Title of dissertation

UNDERSTANDING OF FOOD ADDICTION:

EATING DISORDER OR DISORDERED EATING?

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Declaration

I declare that is entirely my own work and has not been submitted as an exercise for a degree at this or any other third level education institution

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Abstract

The concept of Food Addiction (FA) has been a controversial topic in the scientific community. In current society overeating is becoming a significant issue, as it leads to overweightness and obesity with serious consequences for health. While food is a source of energy and consuming food is essential, people's relationship with food has become more than just survival mechanism. Current hypotheses suggest that certain types of foods may be addictive and have the potential to lead to overeating, therefore presenting as addictive behaviour. The aim of the study is to explore FA, and its connection to disordered eating (DE) or eating disorder (ED). This study will apply qualitative research methods, aiming to explore the participants' experience and views of their clients who suffer from FA. To analyse the data, thematic analysis was applied with the aim for the researcher to view and make sense of collective or common interpretations and experiences.

Findings: Participants described their perception of working with clients with FA. All participants agreed that FA is a true phenomenon, but that the name is misleading as individuals aren't usually addicted to healthy food but highly processed junk food. They also unanimously agreed that developing addiction is a combination of genetic, behavioural and environmental factors, but the juvenile age was also highlighted as an increased vulnerability to develop FA. Overall, the participants agreed that while dual diagnosis (DD) is common, some had the perception that the individual develops mental health issues as a by-product of the addiction, while others stated that DD is more of a rule than an exception. Participants also acknowledged, that people with ED can have FA at the same time. They may have deep, unresolved psychological issues and reach for highly palatable food with the aim of 'numbing' their feelings. If the psychological issue remains unresolved and the eating pattern continues to be repetitive, the individual learns which foods are 'comforting' and may develop FA. It

was also acknowledged by all participants that everyone goes through ‘hardship’ from time to time and may reach for food as comfort, however, if the issue is resolved, their unhealthy eating pattern will also be resolved.

Conclusion: This study supports the findings of previous studies, which agree that FA is a true phenomenon, but it is complex. The findings support that in order for one to develop FA, a combination of genetic, developmental, behavioural, and environmental factors occupy major roles.

Keywords: Food addiction; disordered eating (DE); eating disorder (ED)

Introduction

Food is a basic need, it is a source of energy essential for human survival, similar to other basic needs, such as sleep or sex, it is naturally built into our deoxyribonucleic acid (DNA). Consuming food high in sugar and fat is an instant source of energy (Tarman, 2019). However, relationships with food, predominately in the developed world, have evolved, where it has become more than a survival mechanism leading to scrutiny of abnormal eating. (Tarman, 2019). Over the last number of decades, due to the global rise in obesity, the concept of Food Addiction (FA) has garnered the attention of researchers and society as a conceivable explanation of how psychological factors can contribute to weight gain. This has contributed to an increase in research seeking to explain food related behaviours. (Hebebrand et al., 2014).

FA is identified as a contributor to obesity, posing significant public health issues, including metabolic imbalances, type 2 diabetes and cardiovascular diseases. Obesity has developed rapidly in recent years becoming the leading cause of deaths, globally. (Yau et al., 2014). According to the World Health Organisation (WHO) (2021), obesity across the world has almost tripled since 1970's.

Volkow &Wise (2005), suggest that up to 60% of the risk factors in becoming obese are genetic, obesity rates are ten times higher among individuals with an immediate relative who is obese. (Volkow & Wise, 2005). Studies by Kampov- Polevoy et al. (2003), conclude individuals who have high preference for sweet tasting food may have intergenerational evidence of alcohol dependence and possible genetic disposition with FA.

FA is a controversial topic in the research field. It is considered complex, compounding Eating Disorders (ED), Substance Use Disorders (SUD), and impulsive personality traits (Gearhardt et al., 2011). Randolph (1956), argues that FA is present, if a person develops a

specialized adaption to one or more frequently eaten foods to which they are sensitive, thereby producing a consistent pattern of symptoms, which are descriptively similar to other addictive processes. While not acknowledged in the Diagnostic and Statistical Manual-5 (DSM-5), FA does, however identify SUD as a cluster of cognitive, behavioural and physiological symptoms associated with continued substance use, despite related problems.

To diagnose SUD, three out of seven criteria need to be met as a result of clinically significant impairment or distress. The criteria are:

- tolerance
- withdrawal
- loss of control
- repeat failed attempts or desire to decrease or stop the use
- significant time spent on activities to obtain, use or recover
- giving up other activities
- continued use in spite of physical or psychological negative consequences and impairment or distress as a result (American Psychiatric Association (APA), 2013).

Vasiliu (2021), reports that FA is identified as a link between psychological and medical issues, triggered by dysfunctional eating disorders, for example Bulimia Nervosa (BN), Binge Eating Disorder (BED) and obesity. FA and ED exhibit relatively few behavioural similarities causing challenges in the development of diagnostic criteria.

BN is characterised by recurrent episodes of binge eating in short periods; consuming larger portions of food comparative to others in similar circumstances. The individual experiences loss of control leading to over-eating and engages in recurrent compensatory behaviours including but not limited to: purging, excessive laxative/diuretic use, fasting or exercising

excessively to prevent weight gain. The individual's shape and weight equate to their self-worth (APA, 2013).

APA, (2013) identifies core features of BED, namely:

- eating in discrete time period;
- consuming larger portions of food than most people;
- feeling a sense of loss-of-control during the overeating period;
- eating at a rapid pace;
- experiencing an uncomfortable fullness;
- continuing to eat when not hungry;
- eating alone to avoid embarrassment of excess food consumption
- feeling of self-loathing, guilty and depressed afterwards.

FA is associated with mental health conditions, such as mood disorders, low self-esteem caused by weight gain, BED, or social anxiety (Puhl & Heuer, 2010). FA is directly related to somatic problems like obesity or being overweight, can initiate metabolic imbalances, cardiovascular disorders, or diabetes.

FA is unlikely a causative mechanism in most obese individuals, rather, a heterogeneous syndrome and despite the link between BED and obesity, a significant number of binge eaters are not overweight and the majority of overweight people do not present with BED (Ziauddeen & Fletcher (2013).

