed by inductive-based guiding frameworks, the research tool (questionnaire) was rooted in deductive methods. Even with using a deductive tool (questionnaire), efforts were made to provide open-ended response options, to allow participants to provide responses in their own words. For example, many close-ended questions also included an "other" open-ended text box response option. Generally, in research, it is important to use a method in which respondents feel comfortable sharing their perspectives via, which a questionnaire achieved for RDs, given their frequency of use in the profession. Additionally, using a questionnaire in the study allowed the researchers to build trust with the respondents, prior to conducting interviews or focus groups with the population on this topic.

Notably, essential to grounded theory, reflexivity, was used throughout the research process, but particularly in interpreting the results to avoid making connections that were not found in the data. Though typically applied more commonly to qualitative data, reflexivity was essential to bring to the quantitative data, to adhere to strong, rigorous, and non-biased scientific methods (123,124).

3.2.2. Intersectionality

Intersectionality is the understanding of how multiple forms of identity (e.g., ethnicity, gender, size) impact human experience through social and political inequities (e.g., racism, misogynist, sizeism) (126). Intersectionality was used as a theoretical framework (127,128) in the study to support questionnaire development (e.g., Demographics section) and analysis (129). For

example, intersectionality was used to consider if any intersections of identity were found to be related to the study's primary outcomes (perspectives, experiences, knowledge). Intersectionality also informed the inclusion criteria determined, to be inclusive of all CRDs, rather than a more specific sub-population.

3.2.3. Ecological Systems Theory and Contextual Change

Ecology is the science of how environment impacts a living organism (130). Survey methodology, as an observational research method, is known to give an ecological perspective of the population of interest. Ecological systems theory and intersectionality, were applied to this MSc project, using a questionnaire as the study tool, to deductively test and form comparisons (demographics, primary outcomes) with what was known about the population (CRDs) to what was collected from this questionnaire. Both intersectionality and ecological systems theory were used in questionnaire development (Demographics section), but also in recruitment approaches (i.e., how to reach CRDs), and the determined inclusion criteria (i.e., various practice areas).

Ecological systems theory aims to explain how development is influenced by environmental factors and systems, typically with a child (young development) as the example of interest, and six overlapping stages with increasing levels of separation (131). In this MSc project, the theory was used in the context of a CRDs' development or application of weight-related evidence in practice, where practice setting is their environment. Each stage of ecological systems theory is applied to the topic, as seen in Figure 2. The centering stage is at the individual level, next is the microsystem, mesosystem, exosystem, macrosystem, and outermost is the chronosystem. The chronosystem describes changes over time. One example of this for RDs could be changes to their roles, practice area, or job position(s) over time, which is not explored in this study but could be explored in future research.

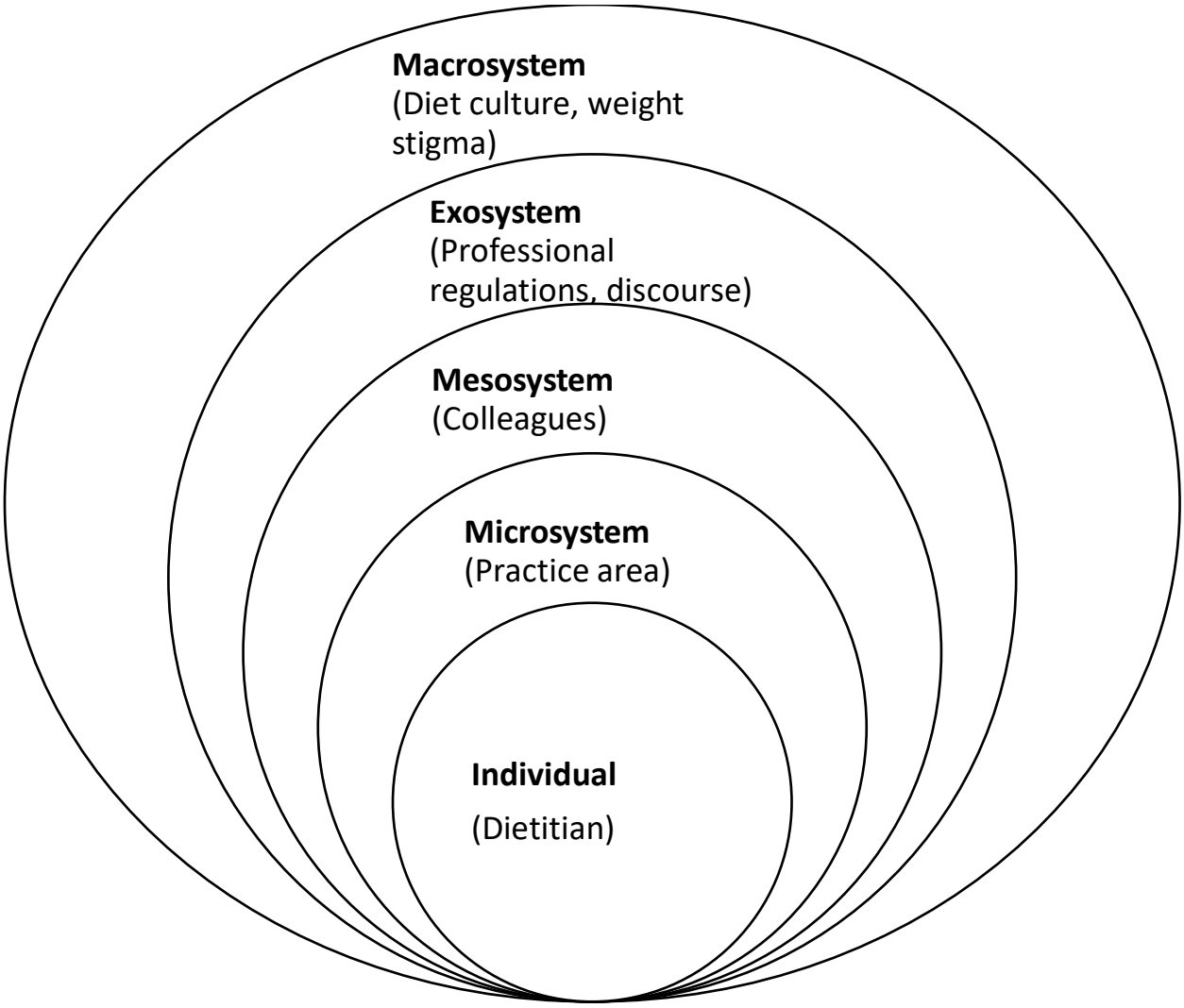

Figure 2. Research Project Conceptualized According to Ecological Systems Theory

Contextual change was used alongside ecological systems theory, to interpret the data, given that similar to physicians, RDs achieve core competencies through a variety of practice areas/ client populations (e.g., clinical, community, administrative) (132). Meaning, from education to practicing, they must learn how to adapt and apply relevant evidence, knowledge, and skills to their current practice setting and/ or client(s).

3.3 Design

The study followed a descriptive cross-sectional research design, using a questionnaire as the research tool. The stepwise process for the study is described in Figure *3*. The questionnaire was face, content, and construct validated prior to full implementation, using the Validation Rubric

for Expert Panel (VREP ©) Tool (Appendix A), using horizontal scoring and content analysis. Once implemented, the questionnaire collected data at only one point in time. Lastly, findings from the study were used to identify and describe the existing phenomena (weight evidence) experiences, perceptions, and knowledge among RDs, including demographics of the sample.

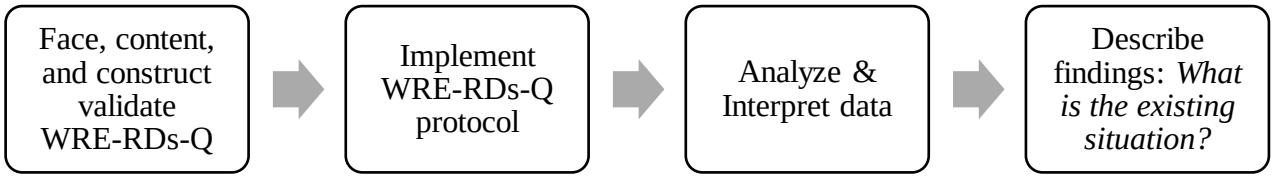

Figure 3. MSc Project Flow Diagram

3.4 Sample

3.4.1 Inclusion criteria

To participate in the study (i.e., inclusion criteria), respondents had to be RDs who spoke English, were registered in any Canadian province or territory, and worked in any setting. The problem identified and rationale for the study considered the professional dissonance (feelings of internal conflict due to misalignment between personal beliefs and professional responsibilities or expectations (133)) existing across dietitians, not only those actively seeing patients or practicing in clinical settings. One could hypothesize that including interns and retired RDs could have shown more varying data on age as a demographic; however, if interns and retired RDs were included, the sample would have no longer represent the current workforce in Canada.

3.4.2. Sample size determination

For this MSc project, sample size was estimated using two key approaches: 1) reviewing other research in the field/ with the chosen population, and 2) statistical calculations (134,135). Recently, Dietitians of Canada (DC) conducted a survey of members to decide endorsement towards the Canadian Adult Obesity CPGs (2020), where their sample size goal was $n = 180$. This was calculated based on an estimation that the guidelines would only be of interest to 10% of practicing dietitians (practicing RDs are considered to be about half of membership) (6). This estimation was not used for this study, as it aims to include all actively licenced RDs in Canada. Sample sizes of existing literature surveying dietitians range from $n = 35$ (136) to $n = 514$ (3).

Though the Barr et al. (2004) study was conducted almost 20 years ago, Martino et al. (2022) were able to recruit just as large as a sample size (n = 500) of Canadian dietitians in 2016-17 when their research was conducted (6-7 years ago) (3,137). A sample size of n = 370 was calculated for this population, which falls within the sample size range determined through a review of the literature (138).

Combining calculation-based approaches and a literature review approach [with similar methods, (e.g., online questionnaires) and samples (e.g., Canadian RDs)], an adequate sample size for this study was estimated to be approximately 375 respondents.

3.4.3. Sampling method

Nonprobability sampling was used for the study. Two sampling methods were used to recruit respondents for the study: 1) convenience sampling, and 2) snowball sampling (134). Convenience sampling was used by distributing recruitment materials to known groups of dietitians, using organizations/ associations (e.g., Dietitians of Canada, provincial colleges) newsletters and existing Listservs (e.g., Gerry's List). In attempt to address potential bias in sampling methods, snowball sampling was also used through "word of mouth", and is deemed appropriate for populations that are geographically dispersed (e.g., RDs across Canada) (139).

3.4.4. Recruitment

Peterson (2000) methods were employed for the study in tandem with a modified (i.e., via electronic means) Dilmann Method (140,141). Sampling included purposeful and snowball sampling methods. Recruitment materials were circulated online using various networks such as the Dietitians of Canada internal networks (Addiction, Mental Health and Eating Disorders; Diabetes, Obesity and Cardiovascular; Community and Public Health Nutrition; Consulting; and Pediatric), provincial RD colleges, Weight Inclusive Dietitians in Canada, Obesity Canada, Gerry Kasten (RD, MSc, FDC)'s Listserv, Diabetes Canada, Primary Care Dietitians in Canada, Heart and Stroke Foundation, Accredited Dietetic Programs in Canada, and by the research team on social media. In the final recruitment efforts, a deadline was added to the recruitment materials (poster/ image (Version 2, Appendix C), social media posts) of when the questionnaire

was closing, to prompt/ invite action from interested respondents to complete the questionnaire before it closed for data collection.

3.5. Study Outcomes

There were three primary outcomes of this study: 1) perceptions, 2) experiences, and 3) knowledge. The three primary outcomes were measured using close-ended and select open-ended questions (e.g., list three examples), rooted in quantitative methods using study's tool/ instrument (questionnaire). The secondary outcomes of this study were the demographic characteristics of the sample.

The demographic characteristics included the following:

1. Age, measured in years.
2. Sex, using a self-descriptor.
3. Gender, using a self-descriptor.
4. Ethnicity, using a close-ended question.
5. Highest level of education, measured in degree(s) achieved.
6. Years fully licenced as an RD, measured in years.
7. Primary area of practice, using a close-ended question.
8. Body size, using a self-descriptor and Pulver's scale.
9. Weight, measured in kilograms or pounds.
10. Weight history, using close-ended questions.
11. Height, measured in centimeters or feet and inches.

3.6. Research Question

This MSc project aimed to answer the following research question:
What are Canadian Registered Dietitians' experiences, perceptions, and knowledge of weight-related evidence in practice?

3.7. Purpose and Objectives

The purpose of the MSc project was to identify and describe Canadian registered dietitians' and their experiences, perceptions, and knowledge of weight-related evidence in practice, using quantitative responses.

3.7.1. Objective 1

Develop a questionnaire to survey Canadian registered dietitians' experiences, perceptions, and knowledge of weight-related evidence in practice.

1.a. Draft a questionnaire, using existing literature and findings from Waugh et al. (2025) (7,8)

1.b. Face, content, and construct validate the questionnaire.

3.7.2. Objective 2

Implement a questionnaire to survey Canadian Registered Dietitians' experiences, perceptions, and knowledge of weight-related evidence in practice.

2.a. Recruit respondents to complete the questionnaire.

2.b. Collect data for 2 months, or until the sample size goal of around 375 respondents is achieved.

3.7.3. Objective 3

Identify and describe Canadian RDs and their experiences, perceptions, and knowledge of weight-related evidence in practice.

3.a. Survey Canadian RDs on their demographics and their experiences, perceptions, and knowledge related to weight evidence in practice.

3.b. Describe the sample's demographics and their experiences, perceptions, and knowledge related to weight evidence in practice, using quantitative methods.

3.8. Survey Instrument – The Questionnaire

The survey instrument was an online mixed-form questionnaire (Appendix B), called the Weight-Related Evidence in Registered Dietitians Questionnaire (WRE-RDs-Q). In the social sciences, questionnaires are one of the most commonly and widely used research methods (142), with two main types of questioning: 1) close-ended, and 2) open-ended. Close-ended questioning such as dichotomous, multiple choice, and scales, were used to survey Canadian RDs on demographics as well as experiences, perceptions, and knowledge of weight evidence. Additionally, Likert scaling was used to measure level of agreement or importance of statements related to weight-related evidence (WRE) (143). Open-ended questions were used in the study to survey Canadian RDs on their experiences and how they describe practice issues, and their opinions related to weight evidence, in their own words. Only quantitative open-ended responses (e.g., three words or less) are included in this MSc project. Responses over 3-4 words will undergo thematic analysis in collaboration with the funded project's Research Coordinator and grant holders.

3.8.1. Content and question generation

Waugh et al. (2025) directly informed development of the study's questionnaire, as did Peterson 2000, and other landmark resources on questionnaire design (8,140,144–148). Of note, the Pulver Rating scale (Demographics section) (149), six items from Barr et al. (2004)'s CRD attitudes study (Knowledge section) (3), and three items from the Anti-Fat Attitudes (AFA) Questionnaire (willpower subscale; Experience section) (150) were included in the WRE-RDs-Questionnaire (Q). Please see Appendix B, for the final draft of the questionnaire.

The scoping review identified two findings as gaps in representation (of the dietetic profession) in the existing literature, most specifically when exploring their experiences, perceptions, knowledge of weight-related evidence. First, gray literature (e.g., blogs) was the only source of evidence where RDs' weight status was reflected on more than once, related to WRE application and interpretation (151,152). Thus, in the questionnaire, an item surveyed CRDs on what types of evidence they value for WRE (Weight-Related Evidence section, Appendix B). Secondly, the review found CRDs identified feeling unprepared (lack of training) to provide weight-related

counselling (153–156). This was included in the questionnaire by surveying CRDs on what training they have received, and to describe their experience(s) with their WRE training, again in the Weight-Related Evidence section.

As the questionnaire took a broad approach, aiming to be inclusive of all/any uses of application or interpretation of body weight and evidence in practice, the research team adopted the term "weight-related evidence." Use of this umbrella term would also allow it to be applied to all practice areas, beyond obesity management (e.g., malnutrition, and more). The questionnaire was named the Weight-Related Evidence Registered Dietitians Questionnaire, with the short-form of "WRE-RDs-Q" in dissemination.

3.8.2. Face, content, and construct validation

Face, content, and construct validity of the study's questionnaire was assessed using the VREP © tool (Appendix A), originally developed by Marilyn K. Simon and Jacquelyn White (2016) for use with expert panels. VREP © has been used to validate several questionnaires in existing literature, including in the Canadian RD context (27,157–162). Permission to use the tool was granted by Marilyn K. Simon and/ or Jacelyn White. An existing list of Delphi Members from the scoping review, which was created in consultation with the research team to identify experts spanning provinces and practice area, was used to recruit volunteers to participate in face, content, and construct validity of the WRE-RDs-Q.

3.8.3. Format of distribution

The questionnaire was distributed in English. The study utilized a forms-based survey that was hosted online via LimeSurvey, recommended by the University's Research Ethics Board (UREB) (163).

3.8.4. Ethical considerations

UREB approval was obtained from MSVU prior to beginning the MSc project (File # 2022-260; Student Research File # 2023-018). Consent by completion was used for both the face, content, and construct validation and implementation of the questionnaire. In addition to this, a consent cover page was included with all distributed materials, including general information about the

research study, what is required to participate (e.g., time to completion, topics covered), eligibility criteria, data usage and storage, and the research team's contact information.

3.9. Statistical Analysis

For close-ended responses, statistical analyses was conducted using Microsoft Excel and IBM SPSS Software (Version 28 and 29). For select open-ended responses (that yield categorical data), Microsoft Word was used to create summary tables of responses. Descriptive statistics (counts, precents) were generated for all categorial and nominal data collected. Continuous data were analyzed using means, standard deviations, minimums and maximums (range).

Inferential statistics were used to determine associations (where $p < 0.05$ is significant), between independent variables (e.g., demographics) and the study's primary outcomes (experiences, perceptions, knowledge); however, they should be interpreted with caution, given the small sample size of the study. Fisher's Exact Test (nonparametric, categorical data) was used to determine associations and create comparisons between groups in the data using 2 x 2 contingency tables, also known as crosstabulations or crosstabs (164). Fisher-Freeman-Halton Exact Test, a version of Fisher's Exact, was also used, in cases where contingency tables were comparing more than 2 x 2 groups. Fisher's Exact Tests were used because they are recommended for small sample sizes, and/or when at least one cell has a value of less than five (165).

4.0. Results

4.1. Questionnaire Development

Face, content, and construct validation

Eight reviewers volunteered to participate in face, content, and construct validation, whom had various areas of expertise including but not limited to bariatrics, metabolics, integrative and functional health, middle-age nutrition, mindfulness, weight neutrality, pediatrics, and diabetes. The reviewers provided feedback on the questionnaire using the VREP © tool, where six reviewers provided scores, per the tool's criteria (Table 1). Overall, the VREP © tool was very useful as it allowed reviewers to be specific in their feedback (using the table), but also provide more detailed or overall feedback in the comments section. For example, a number of typo or question-specific clarity requests were able to be addressed through effective use of the VREP © table.

Horizontal scoring was tabulated (n = 6; Table 1), where the average score of the questionnaire was 3.5/4. This is where 1 = not acceptable (major modifications needs, 2 = below expectations (some modifications needed), 3 = meets expectations (no modifications needed but could be improved with minor changes), and 4 = exceeds expectations (no modifications needed). The lowest criteria average was 'negative wording' (mean: 3.1), and the highest was for 'use of technical language' (mean: 4).

Table 1. Criteria in VREP © Tool and their mean scores for the Weight-Related Evidence Registered Dietitians Questionnaire (n = 6).

Criteria in VREP © Tool	**Mean Score (n = 6)**
Clarity	3.25
Wordiness	3.4
Negative Wording	3.1
Overlapping Responses	3.4
Balance	3.2
Use of Jargon	3.7
Appropriateness of Responses Listed	3.3
Use of Technical Language	4
Application to Praxis	3.9

Criteria in VREP © Tool	**Mean Score (*n* = 6)**
Relationship to Problem	3.6
Measure of Construct (A): Demographics	3.8
Measure of Construct (B): Experience	3.6
Measure of Construct (C): Perception	3.7
Measure of Construct (D): Knowledge	3.8
Total	3.6

n = number of responses

Written feedback was summarized and tabulated, organized by comment, frequency, and whether or not the feedback was integrated into the final draft of the questionnaire or not (and rationale for each decision). The decision-making process for feedback integration was done line by-line collaboratively via team meetings with the Research Coordinator, Research Assistant, Thesis Supervisor, and Graduate Student.

Two thirds (66.6%; *n* = 4/6) of reviewers wanted the term WRE defined; however, this was not integrated as the research team wanted to learn how participants define the term, and what they consider to be WRE, in their own words. Instead, the question prompt was edited to be more reflective of this, reading "Define weight-related evidence *using your own words. There is no correct answer*." Similarly, one-third (33.3%; *n* = 2/6) wanted clarity on "quality of evidence," suggesting GRADE, however this was not integrated, as it was aimed to avoid questions that had a "right" or "wrong" answer attached to them, as we sought out RDs baseline perceptions, experiences, and knowledge. Along with this, some reviewers provided their rationale for: a response to AFA-based items, use of terms used to describe bodies, and/ or their interpretation of the evidence to support or not support the knowledge statements. This further illustrates the current tension ongoing in the profession on the topic.

Along with additional details requested for several knowledge statements, probing questions were also posed about the experience section. Several clarity items were addressed, and experience was a section where respondents suggested alternate ideas for questions, showing interest in the topic, such as, asking if respondents have "sought help from other professionals

for managing their body weight," and an additional, "I fear *losing* weight because of what I do for work," for balance. The "fear [of] losing weight" suggestion is an example of one that was not integrated, to provide a balance of positive and negatively framed questions, as suggested by Peterson (2000) (140). Additionally, literature supported widespread prevalence of fear of gaining weight, but not fear of losing weight as a common concern.

Questioning reviewer bias came up, in requests made where their suggestions showcased how they wanted respondents to respond to the question(s) at hand. One example of this is in requesting more details or context to be able to respond to the knowledge statements. Suggestions as such were not integrated, in order to not sway respondent responses to a "desired" or "correct" response. Defining terms like "weight inclusive" was also suggested to be included in the glossary; however, was not integrated given we wanted responses to be reflective of respondents' current understanding of the term/ topics. Overall, reviewers' feedback was very helpful in questionnaire development. Several reviewers also provided positive comments about exploring this topic further in the profession, despite it being an, "uncomfortable topic for many."

4.2. Questionnaire Implementation

The implemented draft of the questionnaire included five sections, distributed at one point in time. The sections of the WRE-RDs-Q were: 1) Weight-Related Evidence; 2) Getting to Know You & Your Experiences with Your Weight; 3) Perceptions & Paradigms of WRE in Nutrition Care/ Practice; 4) Your Experiences with WRE in Nutrition Care; 5) Knowledge of WRE in Nutrition Care. One optional (sixth) section of the questionnaire was COVID-19, which is not included in this MSc project.

