

The Ontario Public Does Not Understand the Difference Between Registered Dietitians and Unregulated “Nutritionists”: Results from a Cross-Sectional Mixed Methods Study

La population ontarienne ne comprend pas la différence entre diététiste autorisé et « nutritionniste » non réglementé : Résultats d’une étude transversale mixte



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Abstract

Background: Current Ontario healthcare policy permits anyone to use the title “nutritionist” and practice as a clinician regardless of education and training. The title “dietitian,” on the other hand, is protected under the *Dietetics Act* (1991) for use exclusively by individuals who undergo rigorous education and training in evidence-based nutrition.

Objectives: The objectives of this study were to: identify whether the Ontario general public understands the difference between a registered dietitian (RD) and an unregulated “nutritionist;” understand experiences with RDs and “nutritionists;” and determine if the current nutrition landscape arising from gaps in healthcare policy has the potential to harm the public.

Methods: A cross-sectional mixed methods survey study was carried out using inductive content analysis, descriptive statistics and chi-square tests.

Results: Respondents ($n = 402$) did not understand the difference between RDs and “nutritionists.” Overall, public experiences have been significantly more positive when nutrition information/advice stemmed from an RD.

Implications: This study provides justification for proposed legislative amendments to the *Dietetics Act* (1991) and the *Regulated Health Professions Act* (1991). These proposed amendments have been detailed in the full-text manuscript.

Résumé

Contexte : La politique de santé actuelle en Ontario permet à quiconque d'utiliser le titre de « nutritionniste » et d'exercer en tant que clinicien, et ce, indépendamment de son éducation et de sa formation. Le titre de « diététiste », quant à lui, est protégé en vertu de la *Loi de 1991 sur les diététistes* et ne peut être utilisé que par des personnes qui ont reçu une éducation et une formation rigoureuses en nutrition.

Objectifs : L'objectif de cette étude était de déterminer si la population ontarienne comprend la différence entre un diététiste et un « nutritionniste » non réglementé, afin de mieux comprendre l'interaction avec les diététistes et les « nutritionnistes ». L'étude cherchait aussi à déterminer si le paysage nutritionnel actuel, résultant de lacunes dans les politiques de santé, peut être nuisible pour la population.

Méthode : Une étude transversale mixte a été réalisée au moyen d'une analyse inductive de contenu, de statistiques descriptives et de tests du chi carré.

Résultats : Les répondants ($n = 402$) ne comprennent pas la différence entre diététiste et « nutritionniste ». Dans l'ensemble, l'expérience de la population est nettement plus positive lorsque les informations et conseils nutritionnels *proviennent d'un diététiste*.

Répercussions : Cette étude justifie les modifications législatives proposées à la *Loi de 1991 sur les diététistes* et à la *Loi de 1991 sur les professions de la santé réglementées*.

Introduction

Safe, evidence-based and effective nutrition advice is essential for the health and wellness of the general public. With rising chronic disease and obesity rates, emerging diet trends and

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increasing use of complementary and alternative medicine (CAM) in Canada (Caulfield and Rachul 2011; Statistics Canada 2014, 2016), it is vital that consumers understand where to seek credible nutrition information. According to the Canadian Foundation for Dietetic Research, the public is relying less on traditional sources of health information, such as family physicians, and relying more on the internet, social media and blogs, as well as friends, relatives and colleagues for health information (Kennedy 2015).

Healthcare is legislated provincially in Canada (McMillan 2010). In Ontario, registered dietitians (RDs) are the only regulated nutrition professionals in the province (College of Dietitians of Ontario 2018b). The title “nutritionist” is not protected by Ontario law, allowing anyone to legally refer to themselves as a “nutritionist,” offer nutrition advice and provide *medical nutrition therapy* regardless of education or training. While the definition of the term “medical nutrition therapy” can be interpreted in different ways, for the purposes of this study, this term refers to the provision of nutrition information and advice aimed to help prevent, manage or treat a medical disease or condition, manage food allergies/intolerances or improve health and nutritional status during pregnancy/lactation. This is in line with the proposed definitions provided by the American Dietetic Association and the Center for Medicare and Medicaid Services (Carey and Gillespie 1995; Michael 2001). Peer-reviewed scientific research has yet to study consumer comprehension of the difference between an RD and an unregulated “nutritionist,” but grey literature indicates that significant confusion from the general public is likely (DieteticAdvocacy 2013). The provinces of Alberta, Nova Scotia, Quebec and Prince Edward Island have responded to this issue with provincial legislation requiring that the title “nutritionist” be used exclusively by RDs (College of Dietitians of Alberta 2018; Ordre professionnel des diététistes du Québec 2017; Prince Edward Island Legislative Counsel Office 2018; The Nova Scotia Dietetic Association 2018).