Yau et. al., (2014) explain that while food consumption is normally rewarding, there is a theory that certain foods may be more addictive. FA is supported through animal model research and increasingly, research in humans. (Gearhardt, 2009). Avena & Hoebel, (2003)

propose that animals exposed to incrementally increased sugar diets over periods of time developed patterns of abundant consumption and displayed withdrawal symptoms, when reverting to a normal diet**.** Some individuals can lose control over their food intake, fail to abstain or decrease consumption of certain types of foods due to their awareness of the negative consequences (Gearhardt, 2009).

Individuals with FA can have poor coping mechanisms and may compensate by increasing food intake. This relationship with food can result in increased stress susceptibility, mood disorders, emotional dysregulation and low self-esteem. The emotional distress experienced through FA is similar to that observed in SUD where individuals use substances to self-medicate their unresolved psychological issues and anxieties (Yau et. al., 2014),

There is a strong link between psychological distress and food addiction particularly with regard to impulsivity. Gearhardt, et al., (2012), suggest that within FA, the relationship between levels of impulse and FA cannot be overlooked. Brewer & Potenza (2008) identify strong links between various substance misuse, behavioural addictions and impulsivity. Consequential thinking is disrupted; reaching for substances or highly palatable foods in spite of having an awareness of the outcome.

Despite two decades of research, there is still a division within the professional field on the subject of FA (Vasiliu, 2021). The majority of studies were carried out internationally, with a limited number focusing exclusively on Ireland. In addition, these studies are primarily focused on eating disorders, Bulik et. al. (2016) rather than FA.

Therefore, the aim of this study is to comprehend how FA links to ED or disordered eating, (DE) and the possible causalities in the Irish context.

Change in eating habits and health consequences

In recent years, changes in eating behaviours have stimulated food consumption beyond energy expenditure (Wardle, 2007). Bhurosy & Jeewon (2014), assert, that dietary changes in terms of food components; increased consumption of fats, sugar, meat and larger portion sizes combined with accessibility to food and decreased physical activity are the main contributory factors for metabolic diseases and obesity in developed countries. As a result, worldwide obesity has almost tripled since 1970s. In 2020, 1.9 billion people over the age of 5 years and 39 million children under the age of 5 are recorded as overweight or obese. Obesity is the primary risk for cardiovascular disease and type 2 diabetes, which is an increasing health care problem (WHO, 2021).

Diabetes and insulin resistance is a leading predictor of cardiovascular morbidity and mortality stemming from obesity (Sheerer & Hill, 2016). Most obesity treatments such as pharmaceutical, surgical or behavioural treatments are a temporary solution, and most patients regain weight sometimes including additional weight, within the five years of intervention. (Yau et. al. 2014)

Criteria and definition

Mate (2020), defines addiction as a complex psycho-physiological process with key components. He explains, that addiction manifests in any behaviour in which a person:

- finds and craves temporary pleasure or relief,
- suffers negative consequences as a result,
- experiences difficulties to discontinue behaviour.

In the case of FA, the temporary pleasure or relief is associated with eating despite an absence of metabolic need for the food. (Yau et. al. 2014).

DSM-IV provides that an individual must experience clinically significant impairment or distress from substance misuse. The primary tool to diagnose FA, is the Yale Food Addiction Scale (YFAS) assessment tool, which is based on the DSM-IV diagnostic criteria for drug dependence (Gearhardt et. al., 2009).

The YFAS, developed by Gearhardt and colleagues, employs DSM criteria for clinically relevant drug-use disorders to measure the signs of addicted eating for highly palatable, energy-dense foods (Markus et. al. 2017). However, Long et. al., (2015) argue that the use of the YFAS, has limited utility in making a clinical diagnosis for problems related to addiction and/or substance abuse. In spite of this, the YFAS remains the most common method in exploring food related dependencies. (Markus et. al. 2017). According to the current diagnostic system DSM-5, there is phenomenological overlap between drug-related and addictive disorders and feeding and eating disorders, where "control" is a key factor in the criteria for disorders (APA, 2013) Individuals with lower levels of self-control, potentially a result of brain impairment to the inhibitory mechanism, could be predisposed to substance use disorders indicating that for some people, the root of their disorder manifests in behaviours long before they commence substance use. In contrast, a crucial aspect of BN and BED is a feeling of lack-of-control when over-eating during the (binge eating) episode (APA, 2013).

Neurotransmitter studies

Substance use research provides important tools for understanding the neural circuitry which regulates food-motivated habits, and how this circuitry may be hacked to generate appetitive behaviours. Food and drugs stimulate common reward circuitry in the brain (Volkow &Wise, 2005). Addiction and obesity result from eating behaviours which continue and increase become stronger despite negative consequences. Both drug use and eating involve the formation of preferences and creation of routines supported by significant and repeat rewards.

After consuming foods which taste good, the brains' reward centre is immediately stimulated which continues for several hours (Volkow &Wise, 2005).

Both Ifland et. al. (2009) & Gearhardt et. al., (2009) present findings demonstrating a link between the active neuropathways during the consumption of appetizing food and the main reward pathways active when using drugs and alcohol. The same mechanism leading to the loss of control associated with drug use pleasure seeking followed by behavioural reinforcement and routines—also leads to the same loss of control with some foods. It can be concluded that FA has the same behavioural pathology, characteristics of loss of control, and distress as other addictions.

In both SUD and obesity, the Dopamine 2 (D2) receptors are reduced in comparison to healthy controls, potentially suggesting a dopamine deficiency in obese individuals (Wang et. al., 2001). Benton et. al., (2016) state that in FA the D2 receptors decrease in similar ways, therefore individuals who experience decreased reward from food intake, may overeat to compensate for the dysfunction of the reward system. Additionally, consumption of certain foods or substances cause the same changes in the opiate system. Addictive food substances can cause the release of endogenous opioids in the brain (Gearhardt et. al., 2009). These may also trigger similar behavioural consequences, such as reduced control over the consumption, cravings or continued use in spite of negative health consequences. (Vasiliu, 2021). Therefore, evidence suggests, that both, hyper-palatable foods and other substances share many compensatory dysfunctions in the reward system.

