Achieving Consensus on Recommendations for the Clinical Management of Overweight and Obese Adults for Canadian Physiotherapy Practice

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ABSTRACT

Purpose: The purpose of this study was to reach consensus on the importance and feasibility of clinical practice guideline (CPG) recommendations for physiotherapy practice for the prevention and management of overweight and obesity in Canadian adults. **Methods:** We used a modified Delphi method to achieve consensus. Participants rated the importance and feasibility of recommendations using a nine-point scale in two rounds of electronic surveys and a conference call. The mean and distribution of ratings were analyzed to determine consensus. **Results:** Twenty-one physiotherapists experienced in the management of patients with obesity and representing diverse regions of Canada and areas of practice participated. Seventeen (81.0%) completed survey 1. Ten (47.6%) participated in the conference call and survey 2. Eight of 34 strategies received mean ratings of 7.00 or more for both importance and feasibility from at least two-thirds of participants. These strategies were related to physical activity prescription and assessment. **Conclusions:** A sample of physiotherapists in Canada agreed that obesity-related CPGs contain recommendations that are important to physiotherapy practice. These findings, along with the Canadian Physiotherapy Association's position statement on obesity, provide support for the argument that physiotherapists, as direct-access practitioners or members of multidisciplinary teams, should play a role in the health care of people with obesity and overweight.

Key Words: Delphi technique; obesity; overweight; physical therapy; practice guideline.

RÉSUMÉ

Objectif : L'objectif de cette étude est d'atteindre un consensus quant à l'importance et à la possibilité de mettre concrètement en pratique les recommandations des lignes directrices de pratique clinique pour la prévention et la gestion de l'obésité et du surpoids chez les adultes canadiens dans le cadre de la pratique de la physiothérapie. **Méthode :** Pour parvenir à un tel consensus, on a eu recours à une méthode Delphi modifiée. Les participants ont évalué l'importance et la faisabilité des recommandations sur une échelle de 9 points dans le cadre de deux rondes de sondages réalisés par voie électronique et d'une conférence téléphonique. La moyenne et la répartition des cotes ont été analysées en vue de déterminer s'il y avait consensus. **Résultats :** Au total, 21 physiothérapeutes expérimentés en gestion de patients souffrant d'obésité, représentant diverses régions du Canada et divers secteurs de pratique, ont participé à l'étude. De ce nombre, 17 (81,0 %) ont rempli le sondage n° 1. Dix physiothérapeutes (47,6 %) ont pris part à la conférence téléphonique et au sondage n° 2. Huit des 34 stratégies reçues comportaient des cotes moyennes $\geq 7,00$ pour l'importance comme pour la faisabilité, provenant d'au moins les deux tiers des participants. Ces stratégies étaient liées à la prescription d'activité physique et à l'évaluation. **Conclusions :** Un échantillon de physiothérapeutes au Canada convient que certaines recommandations des directives de pratique clinique liées à l'obésité sont importantes pour la pratique de la physiothérapie. Ces conclusions, de même que l'énoncé de position de l'Association canadienne de physiothérapie concernant l'obésité, viennent appuyer l'argument voulant que les physiothérapeutes, en tant que professionnels de la santé disposant d'un accès direct aux patients ou à titre de membres d'équipes multidisciplinaires, devraient jouer un rôle dans les soins de santé des personnes souffrant d'obésité ou de surpoids.

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The World Health Organization has declared obesity an epidemic.¹ Despite a multitude of programmes designed to help individuals and populations lose weight, obesity rates in virtually every industrialized country have been climbing steadily for decades and now approach or surpass 50%.^{1,2} Once considered a disease of affluence, obesity and its associated health consequences are also steadily becoming more prevalent in developing countries.^{1,2} In Canada, nearly 60% of the population is overweight or obese.³ Although the terms *overweight* and *obesity* are not synonymous, both conditions are characterized by an accumulation of excess body fat. Individuals are characterized as overweight if they have a body mass index (BMI, calculated as the mass in kilograms divided by height in metres squared) between 25 and 29.9 kg/m² and as obese if their BMI is 30 kg/m² or more.² Overweight and obesity are, for the most part, considered to be multi-factorial, preventable conditions resulting from a chronic energy imbalance that occurs when individuals consume more energy than they expend.^{4–6} Factors that contribute to these conditions include diet, genetics, physical activity, environment, culture, use of medications, and psychological status.^{6,7} Increasing BMI brings progressively increasing risks of developing illnesses such as type 2 diabetes, cardiovascular disease, peripheral vascular disease, sleep apnea, osteoarthritis, gallstones, stress incontinence, gynaecological abnormalities, and certain types of cancer.^{8–10}

A review conducted in 2001¹¹ estimated the costs associated with obesity at \$4.3 billion, corresponding to 2.2% of total health care expenditures for all diseases in Canada. Given the magnitude of this epidemic and its health- and cost-related implications, health care professionals, including physiotherapists, need to consider what role they might play in preventing and managing obesity.