The final questionnaire had five sections, with 73 close-ended and seven open-ended questions (80 total). Nine of the 73 close-ended questions were fixed open-ended questions, for example, only applicable when respondents were asked to provide context if they chose "other" as a response option, or items asking for textual examples, such as "list three words or examples…".

4.3. Results

The WRE-RDs-Q was live for a total of three months (July 21, 2023 – October 20, 2023), collecting a total of 52 responses from CRDs. A total 174 people interacted with the questionnaire;121 were removed. See Section 3.4.4. for additional details on respondent recruitment.

4.3.1. Sample Characteristics

Fifty-two Canadian Registered Dietitians (CRDs) completed the questionnaire, taking a mean of just over half an hour (mean: 35.5 minutes; SD: +/- 18 minutes) to complete. The WRE-RDs-Q surveyed the respondents on a variety of demographic characteristics such as age, sex, gender, ethnicity, province of residence, highest level of education, body size (including weight history), additional training completed, years licenced as an RD, primary and secondary employment/ practice areas, and weight-related identified needs of their typical clientele (Table 2 and Table 3).

The majority of respondents identified both their biological sex (96.0%; *n* = 48/50) and gender (90.0%; *n* = 45/50) as female. One respondent identified as male (2.0%; *n* = 1/50), and two as non-binary or gender queer (4.0%; *n* = 2/50). Three respondents (sex: *n* = 1/52; gender: *n* = 2/50) wrote in, which appear to be very literal responses, or from those who may not have been educated on differences between gender and sex, such as “sex” for sex, and “heterosexual” and “what do you identify as?” for gender. The raw data provides insights that these responses likely do come from literal thinkers, or those not educated on sex, gender, and sexuality differences, but are not provided in MSc project for protection of identifiability of respondent(s).

Fifty-nine percent (59.2%; *n* = 29/49) of the sample identified their ethnicity as North American/ White, 16.3% (*n* = 8/49) European, and 14.3% (*n* = 7/49) as other. Respondents provided the following terms as “other”: Acadian (White / Metis), Ashkenazi Jew, Jewish, South Asian and white European, Middle Eastern (*n* = 2/49), and French Acadian North American. About half of respondents (52.0%; *n* = 26/49) resided in central Canada (Ontario; Quebec), a third in (32.0%; *n* = 16/49) in Western Canada (British Columbia; Alberta; Manitoba), and 16.0% (*n* = 8/49) in the

Eastern provinces (Nova Scotia; New Brunswick). The mean age of the sample was 42 years of age, with the youngest respondent aged 26 years and the oldest 81 years of age.

Table 2. Respondents' demographics, including sex, gender, ethnicity, residence, education, practice area, and clientele.

Characteristic (*N*)	***n* (%)**
Biological sex (50)	
Female	48 (96.0)
Male	1 (2.0)
"Sex"	1 (2.0)
Gender (50)	
Cisgender female	2 (4.0)
Female	43 (86.0)
Non-binary	1 (2.0)
Gender queer	1 (2.0)
Male	1 (2.0)
Heterosexual	1 (2.0)
"What do you identify as?"	1 (2.0)
Ethnicity (49)	
North American/ White	29 (59.2)
European	8 (16.3)
Other	7 (14.3)
East Asian	3 (6.1)
North American/ Indigenous	1 (2.0)
Caribbean Region	1 (2.0)
Currently reside (50)	
Ontario	25 (50.0)
British Columbia	11 (22.0)
Nova Scotia	6 (12.0)
Alberta	3 (6.0)
New Brunswick	2 (4.0)
Manitoba	2 (4.0)
Quebec	1 (2.0)
Highest level of education (50)	
Master's degree	27 (54.0)
Undergraduate degree	23 (46.0)
Primary place of work (50)	
Clinical – Outpatient care	19 (38.0)
Community/Public Health	9 (18.0)
Clinical – Acute care	8 (16.0)
Private practice/ Consulting	4 (8.0)
Private practice, primarily individual counselling	2 (4.0)
Population and public health	2 (4.0)
Education, academia or research	2 (4.0)

Characteristic (*N*)	***n* (%)**
Business or industry	1 (2.0)
Non-governmental organization	1 (2.0)
Food Service Management	1 (2.0)
Management or administration	1 (2.0)
Secondary place of work (22)	
Private practice/ Consulting	7 (31.8)
Private practice, primarily individual counselling	2 (9.1)
Communications/ Media	2 (9.1)
Clinical – Long term care	2 (9.1)
Clinical – Outpatient care	2 (9.1)
Education, academia or research	2 (9.1)
Clinical – Acute care	1 (4.5)
Management or administration	1 (4.5)
Non-governmental organization	1 (4.5)
Other	1 (4.5)
Employed outside of dietetics	1 (4.5)
*Additional experience and/or training completed on WRE (52)	
On-the-job learning	42 (80.8)
Additional courses or certifications	29 (55.8)
Internship	16 (30.8)
University level electives	12 (23.1)
Other	11 (21.1)
Volunteering	6 (11.5)
In a typical month, provide care to clientele that are	
Pre- or post-bariatric surgery (48)	15 (31.3)
Seeking weight loss (49)	32 (65.3)

n = number of responses; *N* = number of respondents; * = could select more than one response; WRE = weight-related evidence

For body size and weight (Table 3), just over half of the respondents (53.1%; *n* = 26/49) maintained a similar weight throughout their adult lives. Twenty-six percent of respondents (28.4%; *n* = 14/49) identified as currently living in a "thin" body and 20.4% (*n* = 10/49) in a "large" body. Despite this, 41.7% (*n* = 20/48) of respondents indicated images A to C (i.e., smallest bodies) of the Pulver Figure Scale (Appendix B) best represents their current body. Most respondents (27.1%; *n* = 13/48) identified with image D, 18.8% (*n* = 9/48) with image E, and 12.5% (*n* = 6/48) with image F (i.e., mid-size bodies). No respondents identified with images G to I (i.e., largest bodies on the scale). Relevant to lived experience, 16.3% (*n* = 8/49) of the respondents indicated that they have previously lived in a "large" body, and 36.7% (*n* = 18/49) have previously lived in a "thin" body.

Table 3. Respondents' self-rated figure scale and weight history.

Characteristic (*N*)	***n* (%)**
Pulver Figure Scale (48)	
A	2 (4.2)
B	8 (16.7)
C	10 (20.8)
D	13 (27.1)
E	9 (18.8)
F	6 (12.5)
G	0 (0.0)
H	0 (0.0)
I	0 (0.0)
I prefer not to respond to this question	1 (2.1)
*Personal weight history (49)	
I now live in a thin body	14 (28.6)
I now live in a large body	10 (20.4)
I have previously lived in a thin body	18 (36.7)
I have previously lived in a large body	8 (16.3)
I have maintained a similar weight throughout my adult life	26 (53.1)
I prefer not to respond to this question	1 (2.0)

n = number of responses; *N* = number of respondents; * = could select more than one response

With the Pulver Figure Scale, only one respondent (2.1%; *n* = 1/48) indicated they preferred not to respond to the question, and the same participant (2.0%; *n* = 1/49) also preferred not to respond to the personal weight history questions (Table 3).

Comparatively, using numeric means (Table *4*), the sample's mean current BMI was found to be 25.2 kg/m^2 (SD: 3.8 kg/m^2) with a range of BMIs from 19.5 to 33.9 kg/m^2. As an adult, the sample had a mean lowest weight of 60.0 kg (mean BMI 21.6 kg/m^2), with a range of 45.0 kg to 93.0 kg (BMI min: 16.3 kg/m^2; BMI max: 26.7 kg/m^2). For highest adult weight, the mean was 74.3 kg (mean BMI: 26.8 kg/m^2), with a range of 52 to 114.3 kg (BMI min: 20.3 kg/m^2; BMI max: 37.3 kg/m^2). As a note, all weights reported for highest and lowest, were asked to be absent of medical water retention or pregnancy. Alternatively, one respondent (*n* = 1/43) indicated "as a rule, I do not weight myself." Two additional respondents (*n* = 2/43) indicated their responses were estimates, as they don't weigh themselves or use a scale, with one writing, "I don't feel that there is any medically necessary purpose to body weight."

Table 4. Respondents' demographics, including age, years licensed as a dietitian, height, and weight history.

Characteristic (unit, if applicable) [*N*]	**Mean +/- SD (Minimum, Maximum)**
Age (years) [50]	42* +/- 12.5 (26, 81)
Years fully licensed as an RD (years) [50]	15.75 +/- 11.75* (1, 53)
Height (metres, m) [44]	1.67 (1.52, 1.93)
Current weight (kilograms, kg) [42]	70.3 (49.9, 112.5)
Current BMI (kg/m^2) [42]	25.2+/- 3.8 (19.4, 33.9)
As an adult (absent of medical water retention, pregnancy)	
Highest weight [41]	74.3 +/- 14.6 (52, 114.3)
Highest BMI [41]	26.8 +/- 4.4 (20.3, 37.3)
Lowest weight [43]	60.0 +/- 9.4 (45, 93.0)
Lowest BMI [43]	21.6 +/- 2.4 (16.3, 25.9)

n = number of responses; *N* = number of respondents; SD = Standard deviation; RD = Registered Dietitian; BMI = Body Mass Index; * = rounded to the nearest quarter (0.25), for years

For highest level of education, the sample was split between 54.0% (*n* = 27/50) having a Master's degree, and 46.0% (*n* = 23/50) having an undergraduate degree. For additional training, 55.8% (*n* = 29/52) of respondents indicated they've completed additional courses or certifications, 23.1% (*n* = 12/52) university level electives, and 11.5% (*n* = 6/52) completed volunteering related to weight evidence. Whereas 80.8% (*n* = 42/52) indicated they've experienced on-the-job learning and 30.8% (*n* = 16/52) internship experiences/ training related to weight evidence. Otherwise, *n* = 13 CRDs indicated they received "other" forms of training, including engagement with lived experience sharing, books, podcasts, and popular media uptake.

The sample's mean was 15 years, 9 months (15.75 years), for years of experience as a fully licenced RD, with a range of 1 to 53 years of experience. Current primary place of work varied across the sample; however, the majority of respondents (56.3%; *n* = 33/50) indicated some form of clinical practice as their primary place of work, with outpatient being the most prevalent (39.6%; *n* = 19/50), followed by community/ public health (18.8%; *n* = 9/48), and acute care (16.7%; *n* = 8/50). Forty-five percent of respondents (45.8%; *n* = 22/50) have a secondary place of work, with the majority having a secondary place of work in private practice (40.9%; *n* = 9/22), then communications/ media (9.1%; *n* = 2/22), long term care (9.1%; *n* = 2/22), outpatient care (9.1%; *n* = 2/22), and education, academia or research (9.1%; *n* = 2/22).

For the RDs' clientele (Table 4), 18.4% (*n* = 9/49) indicated they work with people who identity as fat, having a higher weight, living in a larger body, or having a BMI above or equal to 30 kg/m^2 one to a quarter percent of the time; 12.2% (*n* = 6/49) just over a quarter to fifty percent of the time; 44.9% (*n* = 22/49) just over half to three quarters of the time; and 18.4% (*n* = 9/49) indicated they see patients with higher weights just over three quarters to one-hundred percent of the time. In a typical month, 65.3% (*n* = 32/49) of RDs sample indicated they provide care to people seeking weight loss, and 31.3% (*n* = 15/48) indicated they provide care to people pre- or post-metabolic bariatric surgery (Table 1).

Table 5. Frequency of use of weight-related evidence in practice and of seeing clients living in larger bodies.

Question (*N*)	**1% to 25% of the time** [*n* (%)]	**26% to 50% of the time** [*n* (%)]	**51% to 75% of the time** [*n* (%)]	**76% to 100% of the time** [*n* (%)]	**I do not use weight-related evidence in practice.** [*n* (%)]
How often do you use weight-related evidence in practice? (50)	9 (18.0)	7 (14.0)	17 (34.0)	14 (28.0)	3 (6.0)
How often do you work with people who identify as fat, having a higher weight, living in a larger body, or having a BMI above or equal to 30kg/m^2? (49)	9 (18.4)	6 (12.2)	22 (44.9)	9 (18.4)	3 (6.1)

n = number of responses; *N* = number of respondents; BMI = Body Mass Index

4.3.2. Weight-Related Evidence

Six percent (*n* = 3/50) of our sample indicated they do not use weight-related evidence in practice, whereas 62.0% (*n* = 31/50) indicated they use weight-related evidence frequently, or

over half their time in practice. About a third (28.0%; *n* = 14/50) of our sample indicated they use weight-related evidence 76 to 100% of their time in practice (Table *5*).

When asked what they considered to be evidence (Figure 4), generally, respondents agreed on that clinical practice guidelines (88.5%; *n* = 46/52) and research articles (96.2%; *n* = 50/52) are considered to be evidence, and blog posts are not (90.4%; *n* = 47/52). Where dietitians were divided and had an even split (50.0% each; *n* = 26/52, each) was whether patient perspective is considered evidence or not. However, less than twenty-percent (17.3%; *n* = 9/52) of the sample indicated "other" forms of evidence, which included lived experience, clinical judgement, and blogs with reference lists.

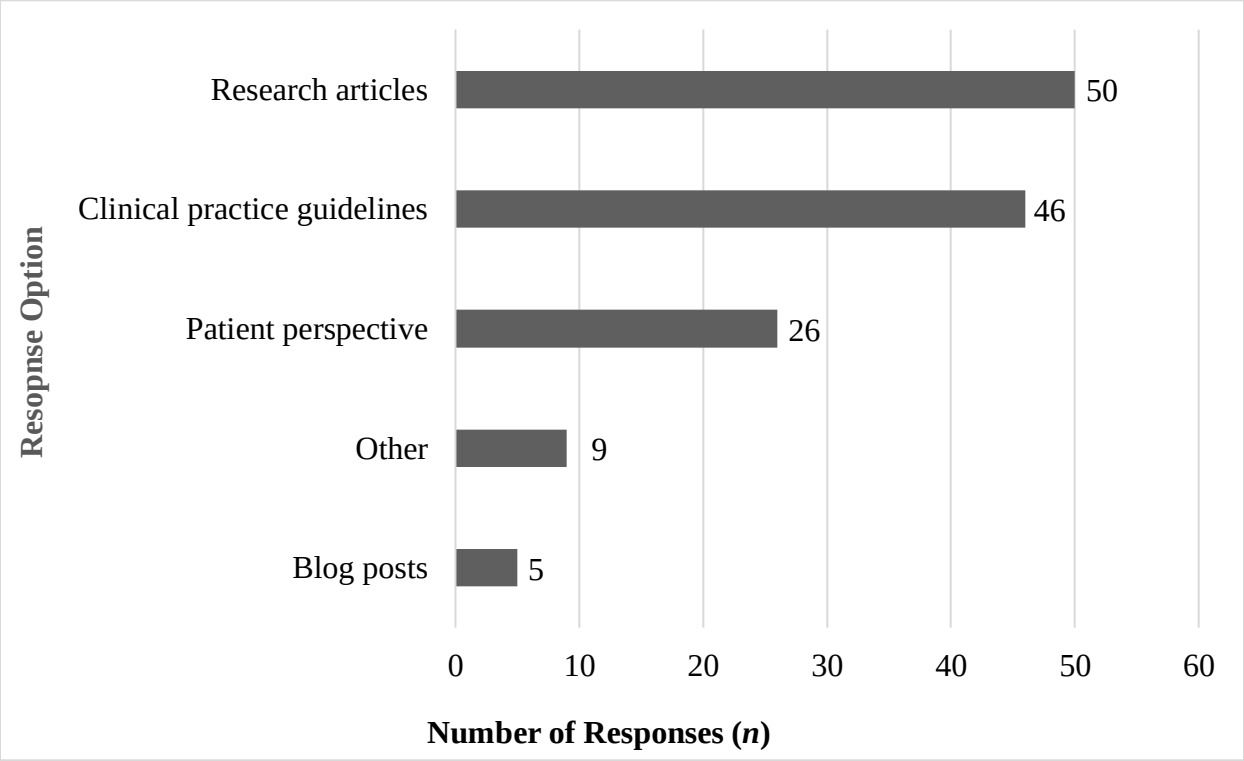

Figure 4. Responses (*N* = 52) to, "what is evidence?"

n = number of responses; *N* = number of respondents

Note. Respondents could select multiple responses to this question.

Comparisons were made between considering CPGs as evidence (Figure 4) and the three weight-related (WR) paradigms (See Section 4.3.3.1.). The results of the Fisher's exact test [(1) *p* =

0.397, dominant/ weight-centric paradigm; (2) $p = 0.388$, health/ complication-centric paradigm] do not indicate a significant association between considering CPGs as evidence and either (1) the dominant/ weight-centric paradigm, or (2) the health/ complication-centric paradigm. However, the results of the Fisher's exact test ($p = 0.022$) indicate a significant association between considering CPGs as evidence and identifying with the health/ complication-centric paradigm. All respondents who identified with the health/ complication-centric paradigm ($n = 24/48$) considered CPGs as evidence ($n = 24/52$) (See Table I in Appendix D for full crosstabulation comparisons).

Comparisons were also made between considering CPGs as evidence (Figure 4) and respondents' practice contexts (See Section 4.3.1.). For example, the results of the Fisher's exact test [(1) $p = 0.558$), primary practice area; (2) $p = 0.360$, clientele includes pre-and post-metabolic surgery patients], do not indicate a significant association between considering CPGs as evidence and either (1) practice area or (2) their patient population including pre- or post-metabolic surgery patients. See Table II, Appendix D, for crosstabs/ additional data for these comparisons. Otherwise, the results of the Fisher's exact test ($p = 1.000$) do not indicate a significant association between considering CPGs as evidence and seeing patients seeking weight loss.

Table 6. Comparison between responses to considering clinical practice guidelines as evidence, weight-related paradigms, primary practice area, and respondents' typical clientele.

Characteristic *n / N (%)*	**Characteristic** *n / N (%)*	**P-value**
Clinical practice guidelines are evidence Yes *46/52 (88.5)* No *6/52 (11.5)*	**Dominant/ Weight-centric paradigm** Yes *4/52 (7.7)* No *48/52 (92.3)*	0.397[a]
	Health/ Complication-centric paradigm Yes *24/48 (50.0)* No *25/48 (50.0)*	0.022[a]*
	Critical/ Non-weight centric paradigm Yes *30/48 (62.5)* No *18/48 (37.5)*	0.388[a]

Characteristic *n / N (%)* **Clinical practice guidelines are evidence** Yes *46/52 (88.5)* No *6/52 (11.5)*	**Characteristic** *n / N (%)*	**P-value**
	Primary practice area Admin/ Management *3/50 (6.0)* Clinical *33/50 (66.0)* Public Health/ Community *12/50 (24.0)* Education/ Academia/ Research *2/50 (4.0)*	0.558[b]
	Working in bariatrics Yes *15/48 (31.3)* No *33/48 (68.7)*	0.360[a]
	Clientele seeking weight loss Yes *32/49 (65.3)* No *17/49 (34.7)*	1.000[a]

n = number of responses; *N* = number of respondents; * = significant association
[a] = Derived by Fisher's Exact Test, Exact Sig. (2-sided)
[b] = Derived by Fisher-Freeman-Halton Exact Test, Exact Sig. (2-sided)
Note. Respondents could select multiple responses to weight-related paradigms.

For forms of research/ methods (Figure *5*), CRDs in our sample indicated they typically refer to meta-analyses and systematic reviews (94.2%; *n* = 49/52), randomized controlled trials (82.7%; *n* = 43/52), and cohort studies (53.8%; *n* = 28/52), to get weight-related evidence. Comparatively, CRDs in our sample indicated they *do not* typically refer to animal and in vitro (92.3%; *n* = 48/52), case-control (73.1%; *n* = 38/52), case series (84.6%; *n* = 44/52), case reports (80.8%; *n* = 42/52), and editorials, commentaries, or expert opinion papers (59.6%; *n* = 31/52). However, 40.4% (*n* = 21/52) of respondents *do* refer to editorials, commentaries, or expert opinion papers. No significant associations ($p < 0.05$) were found between type of research or methods typically referred to for WRE and identified WR paradigm or primary practice area. Almost a fifth of the sample (19.2%; *n* = 10/52) indicated they also typically refer to "other" forms of research to get weight-related evidence, listing qualitative research, lived experience, and clinical judgement examples of such.

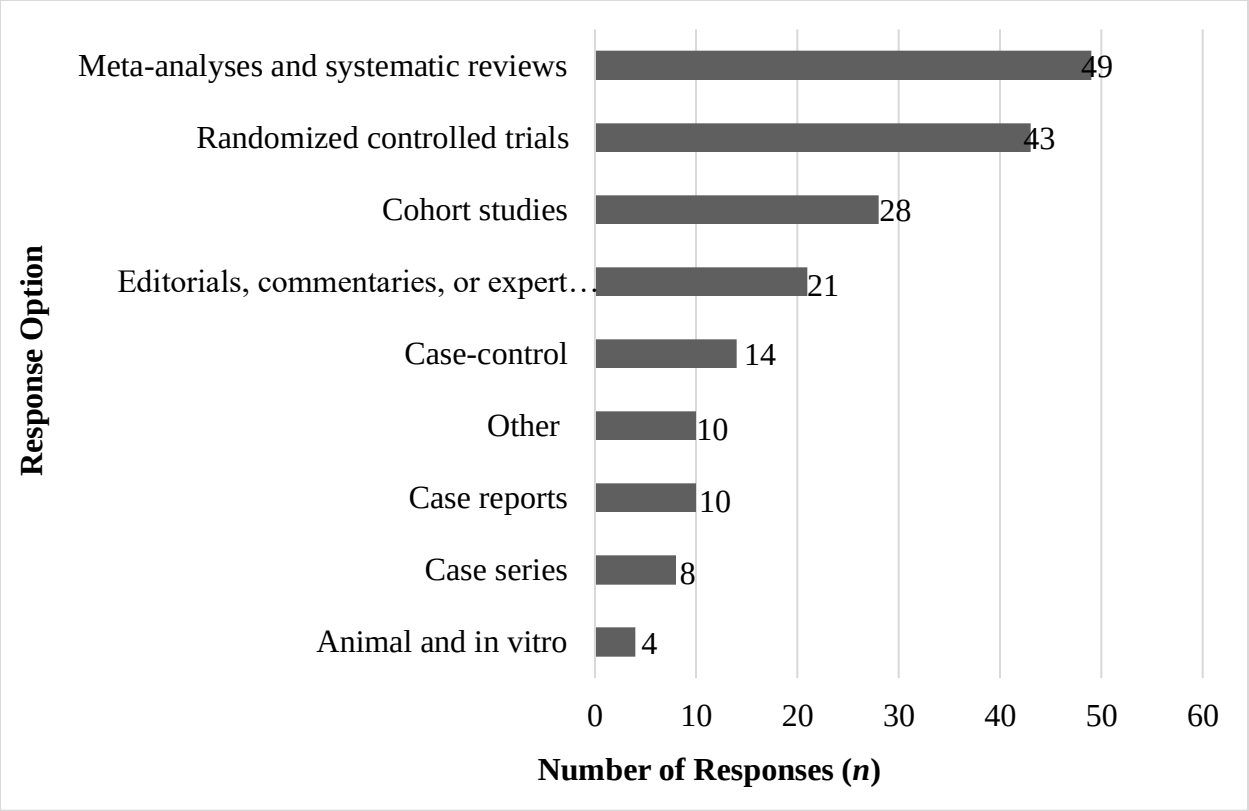

Figure 5. Responses (*N* = 52) to, "what forms of research/ methods do you typically refer to, to get weight-related evidence?"

n = number of responses; *N* = number of respondents
Note. Respondents could select multiple responses to this question.