More than 70% of Canadians regularly use CAM as part of their health regime. This includes taking vitamins and minerals, herbal products, homeopathic medicines, and other natural health products in an effort to maintain and improve health and quality of life (Public Health Agency of Canada 2008). With the common use of these products in Canada, there is the possibility of a number of issues that may adversely affect health, including CAM/nutrient/drug interactions, direct clinical risks of adverse events (including hepatotoxicity of CAM products) and inefficacy of these treatments leading to the delay or outright refusal of evidence-based conventional treatments (Johnson et al. 2018; Wardle and Adams 2014). Given that the provision of CAM and *medical nutrition therapy* are not considered controlled acts under Ontario’s *Regulated Health Professions Act (RHPA 1991)*, “nutritionists” in Ontario are permitted to recommend vitamins and minerals, herbal products, homeopathic “medicines” and other natural health products regardless of their knowledge and training in this area. Essentially, anyone in the province can sell or endorse CAM and *medical nutrition therapy* services as a result of gaps in the current healthcare policy and legislation. This, in turn, puts the public at risk of nutrition misinformation, which could result in health-related harms.

Social media has become a frequently used tool for delivering health and nutrition information, with blogs being a particularly popular “source” of information (Dumas et al. 2017). A recent study focusing on detox diet blogs found that “nutritionists” in Ontario are providing false, misleading and potentially harmful nutrition information, while RDs in Ontario are providing safe, evidence-based information about detox diets (Toth et al. 2019). These diets can have many serious adverse effects, such as changes in electrolyte levels, dehydration or water overdosing, interactions with medications and nutritional deficiencies (Acosta and Cash 2009; Dietitians of Canada 2014; Klein and Kiat 2015; Zeratsky 2020). Fad diets, including detoxes, have resulted in several harmful health outcomes including the development of serotonin syndrome (Bryant and Kolodchak 2004), lactic acidosis (Johnstone 2007) and even death (Isner et al. 1979). Interestingly, one study noted that blogs written by non-RDs displayed more results on Google and therefore could have higher readership (Dumas et al. 2017). Consequently, non-RD blogs could influence readers’ dietary behaviours to a greater extent than RD blogs. These findings are especially concerning, given that about 50% of Canadians seek nutrition information and advice online (Kennedy 2015). Furthermore, Ontario “nutritionists” provide recommendations with no accountability to uphold safe standards of practice for the quality of their service and are not mandated and overseen to ensure patient confidentiality or security of personal health information (UnlockFood 2020). In comparison, RDs in Ontario are legislated under the *RHPA* (1991) and the *Dietetics Act* (1991) to help ensure that safe, competent and ethical care is provided to patients at all times.

When nutrition advice is not backed by robust scientific evidence, there is a higher risk of harm. An example includes the case of an 11-year-old boy in Ontario who followed a highly restrictive diet (consisting of only potato, pork, lamb, apples, cucumber and Cheerios™) in an effort to relieve his severe eczema and allergies (Jacobson et al. 2017). Due to the severe vitamin A deficiency that developed over the course of eight months, the boy suffered from severe dry eyes, light sensitivity, night blindness and progressive vision loss, leading him to become legally blind (Jacobson et al. 2017). Another example comes from a recent study that assessed the utilization and efficacy of alternative medicine for patients with common types of curable cancer (Johnson et al. 2018). This study found a significantly increased risk of death in patients who chose alternative medicine as treatment, without conventional cancer treatment (chemotherapy, radiotherapy, surgery and/or hormone therapy; Johnson et al. 2018). Given that CAM practices are highly prevalent in Canada (Wardle and Adams 2014), this is a significant public health concern.

While patients should have the option to access various healthcare practitioners, their choice should be informed (Caulfield and Rachul 2011). Noted concerns with medical or lifestyle advice that lacks scientific evidence includes costly, ineffective and inappropriate dietary recommendations – this has been noted particularly with respect to certain types of allergy testing (Caulfield and Rachul 2011). In addition to the abovementioned risks, there is a risk of harm to the public when the advice they receive is not evidence-based, as this can

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delay effective scientific-based treatment, resulting in unnecessary monetary costs and wasted time and effort for patients.

There is currently no peer-reviewed published literature assessing the public’s comprehension of the differences between RDs and “nutritionists” in Ontario, and minimal research exists assessing patients’ experiences working with each of these nutrition providers. If Ontarians are unaware of the differences between an RD and “nutritionist,” they are at great risk by unknowingly trusting those who provide nutrition advice with no credibility or scientific evidence (Caulfield and Rachul 2011). Accordingly, the objectives of the present study were: to identify whether members of the Ontario general public who have an interest in nutrition understand the difference between RDs and “nutritionists” in Ontario; to assess their experiences of obtaining nutrition information from various nutrition providers; and to determine if the current Ontario nutrition landscape arising from gaps in healthcare policy and legislation has the potential to harm the public.