Potential risk of food addiction

It is suggested that some foods are more addictive than others (Yau et. al. 20014). While research in humans has mainly focused on brain patterns surrounding FA, animal studies explored biological and behavioural indicators of addiction to food (Gearhardt et. al., 2009). A study, carried out by Rada et. al. (2005) found that rats fed sugary food intermittently, tripled their sucrose levels, indicating an increased tolerance to effects of high sugar foods. Mestre-Bach et. al., (2019) report that animals exposed to highly palatable foods develop behaviour patterns including; obsessive eating, binge eating, tolerance, and withdrawal. Animals display behaviour patterns resembling drug withdrawal when the sugar-enhanced food is discontinued, including aggression, elevated levels of anxiety, and head shaking. This suggests that increased sugar consumption may sensitize users to this form of abuse. Meule, (2014) suggests, while these paradigms appear artificial and have a low value for conclusive evidence about possible sugar addiction in humans; they are a good match to some individuals eating styles. Alternatively, in a different study, where rodents can select a chocolate drink or cocaine, the rats were more motivated to seek cocaine despite prior exposure to a palatable diet for two months (de Jong et. al., 2013). However, Benton (2010) and Meule, (2014) argue that while this rodent study may produce an insightful hypothesis for comprehending human behaviour, it is debatable that these findings have any relevance to human eating habits, food addiction, obesity, or binge eating.

Such studies have demonstrated the possibility that foods can trigger biological and psychological responses, parallel to those seen with classic substances of abuse (Gearhardt et. al., 2009). Pelchat (2002) suggests individuals with DE experience cravings, withdrawal symptoms and dysregulated patterns of eating which are signs of tolerance.

It is essential to understand what foods can be the cause of triggers for the onset of FA (Gearhardt et. al., 2009). Hyper-palatable foods containing ingredients such as sugar, flour, fat, salt, sweeteners, when artificially combined may increase their potential addictiveness (Ifland et. al., 2009) Increased accessibility to unhealthy food has risen in recent years, particularly in areas with juvenile populations, like schools and supermarkets. In addition, there is increased exposure to appealing food commercials, targeting young people. (Keser et. al., 2015). Psychological marketing appeals to addictive tendencies utilising claims of appetite gratification. Excessive exposure negatively influences young people's nutritional choices potentially leading to health issues. Foods companies produce foods that are highly processed and hyper-palatable that have contributed to the rise in obesity (Volkow et. al., 2002). Ifland et al., (2009) suggest that refined foods could have psychotropic effects comparable to addictive substances. Parylak et. al., (2011) argue that initially palatable foods have positive reinforcing, pleasurable effects, and negative reinforcing, "comforting" effects that can acutely normalise organism responses to stress. However, repeated consumption of palatable foods can become a coping mechanism to deal with negative emotional states. Significant levels of comorbidity between stress, anxiety, and mood disorders cause episodes of dysregulated eating behaviour in individuals (Parylak et. al., (2011). Fryan et. al. (2016) suggest that individuals may consume unhealthy food to self-medicate negative moods, rather than eating those foods because of an addiction.

Vasiliu (2021) notes that ED commonly co-occurs with FA. Individuals with BN display a higher incidence of FA in comparison to individuals with BED. Individuals with co-morbidities of FA and BED experience a higher intensity of food craving, an increased in impulsivity and more severe impact on mood than those individuals with BED only (Mestre-Bach et. al., 2019). According to Granero et al. (2014), ED subtypes with binge eating behaviours (BN, BED, and binge eating-purging subtype) have the highest prevalence

of FA. Due to frequent episodes of overeating and lack of self-control, FA like BED can result in weight gain, and in some situations, obesity. (Mestre-Bach et. al., 2019). According to Bak-Sosnowska (2017), eating in BED may be used to lessen distress, which is typically linked to food-related cognitive distortions, however in FA, food may be used more frequently to elicit hedonistic fulfilment and a sense of pleasure.

Comorbidity and Triggers

Higher psychopathology, such as anxiety and low mood, is observed in individuals who meet the criteria for food addiction (Burrows et. al., 2018). Adults and adolescents with BN or BED display an increased occurrence of major depression, bipolar disorder, alcohol or other drug abuse and anxiety disorders than individuals without ED (Parylak et. al., 2011, Mestre-Bach et. al., 2019). Brewerton (2017) states, there is a strong association between childhood physical and sexual abuse and FA and in the female population where PTSD is present. Before and during a simulated negative mood induction, Frayn et al. (2016) evaluated attention to food in women with FA. These participants demonstrated increased attention to unhealthy food images and decreased attention to healthy food images.

Rose et. al., (2018) state that adolescents with severe obesity may be more susceptible to mental health issues including anxiety and depression. Children and adolescents may experience psychological and neuromaturation delays due to addictive substances, rendering them more susceptible to their harmful effects. Because food consumption starts earlier than exposure to other substances, this may increase the risk of disruptive eating behaviour and associated health implications, including obesity and BED later in life. It is worth noting there is less potential for FA in comparison to other substances. Parental characteristics may be linked to a higher risk of addictive-like eating in children. Problematic substance use is more likely to occur in children of parents who engage in substance abuse. Numerous factors,

including genetic and environmental, may contribute to higher familial risk of substance abuse (Burrows et. al., 2017a).

Obesity is associated with a lower quality of life in paediatric populations and is connected to poorer executive functioning and impulse control in adolescents. Negative urgency, or poor impulse control is one facet of impulse control that correlates with obesity and eating habits (Rose et. al., 2018). According to Mestre-Bach et. al., (2014) high levels of impulsivity and low levels of inhibitory control define adolescence, making this demographic more susceptible to addictive behaviour, such as substance abuse. Another significant intrapersonal factor is emotional eating, which is more common in overweight adolescents receiving treatment compared to their overweight peers who are not. Emotional eating is associated with negative affect on negative urgency and issues with impulse control (Rose et. al., 2018). According to Parylak et. al. (2011) binge eaters have higher rates of mental diagnoses involving negative emotional states than the general population. Howell (2017) states that adolescents facing negative life events or stressors could view food as reward. Negative emotions such as stress, anxiety, loneliness, boredom or anger can also trigger overeating.

