The Disordered Eating Practices and Body Image Concerns of Elite and Retired Judoka

Thesis submitted by:

Jade Courtney Eccles

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Abstract

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The aim of this thesis was to gain a greater understanding of the real-life disordered eating and body image experiences of elite and retired judoka. This was achieved through using in-depth qualitative methods to gain an insight into the factors that influence and contribute towards the development of these processes, such as cutting weight.

The first study (Chapter 3), aimed to explore and understand the unique cultural dynamics of judo and the relationship cutting weight has with disordered eating behaviours and body image perceptions of elite judokas through using an ethnographic approach to research. Complex relationships between the weight cutting culture, disordered eating, and body image were present within the judo environment, with athletes experiencing many resultant negative affects. Expanding on this study, the second study (Chapter 4) aimed to gain an understanding of the impacts that cutting weight has on judokas into their retirement. Retired athletes experienced a strong athletic and weight category identity, and cutting weight practices were found to be synonymous with disordered eating behaviours, indicating a continuation of cutting weight into retirement. The final study of this thesis (Chapter 5) translated the composite letter from Chapter 4 into an arts-based knowledge translation (ABKT) tool. This study aimed to: 1) Bridge the disordered eating and body image dissatisfaction knowledge-transfer gap, and 2) Disseminate the resources to potential users (i.e., athletes, coaches, parents, and practitioners) to assess its impact. Findings indicated that the resources should be disseminated to individuals inside and outside of sport to help them understand cutting weight practices, and their consequences.

The overall findings from this thesis would suggest that those working within judo should consider the long-term psychological impacts from engaging in extreme cutting weight behaviours, and the development of informed guidelines and safe practices. This thesis contributed to existing knowledge through researching an under-researched population (judokas), developing a greater understanding of the culture of judo and its relationship with cutting weight, and discovering the existence of a weight category identity. Furthermore, this thesis expanded methodological contributions through the use of longitudinal, in-depth methods, such as ethnography and letter writing, and translated the knowledge gained into an easily accessible format.

List of Abbreviations

ABKT	Arts-Based Knowledge Translation
BJA	British Judo Association
BJJ	Brazilian Jiujitsu
DSM-5	Diagnostic and Statistical Manual of Mental Disorders 5th edition
EDE-Q	Eating Disorder Examination Questionnaire
IJF	International Judo Federation
LEA	Low Energy Availability
MMA	Mixed Martial Arts
NEDC	National Eating Disorders Collaboration
NGBs	National Governing Bodies
RED-S	Relative Energy Deficiency in Sport
RWL	Rapid Weight Loss
WWCP	Wrestling Weight Certification Programme

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Conference Presentations

Eccles, J. C., Winter, S., & Wadey, R. (2023, May 25). *An ethnographic approach to disordered eating and body image in elite judokas* [Conference presentation]. SHAPS Festival of Research, St Mary's University, Twickenham, United Kingdom.

Eccles, J. C., Winter, S., & Wadey, R (2024, July 30-August 1). *An ethnographic approach to disordered eating and body image in elite judokas* [Conference presentation]. Qualitative Research in Sport and Exercise 2024, Bath, United Kingdom.

Chapter 1: Introduction

1.0 Introduction

1.0.1 Background to Judo

Judo is an Olympic martial art and combat sport that was introduced at the Tokyo 1964 Games for men, and at the 1992 Games in Barcelona for women. Combat sports are a "class of contact sports where competitors engage in one-on-one combat… [which] can involve striking… grappling techniques… or a mixture of both" (Barley et al., 2019, p. 1). In this sense, judo comes under the category of a grappling combat sport and martial art. Within judo competitions, judoka (the term given to athletes within the sport) are divided into different age categories, which will dictate how they can win a fight, what rules they must follow, and how long they fight for. The age categories for judoka stipulated by the British Judo Association (BJA) are as follows: Minors 8 to 11 years, Pre-Cadet 12 to 13 years, Cadet 14 to 16 years, Juniors 14 to 19 years (Cadets can compete in this category), Seniors 14 plus (Juniors can compete in this category), and Masters aged 30 and above (BJA, 2021).

