Article

Health professionals’ and health professional trainees’ views on addictive eating behaviours: A cross sectional survey

Burrows T 1, 2\* Verdejo-Garcia A 3, Carter A 3, Brown R.M 4, Andrews Z.B 4, 5, Dayas C.V 6, 7, Hardman C.A 8, Loxton N 9, 10, Sumithran P 11, 12 and Whatnall M 1,2

1 Priority Research Centre for Physical Activity and Nutrition, University of Newcastle, Callaghan, NSW 2308, Australia; tracy.burrows@newcastle.edu.au (T.B), megan.whatnall@newcastle.edu.au (M.W)

2 School of Health Sciences, Faculty of Health and Medicine, University of Newcastle, Callaghan, NSW 2308, Australia

3 Turner Institute for Brain and Mental Health, Monash University, Clayton, Victoria, 3800, Australia; antonio.verdejo@monash.edu (A.V-G), adrian.carter@monash.edu (A.C)

4 Florey Institute of Neuroscience and Mental Health, University of Melbourne, Parkville, Victoria, 3052, Australia; robyn.brown@florey.edu.au (R.M.B)

5 Monash Biomedicine Discovery Institute and Department of Physiology, Monash University, Clayton, Victoria, 3800, Australia; zane.andrews@monash.edu (Z.B.A)

6 School of Biomedical Sciences & Pharmacy, Faculty of Health and Medicine, University of Newcastle, Callaghan, NSW 2308, Australia; christopher.dayas@newcastle.edu.au (C.V.D)

7 Hunter Medical Research Institute (HMRI), New Lambton Heights, NSW 2305, Australia

8 Department of Psychology, Institute of Population Health, University of Liverpool, L69 7ZA, United Kingdom; cah@liverpool.ac.uk (C.A.H)

9 School of Applied Psychology, Griffith University, Brisbane 4122, Queensland, Australia; n.loxton@griffith.edu.au (N.L)

10 Centre for Youth Substance Abuse Research, University of Queensland, Brisbane 4072, Queensland, Australia

11 Department of Medicine (Austin), University of Melbourne, Melbourne, Australia; priyas@unimelb.edu.au (P.S)

12 Department of Endocrinology, Austin Health, Melbourne, Australia

**\*** Correspondence: tracy.burrows@newcastle.edu.au

Received: date; Accepted: date; Published: date

**Abstract:** Despite increasing research on the concept of addictive eating, there is currently no published evidence on the views of health professionals who potentially consult with patients presenting with addictive eating behaviours, or of students training to become health professionals. This study aimed to explore the views and understanding of addictive eating behaviours among health professionals and health professionals in training, and to identify potential gaps in professional development training. An international online cross-sectional survey was conducted in February-April 2020. The survey (70 questions, six key areas) assessed participants opinions and clinical experience of addictive eating, opinions on control, responsibility and stigma relating to addictive eating*,* and knowledge of addictive eating and opinions on professional development training. In total 142 health professionals and 33 health professionals in training completed the survey (mean age 38.1±12.5 years, 65% from Australia/16% from the UK, 47% dietitians/16% psychologists). Most participants (n=126, 72%) reported that they have been asked by individuals about addictive eating. Half of the participants reported that they consider the term food addiction to be stigmatising for individuals (n=88). Sixty percent (n=105) reported that they were interested/very interested in receiving addictive eating training, with the top two preferred formats being online and self-paced, and face-to-face. These results demonstrate that addictive eating is supported by health professionals as they consult with patients presenting with this, which supports the views of the general community and demonstrates a need for health professional training.

**Keywords:** addictive eating; food addiction; health professional; clinician

1. Introduction

Addictive eating (i.e. an abnormal, recurrent pattern of excessive food consumption despite negative consequences) [1], often referred to as food addiction, is not currently recognised in the Diagnostic and Statistical Manual of Mental Disorders as a distinct diagnosis from other eating and substance use disorders. There exists an ongoing scientific debate in this regard, which centres around whether the symptoms of addictive eating are covered appropriately under other recognised disorders, namely binge eating disorder [2,3]. If addictive eating is a distinct disorder, the debate is also around whether it be considered a substance (i.e. food) addiction or a behavioural (i.e. eating) addiction, or on a spectrum of overeating [2,3]. Further, there is the question of what the addictive substance/s are or if it relates to the level of food processing [2,3]. Regardless of whether addictive eating should be recognised, 15-20% of the population report experiencing symptoms that align with addictive eating as determined by self-reported tools [4]. This is higher among certain groups, including females, those with binge eating disorder and other mental health conditions, and those with overweight and obesity [4]. Further, rates of self-perceived addictive eating among community samples range from 27% to 50% [5]. There is also widespread support from community samples that the concept of addictive eating exists [5,6]. For example, a survey of over 600 American and Australian adults reported that 86% believed certain foods may be addictive and 72% believed addictive eating is linked with an increased risk of obesity [6].

Unhealthy lifestyle behaviours, such as poorer dietary intake, physical inactivity, greater time spent sitting and poor sleep quality are associated with addictive eating [7,8]. This association extends to conditions such as depression, anxiety and overweight and obesity [9,10]. In terms of clinical management of addictive eating, the published evidence is scarce [11,12]. A recent systematic review conducted by Cassin et al. to assess psychosocial interventions for addictive eating identified only eight studies [12]. Of these, only two studies included individuals with addictive eating and interventions that specifically targeted addictive eating symptoms. The two interventions were abstinence-based (i.e. abstaining from overeating, snacking and/or from identified problem foods), while the remaining studies included an outcome measure of addictive eating in intervention studies targeting either bulimia nervosa or overweight and obesity. Additionally, all of the included studies were deemed to exhibit poor or fair methodological quality and most were pilot or feasibility studies. Importantly, the review was limited to psychosocial interventions and did not consider alternate options such as dietary advice alone. Overall, the review authors concluded that no effective psychosocial interventions currently exist for the treatment of addictive eating. There is however a high volume of self-help support groups for individuals with addictive eating [13]. A recent review of websites identified 13 online support groups for addictive eating, however only three of these involved credentialed health professionals [13]. Evidently, research exploring the clinical utility of recognising addictive eating as a diagnostic entity, and evidence-based best practices for treatment is limited.

