Weight Loss Interventions for Overweight and Obese Patients in Primary Care: a literature review

Abstract

Objective; to identify which weight loss interventions are best delivered through Primary Care to achieve beneficial outcomes for patients and practitioners.

Methods; A literature search was conducted using online databases; Academic Search Complete, CINAHL complete, Inter nurse, Medline Complete, Pub Med, Trip, Psych-Info & Web of Science. The search was limited to peer reviewed, english language papers published between 2007-2017.

Findings; Three core themes emerged from the literature; recruitment of participants, attrition rates and the effects of intervention. The intervention which utilised a commercial provider yielded the highest percentage (60%) of patients who lost a clinically significant 5% body weight. Mean attrition rates between studies were below 30% average at 23.87% and males were underrepresented in recruitment.

Conclusion. Commercial providers can assist PC with the burden related to obesity. In addition training is required to support and encourage PC practitioners to manage weight related interactions with their patients. Male underrepresentation could be decreased by forming male specific services and further research into mechanisms behind attrition such as motivation are recommended.

Introduction

In the last few decades the prevalence of non-communicable obesity related diseases has become a huge burden to 21st century health care (WHO 2014). In the United Kingdom, 58% of women and 65% of men are overweight or obese (Health Survey England, 2014). National recommendations suggest that Primary Care is ideally placed to tackle the increasing obesity crisis (National Institute for Clinical Excellence 2014), and facilitate treatments on a wide scale (Ard 2015). Many of the comorbidities associated with obesity are managed in PC and any successful interventions could have a positive impact on the current challenges faced by Primary Care providers (Ard 2015). However, some research suggests that primary care staff feel ill-equipped to deal with the demands and complexity's that obesity brings (Sturgess et al 2016, Jansen et al 2015), especially considering the wide variance of available interventions and how they are delivered. The aim of the review was to assess which Primary Care weight loss interventions achieved the most significant health benefits.

Method

Literature searches were carried out through databases Academic Search Complete, CINAHL complete, Inter nurse, Medline Complete, Pub Med, Trip, Psych-Info & Web of Science. Search terms were informed using the PICOS Framework. *Population*; Obes* OR High BMI OR "over - weight" OR "High Body Mass index", *Intervention*; Intervention OR treatment* OR strategi* OR "best practice" OR "weight management", *Control*; "usual care OR "standard care". *Outcome*; "weight reduction". *Setting*; "Primary care" OR "General practice" OR GP surgeries OR community, where 1677 papers were found. Limiters were added for date range (2007 -2017), full text, peer reviewed, and English language, which reduced to 986 journals. The first 150 were screened in order of relevance by title and abstract from all databases except Trip, where 50 were screened applying the same method.Exclusion criteria were children or paediatric, diseases named in the title, opinion

reviews, patient, or practitioner perspectives. 173 records were excluded, leaving 28 for further screening. Fifteen further papers were excluded due to not being original research, leaving 13 for quality control. Five papers were excluded on the basis that they were pilot studies or cohort studies leaving 8 papers included in the review

All studies were randomised controlled trials, bar one, which was an evaluation of a longitudinal study. All studies were carried out with primary care patients mainly in the United Kingdom (UK) (Little et al 2016, Aveyard et al 2016, Beeken et al 2017, Parretti et al 2015, Reckless 2008), one recruited German, UK and Australian participants (Jebb et al 2011), one based in USA (Daubenmier et al 2016) and one of Dutch origin (Molenaar et al 2009). All participants had Body Mass Index (BMI) ≥ 30 except for two studies who used patients with BMI of 27-35kg (Jebb et al 2011) and 28-35kg (Molenaar et al 2009). Mean BMI ranged between 31.3 (Molenaar et al 2009) and 37 (Reckless 2008).

Following analysis of the literature three themes emerged from the literature; recruitment of participants, attrition rates and the effects of intervention. The interventions and outcomes of each study are shown in Table1.

