

Missing an opportunity: the embedded nature of weight management in primary care

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What we already know

- Obesity is an important chronic medical condition and is associated with numerous comorbidities, yet it is inconsistently addressed in primary care.
- There are mixed messages on obesity from the media and healthcare providers that confuse patients.
- The aetiology is multifactorial and management can benefit from multiple professional perspectives.

What this adds

- Weight management discussions in primary care largely take place within other types of clinical visits; this has important consequences for delivering and assessing the impact of weight management interventions.
- Understanding the contextual features of primary care encounters and longitudinal relationships is crucial for strategies to incorporate weight management into primary care.

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Summary

The 5As Team study was designed to create, implement and evaluate a flexible intervention to improve the quality and quantity of weight management visits in primary care. The objective of this portion of the study was to explore how primary care providers incorporate weight management in their practice. 5AsT is a randomized controlled trial (RCT) on the implementation of a 6-month 5 As Team (5AsT) intervention designed to operationalize the 5As of obesity management in primary care. Data for the qualitative portion of the study presented here included semi-structured interviews with 29 multidisciplinary team providers and field notes of intervention sessions. Thematic analysis was undertaken. A key pattern that emerged from the data was that healthcare providers usually do not address obesity as a primary focus for a visit. Rather, obesity is embedded in a wide range of primary care encounters for other conditions. Implications were it can take extra time to discuss weight, it can be inappropriate to bring up weight as a topic, and treating risk factors and root causes of obesity have indirect benefits to patient weight management. Our findings have implications for obesity treatment approaches and tools that assume a discreet weight management visit. The embedded nature of obesity management in primary care can be harnessed to leverage multiple opportunities for asking and assessing root causes of obesity, and working longitudinally towards individual health goals.

Keywords: Health education, knowledge translation, obesity.

Introduction

Primary care is increasingly focusing on obesity as a chronic condition through tools and approaches that aim to address its complexity. At times, this focus has led to comprehensive assessment checklists or algorithmic

approaches to weight management more generally, each with varying degrees of success (1–4). Recent guidelines and articles have highlighted the role of family physicians in implementing lifestyle interventions and in reversing obesity in Canada, with strong recommendations to refer overweight and obese patients at high risk for diabetes to

behavioural interventions aimed at weight loss (5,6). In the United States, the Centers for Medicare and Medicaid Services have recommended that practitioners (physician, nurse practitioner, medical assistants) provide brief weekly counseling services to obese patients for the first month followed by biweekly visits for the following five months (7). In this same atmosphere, the need for better healthcare provider training on weight management has also become a priority (8).

The challenge is that the conversations are not happening: less than half of family physicians report they discuss obesity and physical activity with their patients during their periodic health examinations (9). Lack of resources, training and time are reported as reasons for poor implementation of lifestyle interventions in primary care (6,10,11). There is also a lack of systematic research on the organization of care for persons with obesity or on behaviour change for healthcare professionals (12). Approaches and recommendations to weight management or weight management training in health care generally fail to question the assumption that discreet weight management visits are either occurring or should occur in primary care on a regular basis.

The 5As Team study (5AsT) was designed to create, implement and evaluate a flexible intervention to improve the quality and quantity of weight management visits in primary care. 5AsT is a convergent mixed method randomized control trial with the aim of increasing the number and quality of weight management visits. Working in an interdisciplinary primary care environment, the primary quantitative outcome measure was the number of weight management visits occurring; as is apparent with this measure, our team was originally operating under the assumption that discreet visits would be a good measure of intervention success. Our qualitative intent was to collect information necessary for describing the intervention, broadly assessing its impacts, and determining the contextual factors that influence the ability or desire of providers to conduct weight management visits.