There is currently no published evidence on the views of health professionals who likely consult with patients who report addictive eating behaviours, or of those training to become health professionals. Research should examine clinicians’ and future clinicians’ understanding of addictive eating, their support for it as a diagnostic category, and whether professional development training is needed regarding understanding and treating addictive eating. This work is critical to advancing the field of addictive eating in terms of treatment and informing best practice. The aims of this study were to explore the opinions and understanding of addictive eating behaviours among health professionals with experience in weight management and students undertaking relevant health professional training. The study also aimed to explore the needs and preferences for professional development training in addictive eating.

2. Materials and Methods

2.1. Study design

An international online cross-sectional survey was conducted. An online survey was used as a convenient method of completion for participants and to maximise the survey reach and response rate. The survey was hosted via Qualtrics (<https://www.qualtrics.com/au/>) and was open from 21st February to 27th April 2020. The survey took approximately 25 minutes to complete and was initially pilot tested among a sample of five health professionals and university students to assess for readability and comprehension. The survey consisted of 70 questions including demographic questions and questions across six key areas (opinions and clinical experience of addictive eating; opinions on control, responsibility and stigma relating to addictive eating;knowledge of addictive eating and opinions on professional development training; opinions on weight gain; treatment of disordered eating and overweight/obesity; and agreement with statements regarding addictive eating behaviours). This paper reports on the questions relating to opinions and clinical experience of addictive eating, opinions on control, responsibility and stigma relating to addictive eating, and knowledge of addictive eating and opinions on professional development training. Questions relating to the other key areas were outside the scope of the current paper (see Supplementary File). The survey questions used were developed by the research team for the purpose of this study. The survey was set up to require a response to each question before participants could progress to the next question, with the exception of the qualitative questions which were optional to complete. Survey logic was used so that only relevant questions were displayed to each participant based on their previous responses. The use of survey logic also limits participants being able to go back and change previous responses. The study conduct and reporting comply with the STROBE guidelines for cross-sectional studies [14]. All participants gave informed consent prior to completing the survey. Participation was voluntary and no incentives were offered for participation. Ethical approval for the study was obtained from the University of Newcastle Human Research Ethics Committee (H-2019-0349).

2.2. Participants and recruitment

Individuals were eligible to participate if they were a health professional with experience in management or research of overweight or obesity, or a student currently enrolled in health professional training at a university. Relevant disciplines included allied health professionals, medical professionals, psychologists, other health professionals, public health, nutrition or other health researcher, or university students training in one of these professions. University students of relevant disciplines were also included as they represent the next generation of health professionals. Individuals from any country were eligible to participate, however the survey was written in English. Health professionals and university students completed the same survey, however some of the survey questions were worded differently by asking health professionals about their practical experience and university students about their opinions. Additionally, the questions regarding experience in treating clients were only asked of health professionals. Recruitment was via convenience sampling and used a range of strategies. Email invitations were sent from the members of the research team to their networks of health professionals and students, which contained a link to the online survey. The survey was also advertised via posts from the research team on Twitter, a brief advertisement in the member e-newsletter of Dietitians Australia (professional body for Dietitians in Australia), and an advertisement to students was posted via the online learning management system at the University of Newcastle, Australia. All advertisements used the same recruitment materials and information which described the survey as a “**cross-sectional survey to identify the current understanding of addictive eating behaviours and if a need exists for professional development training.”**

*2.3. Measures*

2.3.1. Demographic characteristics

Demographic data collected included age, gender, country of residence, and highest qualification completed. Health professionals were also asked their occupation, primary work setting (e.g. hospital, private practice, research), the population group/life stage they primarily work with (e.g. adolescents, adults) and whether they provide advice to individuals with disordered eating or overweight/obesity. University students were also asked the degree for which they were currently studying.

2.3.2. Opinions and clinical experience of addictive eating

The survey included 14 questions about opinions and clinical experiences regarding addictive eating. Participants were asked whether they had encountered patients/individuals asking or speaking about addictive eating, their thoughts around whether people can develop compulsive eating patterns that resemble an addictive disorder and whether addictive eating exists *(yes, no or maybe)*. Of those who indicated that addictive eating does or may exist, participants were asked whether they think different populations may be more vulnerable. Of those who indicated that they provide advice to individuals with disordered eating or overweight/obesity, participants were asked what proportion of their clients may benefit from a specific treatment of addictive eating if available. Participants were also asked to rate their level of interest in addictive eating becoming a diagnostic term and a referral pathway being introduced for the treatment/management of addictive eating *(1/very interested to 5/not at all interested).* In terms of treatment for addictive eating, participants were asked their opinion on which health professionals would be best placed to identify and treat people with addictive eating, and which services they would be more/less likely to refer individuals to., as well as whether any particular sub-groups of overweight and obese people would benefit more from a diagnosis of addictive eating. Two open-ended questions were also asked of those who indicated that addictive eating does or may exist, including what they thought were the strengths and weaknesses of using the addictive eating concept to explain eating and weight to individuals.

2.3.3. Opinions on control, responsibility and stigma relating to addictive eating

Three questions were included relating to opinions on control and responsibility for eating and weight. Participants were asked to rate how much they think it is the responsibility of the individual with addictive eating to gain control over their eating, and weight status *(1/not responsible to 5/100% responsible)* and how much control they think individuals have over their eating and weight *(1/a great deal to 5/none at all).* Three questions were included relating to their opinions around the different terminology used for addictive eating and stigma. Participants were asked how well they think the term food addiction relates to the experiences of people with weight issues, whether they think the term food addiction is stigmatising, and to indicate which term (if any) they think is most appropriate to describe food addiction/addictive eating.