Findings

Recruitment of participants

The most common recruitment method involved the use of primary care databases to generate random samples of patients, inviting them by letter to take part (Parretti et al. 2015, Beeken et al 2017, Little et al 2016,). Other methods involved opportunistically approaching patients face to face, during normal appointments within their practices (Reckless 2008, Aveyard 2016). Both approaches give access to a high number of participants, however seven out of the eight studies indicated a

higher percentage of women participants than men; mean difference being 35% men to 65% women. This is congruent with more women having their weight recorded and attending primary care settingsthan men (Counterweight Project team 2004). The difference was wider when other countries were involved, (Australia and Germany) 12% to 88% (Jebb et al 2011) and USA 20% to 80% (Daubenmier et al 2016) which indicate that these trends continue, on a wider scale.

Response rates did vary, but the smaller study, where participants were invited by their own GP, yielded the highest response at 97% (Parretti et al 2015). Aveyard et al (2016) also had a far higher response than other studies at 82.9% with an opportunistic face to face approach. The lowest responses came from Beeken et al (2017) at 22%, Molenaar et al (2010) at 30% and Little et al (2015) at 38% whom all employed a mass scale approach

Attrition Rates and contact time.

Adherence within weight loss studies is historically poor with dissonance being shown before an intervention has begun (Goldberg & Kiernan 2005). Reported rates at 12 months were 25% for Molenaar et al (2009), Aveyard et al (2015), Reckless (2008), 19% for Little et al (2015) and Daubenmier et al (2016), and highest for Jebb et al (2011) at 42%. As one would predict, this increased with length of time, where Beeken et al (2017) and Reckless (2008) lost 42% and 46% of their participants respectively at 24 months, in comparison to 11% for Parretti et al (2015) having the shortest study time at 12 weeks with the smallest sample. Mean rate between studies was 23.87% which is below the general average of 30% (Little et al 2015).

The amount of contact or commitment time participants had with the intervention may also be linked to attrition. Those that offered more intense contact of weekly support, be it 12 weeks or 12 months, (Aveyard et al 2016, Reckless 2008 & Jebb et al 2011), had average to higher drop out than other studies. Lowest rates of 19% for Daubenmier et al (2016) and Little et al (2015) had less invasive

contact over a six-month period. Interestingly, Parretti et al (2015) who had the lowest attrition rate also had the least amount, with one contact at 2 weeks to check on participant adherence. Little et al (2015) had a small monetary reward at 12 months which may have influenced participants to stay in the study. Other factors linked to attrition were age where completers were older than non-completers (Molenaar et al 2009, Daubenmier et al 2016, Jebb et al 2011) and country, where the UK had a higher percentage of attrition (64%) than other countries (Jebb et al 2011).

Effects of Intervention

Primary outcomes of 5% or 10% weight loss were reported at 12 months by majority of studies; 25% of the male participants and 12% of the female participants (Aveyard et al 2016), 32% (Molenaar et al 2009), 30.7% (Reckless et al 2008), 30.5% mean between 2 interventions (Little et al 2015), 16% (Beeken et al 2017), 27% at 12 weeks (Paretti et al 2009). Highest being Jebb et al (2011) whom had 60% of participants losing ≥5% of their original weight. Two studies had the longest follow up duration where 5% weight loss was maintained or increased at 24months; Reckless (2008) at 31.9% and Beeken et al (2017) at 27%, however, 26% of Beeken's (2017) control group also achieved 5% weight loss during this time. Nonsignificant results for 5% weight loss were reported for Daubenmier et al (2016) however there was a difference of 1.7kg favouring the intervention group at 18 months follow up. Daubenmier et al (2016) had better effects when considering secondary outcomes of decreases in blood pressure, glucose and low-density lipoprotein cholesterol levels and increased ratio of high density lipoprotein cholesterol as did Reckless (2008), Jebb et al (2011), and Beeken et al (2017). Waist circumference was acknowledged as an important factor in reducing abdominal adipose tissue (Pischon et al 2008) with decreases in measurement reported to be in line with weight lost for Molenaar et al (2009), Beeken et al (2017), Jebb et al (2011), and Duabenmier et al (2009). Other secondary factors emphasised the perceived appropriateness and helpfulness of the intervention to patients (Aveyard et al 2016), the effectiveness of the instructors in delivering the