The need for better weight management training among providers had been a concern with our Primary Care Network (PCN) partner who had previously been using didactic training sessions provided by the provincial health authority, and the 5As model for weight management training (13). 5AsT built off of the 5As of obesity, a model that combines the structure of the Canadian Obesity Clinical Practice Guidelines (6) with the 5As methodological framework (Ask, Assess, Advise, Agree, Assist) (14). It is a broad patient-centred approach to obesity management supported by the Canadian Obesity Network and was an approach our partner supported. The 5As includes a suite of tools and resources that emphasize the importance of patient readiness (ask) as well as the complexity of weight management beyond 'eat less and move more'. This com-

plexity is reflected in a thorough assessment that includes monetary, mechanical, metabolic and mental aspects of weight gain (15). The final stages of advising, agreeing and assisting emphasize a patient-centred and long-term approach to patient weight management.

The current analysis explores the way that primary care providers incorporate weight management in their practice.

Methods

The protocol for the 5AsT study has been published previously (16). Ethics approval for the 5AsT study was given by the University of Alberta ethics board (Pro00036740).

Setting and participants

This study took place within the context of a well-established urban primary care network (PCN) in Edmonton, Canada. PCNs are partnerships of family practices which provide interdisciplinary programming and team-based care. Our partner PCN employs 52 healthcare providers who work within practices throughout southern Edmonton. Together they are integrated with over 150 family doctors serving over 166 000 Albertans.

Twenty-four clinic-based PCN teams were randomized to the 5AsT intervention or control. Eligibility requirements were twofold: first, clinics had to have joined the PCN by April 2013, and second must have had an interdisciplinary team (nurse/nurse practitioner, mental health worker, dietitian) affiliated with the clinic. Those randomized to the intervention were invited to take part in the 5AsT sessions by research staff, all agreed to participate; however, two were unable to attend any sessions due to scheduling difficulties with their clinics. Participants ($n = 29$) included mental healthcare workers ($n = 7$), registered dietitians ($n = 7$), registered nurses or nurse practitioners ($n = 15$). All participants spent the majority of their time delivering family practice clinic-based direct patient care and participated in occasional meetings and training sessions at the central PCN office. In addition, some practitioners provided centralized patient programming at the PCN office.

Intervention design

In addition to the 5As, intervention design and evaluation was also influenced by two theories: (i) complex innovations implementation (CII) (17), a framework developed to locate and build upon factors that may influence intervention success, and (ii) theoretical domains framework (TDF) (18) that outlines key domains influencing behaviour change. Both theories supported the need for rich description of the intervention, extensive collaboration with the partner, and the need to consider both the context of the

participants and the broader structures within which they work.

The primary component of 5AsT was a 6-month intervention consisting of learning collaborative sessions on topics relevant to weight management with interdisciplinary PCN providers. Over a period of 6 months, participants met biweekly for 2 h at the central office, listened to a topic expert speak, shared their own views and experiences and set personal goals that would bring new learning into their practices. The group met again at 12 months to discuss the interventions' impact and review preliminary qualitative results.

Evaluation

The primary quantitative outcome measure was the number of weight management visits per full time equivalent with nurses and nurse practitioners (to be presented elsewhere). This paper's analysis focused on the qualitative data collected from participants to describe and monitor the intervention and to determine contextual factors that could influence the outcome measure or other aspects of 5AsT impact. The intervention followed a convergent mixed method design (19,20), which seeks triangulation between different data types, elaboration or enhancement, and to create comprehensive accounts of an issue. Neither a qualitative nor quantitative approach on their own would have provided the research team with the detail necessary to determine impacts, effects, implementation process and outcomes. Furthermore, quantitative results without contextual detail would have limited our ability to fully understand the context within which our participants were living and working.

Field notes were taken during all sessions, structured to focus on key aspects of TDF (knowledge, skill, intentions, goals, beliefs about consequences, emotion, optimism, role identity and beliefs about capabilities) as well as CII (management support, resource availability, organizational policies and practices, implementation climate, values fit). Semi-structured interviews conducted with all intervention participants ($n = 29$) likewise reflected these theories as well as our need for general context (provider background, daily routines, motivations). Interviews lasted between 40 min and an hour; providers were asked questions pertaining to their views of the intervention and of the 5As approach, their work environment, interactions with other providers, the nature of their work with regard to weight management, their confidence in addressing weight and aspects of their work that were challenging.