2.3.4. Knowledge of addictive eating and opinions on professional development training

Three questions asked about participants’ knowledge of addictive eating. Participants were asked what sources of information informed their understanding of addictive eating and to rate their current knowledge of addictive eating and their level of confidence in their knowledge. Six questions asked about participants’ professional development training needs and preferences. Participants were asked about what kinds of professional development training on addictive eating assessment and treatment would be needed, who should receive this training, and their preferred method of training delivery. They were also asked to rate their level of interest in receiving addictive eating training delivered online, whether this would be of interest to colleagues/peers, and whether individuals/clients would be interested in training/management/treatment delivered online.

2.4. Analysis

Data were analysed using Stata statistical software version 14.2. In total, 274 individuals accessed the online survey, of which 175 consented and completed all survey questions (i.e. 64% of those who accessed the survey). Of those that did not complete the survey (n=99), 14 opened the link/viewed the first page but did not start the survey, one did not provide consent and exited the survey, 15 filled in some of the demographics questions only, and the remaining 69 completed the demographics questions and some but not all of the rest of the survey. Quantitative data are reported as number and percentage for categorical variables and mean and standard deviation for continuous variables. Open response questions are described qualitatively. Qualitative data were analysed using a theoretical thematic analysis approach [15], including 1) identifying codes from the responses based on key words/phrases, 2) grouping codes into themes, 3) reviewing themes in relation to the contributing codes, and 4) defining and naming themes. One researcher initially conducted the thematic analysis, and this was checked by a second researcher with any discrepancies discussed and results amended. Themes are presented in order of most to least frequent/recurrent. Results for health professional and health professional trainee participants were compared using chi square tests for questions with mutually exclusive response options to determine whether these were significantly different. There were differences between responses for nine of the questions, however with further investigation these differences were driven by the large number of response options. As the pattern of the most common responses were similar between the two groups, and due to the small sample size of the health professionals in training, it was deemed appropriate to combine the responses for reporting (see Supplementary File for responses by group).

3. Results

3.1. Sample characteristics

Of the 175 participants, 81% (n=142) were health professionals and 19% (n=33) were university students (Table 1). The mean±SD age of participants was 38.1±12.5 years, the majority were female (n=150, 86%) and participants were from six different countries with most residing in Australia (n=113, 65%) or the UK (n=28, 16%). Among the health professional participants, the most common occupations were dietitian (n=66, 47%) and psychologist (n=23, 16%), with the highest proportion working in hospitals (n=39, 28%) and private practice (n=39, 28%), and working with population groups of adults 25-65 years (n=109, 77%) and young adults 18-24 years (n=52, 37%). Sixty-three percent of health professional participants (n=90) reported that they provide advice to clients for disordered eating, while 70% (n=100) provide advice to clients for overweight/obesity.

**Table 1.** Demographic characteristics of health professionals participating in a survey on addictive eating (n=175).

|  |  |  |
| --- | --- | --- |
|  | **N** | **%** |
| **Age (years) Mean±SD** | 38.1±12.5 |  |
| **Gender** |  |  |
|  Female | 150 | 85.7 |
|  Male | 22 | 12.6 |
|  Other | 3 | 1.7 |
| **Country of residence** |  |  |
|  Australia | 113 | 64.6 |
|  UK | 28 | 16.0 |
|  USA | 23 | 13.1 |
|  Other | 11 | 6.3 |
| **Highest qualification completed** |  |  |
|  School certificate/Higher school certificate | 21 | 12.0 |
|  Trade or diploma | 2 | 1.1 |
|  Undergraduate university degree | 50 | 28.6 |
|  Postgraduate university degree | 71 | 40.6 |
|  Higher research degree | 31 | 17.7 |
| **Occupation** |  |  |
|  Dietitian | 66 | 37.7 |
|  Tertiary health or medical student a | 33 | 18.9 |
|  Psychologist | 23 | 13.1 |
|  Other health practitioner | 18 | 10.3 |
|  Health researcher | 12 | 6.9 |
|  Tertiary academic/teacher | 6 | 3.4 |
|  Medical Specialist/Registrar | 4 | 1.7 |
|  General Practitioner | 3 | 1.7 |
|  Counsellor | 3 | 1.7 |
|  Pharmacist | 3 | 1.7 |
|  Psychotherapist  | 2 | 1.1 |
|  Social worker | 2 | 1.1 |
| **Primary work situation b** |  |  |
|  Hospital  | 39 | 27.5 |
|  Private practice | 39 | 27.5 |
|  Research and teaching | 29 | 20.4 |
|  Community/population/public health program | 19 | 13.4 |
|  Primary care | 7 | 4.9 |
|  Food service | 1 | 0.7 |
|  Other | 8 | 5.6 |
| **Population group work with b** |  |  |
|  Infants < 2 years | 13 | 9.2 |
|  Children 2-12 years | 20 | 14.1 |
|  Adolescents 13-17 years | 39 | 23.2 |
|  Young adults 18-24 years | 52 | 36.6 |
|  Adults 25-65 years | 109 | 76.8 |
|  Adults >65 years | 41 | 28.9 |
|  Not applicable | 4 | 2.8 |

a Of the tertiary health and medical students, n=29 (88%) were studying a degree in Nutrition and Dietetics. b Responses are for health professionals only (n=142).

3.2. Description of quantitative results

3.2.1. Opinions and clinical experience of addictive eating

The majority of participants (n=126, 72%) reported that they have been asked by individuals about addictive eating (Table 2). Sixty-percent of participants (n=105) indicated that they think addictive eating exists. The proportion of the sample who reported being interested/very interested in addictive eating being a diagnostic term was 48% (n=83).