Methods

This was a cross-sectional, mixed methods study, which utilized both online and in-person data collection methods. The recruitment methods aimed to capture an accurate and representative sample of members of the Ontario general public who have an interest in nutrition. To achieve this, a non-probability voluntary sampling strategy was used. The sampling strategy aimed to target a variety of age groups, genders and locations when reaching out to organizations and social media pages. Two main strategies were used for data collection. First, the online survey link was shared on social media with Ontario-based followers via a variety of Facebook and Twitter pages, upon obtaining the consent of page administrators (Appendix 1, available online at longwoods.com/content/26349). Social media pages were strategically selected to recruit subjects from a variety of locations within Ontario, with followers accurately representing the Ontario general public. To minimize response bias (e.g., aiming to avoid recruitment of a large number of friends/family of dietitians and/or nutritionists), social media pages of practising dietitians and nutritionists were not contacted to share the survey link. To capture individuals who may not use social media, in-person surveys were conducted in various public spaces within Southwestern Ontario with permission from the respective establishment (Appendix 1). Non-RD and non-nutritionist Ontario residents aged 13 years and older met the inclusion criteria. Residents aged 13 years and over were included, given that research demonstrates that dieting and attention to nutrition in adolescence is becoming increasingly common in Ontario (Findlay 2004). A chance to win a \$50 grocery store gift card was provided as an incentive to participate in the study. Voluntary and anonymous survey responses were collected from the online format between August and November 2018, and from the in-person format throughout November 2018. This study was approved by the Western University Research Ethics Board (Protocol #112252).

Instruments

An electronic survey was developed using Qualtrics Survey Software, Version 4.02. The same questions were included in the in-person survey. The survey consisted of two open-ended questions and 14 closed-ended questions, which were developed to screen for eligibility criteria, obtain demographic data from the sample population and achieve the three abovementioned objectives of the study (Appendix 2, available online at longwoods.com/content/26349). All authors reviewed and revised the survey before implementation. All surveys were voluntary and anonymous.

Data analysis

Qualitative responses to Questions 6 and 16 were analyzed using inductive content analysis (Elo and Kyngäs 2008). Responses were independently coded by two researchers (Fisher and Horne), who then identified overarching themes. The final themes were agreed upon through consensus by discussion.

To determine the public's understanding of the differences between RDs and "nutritionists," two questions were analyzed (Appendix 2). First, respondents were asked if there is a difference between RDs and "nutritionists." If they selected "no" or "not sure," they were coded as "did not understand." If respondents selected "yes," they were asked to specify what the difference is. These open-ended responses were further analyzed for accuracy based on pre-determined criteria for a correct response (Appendix 3, available online at longwoods.com/content/26349). Upon analyzing the responses, one additional criterion was added to the list for determining a correct response (Appendix 3). Using this criterion, each response was independently coded by two researchers (Fisher and Horne) as "correctly understood (the differences)," "did not understand (the differences)" or "cannot determine." Discrepancies in coding were resolved by reaching consensus through discussion. Those who indicated that there was a difference between RDs and "nutritionists" and who were able to correctly identify at least one difference (Appendix 3) were determined to have a correct understanding of the difference between RDs and "nutritionists." All others were grouped as those who did not understand the difference.

Quantitative responses were summarized using descriptive statistics. Chi-square tests were used to test associations ($p < 0.05$) between the type of nutrition provider (RD, "nutritionist" or other) and whether (1) specific recommendations about food were provided, (2) specific recommendations about supplements were provided, (3) health and nutrition concerns were addressed and (4) nutrition recommendations were followed.

Results

Of the 430 participants who started the survey, 93.5% ($n = 402$) met the predetermined inclusion criteria and were therefore included in the analyses. Participants were primarily female adults (Table 1). Due to the nature of online surveys, the number of responses varied for different questions. This could have been because respondents closed the survey before

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TABLE 1. Characteristics of study participants ($n = 402$)

Age (years)	13–17	18–45	46–65	Over 65
Frequency, n (%)	22 (5.5)	189 (47.0)	131 (32.6)	60 (14.9)