Analysis

We used a thematic analysis approach to determine themes from within the qualitative data (21,22). Transcripts were

inductively coded line by line according to subject. Data were managed using NVIVO 10 software (QSR International, Burlington, MA, USA). With the first six interviews, a code manual was created; it was unnecessary to add additional codes, though overlapping topics were later collapsed into a single code. Once all material was coded, each code was reviewed for recurrent patterns or subthemes; these patterns were compared to identify themes. We define theme as an integration of the disparate pieces of data that constitute the findings (23). In other words, a theme had to be consistently present, link numerous codes and could be latent or manifest. Field notes (24) were handled in a similar fashion and reviewed for patterns pertaining to context, flow of sessions and content. Field notes were most useful as an ongoing intervention evaluation tool, though participant discussion points tended to mirror interview findings. As our interview numbers and field note sources were pre-set, data saturation was not used as a method to determine the amount of qualitative data necessary. However, had saturation not occurred, follow-up interviews were to be undertaken; this was not necessary as it was clear that little new information was being revealed after roughly the first two-thirds of interviews had been complete.

Research team members and an independent third party cross-checked all analysis and key findings were shared with participants after the intervention, at which point an opportunity for comment was provided. Agreement in both cases was strong; research team feedback led to longer team discussions regarding the impact of findings. Participant feedback was given during a 2-h interactive session; no additional material was added by participants, though as a group, they verbally expressed agreement with our findings.

In the text below, we draw on representative quotes from diverse participants to illustrate our findings and demonstrate the consistent expression of how weight management visits occur. Each quote is representative of broader patterns, which are otherwise described within the text.

Results

The embeddedness of obesity in a wide range of primary care encounters was a key pattern that emerged from the qualitative analysis. In this context, embeddedness is defined as the observed tendency among interdisciplinary healthcare providers randomized to 5AsT to see weight as an issue within other types of medical visits rather than presenting as a discreet issue. For example, when asked to describe their approach to weight management, a provider might state that they do not see patients for weight management but instead bring up the topic with pregnancy, diabetes and other chronic diseases when appropriate.

Table 1 Interview extracts pertaining to embeddedness

Summary	Healthcare provider quotes
I don't really see weight management visits as such	'I don't have patients that come to see me just for obesity or just necessarily for diabetes or just for one thing. You know they'll come in, yes they're one of my diabetic patients but you know we're talking about their cholesterol today or their blood pressure and their weight another day' (Nurse 4)
It can be inappropriate to bring it up	'... for example the lady that I saw this week could have been like a good like 10, 20 pounds that she could lose, then it was her first visit so am I going to approach that on her first visit for smoking cessation when she's already struggling with that? I find that's one mountain, if you throw everything in the same visit, they're going to be like who's that crazy lady, I'm not going back.' (Nurse 6)
Time can be a challenge	'It depends... on how much time I have so if this is a patient I had never seen before and I've been booked 10 or 15 min with them and they have a number of issues but what they're there for is their cough, I probably won't bring it up.' (Nurse 7)
Instead I can focus on issues related to weight indirectly	'... because I don't deal with a lot of weight management and you know I've been working with one lady who is going through the bariatric program but my work is not kind of in, we don't deal a lot with weight right. We're working on assertiveness training, we're working on managing her mood, those types of things which it all kind of impacts and I certainly support you know her, increasing her physical activity, you know we address some of those types of things, not necessarily on the weight.' (Mental health worker 5)
There are many places to start the conversation	'I often do because they're all kind of linked, those chronic diseases right so if they are in fact overweight but they're coming in for let's say blood sugar management, then I will let them know that the, the literature shows us that even modest weight loss can help you manage your blood sugars, is that something you want to talk about so I definitely do but it's really dependent on whether they're ready to go there.' (Dietitian 4)
	'I see them mostly for diabetes or dyslipidemia or hypertension, mostly diabetes. I mean and weight management is involved in that but that's not my focus is not let's lose weight.' (Dietitian 5)
	'I see a lot of people that have weight issues but when they're coming to see me as a behavioral health consultant, that's not their expectation is for me to start talking about their weight right. They're, they're talking about their sleep disturbance or you know their racing thoughts or their hypomanic episodes or their bad employer or you know.' (Mental health worker 3)
	'I don't want to be that person that says oh you need to lose a little bit of weight, I don't want to be the person that it comes across like that... timing is important cause you don't want to ruin the relationship. You want to build a relationship right. I really feel like that's important and then empower them when they're ready.' (Nurse 1)
	'I do give them the information of well you know five to ten percent weight loss may help with blood sugar control but we just focus on things that they can actually do to help those 'cause I believe that if you know if they work on portion control, that's going to help with their blood sugars and their weight right so I don't necessarily need to bring that up and you know make that the center of attention that oh you know what, let's, let's work on portion control so you can lose weight. I just focus on let's just work on portion control. These are the, these are considered the healthy portions.' (Nurse 12)
	'I'll have, people that are just recently diagnosed with diabetes or maybe even pre-diabetics where their blood sugars are a little bit of out of range and they need some education so I'll go through that teaching with the glucometers, lifestyle changes. I do some of the weight management, seeing people that need that, kind of coaching and, and information. I find a lot of people don't have the education behind even the right food to eat and things like that, they don't, they don't have any baseline knowledge on, on any of this.' (Nurse 11)