The next set of questions asked CRDs how weight exists in the nutrition care they provide to people (Figure *6*). Seventy-six percent of respondents (76.9%; *n* = 40/52) said weight exists in body image, 61.5% said BMI (*n* = 32/52) and nutrition requirement calculations (61.5%; *n* = 32/52), and 57.7% said weight exists as an outcome (*n* = 30/52) to their clients; whereas, others said weight does not exist in body image (23.1%; *n* = 12/52), BMI (38.5%; *n* = 20/52), nutrition requirement calculations (38.5%; *n* = 20/52), or as an outcome (42.3%; *n* = 22/52) in the nutrition care they provide. Two items where the sample had more split responses was measurements and as goal. This is where slightly more than half of the RD sample said weight does *not* exist with measurements (57.7%; *n* = 30/52), or as a goal (55.8%; *n* = 29/52) in the nutrition care they provide.

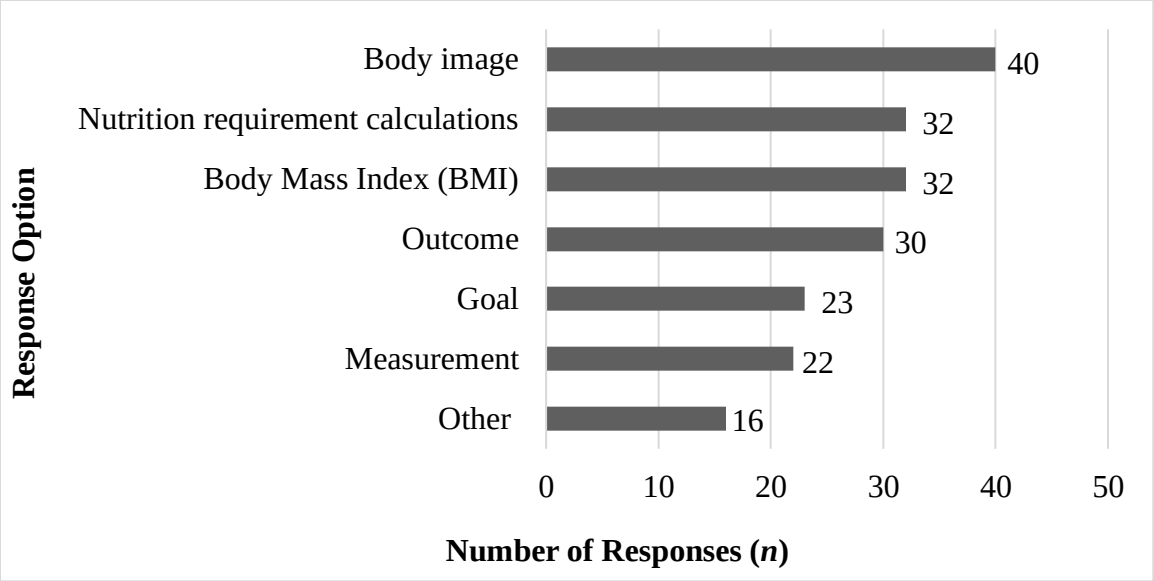

Figure 6. Responses (*N* = 52) to: How does weight exist in the nutrition care you provide?

n = number of responses; *N* = number of respondents
Note. Participants could select multiple responses to this question.

Comparisons were made between the ways weight exists in nutrition care respondents provide and primary practice area (Section 4.4.1.). The results of the Fisher's exact text [(1) $p = 0.019$, BMI; (2) $p = 0.004$, goal; (3) $p = 0.001$, nutrition requirement calculations] indicate a significant association between primary practice area and weight showing up as/in (1) BMI, (2) goal(s), and (3) nutrition requirement calculations, in the nutrition care respondents provide (Table 7).

This is where those in clinical practice most frequently identified BMI (*n* = 25/31) (Table III, Appendix D), weight as a goal (*n* = 19/22) (Table IV, Appendix D), and nutrition requirement calculations (*n* = 25/30) (Table VII, Appendix D) as ways in which weight exists in the nutrition care they provide. For all crosstabulations for these comparisons, see Tables III-VIII, Appendix D.

Otherwise, the results of the Fisher's exact text [(1) $p = 0.274$, measurement(s); (2) $p = 0.276$, body image; (3) $p = 0.702$, outcome(s)] do not indicate a significant association between primary practice area and weight showing up as/in either (1) measurement(s), (2) body image, or (3)

outcome(s), in the nutrition care respondents provide (Table *7*. Comparison between primary practice area and how weight exists in the nutrition care respondents provide.).

Table 7. Comparison between primary practice area and how weight exists in the nutrition care respondents provide.

Characteristic *n / N (%)*	**Characteristic** *n / N (%)*	**P-value**
Primary practice area Admin/ Management *3/50 (6.0)* Clinical *33/50 (66.0)* Public Health/ Community *12/50 (24.0)* Education/ Academia/ Research *2/50 (4.0)*	**Body Mass Index** *31/50 (62.0)*	0.019[a]*
	Goal *22/50 (44.0)*	0.004[a]*
	Nutrition requirement calculations *30/50 (60.0)*	0.001[a]*
	Body image *40/50 (80.0)*	0.276[a]
	Outcome *29/50 (57.7)*	0.702[a]

n = number of responses; *N* = number of respondents; * = significant association
[a] = Derived by Fisher-Freeman-Halton Exact Test, Exact Sig. (2-sided)
Note 1. Participants could select multiple responses to how weight exists in nutrition care.

Almost a third (30.0%; *n* = 15/50) of respondents said weight exists in "other" ways in the nutrition care they provide, for instance in referrals for weight loss, weight stigma education, assessment (e.g., nutrition requirements, EOSS tool) and intervention (e.g., metabolic surgery), and non-weight focused approaches and discussions. Examples of non-weight focused approaches often listed included weight inclusive and weight neutral, and discussions with clients included education focusing on weight not being a parameter of health, weight and mental health, and how their weight makes them feel.

4.3.3. Perceptions

Perceptions of the following were measured among Canadian RDs: 1) weight-related paradigms; 2) importance of weight-related assessment in the NCP; and 3) quality of weight-related evidence.

4.3.3.1. Weight-related paradigms

Weight-related paradigms were defined using three categories adapted from a literature review by Nutter and colleagues (2016), described in PEN®'s *Weight Stigma Backgrounder*, a resource available to Canadian RDs. The three paradigms/ approaches were: 1) dominant/ weight-centric; 2) health/ complication-centric; and 3) critical/ non-weight centric (Appendix B, questionnaire).

Over half of the sample (62.5%; *n* = 30/48) indicated they draw from a "critical/ non-weight centric" approach in their practice, whereas 8.3% (*n* = 4/48) indicated they draw from a dominant/ weight centric approach (Figure 4). The sample was split (50.0%, *n* = 24/48 yes; 50.0%, *n* = 24/48 no) on drawing from the health/ complication-centric approach in practice. Overall, 50.0% (*n* = 24/48) of the sample indicated they draw from the health/ complication centric approach in practice, and 19.2% (*n* = 10/48) identified with more than one approach (Figure *7*).

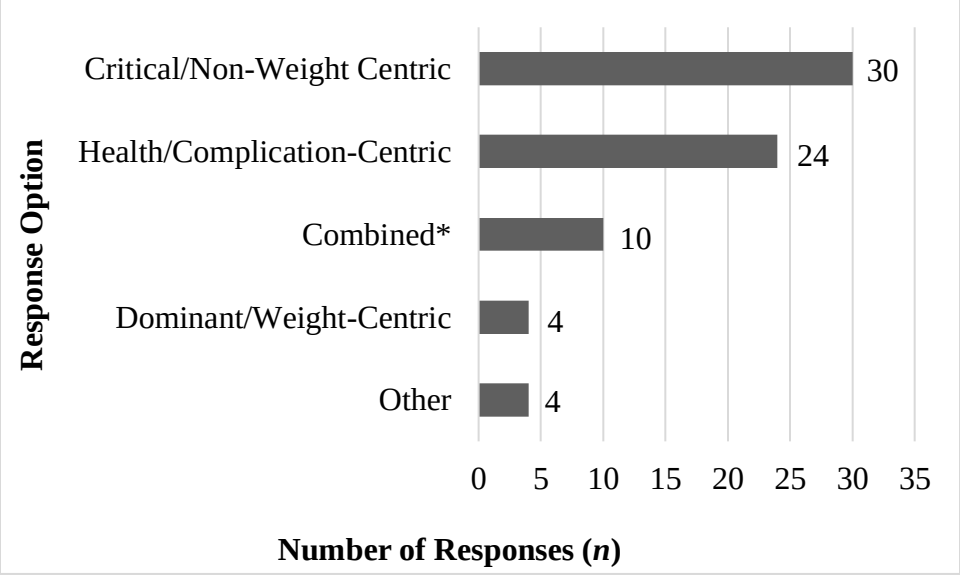

Figure 7. Approaches respondents (*N* = 48) identified they draw from in their practice.

n = number of responses; *N* = number of respondents; * = selected more than one response
Note. Participants could select multiple responses to weight-related paradigms.

Under ten-percent (7.7%; *n* = 4/48) of the sample responded that they draw from an "other" paradigm in their practice (Figure 4). In this case, those respondents described paradigms in their

own words, specifying portions they agree or disagree with the listed paradigm options, a hybrid approach, or specified how it depends on their client(s) or the practice setting.

Comparisons were made between identifying with the health/ complication-centric paradigm and primary practice area. The results of the Fisher's exact test ($p < 0.001$) indicate a significant association between primary practice area and identifying with the health/ complication-centric paradigm (Table 8). This is where 91.7% ($n = 22/31$) of those primarily working in a clinical setting, identified with this paradigm ($n = 24/48$) (Table II, Appendix D).

Comparisons were also made between identifying with the critical/ non-weight centric paradigm and primary practice area. The results of the Fisher's exact test ($p = 0.043$) indicated a significant association between primary practice area and identifying with the critical/ non-weight centric paradigm (Table *8*). This is where also 91.7% ($n = 11/12$) of those working primarily in public health or community roles identify with the critical/ non-weight centric paradigm ($n = 30/48$). See Table II and XIII, Appendix D, for crosstabs/ additional data for these comparisons.

Table 8. Comparisons between respondents' ($N = 48$) primary practice area and the weight-related paradigms.

Characteristic *n / N (%)*	**Characteristic** *n / N (%)*	**P-value**
Primary practice area Admin/ Management *3/48 (6.2)* Clinical *31/48 (64.6)* Community/ Public Health *12/48 (25.0)* Education/ Academia/ Research *2/48 (4.2)*	**Dominant/ Weight-centric** Yes *4/48 (8.3)*	0.304[a]
	Health/ Complication-centric Yes *24/48 (50.0)*	<0.001[a]*
	Critical/ Non-weight centric Yes *30/48 (62.5)*	0.043[a]*

n = number of responses; *N* = number of respondents; * = significant association; [a] = Fisher-Freeman-Halton Exact Test, Exact Sig. (2-sided); *Note.* Participants could select multiple responses to weight-related paradigms.

Comparisons were made between identifying with the critical/ non-weight centric paradigm and weight history. The results of the Fisher's exact test ($p = 0.031$) indicate a significant association

between identifying with the critical/ non-weight centric paradigm and previously living in a thin body (Table IX, Appendix D). This is where 50.0% (*n* = 15/30) of those identifying with the critical paradigm (*n* = 30/48) have previously lived in a thin body, and 50.0% (*n* = 15/30) have not (See Table X, Appendix D). Of those who have previously lived in a large body (*n* = 8/48), *n* = 5/8 identified with the health/ complication-centric paradigm, *n* = 3/8 with the critical/ non-weight centric paradigm, and *n* = 1/8 with the dominant/ weight-centric paradigm (Tables IX-XII, Appendix D).

The results of the Fisher's exact test (*p* = 0.031) also indicated a significant association between identifying with the dominant/ weight-centric paradigm and years fully licenced as a dietitian (Table 9). This is where *n* = 2/4 identifying with the paradigm have been licenced for 31+ years (*n* = 2/4), *n* = 1/4 with the paradigm have been licenced for 16 to 30 years (*n* = 1/20), and *n* = 1/4 have been licenced for 0 to 5 years *(n* = 1/12) (Table XIX for crosstabulations, Appendix D).

Table 9. Comparisons between respondents' years fully licenced as a dietitian and weight-related paradigms.

Characteristic *n / N (%)*	**Characteristic** *n / N (%)*	**P-value**
Years fully licenced as a dietitian 0 to 5 years *12/50 (24.0)* 6 to 15 years *14/50 (28.0)* 16 to 30 years *20/50 (40.0)* 31+ years *4/50 (8.0)*	**Dominant/ Weight-centric** Yes *4/50 (8.0)* No *46/50 (92.0)*	0.031[a]*
"I have previously lived in a thin body." Yes *18/48 (37.5)* No *30/48 (62.5)*	**Critical/ Non-weight centric** Yes *30/48 (62.5)* No *18/48 (37.5)*	0.031[b]*

n = number of responses; *N* = number of respondents; * = significant association; [a] Derived by Fisher-Freeman-Halton Exact Test (Exact Sig., 2-sided); [b] Fisher's Exact Test (Exact Sig., 2-sided); *Note 1.* Participants could select multiple responses to weight-related paradigms.

No other significant associations ($p < 0.05$) between any demographics (sex, gender, age, ethnicity, level of education, years licenced, residence, body size) and the three WR paradigms were found.

4.3.3.2. Perceived importance of weight-related assessment in the NCP

Valued importance of assessing weight-related factors, within the context of the nutrition care process, was asked to respondents. Statements either asked CRDs for their valued importance, or their perception of their average client's valued importance, for three weight-related assessment outcomes: 1) history of weight loss/ gain; 2) client's lived experience(s) with weight; and 3) domestic lives/ living conditions (Table *10*).

For valued importance of assessing clients' history of weight loss/ gain, 43.2% (*n* = 19/44) respondents saw this as extremely or very important, while 20.5% (*n* = 9/44) saw it as moderately important, and 22.7% (*n* = 10/44) as slightly important or low importance. Their perception of how their average client valued the importance of assessing their history of weight loss/ gain differed, where 37.4% (*n* = 15/42) rated it as extremely or very important, 35.7% (*n* = 15/42) as moderately important, and 14.3% (*n* = 6/42) as slightly or low importance.

For valued importance of discussing clients' lived experience(s) with weight, 59.5% (*n* = 25/42) of respondents saw this as extremely or very important, 16.7% (*n* = 7/42) as moderately important, 9.5% (*n* = 4/42) as slightly important, and 0.0% (*n* = 0/42) saw it as low importance. On the other hand, respondents perceived their average clients to value this less, with 38.4% (*n* = 15/39) as extremely or very important, 35.9% (*n* = 14/39) as moderately important, 10.3% (*n* = 4/39) as slightly important, and 0.0% (*n* = 0/39) as low importance.

Thirdly, importance for discussing clients' domestic lives/ living conditions in assessment in nutrition care was generally valued high, with 80.5% (*n* = 34/46) of respondents seeing it as extremely or very important, 10.9% (*n* = 5/46) as moderately important, and 2.2% (*n* = 1/46) as low importance. For respondents' perceptions of how clients value discussing domestic lives/ living conditions in nutrition assessments, this again differed than their perceived importance,

with 39.0% (*n* = 16/41) as extremely or very important, 36.6% (*n* = 15/41) as moderately important, and 9.7% (*n* = 4/41) as slightly or low importance. For this sub-section of the questionnaire, six respondents indicated they work in alternate practice areas (Table *10*), where they do not work with individual clients; therefor, their responses are not reflected in the above percentiles or proportions.

Table 10. Perceived and valued importance of Nutrition Care Process assessment domains in practice to the respondent, and their perception of this importance to their average client.

Question (*N*)	**Low important** [*n* (%)]	**Slightly important** [*n* (%)]	**Moderately important** [*n* (%)]	**Very important** [*n* (%)]	**Extremely important** [*n* (%)]	**I do not work with individual clients** [*n* (%)]
How important is assessing your clients' history of weight loss/gain? (44)	3 (6.8)	7 (15.9)	9 (20.5)	11 (25.0)	8 (18.2)	6 (13.6)
How important to your average client is assessing history of weight loss/gain? (42)	1 (2.4)	5 (11.9)	15 (35.7)	14 (33.3)	1 (2.4)	6 (14.3)
How important is discussing your client's lived experience(s) with weight? (42)	0 (0.0)	4 (9.5)	7 (16.7)	14 (33.3)	11 (26.2)	6 (14.3)

Question (*N*)	**Low important** [*n* (%)]	**Slightly important** [*n* (%)]	**Moderately important** [*n* (%)]	**Very important** [*n* (%)]	**Extremely important** [*n* (%)]	**I do not work with individual clients** [*n* (%)]
How important to your average client is discussing lived experience(s) with weight? (39)	0 (0.0)	4 (10.3)	14 (35.9)	10 (25.6)	5 (12.8)	6 (15.4)
How important is discussing your clients' domestic lives/ living conditions? (46)	1 (2.2)	0 (0.0)	5 (10.9)	21 (52.2)	13 (28.3)	6 (13.0)
How important to your average client is discussing domestic lives/ living conditions? (41)	1 (2.4)	3 (7.3)	15 (36.6)	11 (26.8)	5 (12.2)	6 (14.6)

n = number of responses; *N* = number of respondents

4.3.3.3. Perceived quality of weight-related evidence

Perceived quality of evidence was measured for seven approaches and statements, using a 5-point Likert scale ranging from "excellent" to "poor." Overall, responses from the sample were very split for the seven statements/ items (Table *11*).

Table 11. Respondents' Perceived Quality of Evidence

Question (*N*)	**Poor** [*n* (%)]	**Fair** [*n* (%)]	**Good** [*n* (%)]	**Very good** [*n* (%)]	**Excellent** [*n* (%)]
Weight-inclusive approaches (48)	2 (4.2)	14 (29.2)	15 (31.3)	13 (27.1)	4 (8.3)
Individual body assessment using Body Mass Index (BMI) (47)	20 (42.3)	8 (17.0)	7 (14.9)	9 (19.1)	3 (6.4)
Population health assessment using Body Mass Index (BMI) (47)	6 (12.8)	17 (36.2)	13 (27.7)	10 (21.3)	1 (2.1)
Obesity defined using adiposity impairing health (48)	12 (25.0)	9 (18.8)	13 (27.1)	10 (20.8)	4 (8.3)
Size acceptance approaches (48)	5 (10.4)	14 (29.2)	14 (29.2)	11 (22.9)	4 (8.3)
Pharmacotherapy for weight loss (48)	13 (27.1)	12 (25.0)	14 (29.2)	7 (14.6)	2 (4.2)
Bariatric or metabolic surgery for weight loss (48)	11 (22.9)	11 (22.9)	12 (25.0)	13 (27.1)	1 (2.1)

n = number of responses; *N* = number of respondents

For obesity defined using adiposity impairing health, 29.1% (*n* = 14/48) rated the evidence as excellent or very good, 27.2% (*n* = 13/48) rated the evidence as good, and 43.8% (*n* = 21/48) rated the evidence as fair or poor. For pharmacotherapy for weight loss, 18.8% (*n* = 9/48) rated the evidence as excellent or very good, 29.2% (*n* = 14/48) rated the evidence as good, and 52.1% (*n* = 25/48) rated the evidence as fair or poor. For bariatric or metabolic surgery for weight loss, 29.2% (*n* = 14/48) rated the evidence as excellent or very good, 25.0% (*n* = 12/48) as good, and 45.8% (*n* = 22/48) as fair or poor.

The two statements relating to BMI, for individual and population health assessments, were two that had more representation indicating that the evidence to support them is fair or poor. For individual body assessment using BMI, 25.5% (*n* = 12/47) rated it as excellent and very good evidence, 14.9% (*n* = 7/47) for good evidence, and 59.3% (*n* = 28/47) for fair and poor evidence. For population health assessment using BMI, 23.4% (*n* = 11/47) rated it to have excellent and very good evidence, 27.7% (*n* = 13/47) for good evidence, and 49.0% (*n* = 23/47) for fair and poor evidence.

Comparisons were made between value ratings of the evidence for population health assessment using BMI and (1) primary practice area, and (2) years licenced as a dietitian (Table 2 and Table 4). The results of the Fisher's exact test [(1) $p = 0.612$, years licenced as a dietitian; (2) $p = 0.072$, primary practice area] did not indicate a significant association between value ratings of the evidence for population health assessment using BMI, and either (1) primary practice area, or (2) years licenced as a dietitian (Table *12*).

Table 12. Comparisons between value of evidence ratings, primary practice area, and years licenced as a dietitian.

Characteristic *n / N (%)*	**Characteristic** *n / N (%)*	**P-value**
Value ratings of evidence for: **Population health assessment using Body Mass Index** Poor *6/47 (12.8)* Fair *17/47 (36.2)* Good *13/47 (27.6)* Very good *10/47 (21.3)* Excellent *1/47 (2.1)*	**Primary practice area** Admin/ Management *3/47 (6.4)* Clinical *30/47 (63.8)* Public Health/ Community *12/47 (25.5)* Education *2/47 (4.3)*	0.072[a]
	Years licenced of a dietitian 0 to 5 years *12/47 (25.5)* 5 to 15 years *13/47 (27.6)* 16-30 years *18/47 (38.3)* 31+ years *4/47 (8.5)*	0.612[a]
Value ratings of evidence for: **Weight inclusive** Poor/ Fair *16/48 (33.3)* Good *15/48 (31.2)* Very good/ excellent *17/48 (35.4)*	**Value ratings of evidence for:** **Size acceptance approaches** Poor/ Fair *19/48 (39.6)* Good *14/48 (29.2)* Very good/excellent *15/48 (31.2)*	< 0.001[a]*

n = number of responses; *N* = number of respondents; * = significant association
[a] = Derived by Fisher-Freeman-Halton Exact Test (Exact Sig., 2-sided)

Moving onto weight-inclusive approaches, which showed almost split even results, 35.4% (*n* = 17)/48 rated the evidence as excellent or very good, 31.3% (*n* = 15/48) as good, and 33.4% (*n* = 16/48) as fair or poor. Whereas, for size acceptance approaches, 31.2% (*n* = 15/48) rated the evidence as excellent or very good, 29.2% (*n* = 12/48) as good, and 39.6% (*n* = 19/48) as fair or poor. The p-value of the Fisher's exact test ($p < 0.001$) indicated a significant association between value ratings for weight-inclusive approaches and size acceptance approaches (Table 12). This is where 87.5% (*n* = 14/16) of those who rated the quality of weight-inclusive approach data as fair/ poor (*n* = 16/48), rated the quality of the size acceptance approaches similarly (*n* = 19/48) (Table XIV, Appendix D).