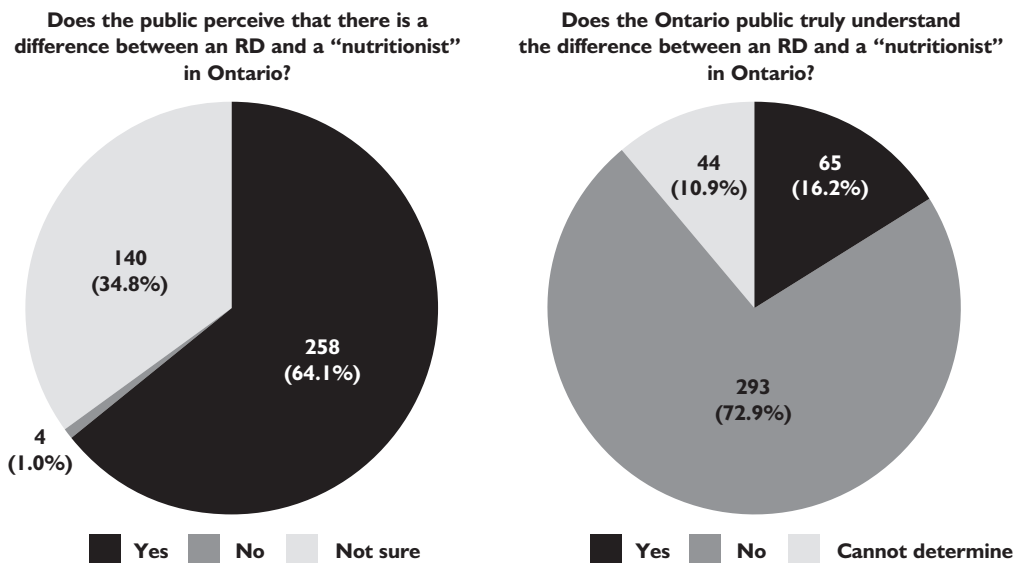
Gender	Male	Female	Non-binary	Prefer not to say
Frequency, n (%)	68 (16.9)	331 (82.3)	0 (0.0)	3 (0.8)

answering all questions and submitting, did not need to respond to questions that were not applicable based on their previous responses or skipped questions. For reference, the number of respondents for various results is indicated in each table/figure.

Limited understanding of the difference between RDs and nutritionists

While 64.1% ($n = 258$) of survey respondents indicated that there was a difference between an RD and “nutritionist” in Ontario, only 25.2% ($n = 65$) of these individuals correctly identified the difference (Figure 1). The vast majority comprising 72.9% of the entire sample of 402 respondents ($n = 293$) either did not understand that there is a difference, stated that they were not sure if there is a difference between RDs and “nutritionists” in Ontario, or stated that there was a difference but did not correctly identify it. Therefore, only 16.2% (of the entire sample of 402 respondents) correctly understood the difference(s). A total of 10.9% of the open-ended survey responses could not be analyzed as the responses were vague and did not refer to the type of nutrition provider, or the responses were left unanswered.

FIGURE 1. Public perceptions and understanding of the difference between an RD and a “nutritionist” in Ontario



Examples of vague responses included “degree,” “schooling” and “skills.” Four overarching themes were identified from the inductive analysis of perceptions of the difference(s) between RDs and “nutritionists”: education/training, scope of work, regulation and uncertainty.

THEME: EDUCATION/TRAINING

With respect to education/training, the differences were incorrectly identified by most respondents. For example, one respondent incorrectly stated that, “Nutritionists are more educated in the biochemistry area of how food is absorbed and what fuels your body.” Conversely, a few respondents correctly identified differences in education/training, such as one who correctly stated that, “Dietitians have a degree in foods and nutrition from an accredited university program and undergo comprehensive and rigorous training.”

THEME: SCOPE OF WORK

Interestingly, many respondents perceived that RDs and “nutritionists” could be differentiated by the scope of their work. With a lack of regulation around nutrition practices in Ontario, both RDs and “nutritionists” are permitted to practice within similar scopes of work. One respondent incorrectly noted, “Dietitians are more focused on eliminating sugars, fats, etc. Nutritionists are more focused on wholesome, natural ways of taking in all food groups including healthy fats and carbs.” Another stated that a “dietitian helps modify your diet to match your health needs and a nutritionist provides supplements outside of what you actually eat.” A different participant believed that “a nutritionist could create a diet specific to your needs, and costs much more. Registered Dietitians seem to be more about public education and teaching the Canada Food Guide.”

THEME: REGULATION

While correct responses were minimal, a more common correct response about regulation was that “dietitians are regulated health professionals.” When regulation was mentioned, responses were often correct. Another participant noted that “a registered dietitian is a regulated profession under Ontario law and requires specific educational pathways. Nutritionist is a more open profession with less governance.” These perceptions were accurate overall.

THEME: UNCERTAINTY

Uncertainty was often expressed by respondents in the open-ended responses to Question 6 (Appendix 2). Participants may have perceived that there was a difference between RDs and “nutritionists,” but they failed to explain the difference. Examples of uncertain responses include the use of some of the following phrases: “not sure,” “don’t know” and “I could be wrong.”