As described below, participants revealed this tendency through discussing overt (recognized by the provider) implications: (i) it can take extra time to discuss weight; (ii) it can be inappropriate to bring up weight as a topic; and (iii) treating risk factors and root causes of obesity, such as depression or chronic pain, can have indirect benefits to patient weight. Less direct aspects of this finding included an increased frequency in opportunities to discuss weight, as well as an opportunity to avoid the issue all together (see Table 1).

As a barrier, embeddedness could limit the feasibility of weight management in primary care as well as the success of time-heavy interventions or tools that require discreet weight management visits. For example as demonstrated in

the following extract, in discussing the 5As approach, this provider felt that while covering the entire 5As process was too time-heavy, it was considerably less cumbersome than previous approaches which dictated the need for a discreet weight management visit. The 5As approach could therefore be integrated into routine visits for other conditions more easily.

It's (the 5As approach) just a matter of I sometimes find it hard to work it in to my conversation with the patient 'cause you kind of, like unless I were to sit down and study it and kind of somehow engrain it into my brain, I probably would forget when I'm having that interaction with the patient to use all those things...

I think it's a lot more usable than the checklist that we were using for the Weight Wise Clinic. That was horrendous. I don't know if you're familiar with it. The Weight Wise, [a tertiary referral intensive weight program] before we would refer someone on to Weight Wise, there was this checklist that we had to complete with them and it was a good way of directing a conversation but it was very overwhelming for me and for that patient (Nurse 1)

This provider is referring to trying to use materials developed for an intensive, tertiary obesity programme geared around lengthy assessments, in her primary care context. When weight is not the primary reason for the visit, time-heavy approaches can be daunting for providers and patients.

Compounded by the fact that weight is a sensitive issue, another negative implication is that patients who see healthcare providers for one concern may not appreciate a shift in topic. Furthermore, as illustrated in the dialogue below, if providers are lacking confidence or interest in addressing weight, it becomes easier to passively avoid doing so. As we see, if providers gain confidence they may be empowered to take opportunities to work it into their practice.

Nurse 7: I honestly would shy away because I feel like it's a big topic and so if I'm already behind and that's not what the person was there for to begin with, I probably won't even bring it up to be honest

Interviewer: And that was my next question, do you routinely ask patients about their weight?

Nurse 7: Usually I only do at completes or patients who, if it's . . . if I'm seeing them for something diabetic or hypertension or lipids but if I'm seeing them for asthma, then I'm probably not going to bring it up for that specific time.

Interviewer: When it does come up, how confident are you at discussing . . . the root causes of obesity and the process of how to address it?

Nurse 7: I think I, I feel more comfortable now that I have a little, I just honestly didn't have any real good framework or tools prior to so I feel more confident now but like I said I haven't really had much chance to employ it so but I feel like I, I have way more information and I have a better understanding of the root causes than I did before.