In 2007, the *Canadian Medical Association Journal* published the “2006 Canadian Clinical Practice Guidelines on the Management and Prevention of Obesity in Adults and Children” (CCPGO).⁶ Also in 2007, the Canadian Physiotherapy Association (CPA) released a position statement in support of the vital role that physiotherapists play as part of a multidisciplinary team in the prevention and management of overweight or obesity in people.¹² The recommendations outlined in these documents provide a starting point for determining the strategies that physiotherapists might adopt in the prevention and management of overweight and obesity.

LITERATURE REVIEW

Clinical practice guidelines (CPGs) are systematically developed statements about health care management that are explicitly intended to affect the behaviour and practices of clinicians.¹³ They are important because they provide standardized, evidence-based direction to clinicians involved with a given population. A review of

the literature revealed no obesity CPGs specific to physiotherapy (PT) practice; however, the CCPGO does make recommendations that are relevant to PT practice in the Canadian health care environment. The CCPGO was developed using teams of experts: Each chapter of the guidelines was delegated to a group of content experts, who performed a systematic literature review and were responsible for drafting the recommendations for that chapter and assigning levels of evidence to the recommendations. These recommendations were then appraised by an independent evidence-based review committee. The final draft of the guidelines was reviewed by external stakeholders and experts, including representatives from academia, industry, and government. The PT profession does not appear to have been represented in the development of the guidelines.

In 2009, Delgado-Noguera and colleagues¹⁴ evaluated 22 obesity-related CPGs. In their study, three independent appraisers assessed the quality of the CPGs using the Appraisal of Guidelines Research and Evaluation (AGREE) instrument.¹⁴ The CCPGO was one of only six CPGs that met the appraisers' criteria and scored highly on six of the seven domains (scope, purpose, rigour of development, clarity of presentation, applicability, and editorial independence; the exception was stakeholder involvement). Although this review focused on childhood obesity, the strong rating lends credibility to the guidelines. The CCPGO supports a multidisciplinary approach toward comprehensive healthy lifestyle change—including behavioural therapy, a reduced-calorie diet, and increased physical activity—as the most effective way to achieve weight loss.⁶

Although there are no obesity-related CPGs for PT practice, there does appear to be some agreement that physiotherapists have a role to play in the prevention and management of overweight and obesity.^{12,15,16} A survey administered to Canadian physiotherapists in 2008 demonstrated that physiotherapists clearly perceive a role for themselves in the management of people with obesity who have associated medical conditions but are not in agreement on specific strategies.¹⁶

According to von Lengerke and colleagues,¹⁷ physiotherapists have opportunities to increase their patients' physical activity level and use their knowledge and skills for tertiary prevention of obesity. In addition, other sources have advocated expanding the role of physiotherapists beyond that of exercise prescription when caring for this population.^{12,17–19} von Lengerke and colleagues^{17(p.538)} posited that nonphysician health professionals “may have even better opportunities than physicians to encourage the use of early detection and screening ... for obesity.” Physiotherapists need to capitalize on these opportunities, given that compared with adults of normal weight, adults who are obese are more likely to access PT services in outpatient settings,¹⁷ as well as more likely to require in-patient rehabilitation after discharge

from an acute care hospital after elective hip-replacement surgery.²⁰

Deshpande and colleagues¹⁸ proposed that a conceptual shift toward primary and secondary prevention is required in PT practice, suggesting that physiotherapists engage further in school-based consultations, employee wellness and screening programmes, and community-based activities to prevent sequelae of obesity. The CPA position statement on obesity also stated that physiotherapists are well suited to engage in health promotion, complication prevention, and management of conditions related to obesity.¹² Because only 20% of individuals who successfully lose 10% of their initial body weight are able to maintain that loss for at least 1 year,²¹ strategies that target populations as well as individuals are imperative to reduce the incidence of obesity.²²

Rather than developing discipline-specific guidelines, physiotherapists can draw on the existing CCPGO and others to assist them in selecting recommendations and strategies that are applicable to their practice as a member of the multidisciplinary obesity management team. We designed this study to reach consensus on the importance and feasibility of existing clinical practice guideline recommendations for the management of overweight and obesity for PT practice.