Reported experiences with nutrition providers

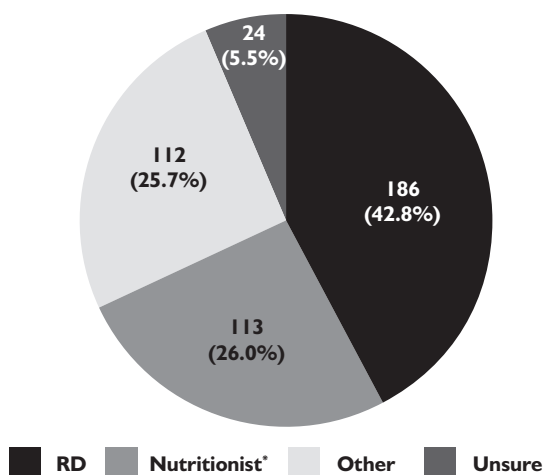
Ontarians reported having had experiences with a variety of nutrition providers, including

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RDs, “nutritionists” and “other” nutrition providers. When asked who/what the “other” nutrition providers included, the most common responses were doctors, the internet, coaches or fitness trainers and naturopaths. In total, 84.0% of respondents attested having sought information, advice or counselling about nutrition (in person/online/blog post/magazine/newsletter/social media) at some point in their lives. When asked where/who they seek out for nutrition information, 42.8% of respondents indicated an RD, 25.7% reported a “nutritionist,” 26.0% reported “other” nutrition providers and 5.5% were not sure (Figure 2). Therefore, the majority of respondents sought nutrition information from sources other than an RD.

FIGURE 2. Proportion of Ontarians receiving nutrition information and advice from different sources

From which nutrition provider(s) do Ontarians receive their nutrition information and advice?



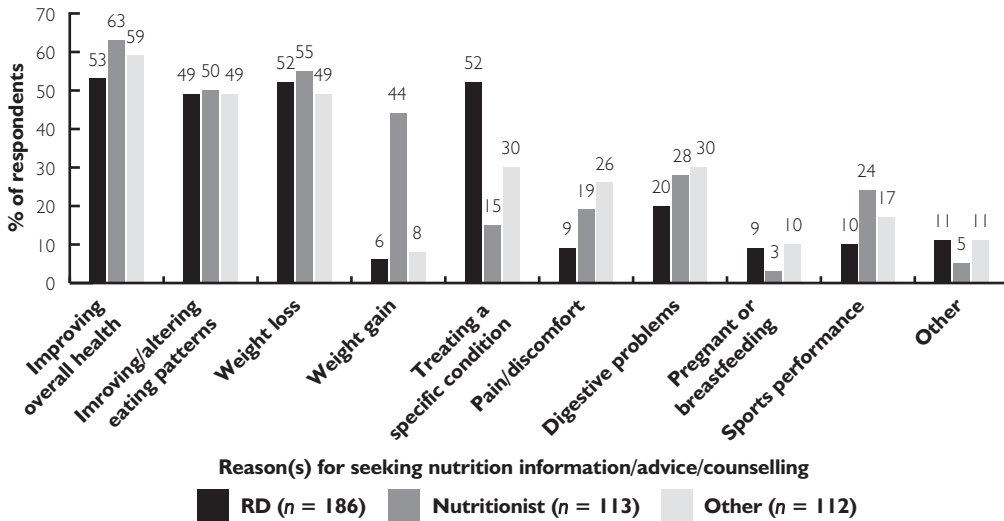
*Nutritionist may include: Holistic nutritionist, personal trainer, nutrition specialist, certified nutritionist, sports nutritionist, certified health coach, certified nutrition consultant and others.

Participants were only asked this question if they responded “yes” to the previous question: “Have you ever sought out information, advice or counselling about nutrition (in person or online through blog posts/magazines/newsletters/social media)?”

The top five reasons for seeking out information from an RD and “other” nutrition providers were for improving overall health, improving/altering eating patterns, losing weight, treating a specific condition and managing digestive problems (Figure 3). The top five reasons for seeing a “nutritionist” were for improving overall health, improving/altering eating patterns, losing weight, gaining weight and managing digestive problems (Figure 3).