On the other hand, the embedded nature of obesity also provides many opportunities for weight management encounters. As noted by the participants, operating within primary care offers ample opportunity to build long-term relationships with patients, facilitating (i) multiple starting points for weight discussions; (ii) the ability to assess and wait for patient readiness; and (iii) the ability to establish a foundation for weight management as linked to numerous

health conditions or life stages. Primary care also opens an opportunity to focus on weight gain prevention as healthcare providers are in a position to anticipate weight gain regardless of the patients initial weight (through monitoring trends, assessing medications, discussing lifestyle changes or anticipated physiological changes).

I can be patient too and I can expect things to change now and I try to slow myself down and say you know it's going to take a while so I think that's the thing, the most difficult thing is to realize that you might not be producing results right away but if you're changing, creating a mindset that's different, that doesn't always show but you're, you're changing, you're sort of planting some kind of seeds and that we should regard that as a success as well. (Nurse 5)

Yeah so and I have had patients that have told me you know what I, at this point in my life there's too much going on, this is not a, this is not a focus for me right now so then we just, we focus on something that I can maybe help them out with or they'll come back when they're ready. (Nurse 12)

As a facilitator, the embedded nature of weight management can shift knowledge translation or training efforts towards addressing weight within various contexts (pregnancy, annual check-ups, arthritis, heart conditions, etc.) and can encourage interdisciplinary collaboration as multiple opportunities for addressing weight challenges indirectly open up. For example, during the 5AsT intervention, many providers expressed a realization that mental health workers, through treating depression, have a key role to play in aiding patients with weight management. One mental health worker stated she had an 'ah ha!' moment in recognizing her role as part of a team in weight management. This role however, relates to other conditions as is seen in the below extract.

We're working on assertiveness training, we're working on managing her mood, those types of things which it all kind of impacts, and I certainly support you know her, increasing her physical activity, you know we address some of those types of things, not necessarily on the weight. (Mental health worker 5)

Discussion

A key observation in this study was that 5AsT interdisciplinary healthcare providers often precluded the idea that weight management should take place in discreet visits. Instead, they described the issue of weight as appearing within many different types of patient visits, thus undermining our assumptions of how weight management was taking place. While this is certainly the case for the participants in 5AsT, it seems probable this is also the reality in

other primary care contexts. In conducting interventions that aim to shift the practices of healthcare providers, it is imperative that researchers work within and respect the reality of practitioners' lived clinical experience, as well as the presenting nature of the condition itself rather than how it ideally presents.

Recognizing and addressing the concept of embeddedness within interventions aimed at weight management or knowledge translation efforts, grasps a missed opportunity of patient care and may avoid a potential negative influence on research outcomes. At best, this issue was a missed opportunity of care by many providers, and at worst was a source of avoidance and a factor undermining the efficacy of weight management tools and approaches. The assumption of a discreet weight management visit misses a fundamental reality of the primary care environment; that symptoms and illnesses are often entwined with each other.

This finding is in line with current initiatives that aim to address obesity in a holistic manner. For example, Making Every Contact Count (MECC) is a model put forward by the National Institute for Health and Care Excellence in the United Kingdom (25). MECC emphasizes the need to take advantage of each opportunity to bring up key health-related issues, whether or not they are the focus of a particular visit. MECC Health Guidance #42 deals specifically with obesity and recommends a systems wide approach that among other things integrates action on obesity into initiatives for cardiovascular disease, cancers and diabetes (26).

However, such initiatives often call for increased provider training around obesity, on which there is a paucity of evidence. Lack of training on weight management has been found as a barrier to provider behaviour change (27), and there is some evidence that provider interventions can increase confidence and provider belief in their adequacy to provide weight management support (28–30). While such initiatives are important, their outcomes can be mixed (31). For example, counterweight programmes deployed in primary care in the United Kingdom have resulted in weight loss in patients of participating providers (4,32,33). In contrast, Flodgren *et al.* (12) found that the results of the few RCTs that looked at the effect of provider-level interventions on weight loss in obese patients have not been significant. Dwamena *et al.* (34) have a similar tentative conclusion, holding that while interventions directed at providers have a positive effect on provider change, this may not necessarily translate to positive patient outcomes.