Specifically, our objectives were to

1. identify obesity-related CPGs, evidence-based recommendations, or position statements relevant to PT practice;
2. determine the importance and feasibility of the CCPGO recommendations (and other CPGs as indicated) to PT practice;
3. provide recommendations and implications for PT clinical practice for therapists working with people with overweight or obesity.

METHODS

Definition of Terms

Importance, feasibility, efficiency, cost-effectiveness, and necessity are all factors that the professional must consider when developing new programmes or clinical practices. Importance and feasibility were selected as the domains of interest for this study because they were recognized as being conceptually different and germane to practice.²³ The dimension of importance speaks largely to the current evidence in support of performing a strategy, and feasibility relates to its pragmatism. For the purposes of this study, we defined *importance* as how valuable, appropriate, and significant the strategy is for PT practice and *feasibility* as relating to the practicality, time, human and material resources, referral patterns, and cost implications associated with the strategy.

Recruitment

Before recruitment of participants, the study was approved by the University of Toronto's Office of Research

Ethics. Physiotherapists who work specifically with people with overweight and obesity are not common; therefore, we began our recruitment process by accessing the membership list of the Canadian Obesity Network (CON), whose mission is "to act as a catalyst for addressing obesity in Canada."²⁴ As of November 2010, CON had 4,833 members, 45 of whom were listed as physiotherapists. The physiotherapist members of CON were used as initial contacts and were asked in turn to suggest the names of colleagues with experience or expertise in obesity management. This strategy, a modified version of snowball sampling,²⁵ is used to find difficult-to-identify people with the specific range of knowledge or skills needed for a study. We used this recruitment technique of purposive sampling to ensure that our sample included individuals with high levels of knowledge and geographical representation from across Canada in key areas of practice (orthopaedics, neurology, cardiorespirology).

Participants

Physiotherapists—both clinicians and administrators representing various areas of PT practice—were recruited to participate in this study. To be included in the study, a participant needed to have at least 2 years of full-time clinical experience as a registered physiotherapist in Canada, have access to the Internet, and be fluent in written and spoken English. In addition, if the participant was a clinician, he or she must have had experience working with people with overweight or obesity or those affected by associated conditions such as type 2 diabetes, coronary artery disease, history of myocardial infarct, history of coronary artery bypass graft surgery, osteoarthritis of the lower extremities, hip or knee arthroplasty, or stress incontinence at the time of recruitment. If the participant was in an administrative role, he or she must have been working as an administrator of a programme that includes patient populations affected by obesity at the time of recruitment.

Overall Research Design

The Delphi method is frequently used as a consensus-building tool in health care research and is a practical strategy to gain the independent opinions of many individuals in a large geographical area without the logistical, financial, and time constraints of holding a face-to-face group meeting.²⁶ We used a modified Delphi method to obtain a consensus of participants' opinions on strategies that are important and feasible for use in the prevention and management of obesity.¹⁰ The process involved these steps:

1. A literature search was conducted in November 2008 to identify evidence-based recommendations, CPGs, and position statements from various sources related to the prevention and management of overweight and obesity in adults.

Table 1 Algorithm for Analysis of Survey 1 and Survey 2 Data

Mean feasibility score	Mean importance score		
	High (7.00–9.00)	Medium (4.00–6.99)	Low (1.00–3.99)
High (7.00–9.00)	Include if $\geq 66.7\%$ of participants rate importance and feasibility ≥ 7.00	Possibly include—carry over to conference call	Exclude
Medium (4.00–6.99)	Possibly include—carry over to conference call	Possibly include—carry over to conference call	Exclude
Low (1.00–3.99)	Exclude	Exclude	Exclude

2. A survey (survey 1) was created and piloted, using strategies identified from these CPGs that were considered to potentially be part of a physiotherapist's role. Survey 1 was distributed electronically to participants, who rated the importance and feasibility of the selected strategies. The results of survey 1 were analyzed using an algorithm to determine whether consensus to recommend a particular strategy had been reached (see Table 1).
3. A conference call was conducted so that participants could discuss some of the strategies not immediately recommended after survey 1.
4. Survey 2 was distributed electronically, and participants were asked to rerate only the strategies discussed during the conference call. The results of survey 2 were analyzed using the same algorithm to determine whether any changes in recommending particular strategies had occurred.

Further details on each phase of the study and its results are presented in sequence in the Study Phases section.

Data Collection

All phases of survey 1 and survey 2 were distributed to the participants via the Web-based tool Survey Monkey (SurveyMonkey.com), which enabled participants to provide confidential responses. The conference call was recorded via a digital recorder and saved on a computer. Participants gave informed consent before recording.