**Table 2.** Opinions and clinical experience of addictive eating among health professionals participating in a survey on addictive eating (n=175).

|  |  |  |
| --- | --- | --- |
|  | **N** | **%** |
| **Have you experienced individuals asking or speaking about addictive eating?** |
|  Yes | 126 | 72.0 |
|  Maybe | 14 | 8.0 |
|  No | 35 | 20.0 |
| **In your opinion, do you feel that people can develop compulsive patterns of eating that resemble an addictive disorder?** |
|  Yes | 120 | 68.6 |
|  Maybe | 33 | 18.9 |
|  No | 22 | 12.6 |
| **In your opinion, does addictive eating exist?** |
|  Yes | 105 | 60.0 |
|  Maybe | 33 | 18.9 |
|  No | 37 | 21.1 |
| **In your opinion, do you feel that there are population group/s who may be more vulnerable to addictive eating? a** |
|  Yes | 75 | 54.3 |
|  Unsure | 18 | 13.0 |
|  No | 45 | 32.6 |
| **Estimated percentage of clients to benefit from a specific treatment of addictive eating (Mean SD) b** | 40.9±27.9 |  |
| **How interested would you be in addictive eating being a diagnostic term?** |
|  Very interested | 43 | 24.6 |
|  Interested | 40 | 22.9 |
|  Somewhat interested | 29 | 16.6 |
|  Not very interested | 23 | 13.1 |
|  Not at all interested | 40 | 22.9 |
| **How interested would you be if there was a referral pathway for the treatment/management of addictive eating?** |
|  Very interested | 72 | 41.1 |
|  Interested | 41 | 23.4 |
|  Somewhat interested | 20 | 11.4 |
|  Not very interested | 6 | 3.4 |
|  Not at all interested | 36 | 20.6 |
| **Who do you think would be best placed to identify people with behaviours suggestive of addictive eating? c** |
|  Dietitians/Nutritionists | 99 | 56.6 |
|  Psychologists | 93 | 53.1 |
|  Psychiatrists | 51 | 29.1 |
|  Counsellor | 49 | 28.0 |
|  General Practitioner | 48 | 27.4 |
|  Medical specialists | 30 | 17.1 |
|  All of the above | 75 | 42.9 |
|  Other | 30 | 17.1 |
| **Who do you think is best placed to provide treatment for people with addictive eating? c** |
|  Psychologists | 114 | 65.1 |
|  Dietitians/Nutritionists | 107 | 61.1 |
|  Psychiatrists | 52 | 29.7 |
|  Counsellor | 49 | 28.0 |
|  General Practitioner | 16 | 9.1 |
|  Medical specialists | 17 | 9.7 |
|  All of the above | 34 | 19.4 |
|  Other | 29 | 16.6 |
| **Are there any services you would be more likely to refer to or suggest to clients/individuals with addictive eating? c** |
|  Psychologist | 124 | 70.9 |
|  Counselling | 77 | 44.0 |
|  Addiction specialist | 75 | 42.9 |
|  General Practitioner | 19 | 10.9 |
|  Pharmacological | 8 | 4.6 |
|  All of the above | 96 | 54.9 |
|  Other | 14 | 8.0 |
|  None | 34 | 19.4 |
| **Are there any services you would be less likely to refer to or suggest to clients/individuals with addictive eating? c** |
|  Pharmacological | 86 | 49.1 |
|  General Practitioner | 76 | 43.4 |
|  Addiction specialist | 33 | 18.9 |
|  Counselling | 6 | 3.4 |
|  Psychologist | 2 | 1.1 |
|  All of the above | 7 | 4.0 |
|  Other | 3 | 1.7 |
|  None | 46 | 26.3 |
| **Are there any particular sub-groups of overweight and obese people you feel would benefit more from a diagnosis of addictive eating? c** |
|  Individuals with binge eating disorder | 80 | 45.7 |
|  Overeaters | 79 | 45.1 |
|  Individuals with a mental health condition | 60 | 34.3 |
|  Individuals with other mental illnesses | 44 | 25.1 |
|  Individuals with substance disorders | 36 | 20.6 |
|  Individuals with low motivation to engage with treatment | 30 | 17.1 |
|  Children | 14 | 8.0 |
|  Other | 17 | 9.7 |
|  No | 58 | 33.1 |

a N=138 responses (i.e. those that believe addictive eating exists). b N=80 responses from health professionals (i.e. those that believe addictive eating exists and provide treatment for overweight/obesity and/or disordered eating). c Multiple response questions i.e. percentages add to >100.

3.2.2. Opinions on control, responsibility and stigma relating to addictive eating

The largest proportion of participants reported that they think individuals with addictive eating have ‘a little’ control over their eating habits (n=89, 51%) and weight (n=77, 44%) (Table 3). However, the majority reported that individuals with addictive eating are very/moderately responsible for gaining control over their eating and weight (n=118, 67%). Half of the participants reported that they think food addiction is a stigmatising term for individuals (n=88). Participants’ preferences regarding the terminology used to describe addictive eating/food addiction were varied. From the proposed list of terms, the largest proportion of participants selected compulsive overeating (n=41, 23%), followed by addictive eating (n=34, 19%), and other (n=29, 17%). Of those that selected other, some indicated that eating disorder terminology should be used, some indicated that more than one term is needed as the most appropriate term may differ for different clients/individuals, while other suggested terms included disordered eating, eating addiction, highly processed food addiction, refined food addiction and restriction rebound overeating.