The last perception question centered around perceived value for existent clinical practice guidelines for weight-related evidence (Figure *8*). This was measured using a 5-point Likert scale, ranging from "strongly agree" to "strongly disagree." Twenty-seven point one (52.1%; *n* = 25/48) RDs indicated valuing the CPGs for weight-related evidence as strongly agree or agree, 22.9% *(n* = 11/48) as neutral (neither agree nor disagree), and 25.0% (*n* = 12/48) as disagree or strongly disagree. Comparisons were made between valuing the CPGs and CRDs' who have clientele seeking weight loss in their roles, and between valuing the CPGs and CRDs' who see clientele pre- or post-metabolic surgery in their roles. Results of the Fisher's exact test [((1) $p = 0.511$, seeing weight loss clients; (2) $p = 0.699$, seeing pre or post-metabolic surgery clients] did not indicate a significant association between valuing the CPGs and either (1) having clientele who seek weight loss, or (2) having clientele who are pre- or post-metabolic surgery (Table *13*). The results from the Fisher's exact test ($p = 0.013$) indicated a significant association between value ratings of the evidence for CPGs and primary practice area (Table 13). This is where *n* = 12/13 respondents rating the evidence for CPGs as excellent indicated clinical as their primary practice area (*n* = 12/31) (Table XV, Appendix D).

Table 13. Comparison between respondents' value ratings of evidence, primary practice area, and typical clientele.

Characteristic *n / N (%)*	**Characteristic** *n / N (%)*	**P-value**
Value ratings of evidence for: clinical practice guidelines Strongly disagree *6/48 (12.5)* Disagree *6/48 (12.5)* Neutral *11/48 (22,9)* Agree *12/48 (25.0)* Strongly agree *13/48 (27.1)*	**Primary practice area** Admin/ Management *3/48 (6.2)* Clinical *31/48 (64.6)* Public Health/ Community *12/48 (25.0)* Education *2/48 (4.2)*	0.013[a*]
Value ratings of evidence for: clinical practice guidelines Strongly disagree *6/47 (12.8)* Disagree *5/47 (10.6)* Neutral *11/47 (23.4)* Agree *12/47 (25.5)* Strongly agree *13/47 (27.7)*	**Seeing clientele seeking weight loss** Yes *30/47 (63.8)* No *17/47 (36.2)*	0.445[a]
Value ratings of evidence for: clinical practice guidelines Strongly disagree *6/46 (13.0)* Disagree *5/46 (10.9)* Neutral *10/46 (21.7)* Agree *12/46 (26.1)* Strongly agree *13/46 (28.3)*	**Seeing clientele pre-or post-metabolic surgery** Yes *15/46 (32.6)* No *31/46 (67.4)*	0.901[a]

n = number of responses; *N* = number of respondents; * = significant association; [a] = Derived by Fisher-Freeman-Halton Exact Test (Exact Sig., 2-sided); *Note.* The counts differ between each question for value ratings, as less respondents progressed onwards in the questionnaire (e.g., *N* = 47, compared to *N* = 46).

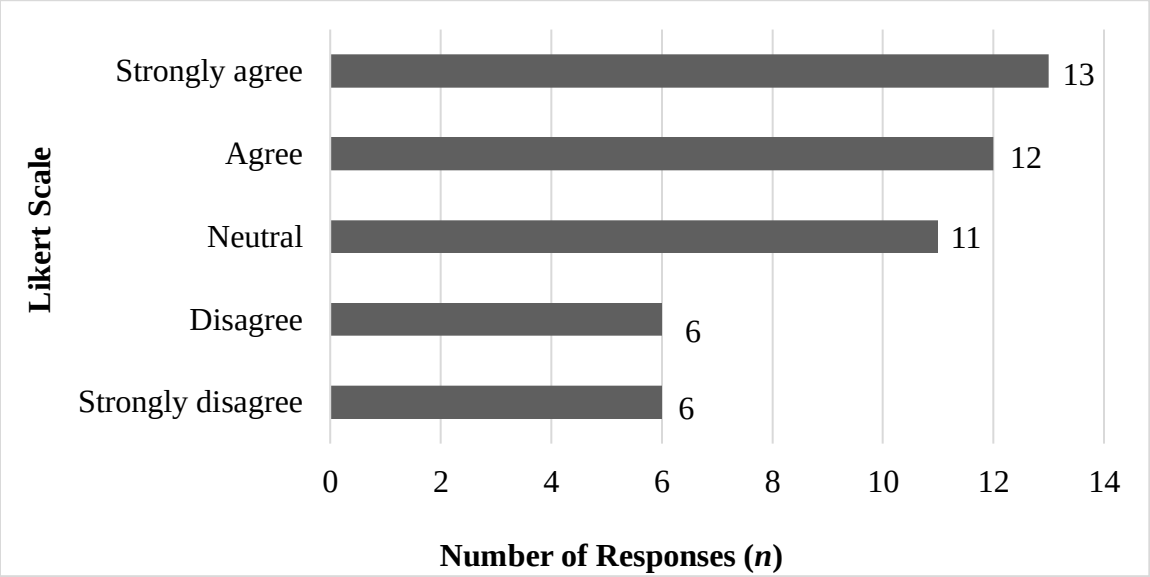

Figure 8. Respondents' (*N* = 48) perceived value for existent clinical practice guidelines for weight-related evidence.

n = number of responses; *N* = number of respondents

4.3.4. Experiences

CRDs were surveyed on their experiences with: 1) weight-related evidence, tools and data collection methods; 2) their weight and reflections on their value as a provider of weight-related evidence; and 3) biases, using the *Antifat Attitudes Questionnaire*.

4.3.4.1. Weight-related evidence, tools, and methods

First, CRDs were asked to list three words or phrases that describe their experience with weight-related evidence in nutrition care (Table *14*). Responses including three words or less (*n* = 35) are included in this MSc project. Longer responses (over 3-4 words, *n* = 23) will undergo qualitative analysis, outside of the scope of this MSc project. From preliminary reviews of this data, the longer responses were frequently describing approaches with patients, or a list of what they do *not* experience.

There was a large variety of words/ phrases submitted, where the most frequent responses, frustrating/ frustration, was submitted *n* = 4 times. Following frustration (*n* = 4), practical was

next with three responses (*n* = 3), and five words were submitted twice (*n* =2), including conflicting, curious/ curiosity, harms/ harmful, and research/ research focused (*n* =2, all). For a full list of terms, including those submitted *n* = 1, see Table A, Appendix E.

Table 14. List of words (with frequency above *n* = 1) that describe respondents' experience with weight-related evidence in nutrition care (*N* = 35).

Word/ Phrase	**Count (*n*)**
Frustrating/ Frustration	4
Practical	3
Conflicting	2
Curious/ Curiosity	2
Evolving	2
Harms/ Harmful	2
Research/ Research focused	2

n = number of responses; *N* = number of respondents
Note. Respondents were able to provide 1-3 responses to this question. Twenty-three responses (*n* = 23) were removed from Table 14 (and Table A, Appendix E), for being over 3-4 words. See Table A in Appendix E for all responses (including those with a frequency equal to one).

Relating to the CRDs' experiences with weight-related evidence in practice, they were asked if/ what tools and methods make them uncomfortable (Figure 9). Overall, the responses to the five tools surveyed had split responses from CRDs. Skin fold calipers (63.0%; *n* = 29/46), body composition scales (52.2%; *n* = 24/46), and BMI calculations (54.3%; *n* = 25/46) were tools/ methods that had slightly more CRDs responding that they do feel uncomfortable with these tools in practice. On the other hand, body weight scales (65.2%; *n* = 30/46) and measuring tapes (52.2%; *n* = 24/46); were two tools CRDs indicated they do not feel uncomfortable using in practice. Despite this, 65.2% (*n* = 30/46) and 52.2% (*n* = 24/46) still generally represents half of the sample.

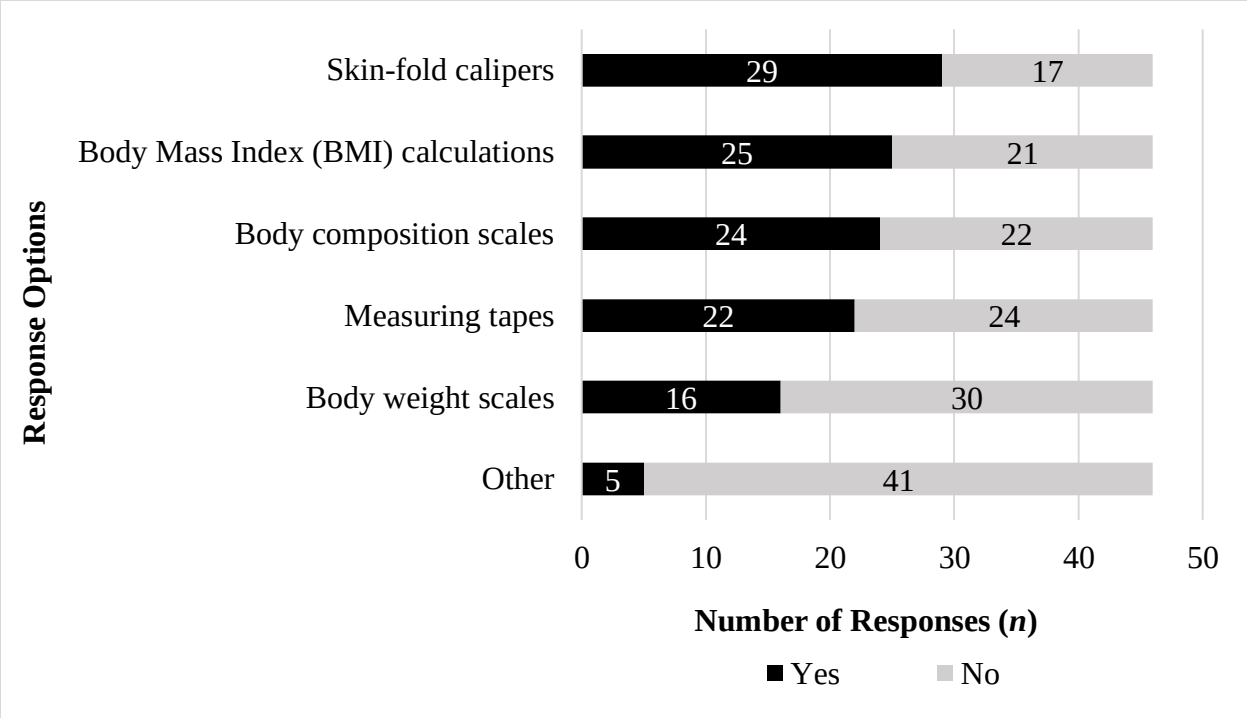

Figure 9. Tools/ methods that make respondents (*N* = 46) feel uncomfortable.

n = number of responses; *N* = number of respondents; black = "yes" responses; gray = "no" responses; *Note.* Respondents could select multiple responses for this question.

Almost ten-percent (9.6%; *n* = 5/46) of respondents indicated that "other" tools/ methods related to weight evidence make them feel uncomfortable in practice, often using the opportunity to provide patient specific examples such as BMI for certain racial groups or body compositions, or to highlight harmful media messaging around electronic tools such as MyFitnessPal or continuous glucose monitors branding (CGM; e.g., "wellness and weight loss CGM").

4.3.4.2. Provider weight status and reflections on weight-related practice

Two statements related to RD weight status (Table *15*), and two statements related to their reflections on weight-related practice use in practice (Table 18) were posed. The reflection-based questions used a 5-point Likert scale to determine frequency from "always" to "never." One of the RD weight status questions used the same frequency scale, whereas the other used a 5-point

Likert scale to determine level of disagreement or agreement, from “strongly disagree” to “strongly agree.”

Eighty-nine (88.4%; *n* = 38/45) percent of respondents indicated they’ve experienced clients commenting on their body weight. No respondents (0.0%; *n* = 0/45) indicated they always experience comments on their body weight, 17.8% (*n* = 8/45) often, 35.6% (*n* = 16/45) sometimes, 35.6% (*n* = 16/45) rarely, and 11.1% (*n* = 5/45) have never had clients comment on their body weight.

Table 15. Respondents’ experienced frequency of comments on their body weight and level of disagreement or agreement with fear of gaining weight.

Question (*N*)	**Never** [*n* (%)]	**Rarely** [*n* (%)]	**Sometimes** [*n* (%)]	**Often** [*n* (%)]	**Always** [*n* (%)]
Clients comment on my body weight. (45)	5 (11.1)	16 (35.6)	16 (35.6)	8 (17.8)	0 (0.0)
Question (*N*)	**Strongly disagree** [*n* (%)]	**Disagree** [*n* (%)]	**Neutral** [*n* (%)]	**Agree** [*n* (%)]	**Strongly agree** [*n* (%)]
I fear gaining weight because of what I do for work. (48)	6 (12.5)	6 (12.5)	11 (22.9)	12 (25.0)	13 (27.1)

n = number of responses; *N* = number of respondents

Just over half of the sample (52.1%; *n* = 25/48), indicated a level of agreeance with, “I fear gaining weight because of what I do for work,” with 27.1% (*n* = 13/48) strongly agreeing and 25.0% (*n* = 12/48) agreeing. Almost a quarter were neutral (22.9%; *n* = 11/48), and a quarter (25.0%; *n* = 12/48) indicated some level of disagreement, with 12.5% (*n* = 6/48) disagreeing, and 12.5% (*n* = 6/48) strongly disagreeing that they, fear gaining weight because of what they do for work. The results from the Fisher’s exact test (*p* = 0.066) did not indicate a significant association between fear of gaining weight ratings and Pulver scale ratings (Table *16*).

Table 16. Comparisons between respondents' (*N* = 45) self-rated Pulver scale and fear of gaining weight.

Characteristic *n / N (%)*	**Characteristic** *n / N (%)*	**P-value**
Pulver scale rating A to C *18/45 (40.0)* D to I[b] *26/45 (57.8)* I prefer not to respond to this question *1/45 (2.2)*	**Fear of gaining weight** Disagree *20/45 (44.4)* Neutral *8/45 (17.8)* Agree *17/45 (37.8)*	0.066[a]

n = number of responses; *N* = number of respondents
[a] Derived by Fisher-Freeman-Halton Exact Test (Exact Sig., 2-sided)
[b] Pulver ratings E to I had 0 responses from respondents.

Next, respondents were asked how they describe their bodies, using words/ phrases, which provides more context to their experience(s) with their own body (Table *17*). Compared to the other open-ended question in this section (Table 14), less responses over 3-4 words were provided. Four responses (*n* = 4/52) were over 3-4 words. These four responses were primarily centered on respondents' perception(s) of/ compared to their actual size (*n* = 2/4), and their ability to do X things in life (*n* = 2/4) ('X' is used to minimize identifiability of the respondent).

"Strong" was the most frequently provided (*n* = 17/52) description by respondents of their own bodies, followed by athletic/ athletic build (*n* = 8), healthy (*n* = 6), and thin/ thin presenting (*n* = 6), average (*n* = 5), and fit (*n* = 5). Interestingly, three words that were provided more than once, included responses where participants justified their use of the word. For example, saying they are "fit for X age", "curvy, but moreso than X years ago", and "fat, especially around the abdomen" (X is included in quotes, to prevent identifiability of the respondent(s)). Along with the justification for location of fatness, providing body part descriptors were also common (*n* = 10), such as "thick thighs" (*n* = 1), or "flabby arms" (*n* = 1).

Of note, while thin/ thin presenting was the fourth most common term (*n* = 6/52), this does not include all of the other terms used to describe small bodies (*n* = 19/52), such as "lean" (*n* = 2), "formerly fat" (*n* = 1), "has always been small" (*n* = 1), "lean" (*n* = 2), "not fat" (*n* = 1), "petite" (*n* = 1), "skinny" (*n* = 1), "slender" (*n* = 1), slim (*n* = 1), "small" (*n* = 1), and "straight

(minimal/no curves)" (*n* = 1). The same is said about larger bodies (*n* = 17/52), where terms beyond "curvy" (*n* = 4), "fat" (*n* = 3), and "overweight" (*n* = 3) were used, including "big boned" (n = 1), "higher weight" (*n* = 1), "large" (*n* = 1), "plump" (*n* = 1), "pudgy" (*n* = 1), "soft" (*n* = 1), and "thick" (*n* = 1),

Height was also included (*n* = 5/52), such as short (*n* = 3) and tall (*n* = 2). Ethnicity was included once (*n* = 1/52), White (*n* = 1). Body shapes were also a times listed (*n* = 2/52), such as "hour-glass shape" (*n* = 1), or "medium build" (*n* = 1). Lastly, the sample was not free from responding with their desires for changing their own body (*n* = 5/52), such as "not muscular enough" (*n* = 1), "needs toning" (*n* = 1), "sometimes upsetting" (*n* = 1), and "unattractive" (*n* = 2). Despite this, several empowering, positive, or ability-focused terms were also used (*n* = 39/48, including "strong" and athletic/ athletic build), such as "able" (*n* = 1), "beautiful" (*n* = 1), "capable" (*n* = 2), "cute" (*n* = 1), "functional/ functioning" (*n* = 2), "juicy" (*n* = 1), "powerful" (*n* = 1), "resilient" (*n* = 1), "resourceful" (*n* = 1), "serving" (*n* = 1), and "sexy" (*n* = 1). For a full list of words submitted, see Table B, Appendix E.

Table 17. List of words/ phrases (with frequency above *n* = 1) of how respondents' describe their body (*N* = 48).

Word/ Phrase	**Count (*n*)**
Strong	17
Athletic/ Athletic build	8
Healthy/ Healthier*	7
Thin/ Thin presenting	6
Average	5
Fit[1]	5
Curvy[2]	4
Fat[3]	3
Overweight	3
Short	3
Aging	2
Bottom heavy	2
Capable	2
Functional/Functioning	2
Lean	2
Muscular	2
Normal	2

Word/ Phrase	Count (*n*)
Tall	2
Unattractive	2

n = number of responses; *N* = number of respondents
*"… than X year(s) ago" (*n* = 1/7)
[1] "…for X age" (*n* =1/5)
[2] "…moreso than X years ago" (*n* =1/4)
[3] "…especially around the abdomen" (*n* = 1/3)
[4] Respondent indicated this is a line from Barbara Brown Taylor, author.
Note. Respondents were able to provide 1-3 responses to this question. Four responses (*n* = 4) were removed from Table 3 (and Table B, Appendix E), for being over 3-4 words. See Table B in Appendix E for all responses (including those with a frequency equal to one).

Almost half of the sample indicated they often (46.7%; *n* = 21/45) reflect on how they use weight-related evidence in their day-to-day activities, 24.4% (*n* = 11/45) always do, 26.7% (*n* = 12/45) sometimes do, and 2.2% (*n* = 1/45) rarely do (Table *18*).

Table 18. Frequency ratings of feeling valued by colleagues for weight-related evidence and reflecting on weight-related evidence use.

Question (*N*)	Never [*n* (%)]	Rarely [*n* (%)]	Sometimes [*n* (%)]	Often [*n* (%)]	Always [*n* (%)]	I do not work in a team environment [*n* (%)]
I feel valued by my colleagues when it comes to advice related to weight-related evidence. (45)	1 (2.2)	5 (11.1)	16 (35.6)	15 (33.3)	7 (15.6)	1 (2.2)
I reflect on how I use weight-related evidence in my day-to-day practice activities (e.g., clinical, research, management). (45)	0 (0.0)	1 (2.2)	12 (26.7)	21 (46.7)	11 (24.4)	-

n = number of responses; *N* = number of respondents

Lastly, respondents were asked about their experience of feeling valued by their colleagues when it comes to advice related to weight-related evidence in practice (Table *18*). Responses primarily

span four of five Likert categories, with 15.6% (*n* = 7/45) indicating they always feel valued by their colleagues for weight-related evidence advice, 33.3% (*n* = 15/45) often, 35.6% (*n* = 16/45) sometimes, 11.1% (*n* = 5/45) rarely, and 2.2% (*n* = 1/45) never feeling valued in this area by their colleagues. No significant associations ($p < 0.05$) were found between any demographic characteristics and experiences of feeling valued for WRE in practice. Also pertaining to this question, two percent (2.2%; *n* = 1/45) of the sample indicated they do not work in a team environment, meaning they do not have colleagues they engage with on a day-to-day basis.

4.3.4.3. Anti-Fat Attitudes Questionnaire

Three questions from the Anti-Fat Attitudes (AFA) Questionnaire were included in our WRE-RDs-Questionnaire (Q), to determine their experience and internalized bias of people living in larger bodies. A 5-point Likert scale, ranging from "strongly agree" to "strongly disagree" was used to guide responses. For a 5-point AFA, it is scored where "strongly disagree" receives a score of 0, and "strongly agree" receives a score of 4. Scores for the three statements are combined. The mean AFA was 1.53, with a standard deviation of +/- 1.47, and a range of scores from 0 to 5.3/9 (Table *19*). These values are contextualized in the discussion section.

Table 19. Respondents' (*N* = 44) mean, standard deviation, minimum, and maximum values for AFA scoring.

Characteristic (unit, if applicable) [*N*]	**Mean +/- SD (Minimum, Maximum)**
AFA [44]	1.53 +/- 1.47 (0, 5.3)

N = number of respondents; SD = Standard deviation; AFA = Anti-Fat Attitudes Questionnaire

Note. AFA typically uses a 10-point Likert scale. In this study, a 5-point Likert scale was used, for consistency within the WRE-RDs-Q. In order to form comparisons to existent research, the sum was then multiplied by two to translate the 5-point scale to a 10-point scale score (182).

Between the three statements (Table *20*), most respondents strongly disagreed (75.0%; *n* = 33/44) with, "some people are fat because they have no willpower." For the same statement on willpower and weight, 11.4% (*n* = 5/44) disagreed, 6.8% (*n* = 3/44) were neutral (neither agree nor disagree), and 6.8% *(n* = 3/44) agreed.

Next, 61.4% (*n* = 27/44) respondents strongly disagreed with the, "when people are fat, it is their own fault" anti-fat attitude statement. For this statement, 25.0% (*n* = 11/44) disagreed and 13.6%

were neutral. The third statement, “people who weight too much could lose at least some part of their weight through a little exercise,” prompted some CRDs in the sample (13.6%; *n* = 6/44) to agree. Twenty-five percent (25.0%; *n* = 11/44) were neutral, 40.9% (*n* = 18/44) disagreed, and 20.5% (*n* = 9/44) strongly disagreed with the statement.