STUDY PHASES

Identification of CPGs Related to Obesity

We identified 38 CPGs in the literature. Of these 38, we selected eight^{4,6,13,27–31} on the basis of their date of publication (1995 or later), the presence of recommendations for lifestyle modifications, the use of supporting evidence, their applicability to adults, and being written in English. We considered all unique strategies pertaining to the adult population. For example, with respect to strategies related to physical activity prescription, we identified parameters for intensity and duration. The strategies selected also had to be considered as a potential part of a physiotherapist's role, based on the CPA

position statement. Strategies such as “pharmaceutical drug prescription” and “bariatric surgery” were modified to “education on pharmacotherapy options” and “education on bariatric surgery options” to reflect the fact that prescribing drugs and performing surgery are outside the scope of PT practice.

Survey 1

Using strategies identified from all eight of the selected CPGs, we created a draft of survey 1. A nine-point numerical rating scale (1 = very low, 9 = very high) was used to assess the importance and feasibility of each strategy. Space was provided for comments throughout the survey. The following is an example of a survey question:

Please rate the following assessment strategies on their importance and on their feasibility in the physiotherapy management of individuals who are overweight or obese.

- Assessment of the individual's medical history, risk factors, and co-morbidities
- Measurement and calculation of body mass index.

Six individuals—clinicians, administrators, and academics (colleagues of ours)—from various areas of PT practice agreed to pilot test an electronic version of survey 1, using procedures suggested by Dillman³² and Oppenheim.³³ Three iterations of the survey were conducted, during which revisions to clarity, format, time commitment, and content were made until the six individuals deemed the survey satisfactory. The final version of the survey included 34 strategies and eight demographic questions.

Before beginning the survey, all participants provided informed consent. Survey 1 and full-length and summary versions of the CCPGO were distributed to participants electronically.

We analyzed responses from survey 1 using an algorithm (see Table 1) to determine whether each strategy met the following criteria for consensus:

1. Strategy achieved a mean rating of 7.00 or more in both importance and feasibility.
2. Two-thirds of participants rated the strategy 7, 8, or 9 in both importance and feasibility.^{34,35}

Questionnaire items that received a mean rating of 3.99 or less in either importance or feasibility were automatically excluded from the study's recommendations. Strategies that were neither included nor excluded from recommendations were referred to as *inconclusive*.

Conference Call

A 1 hour conference call was held for participants to share their opinions regarding inconclusive strategies from survey 1. This step was essential to the modified Delphi method, because it allowed for reflection on other perspectives regarding feasibility and importance, driving the consensus-building process as participants reconsidered their responses to inconclusive strategies. Before the discussion, we summarized the results of survey 1, which were then distributed electronically to allow participants to examine how others had rated the various strategies. We facilitated the conference call, using semi-structured and open-ended questions such as, "For the strategy 'Establishment of specific weight loss goals' what are the issues related to feasibility?" We probed further by asking participants to comment on reasons why a strategy would or would not be feasible, as well as to consider practice area and setting in their responses.

Data from the conference call were analyzed to identify general themes and provide insight into the quantitative data. Two student researchers, Alexander and Rosenthal, independently listened to the call recording, identifying barriers to a strategy's feasibility and solutions to overcome them, and then compared their analyses and listened to the recording a third time to classify feasibility issues into broad themes.

Survey 2

We electronically distributed a second survey (survey 2) containing the inconclusive strategies discussed during the conference call, asking participants to re-rate their importance and feasibility. Participants were given 1 week to complete survey 2. The same algorithm (see Table 1) was used to determine whether consensus had been reached on each strategy.

RESULTS

Survey 1

After attempting to contact 52 potential participants, we successfully recruited 17 physiotherapists who completed survey 1. Of the 52 individuals, we were unable to make contact via telephone or e-mail with 21, five did not meet the inclusion criteria, three were too busy to participate, and two were excluded to avoid over-representation of physiotherapists from Newfoundland. Although 21 of 52 potential participants agreed to participate in the study, 4 did not initiate survey 1 and 2 did not complete the demographic portion of the survey. A total of 15 physiotherapists completed the demo-

graphic information; they represented western, eastern, and central Canada. Participants' patient care experience averaged 13.3 years, and they estimated on average that 46% of their patients were overweight or obese. Participants represented a wide variety of patient care settings, the most common being acute care, inpatient rehabilitation, and public outpatient orthopaedics. The most common areas of practice were cardiorespirology, neurology, and medicine (see Table 2).

