



Original article

What do individuals with morbid obesity report as a usual dietary intake? A narrative review of available evidence



Cathy M. Harbury^{a, b, d, *}, Elisabeth E. Verbruggen^a, Robin Callister^{b, c}, Clare E. Collins^{a, b}

^a School of Health Sciences, Faculty of Health and Medicine, University of Newcastle, Newcastle, New South Wales, Australia

^b Priority Research Centre in Physical Activity and Nutrition, University of Newcastle, Newcastle, New South Wales, Australia

^c School of Biomedical Sciences and Pharmacy, Faculty of Health and Medicine, University of Newcastle, Newcastle, New South Wales, Australia

^d Nutrition and Dietetic Department, John Hunter Hospital, Lookout Road, New Lambton, New South Wales, Australia

ARTICLE INFO

Article history:

Received 29 September 2015

Accepted 10 February 2016

Keywords:

Morbid obesity

Dietary intake

Adult

Systematic review

Bariatric surgery

SUMMARY

Background: In several developed countries, as obesity prevalence doubles it has quadrupled for morbid obesity ($\text{BMI} \geq 40 \text{ kgm}^{-2}$). As more individuals with morbid obesity present for weight loss treatment there is a greater need to understand their dietary habits. No reviews were found in the literature, therefore this systematic review aims to identify and describe the existing evidence on the usual dietary intake of individuals with morbid obesity including those from a general population and those seeking treatment such as weight loss surgery.

Methods: A literature search of ten databases from 1980 to June 2014 was conducted to identify original research of adults with morbid obesity (aged 18–60 years) that reported a usual dietary intake.

Results: Ten studies met all inclusion criteria and reported energy intake, most reported macronutrient composition, two assessed micronutrient intake, and one reported food-based outcomes. Other dietary outcomes were related to surgical intervention. The most plausible energy intake data suggest high intakes, $>4000 \text{ Kcal/day}$ for those weight stable at the highest levels of morbid obesity (up to $\text{BMI} 97 \text{ kgm}^{-2}$). Fat intakes are also high, around 40% of energy intake and up to 57% for some individuals. Suboptimal intakes of iron and calcium are reported.

Conclusion: This review draws attention to a limited evidence base, offers preliminary insight suggesting individuals with morbid obesity are prone to consuming poor quality diets similar to those reported for obese populations, and highlights challenges for future research.

© 2016 European Society for Clinical Nutrition and Metabolism. Published by Elsevier Ltd. All rights reserved.

1. Introduction

In several developed countries, as obesity prevalence doubles morbid obesity (defined as a body mass index $\geq 40 \text{ kgm}^{-2}$) has quadrupled [1,2], resulting in more individuals with morbid obesity presenting for weight loss treatment [3]. The morbidity associated with carrying excessive adiposity is recognized by treatment guidelines, as those individuals with a $\text{BMI} \geq 40 \text{ kgm}^{-2}$ are eligible

for invasive surgical intervention without co-existing medical problems, unlike those individuals with lower BMI's [4]. Treatment guidelines indicate that all modalities of weight loss intervention should include nutrition therapy and in less severe obesity research has focused on investigating lifestyle approaches [5] rather than the effectiveness of surgical intervention for clinically significant obesity (defined as a $\text{BMI} \geq 35 \text{ kgm}^{-2}$ with obesity-related co-morbid conditions) [6]. Consequently, the aims of nutrition research have differed for these two populations, and it appears that less has been published about the dietary intake of those with the highest level of obesity. This is despite a high prevalence of nutritional deficiencies identified in individuals with clinically significant obesity preparing for weight loss surgery [7–11], a propensity for nutrient deficiencies post-operatively [12–14] and recognition that poor dietary habits may be contributing to these deficiencies [11]. Furthermore it has been suggested that

* Corresponding author. HA12 Hunter Building, School of Health Sciences, Faculty of Health and Medicine, University of Newcastle, University Drive, Callaghan, Newcastle, New South Wales, 2308, Australia. Tel.: +61 2 4947 8177; fax: +61 2 4947 8277.

E-mail addresses: Cathy.Harbury@uon.edu.au (C.M. Harbury), lisaverbruggen@hotmail.com (E.E. Verbruggen), robin.callister@newcastle.edu.au (R. Callister), clare.collins@newcastle.edu.au (C.E. Collins).

permanent change in eating behaviour is required to facilitate reductions in energy intake for long-term weight management [15]. It is reasonable to hypothesise that individuals with the poorest quality diet are those most vulnerable and at risk of remaining morbidly obese and with co-morbid health conditions, even after surgical interventions. Therefore treatment optimisation relies on understanding the usual dietary patterns of individuals with morbid obesity.