**Table 3.** Opinions on control, responsibility and stigma relating to addictive eating among health professionals participating in a survey on addictive eating (n=175).

|  |  |  |
| --- | --- | --- |
|  | **N** | **%** |
| **In your opinion, how much control does someone with addictive eating have over their eating habits?** |
|  A great deal | 5 | 2.9 |
|  A lot | 9 | 5.1 |
|  A moderate amount | 60 | 34.3 |
|  A little | 89 | 50.9 |
|  None at all | 12 | 6.9 |
| **In your opinion, how much control does someone with addictive eating have over their weight?** |
|  A great deal | 2 | 1.1 |
|  A lot | 2 | 1.1 |
|  A moderate amount | 44 | 25.1 |
|  A little | 77 | 44.0 |
|  None at all | 50 | 28.6 |
| **In your opinion, how much responsibility does someone with addictive eating have to gain control over their eating and weight?**  |
|  100% responsible | 12 | 6.9 |
|  Very responsible | 51 | 29.1 |
|  Moderately responsible | 67 | 38.3 |
|  Not very responsible | 20 | 11.4 |
|  Not responsible | 25 | 14.3 |
| **Do you think that the term 'food addiction' is stigmatizing for individuals?** |
|  Yes | 88 | 50.3 |
|  Unsure | 52 | 29.7 |
|  No | 35 | 20.0 |
| **How well do you think the term food addiction relates to the experiences of people with weight issues?** |
|  Extremely/very well | 59 | 33.7 |
|  Neutral | 35 | 20.0 |
|  Not well | 81 | 46.3 |
| **Select which term you feel is most appropriate to describe food addiction/addictive eating?** |
|  Compulsive overeating | 41 | 23.4 |
|  Addictive eating | 34 | 19.4 |
|  Compulsive overeating disorder | 27 | 15.4 |
|  Food addiction | 23 | 13.1 |
|  None, no term needed | 21 | 12.0 |
|  Other  | 29 | 16.6 |

3.2.3. Knowledge of addictive eating and opinions on professional development training

The majority of participants rated their knowledge of addictive eating as average or poor (n=106, 61%). The most common source of information that participants used to inform their understanding of addictive eating was colleagues (n=123, 70%), followed by the scientific literature (n=116, 66%). Sixty percent of participants (n=105) reported that they were interested/very interested in receiving training on addictive eating delivered via technologies such as the internet and/or smartphones. When participants were asked who should be trained in addictive eating, the most common responses were dietitians (n=87, 50%) and psychologists (n=82, 47%). In terms of the types of professional development training that are needed, most commonly participants indicated training in evidence-based treatment (n=142, 81%), followed by understanding medical and non-medical treatments (n=134, 77%) and assessment and diagnosis (n=134, 77%).

**Table 4.** Knowledge of addictive eating and opinions on professional development training among health professionals participating in a survey on addictive eating (n=175).

|  |  |  |
| --- | --- | --- |
| **Variable** | **N** | % |
| **How confident do you feel in your knowledge on the latest evidence relating to addictive eating (i.e. assessment methodologies/treatment)?** |
|  Extremely confident | 26 | 14.9 |
|  Very confident  | 26 | 14.9 |
|  Neutral | 41 | 23.4 |
|  Somewhat confident | 34 | 19.4 |
|  Not at all confident | 48 | 27.4 |
| **How would you rate your current knowledge about addictive eating?** |
|  Excellent | 30 | 17.1 |
|  Good | 36 | 20.6 |
|  Average | 57 | 32.6 |
|  Poor | 49 | 28.0 |
|  Terrible | 3 | 1.7 |
| **What sources of information have informed your understanding of addictive eating? a** |
|  Colleagues | 123 | 70.3 |
|  Scientific literature | 116 | 66.3 |
|  Education | 102 | 58.3 |
|  Conferences | 68 | 38.9 |
|  Social media | 36 | 20.6 |
|  Other reading | 27 | 15.4 |
|  Traditional media | 21 | 12.0 |
|  Have not heard of addictive eating | 7 | 4.0 |
| **If training for addictive eating was available, how interested would you be in participating in training delivered using technologies such as the internet and/or smartphones?** |
|  Very interested | 75 | 42.9 |
|  Interested | 30 | 17.1 |
|  Somewhat interested | 24 | 13.7 |
|  Not very interested | 10 | 5.7 |
|  Not at all interested | 36 | 20.6 |
| **In your opinion, who should be trained in addictive eating assessment and treatment? a** |
|  Dietitians | 87 | 49.7 |
|  Psychologists | 82 | 46.9 |
|  Psychiatrists | 55 | 31.4 |
|  General Practitioners | 52 | 29.7 |
|  Undergraduate students | 38 | 21.7 |
|  Medical Specialists | 33 | 18.9 |
|  Practice nurses | 25 | 14.3 |
|  All of the above | 73 | 41.7 |
|  Other | 38 | 21.7 |
| **If food addiction/addictive eating became a diagnostic term, what kinds of professional development training do you think would be needed (for yourself/other professions)? a**  |
|  Evidence-based treatment | 142 | 81.1 |
|  Understanding treatment (medical & non-medical) | 134 | 76.6 |
|  Assessment/diagnosis | 134 | 76.6 |
|  Treatment approaches focusing on other behaviours as well as food e.g. sleep, physical activity | 129 | 73.7 |
|  Understanding addiction terminology | 123 | 70.3 |
|  Neuroscience behind addictive eating | 119 | 68.0 |
|  How to minimise stigma | 114 | 65.1 |
|  Foods to avoid | 59 | 33.7 |
|  Other | 36 | 20.6 |
| **What would be your preferred method of delivery for professional development training? b** |
|  Face to face | 81 | 46.3 |
|  Online, self-paced | 77 | 44.0 |
|  Professional development  | 65 | 37.1 |
|  Structured short course | 63 | 36.0 |
|  Delivered by a credential source | 51 | 29.1 |
|  Other | 13 | 7.4 |
| **Do you think online training/management/treatment delivered by health professionals would be of interest to clients/individuals?** |
|  Yes/Maybe | 157 | 89.7 |
|  No | 18 | 10.3 |
| **Do you think online training would be of interest to your co-workers/colleagues/peers?**  |
|  Yes/Maybe | 154 | 88.0 |
|  No | 21 | 12.0 |

a Multiple response questions i.e. percentages add to >100. b Reported as the N(%) who ranked responses as 1 or 2.