Consensus was reached on seven strategies that were rated 7.00 or more on both importance and feasibility and were rated 7.00 or more by at least two-thirds of respondents. Of those seven recommended strategies,

Table 2 Participant Characteristics

Characteristics	% of work time*
Province; no. of participants†	
Ontario	6
Newfoundland	4
Quebec	4
British Columbia	3
Saskatchewan	2
New Brunswick	1
Alberta	1
Average time spent in various roles‡	
Patient care	62.3
Administration	25.7
Teaching	10.9
Other	1.9
Research	1.3
Average time spent in each patient care setting‡	
Acute care	30.0
In-patient rehabilitation	28.0
Public outpatient orthopaedics	24.7
Other	9.3
Private outpatient orthopaedics	5.0
Homecare	3.3
Palliative care	2.2
Complex continuing care	2.0
Average time spent in each clinical area of practice‡	
Orthopaedics	70.6
Cardiology	45.0
Medicine	37.5
Other	30.0
Neurology	26.7
Gerontology	18.5
Paediatrics	7.0

Note: Values do not total 100% because multiple responses were allowed.

* Unless otherwise indicated.

† $n = 21$.

‡ $n = 15$.

six were related to physical activity prescription. Three strategies received a mean rating of 3.99 or less on either importance or feasibility and were therefore rejected; these strategies were neither discussed further nor included in survey 2. There was limited agreement on the remaining 24 strategies, 15 of which received an importance rating of 7.00 or more and a feasibility rating of between 4.00 and 6.99, and 7 received both importance and feasibility ratings of between 4.00 and 6.99. Of the remaining two strategies, “prescription of flexibility exercises” received an importance rating of between 4.00 and 6.99 and a feasibility rating of 7.00 or more; the strategy “education on strategies for adherence to an independent exercise program” received high mean scores on both feasibility and importance, but received high scores from fewer than two-thirds of participants. Because of the high mean scores in both importance and feasibility, the latter strategy was included and not discussed during the conference call. The strategy ratings from survey 1 are displayed in Table 3.

Sixteen strategies whose ratings were close to meeting the inclusion criteria, as well as strategies with a wide distribution of scores, were selected for discussion during the conference call (see Table 3).

Conference Call

Because of the variability in participants’ schedules and time zones, it was not possible to find a date and time when more than 10 of the 17 physiotherapists who completed survey 1 could attend a conference call. Those who participated were representative of the demographics of the survey sample. The discussion that took place can be summarized into six overarching themes; the same themes were also noted in the comments sections of surveys 1 and 2.

1. *Time constraints:* The feasibility of a strategy is influenced by the time it requires and the physiotherapist’s caseload volume.
2. *Geography:* Responses varied significantly on the basis of participants’ geographical locations. The feasibility of referring to family doctors, dieticians, psychologists, and psychiatrists was increased for participants located in urban settings versus rural settings. Proximity to academic institutions at which health care professionals are trained affected the potential for referrals and participation in research.
3. *Cost:* Financial concerns, in terms of the availability of physiotherapists and specialty equipment required for the treatment of bariatric patients, limited feasibility ratings. Reimbursement was also mentioned as a factor that affects the feasibility of various strategies, such as whether a patient has sufficient personal funds, the availability of third-party insurance, and access to publicly versus privately funded health care facilities and professionals.

4. *Practice setting:* Very clear differences were expressed on the basis of the practice setting in which a physiotherapist encounters a person with overweight. Practice setting has an effect on variables such as a patient’s medical acuity, stage along the rehabilitation continuum, and readiness to change.
5. *Scope of practice:* Participants had varying perspectives on performing strategies they perceived to be outside their scope of practice or beyond their area of expertise, particularly in terms of recommending lifestyle changes. Some participants said that the role of the physiotherapist was only to reinforce messaging about lifestyle changes provided by physicians and dieticians, expressing concern about overstepping professional boundaries. For example, several therapists said they would go no further than providing patients with a copy of *Canada’s Food Guide*. These physiotherapists, primarily working in urban areas, reported greater access and therefore higher feasibility in terms of referring to the aforementioned health professionals. Other physiotherapists, particularly those working in rural areas, where access to health care professionals is more limited, said they would provide more counselling about lifestyle changes such as food intake patterns and establishing weight loss goals.
6. *Sensitivity of the issue:* Participants indicated that obesity may be a sensitive issue for clients and clinicians alike. The perceived sensitive nature of obesity can present a barrier to approaching the subject of weight loss and performing certain assessments. For example, participants thought that some clients would be embarrassed and discouraged on hearing their waist circumference and BMI measurements, and other clients might be motivated to adopt strategies such as joining group exercise programmes if they were engaged in open discussions with their therapist.