When receiving nutrition advice from an RD, 75.7% of respondents reported an increased perception or belief that their nutrition concerns were addressed, which is significantly greater ($p = 0.03$) than that of those who received nutrition advice from a “nutritionist” (59.4%) and those who received nutrition advice from “other” nutrition providers (62.2%). When seeking out information from an RD, 91.3% of respondents reported

FIGURE 3. Reasons for seeking out nutrition information, advice or counselling, stratified by type of nutrition provider



following nutrition advice, compared to 83.8% for those who sought out information from a “nutritionist” and 78.0% for those who sought out information from “other” nutrition providers. Those who received the advice from RDs were significantly more likely to have reported following the advice ($p = 0.007$). Furthermore, respondents were significantly less likely to be given specific recommendations regarding nutrition from food from “other” nutrition providers at 57.0% ($p < 0.001$) compared to 91.8% of respondents who received advice from RDs and 88.3% who received advice from “nutritionists.” Finally, 68.9% of respondents who sought out nutrition information from “nutritionists” said that they were given specific recommendations regarding nutritional supplements (natural products, vitamins/minerals, powder, drinks), which was significantly higher ($p < 0.001$) than 49.5% who received information from “other” nutrition providers or 35.3% who received information from RDs (Figure 4).

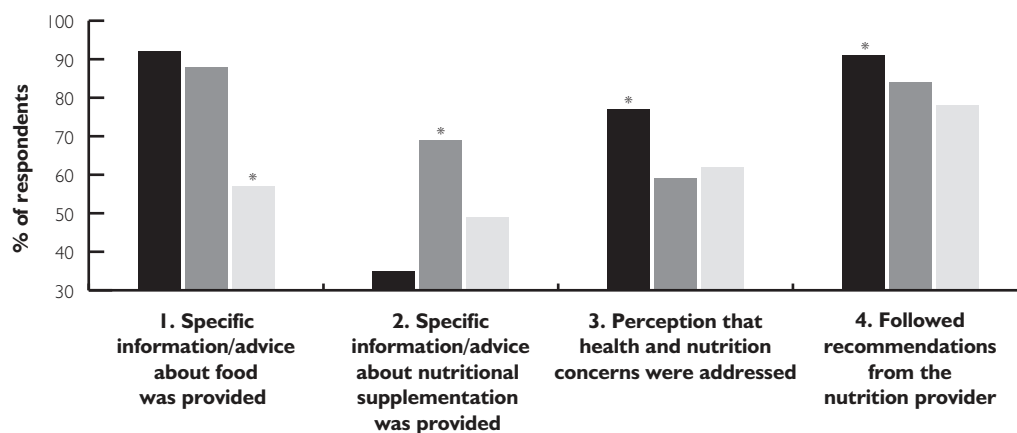
Potential for harm

Overall, 66.5% of the respondents identified that nutrition-related conditions improved after following advice from a nutrition provider, 30.4% of the responses reported no change and 3.1% reported that the condition worsened. As a result of following nutrition advice from a nutrition provider, 9.8% of the respondents reported having adverse/negative side effects.

When asked to specify these experienced side effects, the following three themes arose from the qualitative analysis: *weight gain*, *physiological stress* and *diminished mental health*. Self-reported “unnecessary/unwanted weight gain” was the most prevalent theme. With regard to *physiological stress*, respondents wrote about medication reactions, gastrointestinal

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FIGURE 4. Self-reported experiences with different nutrition providers: percentage of sample indicating “yes” to survey questions



* $P < 0.05$

Percentage of sample indicating “yes” to the following survey questions (number of respondents by category indicated in brackets below):

1. Were you given specific recommendations regarding nutrition from food by one or more of the nutrition professionals? (RD: $n = 182$; Nutritionist: $n = 103$; Other: $n = 93$).
2. Were you given specific recommendations regarding nutrition from nutritional supplements (natural products, vitamins/minerals, powder, drinks) by one or more of the nutrition professionals? (RD: $n = 179$; Nutritionist: $n = 103$; Other: $n = 97$).
3. Were your health and nutrition concerns addressed by one or more of the nutrition professionals? (RD: $n = 181$; Nutritionist: $n = 106$; Other: $n = 98$).
4. Did you follow any recommendations you were given by one or more of the nutrition professionals? (RD: $n = 183$; Nutritionist: $n = 105$; Other: $n = 100$).

problems, “dizziness” and “hair loss.” *Diminished mental health* often included comments related to disordered eating such as “I ended up binge eating,” or participants noted that their experience “worsened [their] relationship with food, [they] felt guilty about eating anything that was not part of the strict and restrictive meal plan.” Others noted adverse side effects such as “depression” and “social anxiety” and noted that they were “hungry *all the time* and miserable.” This suggests that the current nutrition landscape in Ontario has the potential to harm the public and highlights the need for improved regulation of *medical nutrition therapy*.

Discussion

Overall, this study highlights a concerning lack of understanding of the difference between unregulated “nutritionists” and RDs among the Ontario general public. This is the first study to formally assess this public confusion and confirms the confusion that has been indicated in grey literature (DieteticAdvocacy 2013). The public’s inability to differentiate between nutrition providers is concerning, given that RDs are the only regulated nutrition professionals in Ontario. Thus, the public is at risk of mistakenly seeking and following nutrition advice from unregulated nutrition providers, whose training and education in nutrition may be limited, of poor quality and not science-based (College of Dietitians of Ontario 2018b). Furthermore, only RDs have a regulatory college that is responsible for ensuring that high standards of safe, ethical and science-based nutrition care are being provided to the public (College of Dietitians of Ontario 2018b).