Table 20. Respondents' (*N* = 44) level of disagreement or agreement with AFA Questionnaire, willpower subscale, administered within the WRE-RDs-Q.

Question (*N*)	**Strongly disagree** [*n* (%)]	**Disagree** [*n* (%)]	**Neutral** [*n* (%)]	**Agree** [*n* (%)]	**Strongly agree** [*n* (%)]
When people are fat, it is their own fault.* (44)	27 (61.4)	11 (25.0)	6 (13.6)	0 (0.0)	0 (0.0)
People who weigh too much could lose at least some part of their weight through a little exercise. (44)	9 (20.5)	18 (40.9)	11 (25.0)	6 (13.6)	0 (0.0)
Some people are fat because they have no willpower. (44)	33 (75.0)	5 (11.4)	3 (6.8)	3 (6.8)	0 (0.0)

n = number of responses; *N* = number of respondents; * = adapted.

Results of the Fisher’s exact test (*p* = 0.002) indicated a significant association between identifying with the dominant/ weight-centric paradigm (Figure 4, Section 4.4.3.1.) and “some people are fat because they have no willpower” (Table 21). This is where 0.0% (*n* = 0/44) of those who identified with the weight-centric paradigm disagreed with the statement (Table XVI, Appendix D).

Table 21. Comparisons between Anti-Fat Attitudes willpower item and dominant/ weight-centric paradigm.

Characteristic *n / N (%)*	**Characteristic** *n / N (%)*	**P-value**
"Some people are fat because they have no willpower" Strongly disagree *33/44 (75.0)* Disagree *5/44 (11.4)* Neutral *3/44 (6.8)* Agree *3/44 (6.8)* Strongly agree *0/44 (0.0)*	**Dominant/ Weight-centric paradigm** Yes *3/44 (7.7)*[b] No *41/44 (93.2)*	0.002[a]*

n = number of responses; *N* = number of respondents; * = significant association
[a] Derived by Fisher-Freeman-Halton Exact Test (Exact Sig., 2-sided)

4.3.5. Knowledge

Knowledge was surveyed in the WRE-RDs-Q using: 1) a sub-set of questions from the Barr et al. (2004) landmark study, focused on high BMI (equal to or above 30 kg/m^2) and risk to health; and 2) four original close-ended questions exploring intentional weight loss as an intervention/ risk mediator with high BMI.

4.3.5.1. High BMI, Risk, and Health Implications

Six close-ended questions from Barr et al. (2004) were included in the WRE-RDs-Q, in the Knowledge Section. The statements were slightly adapted to reflect current evidence and language (e.g., person-first language). The statements are framed as facts, where respondents were asked to respond with their level of agreement, using a 5-point Likert scale ranging from "strongly agree" to "strongly disagree."

Among the Barr et al. (2004) adapted questions (Table *22*), there were two questions where a third of respondents (31.8%; *n* =14/44) responded 'neutral': i) people with BMIs equal to or greater than 30 kg/m^2 have an increased risk for developing health problems, compared to people with lower BMIs; and ii) most people who lose weight using lifestyle approaches (diet, exercise) will regain it within a few years. Otherwise, for the comparative statement for

increased risk for developing health problems for people with higher BMI compared to lower BMIs (i), 36.4% (*n* = 16/44) agreed, 15.9% (*n* = 7/44) disagreed, 13.6% (*n* = 6/44) strongly disagreed, and 2.3% (*n* = 1/44) strongly agreed. For the weight regain with lifestyle approaches statement, 20.5% (*n* = 9/44) strongly agreed, 15.5% agreed (*n* = 20/44), and 2.3% (*n* = 1/44) disagreed.

Table 22. Barr et al. (2004) adapted questions

Question (*N*)	**Strongly disagree** [*n* (%)]	**Disagree** [*n* (%)]	**Neutral** [*n* (%)]	**Agree** [*n* (%)]	**Strongly agree** [*n* (%)]
People with BMIs equal to or greater than 30 kg/m^2 have an increased risk for developing health problems, compared to people with lower BMIs. (44)	6 (13.6)	7 (15.9)	14 (31.8)	16 (36.4)	1 (2.3)
Weight losses (5-10% of body weight) can produce health benefits. (44)	4 (9.1)	9 (20.5)	7 (15.9)	18 (40.9)	6 (13.6)
Most people who lose weight using lifestyle approaches (diet, exercise) will regain it within a few years. (44)	0 (0.0)	1 (2.3)	14 (31.8)	20 (15.5)	9 (20.5)
Weight cycling is a risk to psychological health. (44)	1 (2.3)	0 (0.0)	1 (2.3)	16 (36.4)	26 (59.1)
Weight cycling has negative metabolic impacts. (43)	1 (2.3)	0 (0.0)	2 (4.7)	14 (32.6)	26 (60.5)
The current emphasis on weight reduction in nutrition care contributes to eating disorders. (44)	0 (0.0)	4 (9.1)	10 (23.6)	14 (31.8)	16 (36.4)

n = number of responses; *N* = number of respondents

Forty percent (40.9%; *n* = 18/44) of respondents agreed that weight losses (5-10% of body weight) can produce health benefits, where 20.5% (*n* = 9/44) disagreed, 15.9% (*n* = 7/44) were neutral, 13.6% (*n* = 6/44) strongly agreed, and 9.1% (*n* = 4/44) strongly disagreed.

Overwhelmingly, most respondents strongly agreed (59.1%; *n* = 26/44) or agreed (38.4%; *n* = 16/44) that weight cycling is a risk to psychological health, with 2.3% (*n* = 1/44) response neutral and 2.3% (*n* = 1/44) strongly disagreeing with the statement. Similar breakdowns were found for the second weight cycling statement, weight cycling has negative metabolic impacts,

where 60.5% (*n* = 36/43) strongly agreed, 32.6% (*n* = 14/43) agreed, 4.7% (*n* = 2/43) were neutral, and 2.3% (*n* = 1/43) strongly disagreed.

Comparisons were made between two knowledge statements [(1) "weight losses (5-10% of body weight) can produce health benefits," and (2) "weight cycling having metabolic impacts"] and respondents' demographic characteristics (Table 23; Table XVII, Appendix D for crosstabulations). The results of the Fisher's exact test ($p = 0.026$) indicate a significant association between "weight cycling has metabolic impacts" and age (Table *23*). Results of the Fisher's exact test did not indicate a significant association(s) between the two knowledge statements and all other demographic characteristics collected.

For this question, only those in the 50 years of age and above group (*n* = 10/43) did not all have unanimous responses agree that weight cycling has metabolic impacts; 20.0% (*n* = 2/43) in this category agreed, and 10.0% (*n* = 1/43) were neutral. All other age groups (20 to 29 years; 30 to 39 years; 40 to 49 years) had 100.0% agreement (agree or strongly agree) that weight cycling has metabolic impacts. (Table XVIII, Appendix D).

Table 23. Comparisons between two knowledge statements and respondent age.

Characteristic *n / N (%)*	**Characteristic** *n / N (%)*	**P-value**
"Weight losses (5-10% of body weight) can produce health benefits" Disagree *13/44 (29.5)* Agree *24/44 (54.5)* Neutral *7/44 (15.9)*	**Age** 20 to 29 years *9/44 (20.4)* 30 to 39 years *12/44 (27.3)* 40 to 49 years *13/44 (29.5)* 50+ years *10/44 (22.7)*	0.050
"Weight cycling has metabolic impacts" Disagree *1/43 (2.3)* Agree *40/43 (93.0)* Neutral *2/43 (4.7)*	**Age** 20 to 29 years *9/43 (20.9)* 30 to 39 years *12/43 (27.9)* 40 to 49 years *12/43 (27.9)* 50+ years *10/43 (23.3)*	0.026*

n = number of responses; *N* = number of respondents; * = significant association
[a] Derived by Fisher-Freeman-Halton Exact Test (Exact Sig., 2-sided)

Lastly, most respondents strongly agreed (36.4%; *n* = 16/44), agreed (31.8%; *n* = 14/44), or were neutral (23.6%; *n* = 10/44) to the following statement: "the current emphasis on weight reduction in nutrition care contributes to eating disorders." Less than ten percent (9.1%; *n* = 4/44) disagreed that the current emphases on weight reduction in nutrition care is contributing to eating disorders.

4.3.5.2. Intentional Weight Loss as an Intervention/ Risk Mediator

Four additional close-ended questions surveyed respondents on their knowledge of use of BMI and intentional weight loss as an intervention or risk mediator in practice (Table *24*).

Table 24. Respondents' level of disagreement or agreement with four knowledge statements.

Question (*N*)	**Strongly disagree** [*n* (%)]	**Disagree** [*n* (%)]	**Neutral** [*n* (%)]	**Agree** [*n* (%)]	**Strongly agree** [*n* (%)]
Weight loss should be encouraged to people with a BMI greater than or equal to 30kg/m^2, prior to a knee replacement surgery. (44)	14 (31.8)	12 (27.3)	13 (29.5)	4 (9.1)	1 (2.3)
Weight loss should be encouraged to people with a BMI greater than or equal to 30kg/m^2, to decrease risk for chronic disease. (44)	11 (25.0)	12 (27.3)	11 (25.0)	9 (20.5)	1 (2.3)
Malnutrition-related weight loss is a favourable outcome for a person with a BMI greater than or equal to 30kg/m^2. (44)	35 (79.5)	8 (18.2)	0 (0.0)	0 (0.0)	1 (2.3)
Weight loss is a negative outcome of cancer for a person with a Body Mass Index (BMI) greater than or equal to 30kg/m^2. (44)	1 (2.3)	3 (6.8)	6 (13.6)	10 (23.6)	24 (54.5)

n = number of responses; *N* = number of respondents; BMI = body mass index

Malnutrition-related weight loss was a risk mediator where disagreement was evident, with 79.5% (*n* = 35/44) strongly disagreeing that malnutrition-related weight loss is a favourable outcome for a person with a BMI greater than or equal to 30kg/m^2, 18.2% (*n* = 8/44) disagreed, and 2.3% (*n* = 1/44) strongly agreed. This was **one** of **two** questions in the questionnaire where 0.0% (*n* = 0/44) respondents responded neutrally.

The majority of respondents strongly agreed (54.5%; *n* = 24/44) or agreed (23.6%; *n* = 10/44) that weight loss is a negative outcome of cancer for a person with a BMI greater than or equal to 30kg/m^2. Thirteen (13.6%; *n* = 6/44) were neutral, 6.8% (*n* = 3) disagreed, and 2.3% (*n* = 1/44) strongly disagreed that weight loss is a negative outcome in patients with an elevated BMI.

Overall, responses were split when it came to agreement that weight loss should be encouraged to people with a BMI greater than or equal to 30kg/m^2, to decrease risk for chronic disease, with 2.3% (*n* = 1/44) CRD strongly agreeing, 20.5% (*n* = 9/44) agreed, 25.0% (*n* = 11/44) were neutral, 27.3% (*n* = 12/44) disagreed, and 25.0% (*n* = 11/44) strongly disagreed.

When it came to knee replacement surgery and weight loss recommendations prior to surgery for people with a BMI greater than or equal to 30kg/m^2, most respondents disagreed (27.3%; *n* = 12/44) or strongly disagreed (31.8%; *n* = 14/44), also with a considerable amount responding neutral (29.5%; *n* = 13/44). Just over ten percent of the sample agreed (9.1%; *n* = 4/44) or strongly agreed (2.3%; *n* = 1/44) that weight loss should be encouraged prior to knee replacement surgery.

4.4. Exit Questions: Future Research

At the end of the WRE-RDs-Q, respondents were provided with the opportunity to indicate if they would be interested in future research on the topic and with what methods (Table *25*). An almost even response rate was received for interest in either focus group discussion(s) (*n* = 29/35; 82.9%) and one-on-one interviews (*n* = 28/35; 80.08%), with focus groups slightly favored. Two respondents provided suggestions for interest in "other" methods for future research, which were further questionnaires, or follow-up questions. Eight respondents (*n* = 8/35; 22.9%) indicated they would not be interested in participating in future research.

Table 25. Respondents' (*N* = 35) interest in future research.

Item (*N*)	***n* (%)**
Focus group discussion (35)	29 (82.9)
One-on-one interview (35)	28 (80.0)
Other (35)	2 (5.7)
I would not be interested in participating (35)	8 (22.9)

n = number of responses; *N* = number of respondents

5.0. Discussion

The purpose of this MSc project was to identify, explore, and describe Canadian Registered Dietitians' (CRDs) experiences, perceptions, and knowledge of weight-related evidence in practice, using close-ended and select quantitative open-ended responses in an online questionnaire. The MSc project' objectives were completed, which were to: 1) develop, 2) implement, and 3) analyze and interpret the findings of an online questionnaire, to ultimately identify and describe CRDs' experiences, perceptions, and knowledge of weight related evidence (WRE) in practice. Using statistical analyses, the MSc project also tested if statistically detectable relationship(s) existed in the sample between respondent demographics and outcomes 1-3. Overall, this thesis describes the development, implementation, and findings from the questionnaire, henceforth known as the WRE-RDs-Q.

Respondent Attributes and Demographics

This online national questionnaire successfully sampled CRDs on their perceptions of, experiences with, and knowledge of weight-related evidence in dietetic practice, from all practice settings. Previous questionnaires on the topic of WRE in dietetics have focused in on CRDs who provide care in women's health/ pregnancy (153,154), outpatient care (27,166), or specific to obesity management (3,4,167). For the CRDs' population/ clientele, our results indicated over 60% work with clients who identity as fat, having a higher weight, or living in a larger body 51 to 100% of their time, meaning weight-related evidence is highly relevant to guide their evidence-based practice.

The respondents of the WRE-RDs-Q were highly educated, compared to previous research with this population on the topic. This could showcase the increase in graduate training completion since early 2000s (3,12); however, still almost double (46.0% graduate-education, compared to 25.0%) responded that were graduate-level educated, compared to the Lichtfuss et al. (2023) sample (166). Additionally, over half of our respondents indicated they have completed additional courses and certificates on WRE, which is interesting considering 81% of CRDs in Lichtfuss et al.'s sample indicated they had no formal education on non-weight focused approaches, which could explain why so many RDs seek out additional training opportunities (8,166). Our sample represented mostly clinical practice perspectives (56.3%), slightly higher

than a 2011 meta-analysis that found 45% of CRDs to be working in clinical roles (12). Our sample was also primarily comprised of Ontario and British Columbia RDs (72.0%; *n* = 36/50); however, this is in agreement with CRD representation nationally, where Ontario is known to have the highest population of CRDs, followed by Quebec, and British Columbia (11).

In our sample of CRDs, mean BMI was 25.2 kg/m^2 (SD: 3.8 kg/m^2; range: 19.5 kg/m^2 to 33.9 kg/m^2; *n* = 42), consistent with previous literature. Amongst UK dietitians, Brown & Flint (add ref #) found a mean BMI of 25.1 kg/m^2, SD: 8.7 kg/m2; *n* = 400) when exploring dietitians lived experience of weight stigma. Similarly, Cassiano et al. (2022) in Brazil (mean: 24.72 kg/m^2; SD: 4.21 kg/m^2; range: 16.3–40.6 kg/m^2; *n* = 1,039), Roy et al. (2023) in New Zealand (mean: 24.95 kg/m^2, SD: 8.67 kg/m^2; n = 92), and Diversi et al. (2016) in Australia (mean: 22.43 SD 2.78 kg/m^2; range: 17.2 - 36.7 kg/m^2; *n* = 201) have all found RD body sizes range considerably, but means fall within social or stereotypical norms of smaller bodies (168–172). While many factors impact BMI, and it is not an accurate measure individual adiposity (173,174), combined with our open-ended "describe your body" responses (*n* = 19/52 terms reported described small bodies), these similarities support that many RDs live in smaller bodies.

The MSc project's third objective, analyze and interpret the sample's demographics and their experiences, perceptions, and knowledge related to weight evidence in practice, was completed and several inferential tests were run to determine if any associations existed between the sample's demographics and their experiences, perceptions, and knowledge of WRE. The demographic characteristics that found statistical associations (using Fishers exact test, where $p < 0.05$), were primary practice area (six associations within the data), years licensed as a dietitian (one association), age (one association), and weight history (one association).

Dietetic scope of practice (175,176) provides insights into our findings of primary practice area being associated with the use of BMI, weight as a goal, nutrition requirement calculations, value for CPGs, the health/ complication-centric paradigm, and the critical/ non-weight centric paradigm. In our results, all of these items had higher proportion of responses from clinical CRDs, except for the critical/ non-weight centric paradigm, which had more response from public health/ community CRDs. For clinical practice, these are all tools (including CPGs) that

are used more frequently in that practice area, given the nature of individualized patient care. Secondly, association between the public health/ community and critical paradigm is growing in the profession, with a recent position statement being released by Ontario Dietitians in Public Health just this year (2024) (177). Additionally, with the paradigms, application of the health/ complication-centric paradigm is more feasible when interacting one-on-one with patients, and the same can be said with the critical paradigm and public health. For example, on an individual level, behavior change strategies are a key component of clinical practice, given nutrition choices are considered lifestyle factors to chronic disease management (beyond obesity, also for diabetes, high cholesterol, and others) (1,2).

Being an evidence-informed profession, as evidence and research is updated, dietetic competencies are updated, and content delivered in dietetic lectures changes (13). In practice, dietitians engage in lifelong learning through Continuing Competency Programs, administered by the provincial colleges (178). This can also serve as an explanation for why an association between years licensed as a dietitian and the dominant/ weight-centric paradigm was found, as well as between age and the metabolic impacts of weight cycling knowledge statement. Drawing from ecological systems and context theory (i.e., contextual change), if CRDs are not working in the delivery of nutrition care to people living in larger bodies (i.e., personal scope of practice), then they would not have to be competent in/ engage with emerging research/ updated evidence on the topic in their yearly continuing competency efforts (132,178). Instead, they may choose set goals related to preceptoring dietetic interns, occupational health and safety legislations, risk management, or food safety standards, all related to their practicing scope (178).

The crosstabulations from the association with weight history (previously living in a thin body) and critical paradigm are worth exploring in future research (Tables IX-XII, Appendix D). Of those who have previously lived in a large body, CRDs identified with the health/ complication-centric paradigm, rather than the critical/ non-weight centric paradigm, or the with the dominant/ weight-centric paradigm. While the sample for these sub-groups is small, it is still interesting to see the split. Coupled with the findings on how CRDs describe their own bodies, several questions for future research could be drafted, for example, if personal dissatisfaction with weight or previous weight loss/gain history impacts positionality or views of WRE or not. Over

50% of the sample have maintained a similar weight throughout their lives. Further exploring how personal experiences with weight inform (or do not inform) positionality on the topic in practice is a potential area of future research; however, our findings suggest dietetic practice area is a key factor influencing WRE perceptions and use.

The sample was not intersectional, and instead it was primarily female, White, graduate level educated, middle-aged, thin, and having a primary practice area in clinical practice. This is consistent with existent research surveying on CRDs' demographics, meaning a representative sample was achieved (12,179). Statistically speaking, a primarily homogenous sample, could be one explanation for why other demographic factors (e.g., sex, gender, ethnicity, body size) did not find associations with the primary outcomes (experiences, perceptions, knowledge). Additional research exploring this research question with larger sample sizes could be warranted, however this research's findings suggest contextual change (i.e., primary practice area) to have a greater impact on perceptions of weight-related evidence interpretation and application (132).

Weight-Related Evidence

Majority of CRDs' use of evidence is consistent with the hierarchy of evidence-based medicine pyramid (180), valuing meta-analysis and systematic reviews, over editorials, commentaries, and expert opinions (Figure 5). However, CRDs valuing editorial and expert opinions more than its initial placement in the evidence-based medicine pyramid is consistent with RD-led publications in gray literature sources (8,181). For the definition of obesity using adiposity impairing health (48), in our sample of CRDs reported 29.1%, 27.2% and 43.8% of evidence as excellent or very good, good, and fair or poor, respectively. These findings suggest CRDs are ambivalent to the new Canadian Adult Obesity Clinical Practice Guidelines (CAO-CPGs), which is consistent with the surveying efforts and the decision for non-endorsement by DC (5,182). These guidelines were created over a span of three and a half years, combining expertise and input from researchers, clinicians, primary healthcare providers, and people with lived experience (183). Clinical practice guidelines are typically seen as the gold standard to follow for evidence-based practice (184), however there are several barriers to implementation in practice such as a delayed knowledge translation, abundances of recommendations, and time constraints of HCPs due to

increasing clinical responsibilities (185). On average, it takes 17 years for research to be translated into practice (186), and CRDs are known to have conflicting opinions on the recent CAO-CPGs (5,182), suggesting opinion may be another barrier to uptake. Further research should be conducted on facilitators and barriers to guidelines update, specific to dietitians and/or allied health providers, given existing research has been done primarily with physicians (185,187,188).

This is where slightly more than half of the CRD sample said weight does *not* exist with measurements, or as a goal in the nutrition care they provide. Primary practice area (clinical practice) was found to have a statistical association with weight as a goal, but not for measurement(s). Current CPGs have shifted their messaging towards stating weight is not a goal or behavior (2), and this is an area where the future open-ended response analysis will provide further context. It's possible that weight did not show up in measurements as frequently for our sample, given nurses typically weigh patients in clinical practice, such as in screening or admission processes in hospital, and for populations RDs see where weight can be essential to assessment, monitoring, and evaluation such as nutrition support (parenteral and enteral) and malnutrition (189–192). If this is explored in the future, perhaps the question should be framed differently for collecting weight versus tracking weight for assessment/re-assessment, monitoring, and evaluation, including context or a case study.

Perceptions

Weight-related approach or paradigm is a highly contested topic in dietetic literature (3-8,166), and has traditionally pitted RDs against one another. The WRE-RDs-Q used the same descriptors from previous surveying effort from DC (originally adapted from the Weight Stigma PEN Backgrounder). The three paradigms/ approaches were: 1) dominant/ weight-centric; 2) health/ complication-centric; and 3) critical/ non-weight centric (Appendix B). In comparison to DC's results (2023), where their sample size was 119 CRDs, 0.8% (n = 1) of their sample agreed with the dominant/ weight-centric paradigm, 49.8% (n = 59) with the health/ complication-centric paradigm, 46.2% (n = 55) with the critical/ non-weight-centric paradigm, and 3.4% preferred not to answer (n = 4) (5,182). Our data (n = 48) was very similar, however, with slightly more

representation from the dominant/ weight-centric (7.7%; *n* = 4/48), critical/ non-weight-centric (57.7% (*n* = 30/48) approaches, and non-applicable (7.7%; *n* = 4/48) responses. This could be because of WRE-RDs-Q recruitment efforts, that included Facebook groups where critical representation was high (e.g., Weight Inclusive Dietitians in Canada group), whereas DC's recruitment focused solely on their membership. While the descriptors were kept constant between both questionnaires, DC requested respondents only select one response, whereas our questionnaire asked respondents to "select all responses that apply to you." This is where, in our sample, 19.2% of CRDs (*n* = 10/48) selected more than one approach, similar to what Lichtfuss et al. (2023) found with 40.5% of their sample indicated they follow a combined approach (166). Exploring the nuance between approaches in practice and prevalence of following combined approaches should be explored further, as it is a potential path for unity within the profession. All of these similarities suggest that our data could be reflective of the larger CRD population, however data with larger sample sizes and wider representation is still needed.