Survey 2

Of the 16 strategies included in survey 2, one additional strategy met the criteria for consensus, and three were excluded (see Table 4).

Of the eight strategies with importance ratings of 7.00 or more and feasibility ratings of more than 6.00 on survey 1, four saw their importance ratings decrease to between 4.00 and 6.99 on survey 2, and a fifth strategy’s feasibility rating decreased to 3.99 or less; this strategy was therefore excluded. Ratings did not change for the remaining three strategies.

Of the seven strategies that received importance and feasibility ratings between 4.00 and 6.99 on survey 1, two saw their feasibility ratings increase to 7.00 or more on survey 2; feasibility strategies for two strategies decreased to 3.99 or less, although there was no notable

Table 3 Strategy Ratings: Survey 1 (*n* = 21)

Strategy	Percentage of respondents rating ≥ 7.0 (mean rating)	
	Importance	Feasibility
Assessment of the individual's medical history*	100.0 (8.78)	99.9 (8.33)
Evaluation of current physical activity level*	100.0 (8.82)	82.4 (8.12)
Providing an individualized physical activity program*	94.1 (8.35)	88.9 (7.88)
Gradual progression of a physical activity program*	100.0 (8.53)	82.3 (7.71)
Prescription of a cardiovascular training program*	94.0 (8.12)	82.4 (7.24)
Prescription of resistance exercises*	94.1 (8.00)	82.3 (7.65)
Education on strategies for adherence to exercise program	100.0 (8.47)	58.9 (7.12)
Education on resources for adherence to the exercise program†	100.0 (8.41)	52.9 (6.94)
Referral to a registered dietitian†	82.4 (7.71)	58.8 (6.29)
Moderate-intensity exercise, 30 min/d, 3–5 d/wk¶	82.3 (7.94)	64.7 (68.8)‡
Assessment		
Assessment of motivation to participate in a weight loss program	83.4 (7.72)	55.6 (5.94)
Assessment of the impact of obesity on the individual's function	83.4 (8.00)	55.6 (6.67)
Establishment of specific weight loss goal†	66.6 (7.17)	72.2 (6.89)
Assessment of social and environmental barriers	83.3 (7.83)	50.0 (6.28)
Participation in research†	94.2 (8.12)	35.3 (6.06)
Prescription of flexibility exercises†	58.8 (6.65)	70.5 (7.88)
Progression of physical activity to 30–60 min/d†	76.5 (7.59)	53.0 (6.41)
Assessment of physiologic and psychological barriers	83.4 (7.44)	44.4 (5.50)
Education on lifestyle changes for maintenance†	88.2 (8.24)	41.2 (6.18)
Measurement of waist circumference†	55.6 (5.94)	61.3 (6.28)
Referral to a physician before weight-loss program commencement†	76.4 (7.29)	47.1 (6.29)
Partnership development between physiotherapy clinics and community resources†	76.5 (7.82)	47.0 (6.06)
Participation in lobbying activities	88.3 (7.59)	23.5 (4.82)
Use of a behavioural therapy (e.g., cognitive–behavioural therapy)	77.8 (7.67)	33.4 (5.17)
Referral to health team member for continued monitoring	70.5 (7.24)	23.5 (4.94)
Referral to a psychologist or psychiatrist†	76.5 (6.53)	17.6 (4.65)
Education on dietary choices†	70.6 (6.71)	17.7 (4.41)
Calculation of body mass index†	44.4 (6.00)	44.5 (6.56)
Evaluation of current dietary habits†	66.7 (6.67)	22.3 (4.39)
Recommend group exercise or team sport†	47.1 (5.94)	41.2 (5.71)
Recommend reducing caloric intake†	55.2 (6.28)	16.6 (4.33)
Body composition measure (using special scales and skin folds)§	22.3 (4.00)	11.1 (2.94)
Education on bariatric surgery options§	11.8 (3.53)	5.9 (2.35)
Education on pharmacotherapy options for weight loss§	17.7 (3.88)	0.0 (2.47)

*Consensus achieved.

†Discussed in conference call.

‡Outlier removed.

§Strategy excluded.

¶Consensus achieved (after dropping lowest score).