3.2.4. Description of qualitative results

Thematic analysis results are presented in Table 5. Sixty-three percent (n=111) of the participants responded to the question *“What are some strengths/benefits to using the addictive eating approach to explain eating and weight to clients/individuals?”* Five themes were identified, including from most to least frequent: 1) Provides an explanation/assists understanding; 2) Relieves guilt/stigma; 3) Provides acknowledgement/validation; 4) Provides a framework/pathway for future treatment and 5) Encourages hope for overcoming addictive eating. Fifty-nine percent (n=103) of participants responded to the question *“What are some of the downsides/weaknesses to using the addictive eating approach to explain eating and weight to clients/individuals?”* Six themes were identified, including from most to least frequent: 1) Reason/barrier not to change; 2) Negative response from clients/individuals; 3) Stigma; 4) Lack of evidence/recognition; 5) Implications for treatment, and 6) Clinician training/time.

**Table 5.** Qualitative findings among health professionals participating in a survey on addictive eating (n=175).

|  |
| --- |
| **Question: What are some strengths/benefits to using the addictive eating approach to explain eating and weight to clients/individuals?** |
| **Themes and quotes** | Provides an explanation/assists understanding*“help clients realise the link between behaviours, thoughts and food…”**“help people understand the role of psychology in food choice”* |
| Relieves guilt/stigma*“May help to reduce stigma and some of the extreme negative thoughts people have in relation to their eating”**“clients may feel less guilty about weight/ weight gain.”* |
| Provides acknowledgement/validation*“Legitimises their problem”* *“‘giving it a name’ may help people externalise and tackle the issue better.”* |
| Provides a framework/pathway for future treatment*“Current knowledge about addiction medicine would provide potential avenues for treatment”* |
| Encourages hope for overcoming addictive eating*“When they [clients] feel understanding and empowered it is easier to facilitate health promoting changes and more effective strategies.”* |
| **Question: What are some of the downsides/weaknesses to using the addictive eating approach to explain eating and weight to clients/individuals?** |
| Themes and quotes | Reason/barrier not to change*“Some people may like another label as a reason not to try to change.”**“dissolves some responsibility for lifestyle decisions that are outside of addictive behaviours.”* |
| Negative response from clients/individuals*“[it] may induce a sense of helplessness”**“some people may get offended when using the word addictive, may bring up deep rooted emotional issues associated with why they overeat.”* |
| Stigma*“It can become a stigmatised label of being an “addict” which may impact on their recovery journey.”* |
| Lack of evidence/recognition*“I do not see this [food addiction] at the moment as true addiction”**“The fact that scientific literature and other health care professionals don’t support this”* |
| Implications for treatment*“The abstinence model may have the potential to increase binge eating if it is too restrictive regarding food rules”**“Limited psychological support to help manage the condition.”* |
| Clinician training/time*“Clinicians need to be trained to identify and safely address addictive eating…Identifying the eating behaviour without appropriate treatment may be detrimental.”* |

Questions were only asked of those participants who responded yes or maybe to the question, do you believe addictive eating exists?

4. Discussion

This study aimed to explorethe opinions and understanding of addictive eating in an international sample of practising health professionals and health professionals in training. The needs and preferences for professional development training in addictive eating were also explored. The majority of the survey sample reported that they support that addictive eating exists, have experienced individuals/ patients asking about addictive eating, and expressed interest in receiving training about addictive eating. Overall the study findings provide important insight into the perspective of currently practicing health professionals’ and health professionals in training (i.e. future health professionals) on addictive eating. This adds to and provides a point of comparison for the larger evidence base of opinions among the general population.

Sixty percent of the health professionals and health professionals in training surveyed supported that addictive eating exists, while a higher proportion (69%) expressed the view that people can develop compulsive patterns of eating resembling an addictive disorder. These results are substantially lower than in community samples such as the survey by Lee et al. where 86% of adults believed that certain foods may be addictive [6]. Results show that over 70% of health professionals reported that individuals had enquired about addictive eating. Moreover, participants expressed interest in addictive eating being officially recognised as a formal diagnosis and in the use of a specific referral pathway. However, self-rating of knowledge of addictive eating was rated below average in the majority of participants and confidence in knowledge of the evidence-base was low. Thus, it is potentially not surprising that our data revealed a definite interest for training and education in this specific topic. Two-thirds of health professionals were interested or very interested in receiving addictive eating training, with almost half reporting that they would prefer training to be online and self-paced, and almost half preferring face-to-face. The most common types of professional development training that were reportedly needed included training in evidence-based treatment, understanding medical and non-medical treatments and training in assessment and diagnosis. Participants identified dietitians and psychologists as the two major professions who should receive training, followed by psychiatrists and general practitioners, while the majority reported that training in addictive eating would also be useful for individuals or clients. This is not surprising given the pertinent roles that these health professionals have in other recognised forms of disordered eating. These findings indicate that this is a significant issue faced by clients and health professionals.

Overall there was a mixed response in terms of the preferred terminology to be used to describe this compulsive form of eating. Compulsive overeating was the most preferred term indicated by 23% of participants, followed by addictive eating (19%). However, a large proportion of participants indicated other responses including that more than one term may be needed as the most appropriate term may differ between clients/individuals. This difference may suggest that a multidimensional or domain based approach is needed rather than a categorical diagnosis. This also shows that reaching a consensus on a common term may not be achievable. Despite there being a lack of consensus in existing research over the preferred terminology [16,17], the term ‘food addiction’ was the least preferred. This illustrates the recognition amongst those surveyed of the highly stigmatising nature of this descriptor. Indeed, the majority of participants expressed a belief that the term food addiction is stigmatising, which supports consumer research [18]. Many existing research reports discuss the terminology and it may be time to move beyond the terminology to focus on greater understanding and possible management options, given that many health professionals in the current study have patients seeking help for this behaviour. The qualitative findings from the current study also provide further insight on the discussion of stigma, as this was a recurrent theme when health professionals were asked to explain the benefits and downsides of using the addictive eating approach to explain eating and weight to individuals. Views were divided in that some health professionals commented that it may reduce stigma while others explained that it may introduce the stigma that is associated with addictions and other mental health conditions in general. This may be linked with the number of views expressed about the terminology. Further exploration of the views of health professionals regarding addictive eating and stigma is warranted [19].