Statements either asked the respondent for their valued importance, or their perception of their average client's valued importance, for three weight-related assessment outcomes: 1) history of weight loss/ gain; 2) client's lived experience(s) with weight; and 3) domestic lives/ living conditions. For lived experiences and domestic lives, CRDs perceived their value for these assessment outcomes more than they perceive their patients to. Whereas for history of weight change, CRDs perceived their patients to value this assessment outcome more than they do. Exploring this further, for example with a sample of patients, rather than CRDs responding for them would gain further insights into this to improve care. Interestingly, in comparison to Nutrition Care Process Terminology (eNCPT), history of weight change is seen across two assessment domains (anthropometric measurements, nutrition-focused physical findings), whereas lived experiences and domestic lives are found in one each (food/nutrition-related history, client history, respectively) (193).

Experience

Experience with WRE and respondents' own weight, was the outcome explored with the least amount of existent literature for HCPs, and particularly RDs and CRDs. Barr et al. (2004)

explored experiences and perceptions regarding "the role of the dietitian in weight management," finding 50.5% agreed that "dietitians are effective in the management of obesity," whereas 29.7% were neutral, and 19.8% disagreed (3). Comparatively, we asked about the experience of feeling valued by colleagues regarding WRE/ WR advice, using a frequency scale instead of level of agreement. Pertaining to this, in 2022, a questionnaire was administered to UK RDs, where almost a quarter (21.1%, n = 400) felt their weight influenced their ability as an RD (169). In 2004 in Canada, 48.0% agreed that RDs "should be role models for weight management, keeping their BMI between 20 and 25 kg/m^2" (3). This is also reflected in Brazilian research, where RDs (30.7%, N = 1039), nutrition students (36.7%), and laypeople (52.1%) agreed "that a good professional would be an individual within an ideal weight" (194). In our questionnaire, only 16.7% indicated they never fear gaining weight because of what they do for work, and 11.1% have never received comments on their body weight by patients. This is of concern and should be explored further in future research, given the known impacts of weight stigma and internalized weight stigma on health, as well as with UK RDs finding it to impact their career decisions and experiences of weight stigma within the profession (169).

Our results showed seventy percent of respondents "always" or "often" reflect on how they use WRE in their day-to-day practice activities, an arguably very positive finding given engaging in reflective practice is a dietetic practice competency, according to the Partnership for Dietetic Education Program (2020), and has been found to have several benefits such as improving service delivery and communication skills (195) . Reflective writing has also been used as an intervention to target weight stigma reduction in HCP clinical trials, where belief-based scores improved (196).

Knowledge

Six questions from the knowledge section were adapted from Barr et al. (2004)'s "facts about obesity" subsection, warranting comparison to their results from 20 years ago, to see how CRDs knowledge and opinions of WRE compares to present day. Of note, Barr et al.'s sample was primarily undergraduate educated, while our sample had more graduate level education, which could explain some differences in the data (3). Additionally, our sample was significantly

smaller (n = 52), whereas Barr et al. had over 500 respondents of RDs across the country (n = 512) (3). Because of this, these statistical comparisons should be considered with caution, however they could provide suggestions for future research, and should be explored with larger sample sizes.

The two statements related to weight cycling were very similar between both samples. For example, impacts of weight cycling on psychological (2023) or psychosocial (2004) health had 95.5% agreement and 80.7% agreement, respectively (3). Interestingly, in 2004, psychosocial health had more neutral responses (17.9%) than in 2023 (2.3%) for this question, highlighting a positive outcome of the application of weight stigma and psychology research's impact on CRDs' understanding of weight (3). One example of this in the 2020 release of a joint international consensus statement for ending weight stigma, of which Dietitians of Canada endorsed (197,198) For physical health's impacts on health, 2004 had 89.9% agreement and 2023 had 93.1% agreement.

Whereas, the two statements about 1) BMI and health risk (2004: 89.8% agree, 5.1% neutral, 5.1% disagree; 2023: 38.7% agree, 31.8% neutral, 29.5% disagree); and 2) weight loss and health (2004: 98.6% agree, 2.6% neutral, 0.6% disagree; 2023: 54.5% agree, 15.9% neutral, 29.6% disagree); had stark differences between both samples (much more neutrality in our 2023 study), suggesting a more nuanced understanding of weight, risk, and health (3). Weight science has progressed significantly since the mid-2000's, including highlighting the harmful impacts of (internalized) weight stigma, first published in 2007, and critical thinkers like the RD-led World Critical Dietetics group forming in 2009 (2,199,200).

For the items included from Barr et al. (2004), the statement reading, "the current emphasis on weight reduction in nutrition care contributes to eating disorders," had very similar neutral responses (2004: 24.1%; 2023: 23.6%), however in 2023, 68.2% CRDs agreed with the statement whereas in 2004, 36.7% agreed (3). This finding contrasts with recent evidence showing that weight reduction or weight management programs do not result in increased risk for eating disorders (201). For regaining weight, over double the proportion of CRDs responded neutrally (31.8%) in 2023, compared to 2004 (13.9%), where less agreed (2023: 36.0%; 2004:

59.4%) in 2023 (3). O'Keeffe et al. (2020) examined if connections exist between provider knowledge gaps and weight stigma scores, finding that HCPs who agree that "obesity can be entirely cured by a commitment to following a healthy lifestyle" was associated with higher weight stigma scores (difference in mean stigma score: 0.28; range: 0.19–0.37; $p < 0.0001$) (202). In our study, the Anti-Fat Attitudes Questionnaire (AFA), willpower subscale, were included in the WRE-RDs-Q, to measure explicit weight stigma (203,204). In previous research, higher scores in the willpower subscale of the AFA have been positively correlated with the dislike subscale (205), meaning results from one subscale can translate to multiple weight stigmatizing beliefs. Drawing from Sherf-Dagan et al. (2022), the AFA scores were totaled and divided by the number of scale items (three) (206). In order to form comparisons with previous samples, the sum was then multiplied by two to translate the 5-point scale to those using 10-point scales. To date, results of the AFA willpower subscale has primarily been studied in undergraduate and healthcare students and trainees (207–210).Though we only measured the willpower scale ($n = 44$), CRDs in our sample had low mean AFA scores (1.53 +/ 1.47; Range: 0 to 5.3, out of 9), compared to other Canadian food and nutrition student samples (mean: 2.33 +/- 1.48; $n = 22$; 2019) (207), American undergraduate dietetic students, interns, and RDs (mean: 3.76 +/- 1.52; $n = 44$, 2013) (208) and post-HAES educated students (mean: 2.51 +/- 0.73; $n = 43$, 2015) (210). This could be explained by the ambivalence and/or cognitive dissonance found in our sample. Previous research has recommended cognitive dissonance exposure as an approach to reduce weight stigma (211). For instance, teaching individuals counter-stereotypes (e.g., intelligent, smell good, determined, accomplished) to commonly held weight stigmatizing beliefs. Our results of the AFA could also be explained by the concept of social desirability bias, whereas members of a professional body, CRDs may sway their responses to respond "correctly" given it was a questionnaire focused on the profession (212).

Of note, there was less strong disagreement for, "people who weigh too much could lose at least some part of their weight through a little exercise," compared to the two other AFA statements, "some people are fat because they have no willpower," and "when people are fat, it is their own fault," suggesting more CRDs see the disconnect between body size and "willpower," however still place blame that body size is an individual's responsibility and within their control. While all statements are examples of explicit weight stigmatizing beliefs, which are "de-bunked" in

current weight science (2), the fact that RDs hold more agreement with individualized responsibility of weight when it comes to lifestyle interventions, connects well to their role and capabilities as a HCP (62), and reinforces that weight stigma exists within the profession. Interestingly, nearly 8% of RDs in the weight-centric paradigm agreed that "some people are fat because they have no willpower," (Table *21*), further exacerbates the stigmatizing beliefs.

Also in the knowledge section, were four statements related to BMI and intentional weight loss as an intervention/ risk mediator, where two statements had high agreement (weight loss regain; BMI and individual risk), and two had high neutrality (weight regain; BMI and individual risk). Others that had high agreement were the statements pertaining to malnutrition and cancer (Table 24). Interestingly, the malnutrition statement was one of two questions in the questionnaire where no CRDs responded neutrally, reflecting clear understanding or opinion from the population. Generally speaking, malnutrition is a topic where historically CRDs have had consensus in advocacy efforts (213).

Two statements that had a third and a quarter of respondents respond neutrally were, "weight loss should be encouraged to individuals with a BMI greater than or equal to 30 kg/m^2, prior to a knee replacement surgery," and "weight loss should be encouraged to individuals with a BMI greater than or equal to $30kg/m^2$, to decrease risk for chronic disease," respectively. Studies show that weight loss prior to total knee replacement (TKA) surgery does not improve adverse outcomes post-surgery (214), including a 2020 systematic review (215). However, some surgery centres still recommend this (216). For both statements, evidence can be conflicting (217,218), dependent on your understanding of research methods and which paradigm you align with, potentially causing confirmation bias. Confirmation bias about WR approaches should be explored in future research.

Questionnaire Implementation and Considerations for Future Iterations

Sample size estimations were used to determine a sample size goal of 375 respondents (219); however, recruitment ended at three months, due to a halt in new responses that were not bots (i.e., legitimate and legible responses in English, progressing past the consent page) (220), despite re-circulating the recruitment poster online (see Section 3.4.4 for full list of networks/

locations) (221). In existing literature, dietitian-focused surveys have been live for one to two months, where the mostly frequently, surveys were distributed for two months (3,90, 91, 166,137,221,222). In 2004, Barr et al., were successful in recruiting 514 CRDs to complete their questionnaire; however, their sampling method included mailed out questionnaire to a geographically stratified random sample of 695 CRDs, either members of Dietitians of Canada, or the Quebec provincial college (Ordre professionale des diététisties du Québecs (OPDQ)) (3). Therefor, typical response rates of online distributed questionnaires should be considered, compared to mail outs. For example, a systematic review by Wu et al. (2022), found the average online questionnaire response rate to be 44.1% (223). In 2023, Lichtfuss et al. were able to recruit 383 CRDs online from May to July 2021; and their recruitment was incentivised with the chance to win one of ten $75 CAD Amazon gift cards (166).

Of note, 121 CRDs began the questionnaire, but were removed for either not providing consent, or not answering any questions after completing the consent. This could be explained by limited time to engage in research and workload demands of healthcare providers (224), if completing at work, as well as content checking. Content checking, similar to fact-checking, is a phenomenon observed primarily in social media, news, or other forms of digital sharing, where the user reviews the content of a post or article, before determining if they should take action (225). Similar to negativity bias, content checking is observed more frequently on controversial topics, where polarizing views exist (226). If task switching or time was an issue, follow-up could have been a way to mitigate this, however, potentially would have caused less truthful responses with removing anonymity (i.e., in providing an email address in the consenting process). LimeSurvey did provide respondents of opportunity to save their responses to return to later, of which three respondents (n = 3/52) utilized.

A couple of theories for low response rate exist, such as the length, number of response options, interest of participants, and communication (i.e., messaging of recruitment materials) (227,228). Additionally, the questionnaire was administered post-COVID-19 pandemic, a time where healthcare works are still recovering from higher rates of burnout, staffing shortages, strain, stress, and mental health distress (e.g., anxiety, depression) (229–231). Another consideration is that the topic is highly polarized in the dietetic profession, and many RDs may have felt a sense of hopelessness or exhaustion from the topic/ purpose of the questionnaire, especially given

results from previous recent surveying efforts (5,6). Suggestions for increasing response rates among online questionnaires include financial renumerations, personalized invitations, reminders, having a well-designed questionnaire, and more than one recruitment strategy (232). A 2017 study found older participants were more likely to complete the questionnaire if an incentive was available and male participants were more likely if they received a reminder (228); whereas, other research has found incentives to impact the demographic makeup of samples (younger, greater ethnic representation) (233). For this MSc project, reminders were sent out with additional recruitment efforts (Appendix C, for last call recruitment specific poster), and an incentive was not possible due to funding, and that CRDs are generally paid well for their work. However, capacity for engagement with research can be connected to whether or not there is dedicated time (FTE), or requirement for participation in research, within their dietetic role (234,235).

Length of questionnaire

Seventy-three (n = 73) close-ended questions created a lengthy questionnaire, and must be considered in future development and administration, given it is known to impact rate of completion (236). Lichtfuss et al (2023) and Barr et al. (2004), included 20-25 fewer questions in their questionnaire (n = 60 and n = 55, respectively), than this MSc project (n = 80; n = 73 close-ended, n = 7 open-ended) (3,166). However, for this administration, the aim was to explore the topic widely, to determine next steps for studying the concepts in more detail (i.e., refining the research question). A recommendation for administering longer questionnaires includes breaking it up into sections, and administering each section separately, to avoid lack of interest or fatigue (237). Future research could take one section of the WRE-RDs-Q (e.g., knowledge) and explore it further among CRDs.

Exploring Neutrality

The Likert scale has four key strengths including its simplicity to create, each statement is of equal value within the questionnaire, it allows unknown attitudes (e.g., undecided, the middle anchor in even numbered Likert scales), and there is a high chance of producing a very reliable scale (134,238).

Another consideration for rate of completion of a questionnaire is not including too many response options (i.e., items beyond the scope of the study) for close-ended questioning (239). Providing too many response options to a close-ended question can introduce fatigue and order bias, also known as the position effect, where response(s) are chosen more or less frequently, depending on their position in the list of response options (140). There was a high frequency of "neutral" responses throughout the questionnaire. showcasing some non-committal stances, uncertainty, and/ or ambivalence within the profession, which could be predicted, given the current divide in the profession (5,6). Inclusion of middle positioned responses, frequently listed as neutral (neither agree not disagree) on ordinal scales, has been studied in existing tool development literature (240,241). Five key explanations have been proposed for why respondents choose neutral as a response option: 1) true neutral agreeance; 2) undecided, no opinion, never thought about it, do not know; 3) respondent fatigue; 4) desire to fit into the "status quo" position; or 5) nuance within a topic area (240,241). A proposed solution for this is to add a "I do not know" response, however may not be as effective for RD samples, given potential social desirability bias (242). Social desirability bias in the profession was showcased in the VREP © face, content, and validation exercise, where concern over defining concepts, providing more context clues, or details to question prompts were often suggested, with the stated concern of being unsure if respondents will know how to respond or respond 'correctly,' given the current state of evidence.

Generally speaking, the high neutrality rate could also be ambivalence. Ambivalence is a cognitive state where individuals hold two contradictory ideas, beliefs, or thoughts on a topic or decision (243,244). Cognitive dissonance is a similar concept, but is experienced post-decision, rather than pre- or during decision, like ambivalence is (245). The open-ended responses that will undergo thematic analysis post-thesis, may be able to provide further context and insights into better understanding ambivalence and/or cognitive dissonance within the population. Along with this, considering psychological safety in future research on the topic will be essential. A recent scoping review (2023) on psychological safety in simulation-based learning for healthcare providers (HCPs) found a no-blame culture, pre-briefing-debriefing, and structured evidence-based designs as enablers to psychological safety (246). A 'no-blame' culture will be essential in

facilitation of future research and discussion(s), especially if CRDs are already experiencing ambivalence and/or cognitive dissonance on the topic.

Another proposed explanation is that the neutral responses reflect client-specific nuance on the topic. For example, CRDs may have felt compelled to select a neutral response because every client is different, and the question's response may vary in delivery of care depending on the client's needs or expressed interest (which could also vary/ differ from the approach the CRD characterized themselves by). Potentially removing a neutral response in future questionnaires may force CRDs to choose a response or opinion (242,247), or a "it depends on the client" option could be added. A suggestion for future research would be follow-ups exploring those who respond neutrally, to get further insight on why they chose that response (241). Lichtfuss et al (2023), found 40.5% (n = 155/383) respondents used a combination of practice approaches, when ranging from solely weight focused to weight liberated. This was their "middle" response, for their sample of CRDs working in outpatient settings with higher-weight adults (166). Similarly, high neutrality was found in Barr et al.'s (2004) questionnaire, in particular, in two of the experience or perception-based questions, where they had over a quarter neutrality (3). Comparatively, in our sample, we had n = 10/48 (20.8%) combined WR approach responses. Exploring the nuanced views and approaches used by those who identify in the "combination" approach category could be valuable to gain their experiences, perceptions, and knowledge of the evidence informing their practice. Along with this, if neutrality reflects a "middle of the road" political/ paradigm stance (248,249), then future research should certainly explore if RDs employ multiple approaches, given the patient (i.e., nuance).

Weight-Related Evidence as a Term: Misconceptions

Lastly, avoidance of the topic and terms used (e.g., weight-related evidence, obesity) due to their historic controversial nature in the profession could be another explanation for low response rates. Feedback was received from CRDs in the recruitment process of such, expanding that on first glance of the materials, they were unwilling to distribute them to colleagues, given their weight focused nature. When given the chance to explain it was not weight focused, rather exploring the range of paradigms, they were then receptive in distributing the recruitment materials, however that kind of interaction is impossible to have with every eligible respondent.

CRDs could have chosen not to respond to the WRE-RDs-Q thinking it was weight-focused, or solely from the weight-centric paradigm lens, especially for those with views on the other end of the spectrum. Despite this, the critical paradigm had a particularly good representation in our sample, suggesting this was not the case, and one explanation for this could be negativity bias, where those who have feedback or are dissatisfied are more likely to engage with surveys (226). Similarly, the open-ended responses will provide more context to this, especially the question exploring, "how do you define weight-related evidence?"

Despite the uncertainty with use and understanding of "weight-related evidence" as a term in our sample, "weight-related" has been used extensively in literature outside of dietetics, such as psychology and stigma literature (250–266), and including in dietetics, but outside of the Canadian context (169). Continually, given the feedback received in the development process, a glossary of terms (Appendix B) was included at beginning of questionnaire, and each section was defined/ introduced prior to beginning said section; except for WRE, as a goal of the questionnaire was to determine how CRDs define this term in their own words. Another effort to address the community's concerns was the face, content, and construct validation process, including VREP ©, where members of the population were invited to provide feedback on the survey tool.

5.1. Strengths and Opportunities for Improvement

5.1.1. Strengths

A key strength of the MSc project was that it was informed by a scoping review (extensive literature), and was face, content, and construct validated prior to implementation to the population. This is a strength as it is uncommon among published surveying to face-content validate, pre-test/ pilot, or report detailed development procedures for a survey instrument (137,153,156,167,269-274). Additionally, there was a statistically significant ($p < 0.05$) relationship between rated quality of evidence of weight inclusive and size acceptance approaches. In alignment with questionnaire development theory (Peterson et al., 2000), these agreeable findings show the WRE-RDs-Q measured what it was intending to for these items, as repetition within the questionnaire shows alignment (140).

A second strength of the study was the diversity of the research team in areas of expertise, lived experience with weight, and location across Canada. The research team (grant holders, thesis committee) has various experience in the fields of 2SLGBTQIA+ nutrition and health, applied human nutrition, psychology, nursing, critical theory, gerontology, biology, fat studies, communications, and health rhetoric. Additionally, several members of the research team have lived experiences of higher and lower weights, meaning there are voices from inside the team who are able to advocate from their experiences of the patient populations RDs serve. Lastly, the research team has members/ representation from Eastern (Nova Scotia), Central (Ontario), to Western (Manitoba) Canada, all of which are key stakeholders in a study aiming to explore RDs' experiences, perspectives, and knowledge country wide.

Another strength is the high engagement with the body scaling and weight history questions among the CRDs. As mentioned, with the Pulver Figure Scale, only one respondent (2.1%; *n* = 1/48) indicated they preferred not to the Pulver and the weight history questions (2.0%; *n* = 1/49). This was a huge positive, given the personal nature of the topic.

5.1.2. Opportunities for Improvement

A limitation of this study and questionnaires in general is the lack of an ability to build trust with the respondents. Since there was minimal/ no opportunity to build rapport and trust with the respondent, it is unclear how comfortable they felt to be authentically honest in their responses, specifically demographics and open-ended responses. It was aimed to address this limitation through clear recruitment materials and outreach, transparency of ethical approval and procedures, and disclaimers before particularly personal questions, for instance, when asking about the respondents' weight/ body size. This approach was successful, given only one respondent selected, "I prefer not to respond to this question," for the Pulver (body) scale and personal weight history questions. Additionally, personal weight history was measured using pre-determined weight history statements, rather than re-asking the Pulver's scale, which is a limitation. Future research could ask RDs about their personal weight history with the Pulver's scale, to determine what they would perceive their previous highest and lowest weights/ body sizes to be, to more objectively measure this, in comparison to their initial (current) Pulver scale rating. Additionally, psychological safety should be made a priority in future research

approaches, especially given the observed ambivalence in the profession, and the personal nature of weight and body image.

The study's sample size is a limitation for the strength of statistical analyses. To address this, the Fisher's Exact test was used, as it can generate associations between smaller sample sizes. Crosstabulations/ contingency tables were also used to create comparisons, which are recommended for smaller samples (165,275). Additionally, not collecting a diverse or intersectional sample (e.g., not primarily White, female, thin bodies) limited the capabilities of the data even finding such relationships when the variable representation is not there. One example of this is the lack of larger bodies represented in the Pulver scaling, with no representation in G to I sizes, which impacted the relationships able to be explored. In future recruitment, intentional recruitment (and recruitment materials) could be a suggestion to address this, including completing preliminary analyses to check-in on the demographic characteristics of the sample mid-way through recruitment efforts. Despite not receiving an intersectional sample, it is important to consider that the small sample was still very comparable to the profession's known makeup (demographics) and other samples on the topic previously surveyed (3,166), other than higher-response of graduate educated CRDs (3,166).

Two other limitations relating to questionnaire development, is understandability of what is being asked and that it was not translated or distributed in French. For understandability, if the respondent interprets/ understands the question a different way than the researcher intended (276). This limitation was minimized by completing face, content, and construct validity testing the questionnaire, prior to implementation. Feedback was integrated to minimize risk of questionnaire misinterpretation and increase clarity. The questionnaire was not translated to or distributed in French, Canada's second language, which is a minor limitation. Existing research shows it not to be a major limitation, for example DC's recent (2020) surveys were offered in both languages, and only had one respondent complete the survey's open-ended questions in French (5). While this limitation cannot be addressed or minimized due to the scope and nature of the project (MSc), the research team encourages future research to explore the topic in French.