This implies that obese teenagers who engage in emotional eating may struggle to control their emotions and behaviour, especially when experiencing negative impact. Negative urgency can impede the use of better coping mechanisms in the presence of negative affect, consequently linking to an increase in emotional eating.

Like emotional eating in that, it involves eating when not hungry and in reaction to emotional cues or urges, FA is distinct as it implies a deeper emotional issue (Rose et. al., 2018). Meule et. al., (2015) state that eating when not hungry and in reaction to emotional cues or desires is similar to emotional eating. However, it differs from emotional eating in that it represents a physical and psychological dependence on food to provide a favourable physiological response. Adolescents, particularly those in treatment for obesity, have shown this construct.

According to Tompkins et. al., (2017) in FA, like other addictions, teenagers may limit social connections due to embarrassment or guilt, physical discomfort brought on by overeating, and emotions of self-disgust, all of which are likely to have a negative impact on quality of life. These processes are similar for emotional eating, which is frequently concealed, may cause physical discomfort and embarrassment, and is also linked to a lower quality of life.

For this study, the researcher accessed articles through various website sources and online database, such as PCI, University database, Researchgate, Open access journal database, Elsevier and Google Scholar.

Methodology

Research Design Overview

This study aims to explore FA, and its connection to DE or ED.

Qualitative research methods aim to provide insight into the complexities of human experiences (Smith & Firth, 2011). Data is obtained through participant interviews followed by data analysis of the interview transcripts, gaining detailed insights into the phenomena of participants' views/experiences (Morse et. al., 2002). To reach conclusive themes and a potential theory a data coding system is developed, which is followed by linking codes or units of data to analyze the data (Morse et. al., 2002). Thematic analysis (TA) is an interpretive process, whereby data is systematically searched with the aim to provide an informative description of the phenomenon, while it results in the development of meaningful themes without explicitly generating theory (Tesch, 2013).

To investigate this phenomenon, a purposeful sample was selected for this study. Patton (2015) states that logic of qualitative purposeful sampling derives from the importance of an in-depth understanding of specific rich cases where the researcher can learn much about issues of central importance for the purpose of their enquiry. Qualitative researchers are interested in understanding how people interpret their feelings and what meaning they attribute to their experiences (Charan & Biswas, 2013). According to Meriam and Tisdell (2015) purposeful sampling is based on the assumption that the researcher aims to discover, understand and gain insight, therefore needs to select a sample for maximum learning. Qualitative samples are often small, as researchers attempt to explore the themes more in depth. The main inclusion criterion for this study is that participants must have training and experience working with a client with food addiction, therefore, professionals fitting these

criteria were approached to gain insight into their experiences, and to understand what is the main factors in DE and FA.

Study Participants

Five participants, two males and three females, were recruited using the criteria specified above. Only three Irish participants agreed to take part therefore, two participants were recruited from overseas.

Participant 1 is a senior counsellor at an addiction treatment centre in Ireland with over ten years experience in the addiction field and with FA.

Participant 2 is an independent counsellor in the addiction field with experience of FA.

Participant 3 is an independent counsellor in the addiction field with experience of FA.

Participant 4, Dr. Tarman, a medical practitioner based in Toronto, Canada, author of Recovery from Food Addiction and Food Junkies and a counsellor. She also has a history of FA.

Participant 5 is Ms Gudmundsdottir, based in Iceland, Director of International School for Food Addiction Counselling and Treatment (INFACT) and Director of an outpatient treatment centre which specializes in the treatment of food addiction. She also has a history of personal FA.

For the purposes of this thesis, the participants will be referred to by the numbers above throughout, Participant 1, Participant 2 etc.

Participant Recruitment

Following research proposal approval by the lead lecturer at PCI College, the researcher approached two addiction treatment centres to reach potential participants. Two gatekeepers were identified, both senior counsellors in the respective centres. King and Horrocks (2018)

define a gatekeeper as someone who has the authority to grant or deny permission and facilitate access to potential participants. One senior counsellor responded and agreed to be a participant in the research.

The researcher also approached individual independent counsellors recommended via 'word of mouth', a so-called snowball sampling. Four participants were recruited by this process.

The research questions, the invitation and consent form were emailed and then a date and time for the interviews were agreed. Dr. Tarman and counselor Gudmundsdottir agreed to reveal their identity in this research study.

Data Collection

Data collection through interview is a characteristic of many qualitative studies. Interviews give rich data regarding a particular phenomenon and are the most straightforward approach to gathering rich information. To collect data, questions need to be tailored to the research phenomenon, the characteristics of participants and the preferred approach of the researcher. Interviews are generally carried out face-to-face, but the use of telephone interviews or a video platform to overcome geographical barriers is becoming increasingly popular. In qualitative research, the most common data collection is through semi-structured interviews, where the interviewer is asking about the core elements of the phenomenon. The semi-structured interview should be designed to ensure that the required data is captured while still allowing flexibility for interviewees to bring their own perspectives into the discussion. (Barrett & Twycross, 2018). The researcher emailed the study information and questions to participants prior to the interview. Participants agreed to take part in the study without any coercion, understood the purpose of the research and informed that they can withdraw from the study at any point with no consequences.

The intention to ask questions in a particular order was adapted according to the answers of the interviewees where necessary. Thus, the researcher allowed the participants some freedom and flexibility, maintaining the focus of the interview without forcing the participants into a particular area of discussion, resulting in a natural flow (Barrett & Twycross, 2018). Participants were given opportunity to ask questions at the end of the interview.

Ethical consideration was given but not limited to, informed consent and debriefing methods. The plan to address the ethical dilemmas were outlined in this study research proposal.

Four interviews were conducted via video call and one took place by telephone. They lasted between 45-58 minutes, with an average of 50 minutes. They were recorded and then transcribed.

The aim of the Researchers interview questions is to explore the concept of FA and participants experiences of treating clients in practice. Areas of research include clients' family history of FA or other addictions; the age of onset of their DE, and the main contributory factors of their DE. Further questions concerning the main triggers of DE engagement including emotional states which lead to using food for comfort. Questions about the favorite types of food their clients consume leading to their FA were asked. Another area explored looked at whether addicted clients engaged in purging after binge episodes and treatment modalities. Discussion took place around differences in treatment of FA and what tools/questionnaires are used to establish whether the person suffers from FA or ED. Finally, dual diagnosis (DD), having an additional mental health disorder such as mood or anxiety disorders as co-morbid disorder with food addiction, was addressed. In order to gain maximum insight into the participants' experiences, open-ended questions were used.