The survey identified mixed opinions regarding the relationship between addictive eating behaviours and weight. Over two-thirds of the participants reported that individuals with addictive eating have little to no control over their eating habits and weight. This highlights acceptance of the lack of control experienced by those with addictive eating, yet approximately half of the participants reported that addictive eating does not relate well to the experiences of people with weight issues. These findings could relate to the fact that individuals may not have been directed to appropriate services for the management of their addictive eating, i.e. the lack of control relates to numerous unsuccessful attempts at treatment/management by the individual with addictive eating. Comparatively, the study by Lee et al. found that among the community sample of >600 adults, almost three-quarters supported that addictive eating causes obesity, while views were divided close to 50:50 in terms of individuals having control over their weight and eating [6]. These are important findings, as the way that health professionals view these factors would have implications for the treatment that they may provide or refer individuals on to. Further, if these views differ to the general population and/or their patients, this may also influence the efficacy of treatment. There has been increasing research of the overlap of disordered eating and obesity [20]. Given food addiction often overlaps with binge eating and presents with obesity this offers an interesting opportunity for further exploration.

The major strength of this study is that it is the first to explore the opinions of addictive eating in a sample of health professionals and health professionals in training. Further, a moderate sample size was obtained which is a strength given the challenges of engaging health professionals in research (e.g. due to busy workloads). The sample was an international sample with health professionals from a range of backgrounds, which is a strength for this exploratory study as it provides a broad range of perspectives, however the fact that different countries have different professional standards and structures is also a potential limitation. In terms of limitations, health professionals who have an interest in or have been asked about addictive eating may have been motivated to participate in the current study, while a large proportion were dietitians or psychologists. Therefore, the representativeness of the sample is a limitation, and the views presented may not represent the generalised community of health professionals and students. Further, females were over-represented in the study population. However, this can be explained by the higher percentage of women among the health professions surveyed [21], and that females are more likely to participate in online survey studies than males [22]. The use of convenience sampling is also a limitation in terms of the representativeness of the sample, for example this likely contributed to the high percentage of dietitians and participants residing in Australia. The survey included a large number and scope of questions as it is the first to explore this topic among health professionals and the intention was to obtain a broad overview of opinions. However this may have contributed to some participants not completing the survey. Additionally, the survey is based on self-report and while some qualitative data were collected the survey included primarily quantitative questions which may limit the scope of opinions. Many of the participants surveyed also rated their knowledge of addictive eating as below average and their confidence in their knowledge of the latest evidence as low, which could be a limitation to their views on the topic.

The implications of the study findings for research and practice include that practitioners are being asked about addictive eating and there is a need for practitioners to understand addictive eating and the related comorbidities with weight and other mental health conditions such as depression. This would ensure that individuals are provided or directed to the most appropriate service rather than just standard dietary, weight management or psychology advice, one avenue for this could be achieved through professional development training. The focus of professional development training will need to consider the needs of different health professions based on their role in the referral or treatment pathway, for example focusing on awareness of addictive eating and appropriate services to refer individuals to, compared with evidence-based treatment approaches for those delivering/managing treatment. Despite the lack of consistent terminology addictive eating may be a means of people seeking help for a mental illness evidenced through having an unhealthy relationship with food. Therefore, there is a need for greater understanding of addictive eating behaviour and possible management options regardless of the terminology that is used to describe it. Future studies should aim to include a varied representation of health professions who may have a role in the care of individuals presenting with addictive eating. For example, GPs who may be the first point of contact for individuals, and psychologists, dietitians or other health professionals who may provide ongoing treatment. As addictive eating is an emerging field of research, health professionals’ views on the topic may change over time and research into this should be updated accordingly.

5. Conclusions

Overall, this survey of an international sample ofpractising health professionals and health professionals in training identified support for the concept of addictive eating and interest in professional development training. Additional exploration of health professionals’ views on addictive eating is warranted, as this information is critical to advancing the field of addictive eating and informing best practice for assessment and treatment.

**Author Contributions:** Conceptualization, T.B., A.V-G., A.C., R.M.B., Z.B.A., C.V.D., C.A.H., N.L., and P.S.; methodology, T.B., A.V-G., A.C., R.M.B., Z.B.A., C.V.D., C.A.H., N.L., P.S., and M.W.; data curation, M.W. and T.B.; formal analysis, M.W. and T.B.; writing—original draft preparation, M.W. and T.B; writing—review and editing, T.B., A.V-G., A.C., R.M.B., Z.B.A., C.V.D., C.A.H., N.L., P.S., and M.W. All authors have read and agreed to the published version of the manuscript.

**Funding:** This research received no external funding. T.B. and P.S. are supported by Investigator Grant’s from the National Health and Medical Research Council (NHMRC). A.C. is supported by an NHMRC Career Development Fellowship (ID: APP1123311). R.M.B. is supported by an ARC DECRA Fellowship (DE190101244). A.V.G. is supported by a Medical Research Future Fund Next Generation of Clinical Researchers Fellowship (MRF1141214).

**Conflicts of Interest:** The authors declare no conflicts of interest for this research. C.A.H. has received research funding from the American Beverage Association and speaker fees from the International Sweeteners Association for work outside of the submitted manuscript.

References

1. Gearhardt, A.N.; Corbin, W.R.; Brownell, K.D. Food Addiction: An Examination of the Diagnostic Criteria for Dependence. *J Addict Med* **2009**, *3*.

2. Davis, C. From passive overeating to "food addiction": a spectrum of compulsion and severity. *ISRN Obes* **2013**, *2013*, 435027-435027, doi:10.1155/2013/435027.