5.2. Recommendations for Future Research and Implications to Practice

There are several recommendations for future research and implications to practice from this work. First, future qualitative analysis of the open-ended response of the questionnaire will allow the research team to contextualize the quantitative findings and gain a greater understanding of topic. Findings will be summarized in a peer-reviewed manuscript and a potential oral conference presentation. Disseminating the findings from this study could re-assure CRDs that others in the profession are equally as ambivalent, torn, or also experiencing cognitive dissonance as they are, with the frequency of 'neutral' responses in this questionnaire's results. Additionally, the findings could help remove 'blame' towards CRDs whom hold different positions than their own, as it may not be provider weight stigma that influences paradigm choice or weight-related approach, but rather primary practice area to be reflective of their scope of practice. Though our study found a significant association between primary practice area and two of the WR paradigms, this finding should not be considered in isolation, and should be further tested in future research, along with in larger sample sizes.

Secondly, exploring the primary outcomes with a larger sample size and with true qualitative methods are needed to better understand the topic among CRDs. In the future, a shorter version of the questionnaire, or taking a section of the questionnaire (e.g., knowledge, perceptions/ paradigms, or experience) and expanding or exploring it in more detail, given the results from this study, is a strong recommendation to gain a greater understanding. For future questionnaires on the topic, removing 'neutral' as a response option could help decrease fence sitting. Mixed-method approaches could also help researchers better understand if high neutrality in our study could have been due to client-specific nuance, or CRDs' ambivalence on the topic.

The questionnaire was comprehensive, and any/ multiple item(s) or finding(s) could inspiration for a future research project. One example of interest to the graduate student is further exploring weight stigma in the profession, including internalized weight stigma, and how/ if confirmation bias, cognitive dissonance, or black/ white thinking impacts interpretation and application of weight-related frameworks in practice. When contextualizing the AFA findings for this study, it was noted that existent weight bias research has primarily been done in student populations, and research shows know students typically have higher bias scores than RDs (168). Another

recommendation is to explore implicit (i.e., unconscious) weight stigma among CRDs in future research to study prevalence and determine strategies for reduction. Globally, three studies have measured implicit weight bias in RDs, finding almost half hold strong-to-moderate implicit weight stigma (43% of *n* = 402, U.K. RDs; 56.4% to 61% of *n* = 147, German RDs; 76% of *n* = 98, U.S. RDs) (169,277,278). When measuring both, implicit weight bias scores have been found to be higher in RDs compared to their explicit weight stigma scores (172). Reduction in all forms of biases (i.e., size, ethnicity, gender) is known to improve quality of patient care (279).

Continually, highlighting "combined approaches" or nuance in dietitian-client relations looks like a promising avenue to bring the profession together on this topic. Interviews or focus groups could be a fitting method to explore this topic in future research, allowing the interviewer-respondent(s) to build rapport. Results from this study show that CRDs are interested in both methods for future research on the topic. A semi-structured approach for interviews may work best, given the discussion would be exploratory in nature, with minimal research exploring the topic to date (280).

Furthermore, beyond CRD and other HCPs weight bias scores, considering sources of nutrition (mis)information is also an important piece to the puzzle to consider and explore where clients are receiving weight-related messages that may be harmful or perpetuating weight stigmatizing beliefs and coupling weight and health/ weight and nutrition.

Client-focused research is another essential avenue for future research. For instance, exploring the valued importance statements with clients (e.g., of weight-related assessment outcomes), rather than CRDs' perceptions of their clients' importance is needed. Determining client's experiences with such in practice is important to determine any strengths or areas for improvement of CRDs in practice.

Lastly, updating the questionnaire's terminology in the future will be essential as knowledge on the topic progresses. One example of this is how since launching the questionnaire, awareness of using "metabolic bariatric surgery" instead of "bariatric surgery" to describe the procedure has increased, in an effort to remove stigma and align with updated definitions of obesity (adiposity

impairing health/metabolic function, rather than based solely on BMI (body size)). Along with this, given the disconnect in the profession, a greater understanding of the physiology of obesity, or impaired adiposity function, is warranted as a recommendation for dietetic education programming. The results of this study show CRDs are highly engaged and critical thinkers of the topic of weight in the profession, which is positive, and supports CRDs as lifelong learners, critically engaged in continuous professional development efforts.

6.0. Significance and Conclusions

The findings of this study will inform further research on the topic, a key goal of survey research. The questionnaire was face, content, and construct validated by members of the profession, prior to being administered for 3 months (July to October 2023), online via LimeSurvey. Fifty-two respondents completed the questionnaire, where most were female, White, graduate level educated, middle-aged, thin, and primarily in clinical practice.

CRDs indicated they most frequently refer to meta-analyses and systematic reviews and randomized controlled trials, and editorials, commentaries, or expert opinion papers the least frequent. No significant associations ($p < 0.05$) were found between type of research or methods typically referred to for WRE and identified WR paradigm or primary practice area. Between 2004 and 2023, similarities of CRDs' knowledge of weight cycling's impact on psychological health, and differences (percent) of CRDs' who see emphasis of weight reduction in nutrition care as a contributor to eating disorders, were observed (3,166). The differences could perhaps be explained by critical perspectives existing more widely in the profession than before. Many questions also had a high number of neutral responses, suggesting CRDs are indecisive, ambivalent, or experiencing cognitive dissonance on the topic. One example, specific to weight stigma, was a quarter of our sample responded "neutral" agreement to "people who weight too much could lose at least some part of their weight through a little exercise." While this specific statement was from the AFA questionnaire, a measure of pre-judicial attitudes towards people in larger bodies (also known as weight stigma), an alternative explanation for this result could be CRDs interpreting nuance with the statement, dependent on the client or scenario.

The majority of the sample indicated they identify with the critical/ non-weight centric paradigm, then the health/ complication-centric, then dominant/ weight-centric. Almost twenty-percent selected multiple approaches, suggesting they use a combined approach in practice. Associations were found between primary practice area and 1) the health/ complication-centric paradigm, 2) the critical/ non-weight centric paradigm. An association was also found between primary practice area and use of WRE tools in practice for: BMI, goal, and nutrition requirement calculations, where clinical practice most frequently indicated use of these tools. Value for CPGs were associated with primary practice area, and considering CPGs as evidence was associated with those who identify with the health/ complication-centric paradigm.

Bringing the profession together exploring combined approaches or nuance could be a way to further explore the impact of context, or potentially contextual change (132), on decision making of application and implementation of WRE in practice. Dietitians have diverse practice roles and settings, and each respective scope of practice differs based on the tasks performed in each role. Future qualitative analysis of the open-ended responses will provide further insights and context to the quantitative findings described in this thesis. When disseminating to other Canadian RDs, the findings could help RDs gain a greater understanding of each other's viewpoints, and demographic characteristics that may impact their perspectives, such as primary practice area, age, or years licenced as a dietitian. Studying decision-making processes (i.e., nuance, individualized approach with clients), client experiences with dietitians, and weight stigma (and internalized weight stigma) scores among CRDs, are all potential next step for future research. Furthermore, building towards collective understanding and respect is an important first step to fostering trusting relationships with one another, interprofessional colleagues, and clients, rather than competing against each other for the "dominant" viewpoint or approach in dietetic practice. As Audre Lorde, American author, feminist, and civil rights activist, wrote in her 1984 essay (281,282):

> "*As women, we have been taught either to ignore our differences, or to view them as causes for separation and suspicion rather than as forces for change. Without community there is no liberation…But community must not mean a shedding of our differences, nor the pathetic pretense that these differences do not exist."*

7.0. References

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8.0. Appendices

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Appendix A: Adapted VREP © Tool for this study's use

Survey/Interview Validation Rubric for Expert Panel - VREP©

Created by: Marilyn K. Simon with input from Jacquelyn White

Adapted by: Rachel Waugh with input from Shannan Grant, Phillip Joy, Deborah Norris, Christina Lengyel, and Jennifer Brown

Criteria	**Operational Definitions**	**Score** **1=Not Acceptable** (major modifications needed) **2=Below Expectations** (some modifications needed) **3=Meets Expectations** (no modifications needed but could be improved with minor changes) **4=Exceeds Expectations** (no modifications needed)				**Questions NOT meeting standard** **(List page <u>and</u> question number) and need to be revised.** ***Please use the comments and suggestions section to recommend revisions.***
		1	2	3	4	
Clarity	• The questions are direct and specific. • Only one question is asked at a time. • The participants can understand what is being asked.					

	• There are no *double-barreled* questions (two questions in one).					
Wordiness	• Questions are concise. • There are no unnecessary words					
Negative Wording	• Questions are asked using the affirmative (e.g., Instead of asking, "Which methods are not used?", the researcher asks, "Which methods *are* used?")					
Overlapping Responses	• No response covers more than one choice. • All possibilities are considered. • There are no ambiguous questions.					
Balance	• The questions are unbiased and do not lead the participants to a response. The questions are asked using a neutral tone.					
Use of Jargon	• The terms used are understandable by the target population.					

	• There are no clichés or hyperbole in the wording of the questions.					
Appropriateness of Responses Listed	• The choices listed allow participants to respond appropriately. • The responses apply to all situations or offer a way for those to respond with unique situations.					
Use of Technical Language	• The use of technical language is minimal and appropriate. • All acronyms are defined.					
Application to Praxis	• The questions asked relate to the daily practices or expertise of the potential participants.					
Relationship to Problem	• The questions are sufficient to resolve the problem in the study • The questions are sufficient to answer the research questions.					

	• The questions are sufficient to obtain the purpose of the study.					
Measure of Construct: **A: Demographics**	• The survey adequately measures this construct. *Demographics include gender, sex, age, practice setting, size, education, and years of experience.*					
Measure of Construct: **B: Experience**	• The survey adequately measures this construct. *Experiences are "events that occurred in the past when awake and/or cognizant" [1,2].*					
Measure of Construct: **C: Perception**	• The survey adequately measures this construct. *Perception is "informed by experience and knowledge, an individual's view, paradigm, or outlook on a topic or issue" [1,3].*					
Measure of Construct: **D: Knowledge**	• The survey adequately measures this construct.					

	Knowledge is "awareness and recall of a concept or phenomena. Knowledge informs skill" [1,4].					

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Comments and Suggestions:

Types of Validity

VREP is designed to measure face validity, construct validity, and content validity. To establish criterion validity would require further research.

Face validity is concerned with how a measure or procedure appears. Does it seem like a reasonable way to gain the information the researchers are attempting to obtain? Does it seem well designed? Does it seem as though it will work reliably? Face validity is independent of established theories for support (5).

Construct validity seeks agreement between a theoretical concept and a specific measuring device or procedure. This requires operational definitions of all constructs being measured.

Content Validity is based on the extent to which a measurement reflects the specific intended domain of content (6, p.20). Experts in the field can determine if an instrument satisfies this requirement. Content validity requires the researcher to define the domains they are attempting to study. Construct and content validity should be demonstrated from a variety of perspectives.

Criterion related validity, also referred to as instrumental validity, is used to demonstrate the accuracy of a measure or procedure by comparing it with another measure or procedure which has been demonstrated to be valid. If after an extensive search of the literature, such an instrument is *not* found, then the instrument that meets the other measures of validity are used to provide criterion related validity for future instruments.

Operationalization is the process of defining a concept or construct that could have a variety of meanings to make the term measurable and distinguishable from similar concepts. Operationalizing enables the concept or construct to be expressed in terms of empirical observations. Operationalizing includes describing what is, and what is not, part of that concept or construct.

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Appendix B: WRE-RDs-Questionnaire (Last updated: July 12, 2023)

Glossary

Body Mass Index (BMI): Calculated using a formula [BMI=weight(kg)/height(m)^2], classifies health risk. The BMI Nomogram, which defines BMI categories, can be found here[1].

Evidence: Facts or proof of a concept, theory, relationship, or scenario.[2] Evidence guides patient care, and includes patient perspective, to create shared decision making.[3]

Experience: An event that occurred in the past when awake and/or cognizant. Recall and description of experiences are limited to an individual's working memory.[4]

Knowledge: Awareness and recall of a concept or phenomena, and knowledge informs skill. [5]

Paradigm: "A framework, model, or pattern used to formulate generalizations and theories based on shared assumptions, concepts, questions, methods, practices, and values that structure inquiry."[6]

Perception: is informed by experience and knowledge, and is an individual's view, paradigm, or outlook on a topic or issue.[7]

Weight-related evidence: We purposefully have not defined "weight-related evidence" in our work, to better understand how you do/ would.

Section 1: Weight-Related Evidence

Instructions:

This section explores how you define, have been trained in, or use weight-related evidence in your practice and nutrition care. Your participation in this questionnaire is optional, and you can skip or omit any questions/ responses.

1.1. Define weight-related evidence using your own words. There is no correct answer. Use the text box below to enter your response (maximum 150 words).

[Text Box]

1.2. List three examples of weight-related evidence.

1) [Text Box]
2) [Text Box]
3) [Text Box]

1.3.a. What is evidence? Please select all that apply.

- Blog posts
- Clinical practice guidelines
- Patient perspective
- Research articles
- Other

1.3.b. If you selected “other” for question 1.2.a, use the text box below to specify what is evidence.

[Text Box]

1.4.a. What forms of research/ methods do you typically refer to, to get weight-related evidence? Please select all that apply.

- Animal and in vitro
- Case-control
- Case series
- Case reports
- Cohort studies
- Editorials, commentaries, or expert opinion papers
- Meta-analyses and systematic reviews
- Randomized controlled trials

- Other

1.4.b. If you selected “other” for question 1.4.a., please use the text box below to specify what forms of research/ methods you typically refer to, to get weight-related evidence.
[Text Box]

1.5.a. How does weight exist in nutrition care you provide to people? Please select all that apply.

- Body image
- Body Mass Index (BMI)
- Goal
- Measurement
- Nutrition requirement calculations
- Outcome
- Other

1.5.b. If you selected “other” for question 1.5.a., please use the text box below to specify how weight exists in the nutrition care you provide to people.
[Text Box]

1.6. List three examples (words/phrases) of how weight existed in your dietetic training. This could be at the high school, undergraduate, or graduate level (accredited program).

1) [Text Box]
2) [Text Box]
3) [Text Box]

1.7. List three examples (words/phrases) of how weight existed in your dietetic training at the internship level (if applicable).

1) [Text Box]
2) [Text Box]
3) [Text Box]

Section 2A: Getting to Know You & Your Experiences with Your Weight

Instructions:

This section is about getting to know you in effort to gain insights on the diverse positionalities related to weight-related evidence in the dietetic profession, and this includes gathering data on the variance/non-variances in dietitians' demographics and intersectionality, including body shape/size. The findings from this research aim to inform future practice, dietetic curriculum, and policy. The research team is engaged in advocacy to increase diversity in the profession. Your participation in this questionnaire is optional, and you can skip or omit any questions/ responses.

2.1. What is your year of birth? Enter your response in the text box below.

[Text Box]

2.2. What word or phrase do you use to describe is your biological sex? Enter your response in the text box below.

[Text Box]

2.3. What word or phrase do you use to describe your gender? Enter your response in the text box below.

[Text Box]

2.4.a. What ethnicity do you identify with most?[8]

- African
- Australian or New Zealander
- Caribbean Region
- East Asian
- European
- Indian-Caribbean
- Latin American
- South Asian
- Southeast Asian Oceania
- North American/ Indigenous
- North American/ White
- West Asian
- Other

2.4.b. If you selected “other” for question 2.4.a, use the text box below to specify which ethnicity you identify with most.

[Text Box]

2.5. Where do you currently reside? Select the response that best applies to you.

- Alberta
- British Columbia
- Manitoba
- New Brunswick
- Newfoundland and Labrador
- Northwest Territories
- Nova Scotia
- Nunavut
- Ontario
- Prince Edward Island
- Quebec
- Saskatchewan
- Yukon

2.6. What is your highest level of education completed?

- High school
- College
- Undergraduate degree
- Master’s degree
- Doctoral degree

2.7.a. What additional experience and/or training have you completed on weight-related evidence? Select all responses that apply to you.

- Additional courses or certifications
- Internship
- On-the-job learning
- University level electives
- Volunteering
- Other

2.7.b. If you selected “Additional courses or certifications” for question 2.7.a, please specify which course or certification you have completed on weight-related evidence.

[Text Box]

2.7.c. If you selected “other” for question 2.7.a, please specify which additional training and/or experience you have completed on weight-related evidence.

[Text Box]

2.8. How many years have you been fully licensed as a dietitian? Enter your response in the text box below.

[Text Box]

2.9. What is your primary place of work? Select the response that best applies to you.[9]

- Business or industry
- Clinical – Acute care
- Clinical – Outpatient care
- Clinical – Long term care
- Clinical – Homecare
- Communications/ Media
- Community/Public Health
- Education, academia or research

- Employed outside of dietetics
- Food Service Management
- Government and public policy
- Management or administration
- Non-governmental organization
- Population and public health
- Private practice/ Consulting
- Private practice, primarily individual counselling
- Regulatory body
- Rehabilitation
- Sports
- Unemployed
- Other

2.10.a. Do you have a secondary place of work?

- Yes
- No

2.10.b. If answered "yes" to question 2.10.a: What is your secondary place of work? Please select the response that best applies to you.[9]

- Business or industry
- Clinical – Acute care
- Clinical – Outpatient care
- Clinical – Long term care
- Clinical – Homecare
- Communications/ Media
- Community/Public Health

- Private Practice/ Consulting
- Education, academia or research
- Food Service Management
- Government and public policy
- Management or administration
- Non-governmental organization
- Population and public health
- Private practice, primarily individual counselling
- Regulatory body
- Rehabilitation
- Sports
- Employed outside of dietetics
- Unemployed
- Other

2.11. How often do you use weight-related evidence in practice?

- 1 to 25% of the time
- 26 to 50% of the time
- 51 to 75% of the time
- 76 to 100% of the time
- I do not use weight-related evidence in practice

2.12. How often do you work with people who identify as fat, having a higher weight, living in a larger body, or having a BMI above or equal to 30kg/m^2?

- 1 to 25% of the time

- 26 to 50% of the time
- 51 to 75% of the time
- 76 to 100% of the time
- I do not use weight-related evidence in practice

2.13. In a typical month, do you provide care to people pre- or post- bariatric surgery?

- Yes
- No

2.14. In a typical month, do you provide care to people seeking weight loss?

- Yes
- No

Section 2B: Getting to Know You & Your Experiences with Your Weight (Continued)

Instructions:

This section of the questionnaire gathers data on the variance/non-variances in dietitians' demographics and intersectionality, including body shape/size, and the following questions relate to your weight history, Body Mass Index (BMI), and self-descriptors of your body. This may be triggering for some respondents. Your participation in this questionnaire is optional, and you can skip or omit any questions/ responses.

2.15. How do you describe your weight loss/gain history? Please select all responses that apply to you.

- I have previously lived in a thin body
- I have previously lived in a large body
- I now live in a thin body

- I now live in a large body
- I have maintained a similar weight throughout my adult life
- I prefer not to respond to this question

2.16. Which image (figure 1) best represents your current body?[10]

- A
- B
- C
- D
- E
- F
- G
- H
- I
- None
- I prefer not to respond to this question

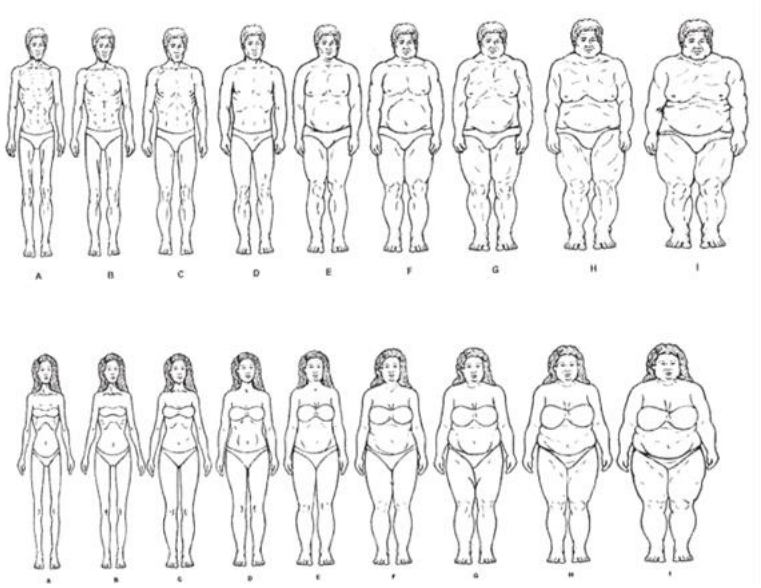

Figure 1: Pulvers (2004) scale[10] showing images of bodies of various sizes. The top row shows masculine body shapes, where "A" is the smallest and "I" is the largest. The bottom row shows feminine body shapes, where "A" is the smallest and "I" is the largest.

Use the text box below to enter your response or skip this question if you prefer not to respond.

2.17. What is your current weight? Please indicate if it is in kilograms or pounds. If you do not know, please provide an estimate. Use the text box below to enter your response or select "I prefer not to answer this question."

[Text Box]

- I prefer not to respond to this question

2.18. As an adult, what has been your highest weight (absent of medical water retention, pregnancy)? Please indicate if it is in kilograms or pounds. Use the text box below to enter your response or select "I prefer not to answer this question."

[Text Box]

- I prefer not to respond to this question

2.19. As an adult, what has been your lowest weight (absent of medical water retention, pregnancy)? Use the text box below to enter your response or select "I prefer not to answer this question."

[Text Box]

- I prefer not to respond to this question

2.20. What is your height? Please indicate if in centimeters, inches, and/ or feet. If you do not know, please provide an estimate. Use the text box below to enter your response or select "I prefer not to answer this question."

[Text Box]

- I prefer not to respond to this question

2.21. List three examples (words/phrases) of how you describe your body.

1) [Text Box]
2) [Text Box]
3) [Text Box]

Section 3: Perceptions & Paradigms of Weight-Related Evidence in Nutrition Care/Practice

Relevant definition(s):

Perception: is informed by experience and knowledge, and is an individual's view, paradigm, or outlook on a topic or issue.[7]

Paradigm: "A framework, model, or pattern used to formulate generalizations and theories based on shared assumptions, concepts, questions, methods, practices, and values that structure inquiry."[6]

Instructions:

This section explores your perceptions of weight-related evidence in dietetic practice including your positionality, self-identified practice paradigm(s), and your beliefs and opinions. Your participation in this questionnaire is optional, and you can skip or omit any questions/ responses.

3.1. Weight can be viewed from different paradigms. What paradigms do you draw from in your practice?[11-12] Please select all responses that apply to you.

- **Dominant/weight-centric approach** - obesity is understood as a modifiable risk factor for chronic diseases and weight loss is recommended for people who are classified as "overweight" and "obese" to achieve improved health status.

- **Health/complication-centric approach** - obesity is classified as a chronic disease. The focus is to assess the type of adipose tissue, distribution and function, with the intention to provide clinicians with individualized treatment options that are independent of weight or Body Mass Index (BMI). The intent is to ensure that body weight and BMI are not sole indicators for the diagnosis of obesity. It supports body diversity and a focus on health-related behavior changes that are universal across all body weights, sizes and BMI categories rather than targeting healthy eating and physical activity messaging predominantly to people with larger bodies.