Data Analysis

One of the more common approaches in qualitative research to draw data from a variety of philosophical sources is thematic analysis (TA). TA is a method for systematically recognising, forming and providing insight into patterns (themes) of meaning across the data set and also enables a researcher to gain insight and make sense of interpreted collective meanings and experiences. It allows identification of commonalities within the spoken or written topic and makes sense of them. TA allows the researcher to identify patterns of meaning and to explore the research question. Thus, the analysis provides rich descriptions of a particular phenomenon (Clarke et. al., 2015).

According to Brown & Clarke, 2012, one method of applying TA is a six-phase approach. This was applied as follows:

Phase 1: The researcher became more familiar with the data by actively and critically reading the interview transcripts a number of times while listening to the audio recording, considering and questioning what is being revealed (Brown & Clarke (2012).

Phase 2: The researcher commenced making notes, highlighting segments of the text for coding considering relevance to the research question and applying labels. Each participant's coded answer was then added under the relevant question. It became apparent that the questions had different numbers of codes, an average of 7-10 codes. These interpretive or latent codes locate meanings hidden behind the semantic surface of the material (Brown & Clarke, 2012).

Phase 3: Following identification of codes, the process of theme development began. The codes were coloured and themes were created from answers that shared meanings. Colour

coding similar answers from participants led to identification of common themes and sub-themes. Further analysis led to the creation of themes as follows:

- FA fits the definition of addiction criteria as identified by DSM-5
- FA can be genetic but also learned behaviour
- Hyper-palatable, unhealthy foods being given from a young age can increase the risk of FA
- FA often presents concurrently with various mental health disorders or other substance use
- FA may have higher prevalence among certain demographics
- FA can develop alongside ED (BN or BED) often triggered by distorted body image.

The relationship between the above themes provides a deeper story around the data gathered (Brown & Clarke (2012).

Phase 4: Reviewing the transcripts, codes and themes, some discrepancies were corrected to improve the accuracy of the meaning of the data. Still considering the research question, the potential themes that emerged were placed into separate columns along with their subthemes for contextual assessment. The researcher then undertook a final read-through to evaluate the themes to the complete data set and checked for accuracy. The final themes revealed the most significant and relevant aspects of the data (Brown & Clarke (2012).

Phase 5: Six themes were defined and named. The themes were informed from analysing the narrative gathered and were significant in informing the research question. Each theme had a singular focus but built on the previous theme. The sequence of the themes was determined by the sub-themes. The themes identified were related but also can be considered individually. In totality the themes go beyond the content of the data to provide a richer and

deeper understanding giving a coherent story around the concept of FA (Brown & Clarke (2012).

Phase 6: In this final phase the researcher put the themes into a logical and coherent sequence. The themes were inter-related and helped to present the findings in natural flow, which revealed the full story surrounding the main factors in DE. This comprehensive, analysis-based report is supported by academic research (Brown & Clarke (2012)).

Findings

The research identified the following themes:

1. Food Addiction (FA).

All participants agreed that food addiction is a true phenomenon, however their understanding of why it develops, is different. Participants 4 and Participant 5 advised they are in recovery from FA. They said, being addicted to certain types of food, is the same as being addicted to any other substance. Both participants report that the only way of recovery is by cutting out the particular substance, in this case the type of trigger food from their diet completely. It cannot be re-introduced as this increases the risk of relapse. Participants 2, 3 and 4 think that the term is confusing, as people are usually not addicted to healthy food, but junk food, therefore, the term 'Junk Food Addiction' would be more appropriate. When treating FA by following the addiction model Participant 2 looks for traits of triggers; loss of control; pre-occupation; progression; cravings; tolerance; chasing the pleasure; self-medication; negative emotions-feeling guilt afterwards and re-engaging in the behaviour again.

Participants 3, 4 and 5 are of the opinion that while many individuals opt for various surgical interventions such as a gastric bypass, or an adjustable gastric band, or psychological treatments, if the 'trigger food' remains in the diet, the individual will have reduced chances of recovery. Notably, Participants 4 and 5 highlighted the link between the neuropathways activated when consuming highly palatable food and the reward pathways activated through alcohol and other substance use. Participant 4 also highlighted that FA can be the root of the cause in obesity and related diseases. Alternatively, Participant 1 stated that the phenomenon of FA is complex, as food is a source of energy and essential for survival, unlike other

substances or gambling for example. Participants 1 and 3 observed that perception of body image is a major contributor in the development of a relationship with food. Participant 1 did not believe that FA fits into the 12 step treatment model due to its complexities however, Participants 3, 4 and 5 counter-argued that a personalised approach to the 12 step treatment model can be used to treat FA.

2; Genetics and Learned Behaviour.

All Participants agreed that the development of FA is affected by a complex combination of genetic, developmental, behavioural and environmental factors. Participants 3, 4 and 5 agree that development of life-long eating habits leading to FA and obesity commences in childhood through treats 'as comfort' when experiencing negative emotions. All Participants shared the view that negative emotions play an important role in learning to cope, thus, the food can be used for self-soothing purposes. However, Participants 2, 3, 4 and 5 think that treats are commonly used as rewards for children. Therefore, viewing treats as a 'reward' is likely a learned behaviour. However, the genetic vulnerability to FA was also highlighted. Participant 1 stated, that he believed the body image in adolescence is one of the main drivers to develop 'specific' eating behaviour (through various diets, compensatory behaviours such as over-exercising, purging, restricting food). Finally, peer pressure and social media were also identified as influencers of developing different eating behaviours/relationship with foods.

3; Types of Food.

All Participants agree that some foods may have more addictive properties than others, Participant 3 asserts theory that certain foods are particularly designed by food companies to have rewarding and reinforcing properties. These foods have no or limited nutritional value but have intense flavours, are identified as 'addictive' and are hyper-palatable (high in one or

more of ingredient such as sugar/fat/salt). Participant 5 highlights, that while some studies prove that sugar is more addictive than heroin, the sale of these products is approved by Government. The promotion of these by shops and food companies including “bargain buys”, “can’t have just one” and “two for price of one” slogans, is widely accepted by the public and these affordable foods are easy to access. Conversely, the use of heroin is stigmatised and purchase of the drug is illegal and punishable under law.