Our results indicated that 84.0% of the respondents have sought nutrition information, advice or counselling at some point, with less than half disclosing that they have sought information or advice from an RD. More than half of the general public appears to be turning to “nutritionists” and “other” nutrition providers or internet sources that may be unregulated, unsanctioned or lacking evidence-based nutrition expertise. Many of the top reasons for seeking nutrition advice from “nutritionists” and other nutrition providers can be considered *medical nutrition therapy*, such as losing weight, gaining weight, treating a specific condition and managing digestive issues (Dietitians of Canada 2018). Ontarians also sought *medical nutrition therapy* from these providers for potentially higher risk considerations such as nutrition for pregnancy, breastfeeding or pain/discomfort (Figure 3). This finding is interesting, as significantly more respondents felt that their health and nutrition concerns were addressed, and were more likely to follow nutrition advice when the information/advice came from an RD, compared to a “nutritionist” or “other” nutrition provider. It was further notable to find that the majority of Ontarians are not turning to RDs for nutrition information/advice. This is, however, not surprising, given the public confusion. Reports of higher rates of health and nutrition concerns being addressed and increased likelihood of following through with recommendations provided by RDs suggest that RDs should be the primary provider of nutrition information and advice in Ontario. Furthermore, the highly reported incidences of “nutritionists” recommending supplements (with no accountability to a regulatory body) is cause for concern due to possible CAM–nutrient interactions, direct clinical risks, adverse events and inefficacy of these treatments, leading to delayed or refusal of evidence-based conventional treatments (Johnson et al. 2018; Wardle and Adams 2014).

Although most respondents self-reported that their condition(s) improved, it cannot be neglected that 30.4% of the responses showed “no improvement,” and 3.1% reported “worsened” conditions, highlighting the notion that following nutrition advice has the potential to result in undesirable outcomes and may cause harm. The potential for risk of harm was further demonstrated in the 10% of participants who indicated that they experienced adverse or negative side effects, such as unwanted weight gain, diminished mental health and physiological stressors. Given that there is potential for nutrition information/advice to cause harm, any nutrition provider offering *medical nutrition therapy* should be regulated in a manner similar to that of an RD. RDs are overseen by a regulatory body, which has a process in place for the public to report negative experiences with dietitians. In cases where harm stems from the nutrition information/advice provided by an RD, disciplinary measures are taken (College of Dietitians of Ontario 2018a). No such regulatory body exists for “nutritionists.” A promising solution is for *medical nutrition therapy* to be added as a controlled act for dietitians under the *RHPA* (1991) and for the term “nutritionist” to be legally protected under the *Dietetics Act* (1991) for use exclusively by the only regulated health professional in the area of nutrition — RDs. These two legislative changes could help protect the Ontario public and promote optimal nutrition and overall health considering that (1) the public is confused about the difference between “nutritionists” and RDs, (2) unregulated

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“nutritionists” are practising *medical nutrition therapy* and (3) there is a risk for harm with the provision of nutrition information/advice. In addition, the legislative amendments may spark media attention, which could help inform the public of the education and training differences among different nutrition providers.

While these proposed legislative amendments aim to help improve the current nutrition landscape with respect to public protection, there are some limitations to note. First, if the title “nutritionist” was protected, these nutrition providers could still refer to themselves using other unprotected titles such as “nutrition coach” or “nutrition clinician”. However, we hypothesize that the title “nutritionist” is perceived as having greater credibility than other titles such as “nutrition coach.” Indeed, future research should explore this. Second, amending legislation can take several years, and thus other strategies to protect the public against false, misleading and potentially harmful nutrition information and advice should be employed in the meantime. Moreover, if/when legislation is amended, a transition plan should be put in place. Transition plans have been used in other provinces, such as Alberta. Alberta’s transition plan included a two-year period in which the college worked to inform non-RD nutrition providers of the new legislation by sending cease-and-desist letters to individuals using the title “nutritionist.” In an effort to avoid any further public confusion around title use, following this two-year transition period, RDs plan to begin using the title “nutritionist” (D. Cook, personal communication, January 21, 2020). The College of Dietitians would ultimately be responsible for overseeing title protection, which is the current situation in provinces where title protection has been achieved (College of Dietitians of Alberta 2018; Ordre professionnel des diététistes du Québec 2017; Prince Edward Island Legislative Counsel Office 2018; The Nova Scotia Dietetic Association 2018). Similar strategies can be used with respect to protection of the term “registered.” However, in this case, various healthcare regulatory colleges would be responsible for overseeing the new legislation, depending on the type of healthcare provider misusing the term. For example, the College of Physiotherapists would be responsible for overseeing the titular use of a “registered athletic therapist.” In terms of implementation costs, indeed, there can be some costs associated with the enforcement of these legislative changes. However, following protection of the title “nutritionist” in Alberta, costs were primarily limited to postage fees of mailing >100 cease-and-desist letters (D. Cook, personal communication, January 21, 2020). Therefore, we posit that Ontario would similarly experience low costs; however, it is possible that costs could differ substantially from province to province.