A preliminary search of the literature found no reviews that summarized the usual dietary intake of individuals with morbid obesity, either those that were seeking treatment or those within the general community. Therefore the aim of this research was to develop a review protocol and undertake the first systematic review to identify and describe the existing evidence on the usual dietary intake of the morbidly obese, including both individuals from a general population and those seeking treatment such as weight loss surgery. In a novel approach, this review collates pre-surgery dietary data to represent usual intake due to a lack of alternative evidence. The findings of this review will inform understanding of the reported dietary intake of individuals with morbid obesity and identify knowledge gaps to guide future research to enhance current weight loss treatments and prevention strategies.

2. Methods

This systematic review protocol was registered in Prospero in May 2013. The protocol can be accessed at <http://www.crd.york.ac.uk/PROSPERO> using registration number CRD42013004526. Research ethics approval was not required for this review.

2.1. Selection criteria

Inclusion criteria for studies were original research in human adults aged between 18 and 60 years, with a body mass index $\geq 40 \text{ kg m}^{-2}$, that reported at least one measure of habitual dietary intake as an outcome (i.e., energy, macro- and/or micronutrient intakes, grams of food groups/items, frequency of meals/snacks). In studies where not all participants had a BMI $\geq 40 \text{ kg m}^{-2}$, an arbitrary cut-off was set to exclude studies where <80% of the total participants had a BMI $\geq 40 \text{ kg m}^{-2}$. Other criteria for exclusion included reporting only eating behaviours or dietary intakes during or following an intervention (e.g., post weight loss surgery). Corresponding authors were contacted in cases where eligibility criteria, such as age range and the percentage of subjects with a BMI $\geq 40 \text{ kg m}^{-2}$, were not reported explicitly, and studies excluded if the eligibility criteria were not met or the corresponding author was unable to provide the required detail. For studies published more than 15 years previous, only those authors that could be identified by an Internet search were contacted.

2.2. Search strategy

The search strategy identified published studies in the English language from 1980 to June 2014. Search strategy keywords were identified by an initial limited search. Individual searches were conducted for all the identified keywords for BMI $\geq 40 \text{ kg m}^{-2}$ and habitual intake, prior to combining these searches. This second search was undertaken across 10 databases: The Cochrane library, MEDLINE, EMBASE, CINAHL, Informat Health Collection, Web of Science, Scopus, PsycINFO, Trove, and Dissertation & Abstracts. An example of the full search strategy, including keywords, is provided in Table 1.

Table 1

An example of the full search strategy, using the Medline database.

Set no.	Search terms	Medline results
1	Obesity, Morbid/	9799
2	(morbid* adj3 obes*).mp	13,177
3	Super obes*.mp	247
4	Super super obes*.mp	38
5	Significant obes*.mp	83
6	(super adj3 obes*).mp	270
7	(bmi adj5 "40").mp	1353
8	(extreme* adj3 obes*).mp	1110
9	(severe* adj3 obes*).mp	3419
10	1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9	16,933
11	Nutrient intake*.mp	5485
12	Diet/or diet.mp	271,612
13	Food group*.mp	2331
14	Energy intake.mp. or Energy Intake/	34,642
15	Food habits/	18,654
16	Diet*.mp	457,224
17	Nutritional intake*.mp	1517
18	Food preferences/or food preference*.mp	9384
19	(eating adj (behaviour* or behaviour)).mp	3280
20	Feeding behavior/	35,531
21	11 or 12 or 13 or 14 or 15 or 16 or 17 or 18	505,215
22	10 and 21	2431
23	Limit 22 to English language	2117
24	Limit 24 to humans	1949
25	Limit 24 to yr = "1980-Current"	1916
26	Limit 25 to "all adult (19 plus years)"	1266

2.3. Selection strategy and procedures

Two reviewers independently reviewed all studies. Titles and abstracts were used to determine relevance. Full articles were retrieved for those studies that met the inclusion criteria or where it was unclear, and relevance checked. A final decision was sought from a third reviewer when eligibility remained uncertain.

2.4. Critical appraisal

The methodological quality of all included studies was independently assessed by two reviewers using three procedures. The National Health and Medical Research Council (NHMRC) levels of evidence guidelines were used to grade each study design [16]. Methodological quality of included studies was assessed using the American Dietetic Association critical appraisal tool to assign an overall rating to each study [17]. In the case of disagreement consensus was achieved by joint review. The quality of dietary intake methods and reporting within each study was graded using a tool adapted from Burrows et al. (2012) [18].

2.5. Data extraction and analysis

Data extraction was completed by one investigator and checked for accuracy by a second. Standardised tables were used to collate data relating to study characteristics, design and quality, dietary methodology, intake outcomes and reporting quality.

3. Results

3.1. General description of included studies

Of 3249 studies identified full texts were retrieved for 344 papers, with 11 papers (10 studies) meeting all inclusion criteria (Fig. 1). Of the 10 studies, seven were observational [10,19–22], including one retrospective study [23] and one case report of a single subject [24], and three studies were experimental randomized control trials (RCT) [25–28]. Due to the low number of

Download English Version:

<https://daneshyari.com/en/article/2690313>

Download Persian Version:

<https://daneshyari.com/article/2690313>

[Daneshyari.com](https://daneshyari.com)