4; Dual diagnosis (DD).

There were varying opinions from Participants surrounding DD however, all agreed that DD is often present and that FA is associated with increased levels of depression and anxiety disorders. Participants 1 and 4 believe that DD or having co-addiction is common in FA. Participant 2 believes that DD is more a rule, rather than the exception, in his clinical practice. However, Participant 3 disagrees about the commonality of DD, believing that it as likely that a mental health issue could be the result of an addiction, as an addiction being the result of self-medicating mental health issues.

Participant 5 believes that while there is uncertainty around DD the mental health issues develop as a ‘by-product’ of addiction however, she acknowledges that individuals with bipolar affective disorder (BPAD) often have addiction issues. Trauma, and self-medicating as a coping skill was also identified by Participants 2, 3, 4 and 5, while Participant 1 believes that distorted body image can lead to low self-esteem, then depression/anxiety resulting in various unhealthy eating behaviours.

5; Age group and gender.

There was a consensus divide on age group and gender from the Participants with Participants 3, 4 and 5 agreeing that FA can start at an early age while Participants 1 and 2

identified adolescence as the most susceptible. All were in agreement that the second most common vulnerable individuals are female.

Easy access to sweets and junk food, or using certain sugary foods 'to comfort or reward' the child can result in developing FA from 5-6 years old. While Participants 1 and 2 acknowledged this risk, they identified that adolescents, with high impulsivity and inadequate inhibitory control characteristics, are the most susceptible to any addiction, including FA. All Participants agreed that body image via social media plays a significant role in the female category.

6; Eating Disorders (ED, BN or BED) or disordered eating (DE).

All Participants identified ED as a complex issue and that it is challenging to identify ED or FA due to their overlapping conditions. They all agree that everyone experiences stressful challenges during their lives and may reach for food for comfort. However, when these issues are temporary and the stressor is resolved, the eating issue is also resolved. However, the root cause of ED is much deeper, harder to treat and lasts longer, which increases the chances of developing FA.

Participant 4 stated that it is not uncommon for an individual to have both ED and FA and believes that individuals with ED and other psychological issues, reach for highly palatable food to 'numb' their feelings. If the psychological issue is not resolved and the eating pattern becomes repetitive over continued time, the individual learns which foods are 'comforting' and may develop FA. This is similarly applicable to DE.

Discussion

The aim of this study is to explore Food Addiction, and its connection to disordered eating (DE) or eating disorder (ED).

Through the perceptions and experiences of all Participants in this study there was agreement that the phenomenon of FA exists albeit a complex matter as food is essential to humans for survival. All were in agreement that FA fits into the addiction treatment model, presenting with similar traits and symptoms.

Development of FA involves a complex combination of genetic, developmental, behavioural, and environmental factors echoing studies by Davis (2015) and Mayhew et. al. (2018) who found through family research with overweight and obese people, that genetic predispositions for disordered eating originate from a complex interaction of psychological risk factors, sociocultural influences, and biological and genetic predispositions.

Supporting studies by Volkow & Wise, (2005) and Gearhardt et. al. (2009), all Participants believe FA involves reward gratification from eating trigger foods despite the absence of the metabolic need to gain pleasure. Furthermore, two Participants outlined that the neuropathways activated when consuming highly palatable food and the reward pathways activated when using other addictive substances are the same. The findings of those studies echo the findings of this study.

This study confirms that Food Addiction is a true phenomenon and can be the driver of Disordered Eating. This study, did not provide any new information, it supports some previous findings. The APA do not include FA into their updated edition in DSM-5. Further research and evidence of the existence of FA would give clarity around the need for inclusion in subsequent editions of DSM, providing greater clinical assistance.

It was proposed that FA should be renamed “Junk Food Addiction” because individuals presenting with FA, are not addicted to healthy food rather highly processed foods refined through industrial process such as pizza, ice-cream, soft drinks etc. confirming research by Ifland et. al. (2009), who state that the distinction between refined and unrefined foods provides the foundation for the addiction to refined foods. Ingredients that are refined through an industrial process fall under the first group. Foods that can be found in nature fall under the second group. People can therefore develop an addiction to refined foods but not to unrefined foods. The findings of this study could contribute to food and food promotion policy development in Ireland. It could be used for in schools to aid children make informed choices about the food they eat.

Although Participants share differing views and experiences in the area of DD there is consensus around the presence of DD alongside presentation of mood, anxiety disorders (Burrows et. al. 2018) and low self-esteem, particularly the ones who are obese or overweight. Their experience reflects the findings of Quello et. al. (2005) who states that the most common psychiatric co-morbidities among individuals with eating disorders are mood disorders, including BPAD, anxiety disorders, PTSD and SUD. An opposing view by one participant proposes that DD is the by-product of addiction however they acknowledge that addiction, including FA is common in individuals with BPAD corroborating the study by Horsager et. al. (2021). Finally, trauma and PTSD were also identified as contributors to emotional eating and self-medicating as a coping mechanism. Brewerton (2019) establishes a relationship between BED and PTSD following traumatic occurrences. Brewerton (2019) outlines that excessive indulgence in hedonic foods and drinks may become an inexpensive, accessible, legal way where distressed individuals can numb and distract themselves from disturbing trauma related thoughts, feelings and memories. The findings in this study, have many similarities with findings of the other studies on psychopathology of various mental

health issues with FA. Clients with DD identify that staff are often lacking knowledge, skills and awareness of DD, leading to a lack of confidence working with DD clients and challenges around treatment due to its complexity (McGabhan et. al. 2004) Therefore, the findings of this study could be used in the education of mental health professionals to increase their confidence in the DD field.