Table 4 Ratings of Strategies Included or Excluded after Survey 2 ($n = 10$)

Strategy	Percentage of respondents rating ≥ 7.0 ; (mean rating)	
	Importance	Feasibility
Calculation of body mass index*	60 (6.7)†	807.2
Referral to a psychologist or psychiatrist‡	60 (6.5)	103.7
Evaluation of current dietary habits‡	60 (6.3)	103.4
Participation in research‡	70 (7.3)	03.5

*Consensus achieved (after dropping lowest score).

†66.7 (7.3) after low score dropped.

‡Strategy excluded.

Box 1 Final Eight Recommended Strategies for the Prevention and Management of Overweight and Obesity in Adults for Canadian Physiotherapy Practice

1. Assessment of the individual's medical history
2. Evaluation of current physical activity level
3. Providing an individualized physical activity program
4. Gradual progression of a physical activity program
5. Prescription of a cardiovascular training program
6. Prescription of resistance exercises
7. Prescription of moderate-intensity physical activity, 30 min/d, 3–5 d/wk
8. Calculation of body mass index

Note: We also recommend including the strategy “education on strategies for adherence to an independent exercise program” whenever possible.

change in importance or feasibility ratings for the remaining three strategies.

In summary, seven strategies met the criteria for consensus after completion of survey 1, and one further strategy met the criteria for consensus after survey 2 (see Box 1). Three strategies were excluded after survey 1, and three more were excluded after survey 2. Finally, 23 strategies were inconclusive at the end of survey 1; 16 of those were discussed during the conference call, and a total of 20 strategies remained inconclusive at the end of survey 2.

DISCUSSION

Six of the eight strategies that achieved consensus are related to physical activity. This finding is not surprising, given that therapeutic exercise is within physiotherapists' traditional area of expertise and scope of practice and continues to be a cornerstone of entry-level PT education. Physical activity requires movement, which is the central unifying concept of PT practice. Movement, defined as an actual change in position, occurs at multi-

ple interacting levels along a continuum from microscopic to the level of a person acting in society.³⁶ Persistent obesity leads to movement restrictions, particularly during weight-bearing tasks such as walking and stair climbing, and such restrictions affect an individual's healthy engagement in work and leisure environments.³⁷ The physiotherapists who reached consensus in this study on the importance and feasibility of physical activity recommendations were from hospitals, outpatient clinics, and community clinics and represented diverse areas of practice including cardiorespirology, orthopaedics, and neurology, which suggests that these strategies to manage obesity and movement restriction are potentially transferable to various PT practice areas and settings.

After reviewing the survey data, we included two additional strategies in the final recommendations. The first, “calculation of BMI,” fell just short of the cutoff criteria for importance; it received a mean importance rating of 6.7 and an importance rating of 7.00 or more from 60% of participants in survey 2. On examining the distribution of responses for importance, we detected one outlying rating; after this single rating of 1.00 was excluded, the proportion of participants who rated the importance of BMI measurement at 7.00 or more was two-thirds, and the mean importance rating was 7.33, so that this strategy now met the inclusion criteria. The second strategy we included was “prescription of physical activity parameters of moderate intensity exercise 30 minutes per day, 3–5 days per week.” In survey 1, this strategy easily achieved most of the inclusion criteria, but only 64.7% of participants rated its feasibility at 7.00 or more. When the lowest feasibility rating was excluded, however, 68.8% of participants rated feasibility at 7.00 or more, so this strategy ultimately met all the inclusion criteria.

The strategy “education on strategies for adherence to an independent exercise program” also received mean ratings of 7.00 or more for both feasibility and importance in survey 1; however, the proportion of participants who rated feasibility at 7.00 or more was 58.9%,

and this proportion did not increase sufficiently even after the lowest rating was excluded. Because of this strategy's high mean scores, as well as the fact that 100% of participants rated its importance as 7.00 or more, we did not select this item for carryover to the conference call and survey 2; however, we propose that it be used by physiotherapists in multidisciplinary weight-management programmes when possible.

Feasibility score averages tended to be lower than mean importance scores for the same item (see Table 3); that is, even when participants agreed that a strategy was important, there was less agreement as to whether it could be executed in the clinical environment. Notably, 26 of the 34 strategies were rated 7.00 or more in importance by more than two-thirds of participants after survey 1, but only eight achieved this benchmark score in feasibility. This result led us to conclude that although many physiotherapists recognize the clinical value of performing many strategies, they feel that only a select few are feasible to perform. This study raises questions about whether physiotherapists have sufficient time, supports, and resources to address the feasibility of obesity management and requires further investigation.