3. Fletcher, P.C.; Kenny, P.J. Food addiction: a valid concept? *Neuropsychopharmacology : official publication of the American College of Neuropsychopharmacology* **2018**, *43*, 2506-2513, doi:10.1038/s41386-018-0203-9.

4. Pursey, K.M.; Stanwell, P.; Gearhardt, A.N.; Collins, C.E.; Burrows, T.L. The prevalence of food addiction as assessed by the Yale Food Addiction Scale: a systematic review. *Nutrients* **2014**, *6*, 4552-4590, doi:10.3390/nu6104552.

5. Ruddock, H.K.; Hardman, C.A. Food Addiction Beliefs Amongst the Lay Public: What Are the Consequences for Eating Behaviour? *Current addiction reports* **2017**, *4*, 110-115, doi:10.1007/s40429-017-0136-0.

6. Lee, N.M.; Lucke, J.; Hall, W.D.; Meurk, C.; Boyle, F.M.; Carter, A. Public Views on Food Addiction and Obesity: Implications for Policy and Treatment. *PLOS ONE* **2013**, *8*, e74836, doi:10.1371/journal.pone.0074836.

7. Li, J.T.E.; Pursey, K.M.; Duncan, M.J.; Burrows, T. Addictive Eating and Its Relation to Physical Activity and Sleep Behavior. *Nutrients* **2018**, *10*, doi:10.3390/nu10101428.

8. Pursey, K.M.; Collins, C.E.; Stanwell, P.; Burrows, T.L. Foods and dietary profiles associated with ‘food addiction’ in young adults. *Addictive behaviors reports* **2015**, *2*, 41-48, doi:<https://doi.org/10.1016/j.abrep.2015.05.007>.

9. Pedram, P.; Wadden, D.; Amini, P.; Gulliver, W.; Randell, E.; Cahill, F.; Vasdev, S.; Goodridge, A.; Carter, J.C.; Zhai, G., et al. Food Addiction: Its Prevalence and Significant Association with Obesity in the General Population. *PLOS ONE* **2013**, *8*, e74832, doi:10.1371/journal.pone.0074832.

10. Burrows, T.; Skinner, J.; McKenna, R.; Rollo, M. Food Addiction, Binge Eating Disorder, and Obesity: Is There a Relationship? *Behavioral sciences (Basel, Switzerland)* **2017**, *7*, doi:10.3390/bs7030054.

11. Wiss, D.A.; Brewerton, T.D. Incorporating food addiction into disordered eating: the disordered eating food addiction nutrition guide (DEFANG). *Eating and weight disorders : EWD* **2017**, *22*, 49-59, doi:10.1007/s40519-016-0344-y.

12. Cassin, S.E.; Sijercic, I.; Montemarano, V. Psychosocial Interventions for Food Addiction: a Systematic Review. *Current Addiction Reports* **2020**, 10.1007/s40429-020-00295-y, doi:10.1007/s40429-020-00295-y.

13. McKenna, R.A.; Rollo, M.E.; Skinner, J.A.; Burrows, T.L. Food Addiction Support: Website Content Analysis. *JMIR Cardio* **2018**, *2*, e10, doi:10.2196/cardio.8718.

14. Vandenbroucke, J.P.; von Elm, E.; Altman, D.G.; Gotzsche, P.C.; Mulrow, C.D.; Pocock, S.J.; Poole, C.; Schlesselman, J.J.; Egger, M. Strengthening the Reporting of Observational Studies in Epidemiology (STROBE): explanation and elaboration. *Epidemiol* **2007**, *18*, 805-835, doi:10.1097/EDE.0b013e3181577511.

15. Braun, V.; Clarke, V. Using thematic analysis in psychology. *Qualitative Research in Psychology* **2006**, *3*, 77-101, doi:10.1191/1478088706qp063oa.

16. Hebebrand, J.; Albayrak, Ö.; Adan, R.; Antel, J.; Dieguez, C.; de Jong, J.; Leng, G.; Menzies, J.; Mercer, J.G.; Murphy, M., et al. “Eating addiction”, rather than “food addiction”, better captures addictive-like eating behavior. *Neuroscience & Biobehavioral Reviews* **2014**, *47*, 295-306, doi:<https://doi.org/10.1016/j.neubiorev.2014.08.016>.

17. Ruddock, H.K.; Christiansen, P.; Halford, J.C.G.; Hardman, C.A. The development and validation of the Addiction-like Eating Behaviour Scale. *International Journal of Obesity* **2017**, *41*, 1710-1717, doi:10.1038/ijo.2017.158.

18. DePierre, J.A.; Puhl, R.M.; Luedicke, J. Public perceptions of food addiction: a comparison with alcohol and tobacco. *Journal of Substance Use* **2014**, *19*, 1-6, doi:10.3109/14659891.2012.696771.

19. Cassin, S.E.; Buchman, D.Z.; Leung, S.E.; Kantarovich, K.; Hawa, A.; Carter, A.; Sockalingam, S. Ethical, Stigma, and Policy Implications of Food Addiction: A Scoping Review. *Nutrients* **2019**, *11*, 710, doi:10.3390/nu11040710.

20. da Luz, F.Q.; Hay, P.; Touyz, S.; Sainsbury, A. Obesity with Comorbid Eating Disorders: Associated Health Risks and Treatment Approaches. *Nutrients* **2018**, *10*, 829, doi:10.3390/nu10070829.

21. Australian Institute of Health & Welfare. Health Workforce Snapshot. Availabe online: <https://www.aihw.gov.au/reports/australias-health/health-workforce> (accessed on 25 August).

22. Cull, W.L.; O'Connor, K.G.; Sharp, S.; Tang, S.-f.S. Response rates and response bias for 50 surveys of pediatricians. *Health Serv Res* **2005**, *40*, 213-226, doi:10.1111/j.1475-6773.2005.00350.x.

|  |  |
| --- | --- |
|  |  |