The findings of this study provide convincing evidence of Ontarians’ confusion surrounding who to approach for evidence-based nutrition information. This study included a wide range of age groups and used robust data analysis methods to examine the results. The accessible, anonymous and voluntary design of the online and in-person survey allowed for participants to be open and honest regarding feedback. This survey design also allowed for a representative collection of responses from people who seek out nutrition information across Ontario. In addition, the survey was advertised virtually on social media pages based in

Ontario and advertised in-person in public spaces within Ontario's densely populated southern region (Appendix 2), further contributing to the representative sample. Furthermore, samples from a variety of genders and age groups, in both urban and rural settings, were gathered for this study.

While the majority of respondents were female, previous research demonstrates that females are more likely than males to seek out nutrition information/advice (Ek 2015). Therefore, our results are generalizable to those seeking out nutrition information and advice.

Some limitations to the study should be noted. Due to the nature of the survey data collection, response bias cannot be completely eliminated, nor can self-selection bias or fraudulent responses. Misunderstandings and misinterpretation of questions are inherent limitations of all survey-based research (Alderman and Salem 2010). In addition, respondents were asked, "Is there a difference between a Registered Dietitian and Nutritionist in Ontario?" The use of the term "registered" preceding dietitian may have biased respondents' perceptions of the difference between the terms RD and "nutritionist." Because the term "registered" is not regulated, it is possible that asking about the difference between registered nutritionists and dietitians in Ontario may have elicited different responses and results, particularly related to which nutrition provider is regulated. Thus, our finding that 72.9% of respondents do not understand the difference between these nutrition providers may be an underestimation of the degree of public confusion. Future research should assess public perceptions of various terms such as "registered," "licensed" and "certified," which are not legally protected in Ontario under the *RHPA* (1991) and, therefore, are available for anyone to use. Furthermore, future research should aim to determine if there is greater potential for harm when nutrition advice stems from an RD or "nutritionist."

Our research is the first to provide insight into the public's perception of the terms "nutritionist" and RD, as well as the public's experiences with different nutrition providers in Ontario. Future research similar to this in other provinces in Canada would be beneficial to compare the perceptions and experiences of Canadians, especially in provinces where the title "nutritionist" has been protected. Additional research should focus on the education, training and experience of unregulated nutrition providers and how these factors influence the quality of nutrition care they provide to the public. In addition, creating a database of cases of harm that have stemmed from following the nutrition advice of "nutritionists," RDs and other nutrition providers, would provide greater insight into the possible adverse events arising from poor nutrition care. This database could be used to guide recommendations for policy and legislative changes to help reduce the risk of harm and protect the health of Ontarians.

Implications for Research and Practice

This study provides justification for several proposed legislative amendments. A positive step toward ensuring that Ontarians receive the highest quality nutrition information would be

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to amend two Ontario Acts. The first recommendation is to amend the *Dietetics Act* (1991) to protect the title of “nutritionist” exclusively for RDs. The second recommendation is to amend the *RHPA* (1991) to protect the title “registered” exclusively for regulated healthcare professionals and to protect *medical nutrition therapy* as a controlled act for RDs. These amendments would minimize confusion for the general public regarding the education levels and experiences of “nutritionists” in comparison to RDs. This is especially significant, given the role that optimal nutrition plays in the management of chronic disease and obesity rates, which are continuously rising in Canada (Statistics Canada 2014, 2016).

Conclusion

Although some of the general public may perceive that there is a difference between an RD and a “nutritionist” in Ontario, the vast majority are unaware of what the difference is, demonstrating an overall lack of understanding. With this lack of understanding, the potential risk for harm, and no regulation around the provision of *medical nutrition therapy*, it is evident that the current state of nutrition care in Ontario needs to be improved. The aforementioned proposed legislative amendments have the potential to dramatically improve the health and nutritional status of Ontarians. These proposed amendments are timely; reducing the risk for chronic disease and managing health conditions through healthy lifestyle behaviours is fundamental, now more than ever and will continue to be in the future.

Disclosures

Justine R. Horne is the chair of the Professional Titles for Dietitians in Ontario Advocacy Group.

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