Twenty inconclusive strategies could be considered as outside of physiotherapists' areas of expertise or traditional scope of practice, such as diet, lifestyle education, and use of behavioural therapy. Discussions that took place during the conference call indicated that, of necessity, physiotherapists working in rural communities often expand on some of the traditional PT roles to compensate for limited funding and lack of access to certain health care professionals. In contrast, physiotherapists working in urban settings indicated that institutional resource constraints such as insufficient personnel and rapid patient turnover prevented them from consistently addressing obesity issues, thus necessitating referral to other professionals, at additional cost to the patient. These differences in practice settings may help to explain why further consensus was not achieved after survey 2.

We recognize several limitations to the study. First, consensus could possibly be achieved on more items with additional surveys, although the lack of further consensus on survey 2 makes this seem unlikely. In addition to providing flexibility in the number of survey rounds, the modified Delphi method allowed us to set consensus criteria specific to the project; we decided to apply rigorous criteria, requiring that a mean rating of 7.00 or more out of 9.00 on both importance and feasibility be achieved on the rating scale. As a result, one could speculate that additional strategies might have reached consensus if less stringent criteria had been used. However, the consensus criteria set for this study did ensure that a definitive decision had been made for the strategies that were ultimately included.

In addition, the interpretation and practical application of certain strategies has not been sufficiently studied,

developed, or discussed by physiotherapists, which may be another reason that consensus was not achieved for a greater number of survey items. As a consequence, strategies such as behavioural therapy, setting weight-loss goals, and lifestyle education may not be clearly understood and may therefore be considered unfeasible by many physiotherapists. Physiotherapist involvement in obesity prevention and management is still in the early stages of development, and therapists may not yet have formed opinions about their specific roles or may lack confidence in performing obesity-related strategies.³⁸ Physiotherapists' self-efficacy is a predictor of perceptions of practice patterns.³⁹ This lack of confidence may partially explain our difficulty in recruiting participants for this study who considered obesity prevention and management to be part of their role.

Finally, our sample included a relatively small number of physiotherapists and was not representative of the distribution of physiotherapists in Canada in relation to demographics or practice, partially because the inclusion criteria required experience with obesity. The snowball sampling approach, although useful in identifying difficult-to-find physiotherapists with experience in obesity, may have led to an over-representation of physiotherapists from the Atlantic provinces, from in-patient rehabilitation, and from cardiorespirology practice relative to the profile released by the Canadian Institute for Health Information in 2009.⁴⁰ However, we did achieve stability of consensus over the two rounds, and study participants were representative of the group or the area of knowledge, which provides some evidence for the validity of these findings.⁴¹ Future studies are needed to include French-speaking therapists and those from private practice and other groups not well represented in this study.

CONCLUSION

A sample of physiotherapists found eight strategies from existing CPGs that met the consensus criteria for recommendations for the prevention and management of overweight and obesity in adults for Canadian PT practice. Six of these strategies are related to physical activity, and two are related to assessment. Because people with overweight and obesity represent close to 60% of the population, these eight strategies can be used in a variety of practice areas and points along the continuum of care. Physiotherapists recognize the value of other lifestyle-change strategies, but they may need support to increase the feasibility of using these strategies and expanding their roles into multidisciplinary weight-loss teams engaged in primary and secondary prevention.

A sample of physiotherapists in Canada agreed that the CCPGO has recommendations that appear to fit well with the scope of PT practice. This fact, along with the CPA position statement on obesity, suggests that physiotherapists can play an important role in the management

of people with overweight and obesity and that the profession needs to position itself to contribute to this area of practice.

KEY MESSAGES

What Is Already Known on This Topic

Obesity is a complex medical problem that requires a multidisciplinary approach to help people with obesity make comprehensive lifestyle changes. Evidence-based clinical practice guidelines have been published to guide health professionals in addressing the needs of their patients. However, most of these guidelines are written for physicians. Although previous studies have shown that physiotherapists perceive they have a role to play in the prevention and management of overweight and obesity in adults, the literature currently has no recommendations on strategies specifically for PT practice.

What This Study Adds

This study investigated which evidence-based strategies Canadian physiotherapists consider important and feasible when treating people who are overweight or obese. Consensus was reached on eight strategies—two related to assessment and six related to physical activity—that can be used in most practice settings. Physiotherapists recognize the value of other lifestyle change strategies, such as behavioural therapy, goal setting, and diet education, but need support to make these practices feasible.

A sample of physiotherapists in Canada agreed that the CCPGO has recommendations that appear to fit well with the scope of PT practice. This, along with the CPA position statement on obesity, suggests that physiotherapists can play an important role in the management of people with overweight and obesity and that the profession needs to position itself to contribute to this area of practice.

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