intervention (Daubenmier et al 2016) and focus on staff training to increase nurses and GP's confidence in raising the subject with their patients, to make interventions applicable in routine practice (Reckless 2008, Aveyard et al 2015). Acknowledgement of other factors that may have influenced weight loss, such as male female differences (Reckless 2008), additional activities to the intervention such as exercise or self -help, (Aveyard et al 2016, Little et al 2016) and pharmacology (Reckless 2008) were reported but not factored into analysis.

Discussion

This review was conducted to find the most beneficial way of losing weight in Primary Care (PC), Jebb et al (2011) had the highest percentage of participants (60% to 32% standard care) to achieve a clinically beneficial 5% weight loss, mean loss being 6.65 kilos, via attending a commercial weight loss provider. Commercial weight loss providers are recommended by NICE (2014) for referral of Primary Care patients, and have proven effectiveness (Ahern et al 2011, Lavin et al 2006). However, free sessions are currently only funded for 12 weeks through PC (NICE 2014) and research suggests this may be an under used resource as PC staff are not discussing the subject of weight loss with their patients in the first place (Michie 2007). Jebb et al (2011) provided free access to Weight Watchers (WW) for a 12 -month period, providing an evidenced based lifestyle and behavioural weight loss plan, including face to face group sessions and digital access, offering support outside of the group sessions as well as a phone App. More recent research advocated the effectiveness of a 52-week referral against the current NICE recommendation of a 12 -week programme, reporting increased weight loss and other clinical benefits at 24 months follow up (Ahern et al 2017). Other commercial providers have been studied and have proven effectiveness at 12 weeks, however only Slimming World has proven as effective as WW in the longer term and thus could be offered as an alternative option through PC (Madigan et al 2014).

The under-representation of men in this review is not surprising as literature suggest that this is a common theme (, Tsai et al 2010, Counterweight project team 2004) which extends internationally, with little research into why this underrepresentation exists or the strategies used to recruit men (Pagoto et al 2012). One reason may be that men are possibly not as motivated to lose weight as women. Their perception of their weight differs from women, in that they are less likely to perceive themselves as overweight relative to women of the same BMI (Kumanyika 2008, Dorsey et al 2009). Social norms about obesity also differ between the sexes. Women experience more societal pressure to lose weight, which may contribute to their overrepresentation in weight loss trials (Sypeck 2004). Research suggest that males lose weight faster than women with little evidence that they should adopt different strategies (Williams et al 2014) but the problem lies in general inequalities in men's health and difficulties in engaging men with health services in the first place (Robertson & White 2011) However Robinson et al (2013) revealed that with the right setting and approach, focusing on male specific interests and language, increases the likelihood of men engaging with health services and adopting healthier perspectives. An initiative in the north of England called Men V's Fat (www.manvfat.com) operate a male inclusive service, and currently have 34,000 members with a 95% success in losing weight (Shanahan 2015). If this style of intervention benefits men in the fight against obesity, then PC providers could further research partnership working with local community groups to bridge that service gap.