There was divided opinion on the most susceptible age for development of FA with three participants placing more emphasis on younger children and two on adolescents. Influences such as peer pressure and social media were identified as factors in development of eating behaviours/relationships with foods and closely support the perception of influential body image research carried out by Rose et al. 2018. The impact of these factors could lead to emotional eating when the adolescent is facing negative stressors and view food as a comfort (Howell, 2017). Body image in adolescence is one of the main drives to develop 'specific' eating behaviour. The findings in this study echo those of previous studies by Burrows et. al. (2017) and Jordan & Andersen (2017) who state that adolescence is a known vulnerable period for psychosocial issue onset; marked by heightened impulsivity and diminished inhibitory control leading to unhealthy eating habits and addictive tendencies towards food in addition to increased experimental alcohol and drug use. It is possible that a higher risk of addictive-like eating in children may be linked to parental traits. The unhealthy diet within a family setting may also contribute to the risk of disruptive eating behaviour later in life.

Participants were in agreement that the second most vulnerable demographic was women of any age. A desire to achieve a “normal body” image alongside peer pressure are important risk factors for women developing an abnormal relationship with food (Hesse-Biber, (2006).

People with ED reach for highly palatable food with the aim of 'numbing' their feelings. If the psychological issue is not resolved and the eating pattern becomes repetitive for a longer period, the individual learns which foods are 'comforting' and may develop FA.

All participants agreed the deep complexities of ED and FA make an informed identification difficult. Predominantly in the field of addiction and FA treatment, expertise in ED especially was lacking in all participants however one participant states it is common to have both ED and FA. In addition various additional psychological issues can make an individual with ED choose hyper-palatable food to 'numb' their feelings. While the roots of ED are much deeper, harder to treat and last longer, it increases the chances of developing FA.

Gearhardt et al. (2013) states that people with BED have significant rates of FA. Mestre-Bach et. al. (2019) highlights that individuals with BED have a higher intensity of food craving, increased impulsivity and more serious effect. If any concurrent psychological issues are not resolved and the eating pattern becomes repetitive over time, the individual learns which foods are 'comforting' and may develop FA. This is similarly applicable to DE. All participants agree that with DE, everyone experiences challenges at some stage of their lives and may reach for food for comfort. An analysis of 634 emotion profiles produced by Macht & Simons (2000) to indicate three categories of emotional states denoted by the labels: anger/dominance, tension/fear, and relaxation/joy reflected the experiences of the Participants. The majority of self-related eating motivation rose when negative emotions were present. However, these problems are momentary, and in most cases, when the stressor is dealt with, the eating problem will be resolved. However, if person is susceptible to addiction, it may increase the risk. Fryen et. al. (2016), argue that this is a learned behaviour and the aim of consuming unhealthy foods to cope with negative emotions is self-medication, rather than addiction.

The findings of this study and the literature demonstrate that whether the person has an ED or is in a period of stress and experiencing strong emotions, self-medication with hyper-palatable foods on a regular basis can lead to developing FA. In Ireland there are treatment centres that specialise in the treatment of ED or addiction. Addiction centres tend to

specialise in treatment of either SUD or behavioural addictions. Very few treatment places treat both. Overall, this study highlights the commonality of FA as either a co-existing condition with other substance addictions or with ED. The findings of this study are consistent with the findings presented in the literature review, drawing the conclusion that it is evident the development of Disordered Eating involves many multifaceted and interacting factors, therefore, the findings of this study could be used in adapting the educational curriculum of those who are training to engage with this complex cohort.

The limitation of this study is that it is a qualitative study and the sample is very small. Of the many Irish counsellors treating FA, the findings here are based on the perceptions of just five professionals, with varying lengths of experience in the field of FA. Furthermore, these professionals do not have experience in the treatment of ED.

Recommendations for further studies on this topic in Ireland are made, with the aim that the government could increase health awareness and take steps to protect public health commencing with the development of policies around sugar consumption to complement the initiatives such as the Sugar Sweetened Drinks Tax introduced in May 2018. Additionally, with evidence of the serious impact caused by the consumption of highly processed foods by children, government could impose an additional tax on sweets, ban advertisements for unhealthy foods and encourage supermarket managers to change the layout and location of shelves containing sweets.

Conclusion

Given the rise in obesity worldwide over the past few decades, the concept of food addiction (FA) has gained appeal among researchers and society in general as a plausible explanation of how psychological factors contribute to weight gain. This has resulted in increased research seeking to explain food-related behaviours. While FA remains a controversial topic in the research field, there is increasing evidence that if an individual develops a specialized adaption to one or more often-eaten foods to which they are sensitive this may result in a pattern of symptoms that are descriptively similar to those of other addictive processes. While FA is not included in the latest DSM-5, there is unanimously accepted diagnosis of FA based on criteria adapted from SUD diagnosis. The psychometric assessment tool YFAS employs DSM criteria for clinically relevant drug-use disorders to measure the signs of addictive eating of hyper-palatable, energy-dense foods.

Some researchers argue, that the primary explanation for the pathophysiology of FA roots from a dysfunction in the reward system. Evidence suggests, that some individuals can lose control over their food intake, fail to abstain or decrease consumption of certain types of foods despite awareness of negative consequence. Also, in FA the D2 receptors are decreased similarly to in substance abuse, therefore individuals who experience decreased reward from food intake, may overeat to compensate for dysfunction in the reward system. Hyperpalatable foods and substances may also trigger similar behavioural consequences. However, while research has mainly focused on humans' brain activity, rather than the behavioural aspect of FA, animal studies explored biological and behavioural indicators of addiction to food. Some studies found that rats fed intermittently sugary food, tripled their sucrose levels, indicating an increased tolerance to effects of high sugar foods. However counter arguments by different studies questioned those findings and stated that while this rodent study may produce

insightful hypotheses for comprehending human behaviour, it is debatable these findings have any application to human eating habits, food addiction, obesity, or binge-eating.

While food consumption is normally rewarding, there is a theory that certain food may be more addictive. Increased consumption of hyper-palatable foods in addition to improved food accessibility and decreased physical activity were identified as the main contributory factors for metabolic diseases and obesity in developed countries. Individuals with FA tend to have poor coping skills and may compensate by increasing food intake.

The participants in this study agreed that FA is a true, but complex and confusing phenomenon, as food is a human necessity, unlike other addictions. Furthermore, FA tends to relate to only hyper-palatable "junk" food. The perception of body image, particularly in women receiving subliminal social media messaging, can also contribute to the development of an unhealthy relationship with food. Social media and peer pressure can influence the development of a negative eating pattern. This is particularly evident in Western culture. There is a higher risk during the adolescence years of developing addictive-like behaviours due to decreased efficiency in emotional regulation and the immature impulse control, that can drive the development of 'specific' eating behaviour through various diets or compensatory behaviours.