The correlation between increased weight and many illnesses is well established (6,35–38); weight impacts health and vice versa, and therefore, these conversations do need to occur with patients. This is particularly true as the physiology of obesity means that weight loss is extremely difficult, and therefore an emphasis on prevention is

crucial. However, training needs to reflect how the issue of obesity actually presents clinically; for better or worse weight is not often reason enough for a patient visit in and of itself. Provider-focused initiatives need to build off of models which take a holistic approach such as 5AsT, or within initiatives such as MECC, and the outcome measures for these initiatives must be appropriate.

Furthermore, the embedded nature of obesity management has potential to impact reporting accuracy and evaluation measures of obesity interventions in primary practice. Firstly, following the 5As approach, patients may refuse to discuss weight when asked by a provider; asking, however, opens an opportunity for future discussion when or if the patient is ready and while unrecorded, is a positive change. Secondly, a diabetes visit (or any other type of encounter) that discusses weight may be recorded as a diabetes visit even though the provider has addressed weight with that patient. Thirdly, suggested treatments or approaches that the patient has agreed to take, for examples sleep apnea treatment with CPAP, may impact their weight in a positive manner, but were given for alternate reasons may not be recorded as a weight management intervention.

The embedded nature of weight management within this particular research context was a finding rather than a focus of research. As such, this study is limited in our ability to evaluate the extent to which this issue influenced other reporting measures. Furthermore, this study did not include the input of physicians and worked with a relatively small group of interdisciplinary providers. These were the limits set by the nature of our collaboration with the PCN partner. Furthermore, the PCN was in a well-established urban centre, which ties these findings to a very specific context. Future exploration of the reach of this issue will need to include broader interdisciplinary input and specific mechanisms for defining and measuring the extent of weight discussions within other types of visits.

Despite these limitations, our findings offer important opportunities for improving obesity management in primary care practice. Rather than attempting to promote discreet obesity management visits, it may be far more effective for weight management to be placed in a wide range of routine clinical encounters for other conditions. Thus, it is evident that a wide range of providers will need (i) the knowledge to address weight management from various starting points (i.e. as related to comorbidities); (ii) the confidence and ability to allow for existing approaches or tools to be flexibly used in ways that are appropriate in various circumstances; (iii) knowledge of a patient-centred approach, which emphasizes relationship building and meeting patients where they are at in terms of personal behaviour change, thus allowing for indirect focus on factors that can influence weight rather than weight directly; and (iv) tools that are either highly adaptable, or which facilitate discussion in specific circumstance.

Conclusion

In the 5AsT context of interdisciplinary providers working within primary care, weight was most often presented as an issue within other types of visits. As such, providers felt it was at times inappropriate to address weight, or that the time within that visit was limited. Thus, in this context, the reach of tools, approaches or interventions that assume a discreet weight management visit may be limited. Furthermore, this issue of embeddedness increases the ease by which providers may avoid the topic if their interest, confidence or ability is not sufficiently strong.

However, embeddedness may be reformulated as an advantage when directly addressed. Primary care offers ample repeat patient visits to establish a longitudinal care relationship, beginning a conversation and reassessing progress over time within a holistic focus of overall health and wellness. Adaptable tools and approaches can allow healthcare providers to discuss weight within many types of visits. Existing approaches or interventions that assume discreet visits may need to be revised if similar findings were identified in other primary care environments.

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Author contributions

DCS, AS, JA, AAO, AMO are responsible for study design, JA, AAO, AMO and DCS for data collection, JA conducted analysis with review support from DCS, AAO, and AMO. JA wrote the initial manuscript with input from DCS, AS, AAO and AMO.

Conflict of Interest Statement

Drs. Campbell-Scherer, J. Asselin, A.M. Osunlana, A.A. Ogunleye have nothing to disclose. Dr. Sharma has served as a consultant and/or speaker for Novo Nordisk, Zafgen, Ethicon, Vivus and Takeda.

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