- **Critical/non-weight centric approach** - aims to raise awareness of body diversity, the impact of weight stigma on health and well-being, and how weight stigma intersects with other social determinants of health. Aims to prevent/treat health issues through the lens of health equity and social justice, in addition to individual health behavior changes. Does not support obesity as a disease approach.

- I prefer not to respond to this question.

- Other

3.1.b. If you selected “other” for 3.1.a, use the text box below to describe your current paradigm/ positionality in your own words (maximum 150 words).

[Text Box]

3.1.c. Provide additional context/ rationale for your response to 3.1.a. Use the below text box to enter your response (maximum 150 words).

[Text Box]

3.2. For the following statements/ questions, please choose the response that best applies to you.[13]

a. How important is assessing your clients’ history of weight loss/gain?

- Not important at all
- Low importance
- Slightly important
- Neutral
- Moderately important
- Very important
- Extremely important
- I do not work with individual clients

b. How important to your average client is assessing history of weight loss/gain?

- Not important at all
- Low importance
- Slightly important
- Neutral
- Moderately important

- Very important
- Extremely important
- I do not work with individual clients

c. How important is discussing your client's lived experience(s) with weight?

- Not important at all
- Low importance
- Slightly important
- Neutral
- Moderately important
- Very important
- Extremely important
- I do not work with individual clients

d. How important to your average client is discussing lived experience(s) with weight?

- Not important at all
- Low importance
- Slightly important
- Neutral
- Moderately important
- Very important
- Extremely important
- I do not work with individual clients

e. How important is discussing your clients' domestic lives/ living conditions?

- Not important at all
- Low importance
- Slightly important
- Neutral
- Moderately important
- Very important
- Extremely important
- I do not work with individual clients

f. How important to your average client is discussing domestic lives/ living conditions?

- Not important at all
- Low importance
- Slightly important
- Neutral
- Moderately important
- Very important
- Extremely important
- I do not work with individual clients

3.3. Which response best describes the quality of the evidence available to you on the following topics? For the following approaches, select the response that best applies to you.

a. Weight-inclusive approaches

- Poor
- Fair

- Good
- Very good
- Excellent

b. Individual body assessment using Body Mass Index (BMI)

- Poor
- Fair
- Good
- Very good
- Excellent

c. Population health assessment using Body Mass Index (BMI)

- Poor
- Fair
- Good
- Very good
- Excellent

d. Obesity defined using adiposity impairing health

- Poor
- Fair
- Good
- Very good
- Excellent

e. Size acceptance approaches

- Poor
- Fair

- Good
- Very good
- Excellent

f. Pharmacotherapy for weight loss

- Poor
- Fair
- Good
- Very good
- Excellent

g. Bariatric or metabolic surgery for weight loss

- Poor
- Fair
- Good
- Very good
- Excellent

3.4 Please select your level of disagreement or agreement with the following statement: I value clinical practice guidelines for weight-related evidence.

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

Section 4: Your Experience with Weight-Related Evidence in Nutrition Care

Relevant definition(s):

Experience: An event that occurred in the past when awake and/or cognizant. Recall and description of experiences are limited to an individual's working memory.[4]

Instructions:

The following section focuses on your experiences of weight-related evidence in practice. This includes your experiences with your own weight and weight-related evidence. Your participation in this questionnaire is optional, and you can skip or omit any questions/ responses.

4.1. Describe your experience with weight-related evidence. Use the text box below to enter your response (maximum 200 words).

[Text Box]

4.2 List three words that best describe your experience with weight-related evidence in nutrition care.

1) [Text Box]
2) [Text Box]
3) [Text Box]

4.3.a. Do any of the following tools/ methods make you uncomfortable? Select all responses that apply to you.

- Body composition scales
- Body weight scales
- Skin-fold calipers
- Measuring tapes
- Body Mass Index (BMI) calculations
- Other

4.3.b If you selected "other" for question 4.3.a, please use the text box below to list the tools/ methods that make you uncomfortable.

[Text box]

4.4. For each of the following statements, select the response that best applies to you.

a. I feel valued by my colleagues when it comes to advice related to weight-related evidence.

- Never
- Rarely
- Sometimes
- Often
- Always
- I do not work in a team environment.

b. Clients comment on my body weight.

- Never
- Rarely
- Sometimes
- Often
- Always

c. I reflect on how I use weight-related evidence in my day-to-day practice activities (e.g., clinical, research, management).

- Never
- Rarely
- Sometimes
- Often
- Always

4.5. Please select your level of disagreement or agreement with the following statement: I fear gaining weight because of what I do for work.

- Strongly disagree
- Disagree
- Neutral

- Agree
- Strongly agree

Section 5: Knowledge of Weight-Related Evidence in Nutrition Care

Relevant definition(s):

Knowledge: Awareness and recall of a concept or phenomena, and knowledge informs skill. [5]

Instructions:

The following section[14-15] explores your knowledge of weight-related evidence in practice. This includes asking about your knowledge of Body Mass Index (BMI), weight loss, exercise, and weight cycling (cyclical weight loss and weight gain), for example. Your knowledge will not be "tested" or scored in this section. Instead, responses will be compiled to report on prevalence within the sample, contextualized to current literature. Your participation in this questionnaire is optional, and you can skip or omit any questions/ responses.

For each of the statements below, please select the response that best represents your disagreement or agreement based on your knowledge.

5.1. When people are fat, it is their own fault.

- Strongly disagree
- Disagree
- Neutral (neither agree nor disagree)
- Agree
- Strongly agree

5.2. Individuals with BMIs equal to or greater than 30 kg/m^2 have an increased risk for developing health problems, compared to individuals with lower BMIs.

- Strongly disagree
- Disagree
- Neutral (neither agree nor disagree)
- Agree
- Strongly agree

5.3. Weight losses (5-10% of body weight) can produce health benefits.

- Strongly disagree
- Disagree
- Neutral (neither agree nor disagree)
- Agree
- Strongly agree

5.4. People who weigh too much could lose at least some part of their weight through a little exercise.

- Strongly disagree
- Disagree
- Neutral (neither agree nor disagree)
- Agree
- Strongly agree

5.5. Most people who lose weight using lifestyle approaches (diet, exercise) will regain it within a few years.

- Strongly disagree
- Disagree
- Neutral (neither agree nor disagree)
- Agree
- Strongly agree

5.6. Weight cycling is a risk to psychological health.

- Strongly disagree
- Disagree
- Neutral (neither agree nor disagree)
- Agree
- Strongly agree

5.7. Weight cycling has negative metabolic impacts.

- Strongly disagree
- Disagree
- Neutral (neither agree nor disagree)
- Agree
- Strongly agree

5.8. The current emphasis on weight reduction in nutrition care contributes to eating disorders.

- Strongly disagree
- Disagree
- Neutral (neither agree nor disagree)
- Agree
- Strongly agree

5.9. Some people are fat because they have no willpower.

- Strongly disagree
- Disagree
- Neutral (neither agree nor disagree)
- Agree
- Strongly agree

5.10. Weight loss should be encouraged to individuals with a BMI greater than or equal to $30kg/m^2$, prior to a knee replacement surgery.

- Strongly disagree
- Disagree
- Neutral (neither agree nor disagree)
- Agree
- Strongly agree

5.11. Weight loss should be encouraged to individuals with a BMI greater than or equal to 30kg/m^2, to decrease risk for chronic disease.

- Strongly disagree
- Disagree
- Neutral (neither agree nor disagree)
- Agree
- Strongly agree

5.12. Malnutrition-related weight loss is a favourable outcome in an individual with a BMI greater than or equal to 30kg/m^2.

- Strongly disagree
- Disagree
- Neutral (neither agree nor disagree)
- Agree
- Strongly agree

5.13. Weight loss is a negative outcome of cancer for someone BMI greater than or equal to 30kg/m^2.

- Strongly disagree
- Disagree
- Neutral (neither agree nor disagree)
- Agree
- Strongly agree

Section 6: COVID-19 [Optional Addendum]

Instructions:

The following section of the questionnaire explores the impacts of COVID-19 on your experiences, perceptions, and knowledge of weight-related evidence in practice. This includes your experiences, perceptions, and knowledge of existent or non-existent relationship(s) between COVID-19 and weight or weight-evidence. Your participation in this questionnaire is optional, and you can skip or omit any questions/ responses.

6.1. In general, were your clients with a Body Mass Index (BMI) equal to or over 30 kg/m2 more concerned about COVID-19 than others?

- Yes
- No
- Unsure
- I do not have clients with a BMI equal to or over 30 kg/m^2

6.2. Is there a link between having a BMI equal to or higher than 30 kg/m^2 and COVID-19 complications?

- Yes
- No
- Unsure

6.3. Is there a link between having a BMI equal to or higher than 30 kg/m^2 and COVID-19 mortality?

- Yes
- No
- Unsure

6.4.a Did you see an increase in clients' weight-related concerns during the pandemic?

- Yes
- No
- Unsure
- I can't remember

6.4.b If you selected "yes" for question 6.4.a, why do you think there was an increase in clients' weight-related concerns during the pandemic? Select all responses that apply to you.

- Increased sedentary behaviours
- Media messages
- Concerns of the relationship between higher BMI and COVID-19
- Increased rates of cooking at home
- Increased rates of emotional eating
- Body shaming related to pandemic weight gain
- Increased desire for ‘control’ in personal life
- I don’t know
- Other
- I prefer not to answer this question

6.4.c. If you selected “other” for question 6.4.b, please use the text box below to specify why you think there was an increase in clients’ weight-related concerns during the pandemic.

[Text Box]

6.5.a Did the pandemic impact clients’ health-related behaviours?

- Yes
- No
- Unsure

6.5.b. If you selected “yes” for question 6.5.a, what do you think was the root cause impacting clients’ health-related behaviours? Select all responses that apply to you.

- Increased sedentary behaviours
- Lack of access to healthy foods
- Lack of access to usual physical activities methods
- Media messages
- Mental health

- Quarantine regulations/ restrictions
- I don’t know
- Other
- I prefer not to answer this question

6.5.c. If you selected “other” for question 6.5.b., please use the text box below to specify what you think was the root cause impacting clients’ health-related behaviours.

[Text Box]

6.6.a. Did COVID-19 impact your weight-related practice activities (e.g., clinical, research, management)?

- Yes
- No
- Unsure

6.6.b. If you selected “yes” for question 6.6.a., use the text box below to specify how COVID-19 impacted your weight-related practice activities (e.g., clinical, research, management).

- [Text Box]

6.7.a. Did the pandemic impact your own perceived body image?

- Yes
- No
- I prefer not to answer this question

6.7.b. If you selected “yes” for question 6.7.a, in what way did the pandemic impact your own perceived body image?

- In a positive way
- In a negative way
- Unsure, but I know it changed

6.8. Did your body weight change during the pandemic?

- Yes

- No
- I prefer not to answer this question

6.9. Do you have any other comments to share about your knowledge, perceptions, or experiences with weight-related evidence and COVID-19? Use the text box below to share your response (maximum 200 words).

[Text Box]

Section 7: Thank-you!

Thank you for completing this questionnaire.

[Optional]

7.1 What type of research would you be interested in participating in the future on this topic?

- Focus group discussion
- One-on-one interview
- Other
- I would not be interested in participating

7.2 If you selected "other" for question 7.1, please use the text box below to specify what type of future research you would be interested in participating in on this topic.

[Text Box]

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Appendix C: Study Recruitment Posters

Version 1 – Original, Red

Are you a Dietitian in Canada who is interested in sharing your beliefs and knowledge on weight evidence in practice?

We want to hear your voice!

Research Study:
Researchers at Mount Saint Vincent University are looking to explore Canadian Registered Dietitians' Experiences, Perceptions, and Knowledge of Weight-Related Evidence Implementation in Practice, Framed by the Nutrition Care Process.

What's involved? Completing a 45-75 minute online survey.

You can take part if:

- You are a dietitian who is fully licensed and reside in Canada.

Want to participate? Email Rachel.Waugh@msvu.ca

MOUNT SAINT VINCENT UNIVERSITY

This research study has been approved by MSVU Research Ethics Board UREB#2022-260.

Canadian Foundation for Dietetic Research

Version 1 – Original, Purple

Are you a Dietitian in Canada who is interested in sharing your beliefs and knowledge on weight evidence in practice?

We want to hear your voice!

Research Study:
Researchers at Mount Saint Vincent University are looking to explore Canadian Registered Dietitians' Experiences, Perceptions, and Knowledge of Weight-Related Evidence Implementation in Practice, Framed by the Nutrition Care Process.

What's involved? Completing a 45-75 minute online survey.

You can take part if:

- You are a dietitian who is fully licensed and reside in Canada.

Want to participate? Email Rachel.Waugh@msvu.ca

MOUNT SAINT VINCENT UNIVERSITY

This research study has been approved by MSVU Research Ethics Board UREB#2022-260.

Canadian Foundation for Dietetic Research

Version 2 – Last call/ deadline for recruitment

Are you a Dietitian in Canada who is interested in sharing your beliefs and knowledge on weight evidence in practice?

We want to hear your voice!

Research Study:
Researchers at Mount Saint Vincent University are looking to explore Canadian Registered Dietitians' Experiences, Perceptions, and Knowledge of Weight-Related Evidence Implementation in Practice, Framed by the Nutrition Care Process.

What's involved? Completing a 45-75 minute online survey.

You can take part if:

- You are a dietitian who is fully licensed and reside in Canada.

Want to participate? Email Rachel.Waugh@msvu.ca

Mount Saint Vincent University

This research study has been approved by MSVU Research Ethics Board UREB#2022-260.

Canadian Foundation for Dietetic Research

Appendix D: Crosstabulation/ Contingency Tables

Tables I – XVIII: Crosstabs for Appendix

Table I. Crosstabulation for considering CPGs as evidence and drawing from the health/complication-centric approach in practice.

		CPGs are Evidence		
		No	Yes	Total
Health/Complication-centric approach	No	6	18	24
	Yes	0	24	24
Total		6	42	48

CPGs = clinical practice guidelines

Table II. Crosstabulation for primary practice area and drawing from the health/complication-centric approach in practice.

		Health/Complication-centric approach		
		No	Yes	Total
Primary practice area	Admin/ Management	3	0	3
	Clinical	9	22	31
	Public Health/ Community	10	2	12
	Education	2	0	2
Total		24	24	48

Table III. Crosstabulation for primary practice area and BMI in nutrition care.

	How does weight exist in the nutrition care you provide to people? [Body Mass Index (BMI)]	
		Total

		No	Yes	
Primary practice area	Admin/ Management	2	1	3
	Clinical	8	25	33
	Public Health/ Community	8	4	12
	Education	1	1	2
Total		19	31	50

Table IV.

		How does weight exist in the nutrition care you provide to people? [Goal]		
		No	Yes	Total
Primary practice area	Admin/ Management	1	2	3
	Clinical	14	19	33
	Public Health/ Community	11	1	12
	Education	2	0	2
Total		28	22	50

Table V.

		How does weight exist in the nutrition care you provide to people? [Body image]		
		No	Yes	Total
Primary practice area	Admin/ Management	1	2	3
	Clinical	7	26	33
	Public Health/ Community	1	11	12
	Education	1	1	2
Total		10	40	50

Table VI.

		Weight exists in/as measurements in nutrition care I provide		
		No	Yes	Total
Primary practice area	Admin/ Management	2	1	3
	Clinical	16	17	33
	Public Health/ Community	9	3	12
	Education	2	0	2
Total		29	21	50

Table VII.

		Weight exists in/as nutrition calculation requirements in nutrition care I provide		
		No	Yes	Total
Primary practice area	Admin/ Management	1	2	3
	Clinical	8	25	33
	Public Health/ Community	10	2	12
	Education	1	1	2
Total		20	30	50

Table VIII.

		Weight exists in/as outcome(s) in nutrition care I provide		
		No	Yes	Total
Primary practice area	Admin/ Management	2	1	3
	Clinical	12	21	33

	Public Health/ Community	6	6	12
	Education	1	1	2
Total		21	29	50

Table IX.

		Critical/Non-weight centric approach		
		No	Yes	Total
I have previously lived in a thin body	No	15	15	30
	Yes	3	15	18
Total		18	30	48

Table X.

		Dominant/Weight-centric approach		
		No	Yes	Total
I have previously lived in a large body	0	38	3	41
	1	7	1	8
	2	3	0	3
Total		48	4	52

Table XI.

		Health/Complication-centric approach		
		No	Yes	Total
I have previously lived in a large body	No	21	19	40
	Yes	3	5	8
Total		24	24	48

Table XII.

		Critical/Non-Weight centric approach		
		No	Yes	Total
I have previously lived in a large body	No	13	27	40
	Yes	5	3	8
Total		18	30	48

Table XIII.

		Primary practice area				
		Admin/ Management	Clinical	Public Health/ Community	Education	Total
Critical/Non-weight centric approach	0	2	14	1	1	18
	1	1	17	11	1	30
Total		3	31	12	2	48

Table XIV.

		Ratings of evidence: Size acceptance approaches			
		Poor/Fair	Very good/ Excellent	Good	Total
Ratings of evidence: Weight-inclusive approaches	Poor/Fair	14	0	2	16
	Very good/ Excellent	0	11	6	17
	Good	5	4	6	15
Total		19	15	14	48

Table XV.

I value clinical practice guidelines for weight-related evidence.					
1	2	3	4	5	Total

Primary practice area	Admin/ Management	0	0	3	0	0	3
	Clinical	2	4	6	7	12	31
	Public Health/ Community	3	2	2	5	0	12
	Education	1	0	0	0	1	2
Total		6	6	11	12	13	48

Table XVI.

		Dominant/Weight-centric approach		
		No	Yes	Total
Some people are fat because they have 0 willpower.	Strongly disagree	33	0	33
	Disagree	5	0	5
	Neutral	1	2	3
	Agree/ Strongly agree	2	1	3
Total		41	3	44

Table XVII.

		Weight losses (5-10% of body weight) can produce health benefits.			
		Disagree	Agree	Neutral	Total
Age	20 to 29 years	5	2	2	9
	30 to 39 years	3	5	4	12
	40 to 49 years	4	8	1	13
	50+ years	1	9	0	10
Total		13	24	7	44

Table XVIII.

	Weight cycling has negative metabolic impacts.	Total

		Disagree	Agree	Neutral	
Age	20 to 29 years	0	9	0	9
	30 to 39 years	0	12	0	12
	40 to 49 years	0	12	0	12
	50+ years	1	7	2	10
Total		1	40	2	43

Table XIX.

		Dominant/ Weight-centric paradigm		
		No	Yes	Total
Years fully licensed as a dietitian	0 to 5 years	11	1	12
	6 to 15 years	14	0	14
	16 to 30 years	19	1	20
	31+ years	2	2	4
Total		46	4	50

Appendix E: Quantitative Open-Ended Responses (less than 3-4 words)

Table A. List three words that best describe your experience with weight-related evidence in nutrition care (*n* =35).

Word/ Phrase	**Count (*n*)**
Adversity	1
Barrier	1
Based on limited data	1
Calculating BMI	1
Challenge	1
Changing	1
Conflicting	2
Confusing at times	1
Consistent	1
Continuous learning	1
Cure-all	1
Curious/ Curiosity	2
Current	1
Cycling	1
Data	1
Disheartening	1
Duration of study	1
Emerging	1
Equally encouraged + discouraged	1
Evidence	1
Evolving	2
Exhausting	1
Fat phobic	1
Fear of other dietitians	1
Frustrating/ Frustration	4
Generalized	1
Good	1
Growing understanding	1
Hard	1
Harms/ Harmful	2

Word/ Phrase	**Count (*n*)**
Hopeful	1
I help clients	1
Ignored	1
Inaction	1
Informative	1
Leader	1
Life-learner	1
Like wading through a bog	1
Limiting	1
Listening	1
Long term data	1
Modernizing	1
New	1
Non-individualized	1
Objective	1
Optimistic	1
Over simplified	1
Patient focused	1
Poor evidence	1
Poor support	1
Practical	3
Research/ Research focused	2
Resources	1
Science	1
Sensitive topic	1
Shocked	1
Stigmatizing	1
Training	1
Unbiased	1
Uncomfortable	1
Uncompassionate	1
Understanding	1
Unhelpful	1
Unlearning	1
Untrained	1
Validating	1

Word/ Phrase	**Count (*n*)**
Valuable	1
Vital	1

n = number of respondents; *N* = total number of respondents who answered the question

Note. Respondents were able to provide 1-3 responses to this question. Twenty-three responses (*n* = 23) were removed for being over 3-4 words.

Table B. List three examples (words/phrases) of how you describe your body (*n* = 48).

Word/ Phrase	**Count (*n*)**
A little excess fat around my middle	1
Able	1
Aging	2
Athletic/ Athletic build	8
Average	5
Beautiful	1
Big boned	1
Big tummy	1
Bottom heavy	2
Capable	2
Chronically ill	1
Comfortable	1
Curvy[1]	4
Cute	1
Dynamic	1
Ever-changing	1
Fat[2]	3
Feminine	1
Fit[3]	5
Flabby arms	1
Flexible	1
Formerly fat	1
Freckly	1
Functional/Functioning	2
Gain weight easily	1

Word/ Phrase	**Count (*n*)**
Genetically determined	1
Good	1
Good enough	1
Has always been small	1
Healthier than a year ago	1
Healthy	6
Higher weight	1
Hot dog bod	1
Hour-glass shape	1
Juicy	1
Large	1
Large legs and butt	1
Lean	2
Medium build	1
Menopausal	1
Mine	1
Muscular	2
Muscular legs	1
My soul's address[4]	1
Needs toning	1
Normal	2
Not fat	1
Not muscular enough	1
Overweight	3
Petite	1
Plump	1
Post-menopausal tummy	1
Powerful	1
Privileged	1
Pudgy	1
Relatively easy to gain/loss weight	1
Resilient	1
Resourceful	1
Sedentary	1
Serving	1
Sexy	1

Word/ Phrase	**Count (*n*)**
Short	3
Skinny	1
Slender	1
Slim	1
Small	1
Soft	1
Sometimes upsetting	1
Sore	1
Straight - minimal/no curves	1
Strong	17
Tall	2
The only body I'll have	1
Thick	1
Thick thighs	1
Thin/ Thin presenting	6
Unattractive	2
Variable	1
Well	1
White	1

n = number of respondents; *N* = total number of respondents who answered the question

[1] "…moreso than X years ago" (*n* =1/4)

[2] "…especially around the abdomen" (*n* = 1/3)

[3] "…for X age" (*n* =1/5)

[4] Respondent indicated this is a line from Barbara Brown Taylor, author.

Note. Respondents were able to provide 1-3 responses to this question. Four responses (*n* = 4) were removed from Table 3, for being over 3-4 words.