An average 31.6% participants between studies lost 5% of their weight indicating that 69.4% did not, highlighting the difficulty for individuals in reducing their weight. Although the most intense interventions of weekly contact gained better outcomes (Reckless 2008, Jebb et al 2011) they also resulted in higher attrition. Historically factors relating to attrition are neither consistently reported or comprehensively explored in weight loss literature (Moroshko et al 2011) possibly due to the heterogeneity of factors involved (Hadziabdic et al 2015). However, it is thought that initial weight

loss within the first month is the strongest predictor of weight loss at 12 months (Hadziabdic et al 2015) which supports the importance of shorter term interventions as a good starting point for individuals in losing weight. Little et al (2015) had lower attrition at 19%, which may indicate the ease and benefits of using a web based intervention for people trying to lose weight. The effectiveness of web based interventions alone, have shown mixed success and the need for added personal support (Kodana et al 2012, Neve et al 2010). Little et al (2015) found that the correct balance of personal and remote support, in additional telephone calls from the practice nurse, be more effective than remote and face to face support. This indicates a viable and cost-effective way forward for Primary Care and weight loss management that does not involve high levels of costly personal support, and which patients who find weekly access to group meetings too intense, maybe more likely to adhere to.

Implications for practice

It is important to consider cost when discussing the implications for practice The reviewed studies could not comment of long term effectiveness as per NICE recommendations, suggesting that a cost of £100 per kilo lost, likely to be cost effective if maintained over a lifetime. Commercial providers have been found to be more cost effective than standard care when considered over a lifetime (Fuller et al 2014), which was further demonstrated by Ahern et al (2017) whom factored the prevention of developing co-morbidities into their analysis. By comparison to the 12 weeks programme the 52 -week programme resulted in 1786 fewer cases of disease, at a saving of approximately £4·9 million per 100,000 individuals. This may provide NICE with evidence to increase the length of funding for patients whom have higher BMI and would not achieve significant health benefits within a 12-week time frame.

The resistance of nurses and GP's in raising the subject of weight loss, highlights the need for staff training, but interventions aimed at changing health care professionals' behaviour to support patients with obesity are lacking (Flodgren et al 2010, Deitz et al 2015). Aveyard et al (2016) based their intervention that an offer of help to change, was more motivating than advice to do so (Aveyard et al 2012). After training in delivering a 30 second interaction of offers of support to lose weight, 81% of their patients found this helpful and appropriate, and staff felt increased competence in their ability to broach the subject. However only 40% of 772 who accepted support, attended, indicating that people find it hard to initially reject a face to face offer of support, and the other mechanisms exist in their decision around acting upon it. This is also apparent from the poor response rates identified within this study, which requires further discussion beyond the scope of this review.

Reckless' (2008) evaluation of the Counter Weight project reported that with comprehensive training from weight management consultants, nurses were able to deliver an effective in-house weight loss service that increased nurses' confidence and competence in delivering management sessions as part of their normal appointment times. The project was reported as a protocol for continuous improvement for PC to tackle the obesity crisis, and achieved positive clinical outcomes for patients who preferred to be supported by their PC provider, as opposed to referral to a commercial provider. However, 7 years on and The Five Year Forward View (NHS 2014) is still making recommendations that the training of front line staff and availability of weight management services be increased, otherwise the plan will be severely undermined. Thus, it appears there may be some way to go before the obesity crisis can be managed effectively.

Conclusion

Effective weight loss in primary care can be achieved and commercial providers can help to alleviate some of the burden experienced by primary care practitioners. Nurses need to develop skills and confidence in discussing the sensitive issue of obesity with their patients. Enhanced staff

training could see more beneficial in-house weight management programmes alongside utilisation of existing arrangements with commercial weight loss providers. In addition further research into partnership working to develop community based services specific to men, and possibilities around offering mixed web based and personal support interventions are required. Primary care remains best placed to impact on the obesity epidemic and primary care nurses are at the forefront of this.

Key Points

- Primary care is best placed to have an impact on the obesity epidemic
- Nurses need to be confident in their practice to communicate with; and to encourage and support obese patients to engage in lifestyle changes.
- Commercial weight loss providers have a role to play in managing the obesity epidemic.
- Male patients are still not seeking support or even recognising that their obesity is a significant problem.

Key words

Overweight, obesity, Primary Care, Weight loss, Body weight

Reflective Questions

- Reflecting on your own practice, do you feel confident speaking to overweight and obese patients about their weight.
- Why are male patients less likely to engage in weight loss programmes?

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