In combination with deeper psychological issues this can lead to development of ED (BN, BED) and if psychological issues remain unresolved and eating patterns are increasingly repetitive, the individual learns which foods are 'comforting' and FA may result. Furthermore, these individuals with ED may reach for highly palatable food with the aim of 'numbing' their feelings. Most participants agreed, that DD or having co-addiction is common in FA. In general, participants linked FA to increased levels of depression and anxiety disorders. It was agreed, that distorted body image can lead to low self-esteem, in turn leading to depression/anxiety resulting in unhealthy eating behaviours. It was also

thought DD can be a by-product of the addiction but self-medication as a coping skill was also identified. Additionally, all participants agreed that developing FA is affected by a complex combination of genetic, developmental, behavioural, and environmental factors. They all agreed that emotions play an important role in coping strategies, thus using food for self-soothing. In addition, if undesirable foods, exacerbated by easy accessibility of sugary treats, are being used to "comfort" at the early age of 5-6 years old, the child is at increased risk of developing FA.

This study aimed to explore what is the main drive of disordered eating? As the findings in this study support prior research and add provenance to the true phenomenon of FA and its significance in global health issues, it places hope that the governing agencies will eventually introduce policies and guidelines in order to protect the public health.

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DSM 5

DSM IV

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Appendix 1

Letter to Senior Counsellor

From Mrs. Katarina Madarasz

Senior Counsellor

Date

Re: Request for permission to carry out a research study:

A Qualitative Research Study: What is the main drive of disordered eating?

Dear Sir or Madam,

Although similar studies have been undertaken worldwide, in Ireland, to date no research has been carried out on this specific topic. I am hoping that the findings of the study could support previous findings in this research topic.

This study will involve the participation of counsellors who fit the criteria of having experience with working with clients with food addiction. The participants will take part in an audio-taped interview which should last approximately 40 minutes. The interviews shall

take place based on an agreement with the counsellor. All ethical issues will be considered and addressed during and after the study. Anonymity and confidentiality will be protected at all times.

Transcription of the data, along with audio recordings will be transferred to an external hard drive and stored within password protected folders. The interviews will be coded and the participants' details and responses will remain anonymous and non-identifiable.

I am currently in the process of submitting my research proposal for approval from the PCI College to undertake the study.

A letter of invitation will be issued to all potential participants along with a consent form. If the counsellors are willing to participate, they must sign the written consent and post it in the pre-stamped envelope included. All participants maintain the right to withdraw from the study at any time without consequence.

Thank you for taking the time to read this letter. I would be grateful for your permission to carry out this study within the addiction counselling services and access to counsellors in the centre.

Should you have any queries please feel free to contact me at …… or email ……. at any stage. I look forward to hearing from you.

Yours sincerely

Katarina Madarasz

Signed:

Appendix 2

Letter of Invitation

Mrs. Katarina Madarasz

<Address>

<Date>

Re: Request for permission to carry out a research study:

A Qualitative Research Study: What is the main drive of disordered eating?

Dear Sir/Madam,

I am currently undertaking a research study as part of my Masters Degree Programme in Addiction Counselling in PCI College in Dublin.

I am a qualified mental health nurse. I have an interest in counsellor's perspectives and experiences through their work with clients who developed food addiction and I hope to undertake a research study with your help.

This study aims to answer the question: What is the main drive of disordered eating?

Although similar studies have been undertaken in worldwide, to date no research has been carried out on this specific topic. I am hoping that the findings of the study could possibly have positive contribution to this field on this topic. To carry out this study, I will need the participation of counsellors who fit the criteria. The criterium is that the counsellor must have an experience in working with a client with food addiction. The interviews shall take place based on an agreement with each counsellor at agreed time and will last approximately 40-50 minutes and will be audio-taped. The counsellors will be provided with all relevant information in advance and will be given an opportunity to ask questions at the end of the interview.

I would like to invite you to take part in this study.
If you choose to take part, you will be requested to sign a consent form that I will send you after you express interest to participate in my study. All ethical issues will be considered and addressed during and after the study. Anonymity and confidentiality will be protected at all times.

Any information gathered during this study which is identifiable to you will remain entirely confidential and anonymity will be maintained throughout the study. You have the right not to take part or to withdraw from the study at any stage without consequence.
Thank you for taking the time to read this letter. Should you wish to take part in the study or have any further questions you would like to ask before making a decision, please feel free to contact me at the above address or alternatively you can ring me on …….. or email ……..

If you would like to participate in this research study, please contact me on the above email address so I can send you the consent form to sign, and return it to me in the pre-stamped envelope.

Should I not hear from you I will assume that you do not want to take part and I will not contact you again.

Yours sincerely,

Katarina Madarasz

Appendix 3

Consent Form

I _____have read and understand the letter of invitation to take part in the research study: A Qualitative Research Study: What is the main drive of disordered eating?

I have received adequate information regarding the nature of the study and understand what will be requested of me. I am aware of my right to withdraw at any point during the study without any consequences.

I hereby consent to participate in this research study.

Participants Signature: _____

Date: _____

Researchers Signature: _____

Date: _____

Appendix 4

Questions to Counsellors

1; From your experience, is food addiction a 'real thing'?

2; Does the food addiction or other type of addiction run in the addicted service users' family?

3; What were the main contributory factors to their disordered eating?

4; What is the difference between eating disorder and disordered eating?

5; Do these clients suffer from other mental health disorders as well such as mood disorder or anxiety disorders?

6; What are their main triggers for engagement in disordered eating? What emotional states? Are they using the food as comfort?

7; Is treatment different for food addiction as oppose to treatment for emotional eating?

8; What are their favourite food types they turn to and binge eat?

9; Do the clients engage in purging after the binge episode?

10; What tools/ questionnaires are you using to establish whether the service user suffers from food addiction and disordered eating?

11; Are they eating because they like eating or they are addicted to the foods they eat?

12; Is there a progression in food addiction?