To win a fight outright in judo, an ippon, the highest score, must be achieved and this can be done in a number of ways. Athletes in all age groups from Minors up to Masters can win by throwing their opponent flat on their back or by pinning them down on their back for twenty-seconds. Once a judoka reaches the age of 14 and becomes a Cadet, they can also win by submissions, which includes armlocks and strangles/chokes. Other ways in which judoka can win is through having a higher score over their opponent by the end of the contest (i.e., being a waza-ari up) or by an accumulation of shidos (light penalty/minor violation of the rules) leading to hansoku-make (disqualification). Within competition rules, Minors, Pre-Cadets, and Masters (up to 59 years of age) fight for up to three minutes, and Cadets, Juniors, and Seniors fight for up to four minutes, with all these categories having an open-ended Golden

Score (International Judo Federation, 2022). The only exception to this rule is the Masters categories for judoka aged 60 and above, where contests last for up to two and a half minutes, with Golden Score being just one minute long. Golden Score occurs when neither competitor has attained a score, competitors have the same score, or they have the same number of shidos. During this period of Golden Score, there are two ways that a judoka can win, the first player to score wins or an athlete can win when their opponent is awarded a shido.

1.0.2 Judo Weigh-Ins

Judokas are subject to weight categories, which are designed to facilitate a fair competition. Dependent on the competition, the age groups, and the gender of the judokas, the BJA (2021) Tournament Handbook notes a difference between open and closed weigh-ins. For example, open weigh-ins are usually conducted on the day of the competition, and in an environment where parents, coaches, players, officials, and the scales can be visibly seen. In these open weigh-ins, which are typically for Cadets and below, boys must wear competition-legal judo trousers and are given a 0.5-kilogram allowance, whereas girls must wear competition-legal judo trousers and a t-shirt and are given a 0.6-kilogram allowance. In events for Minors, Pre-Cadets, and Cadets, it is prohibited for athletes to sweat off the weight. Nonetheless, this does not always stop these younger athletes and if they are seen to be doing this on the day of the competition, they will be asked to weigh in immediately (BJA, 2021).

Closed weigh-ins on the other hand take place behind closed doors and are usually conducted the evening before the competition. It is recommended that there be a minimum of two competition officials of the same gender as the athletes present. In these closed weigh-ins, Juniors are required to weigh in with underwear on and will be provided with a 0.1-kilogram allowance, whereas Seniors and Masters can weigh

in without clothing and with no allowance (BJA, 2021). At International Judo Federation (IJF) level tournaments, the official weigh-in for athletes is organised for the day before the competition, where they must weigh within the weight limits of the category with no tolerance for being over the weight (IJF, 2022). At this international level, athletes can be selected at random to participate in another weigh-in on the day of the competition, where they must weigh within 5% of what they weighed the evening before (IJF, 2022).

1.0.3 My Judo Experience and Research Philosophy

Having been part of the judo community for over twenty years, I have witnessed a first-hand account of how disordered eating practices and body image concerns can impact judoka at all competitive levels. I competed in judo both domestically and abroad, travelling to France, Belgium, The Netherlands, and Japan, and was also a member of the England Pre-Cadet and Cadet Judo Squad for a number of years. Throughout my competitive years within judo, I fought in the under 57-kilos weight category. Although I never had to lose much weight to make the category, I sometimes had to diet or do an extra training session with layers on under my judogi (judo kit) to help lose the weight, and I often would not eat breakfast if I had a morning weigh in. Even since I have retired from competitive judo, where I now occasionally train judo and Brazilian Jiujitsu (BJJ) and also coach children and young adults, I do still engage in some of these behaviours and practices. For example, to this day I often skip breakfast, I always like to eat healthy, and I have maintained some training.

Taking this into consideration, the overarching research philosophy is of interpretivism, which concerns how individuals make sense of their own experiences (Pulla & Carter, 2018; Wang, 2020). This research philosophy aims to gain an in-depth understanding from the findings gathered and considers the complexities that

exist within each unique research context (Alharahshed & Pius, 2020; Pham, 2018). As a result of interpretivism, the research is thus underpinned by ontological relativism and epistemological constructivism. Ontological relativism is the belief that there are multiple realities which are individually created through one's own interests, beliefs, and emotions (Dieronitou, 2014; Lincoln et al., 2018). Epistemological constructivism is the view that knowledge is socially constructed and subjective to the individual, in which research is a co-constructed processes involving both the researchers and the participants (Markula & Silk, 2011; Potrac et al., 2014).

1.1 Overview of Thesis

This thesis comprises of six chapters. Chapter Two begins with a review of the existing literature to provide context to the programme of research. Starting with the conceptualisation of disordered eating, body image, and body image dissatisfaction, and then followed by an overview of disordered eating and body image models and theories. Firstly, the etiological model (Petrie & Greenleaf, 2007, 2012) is discussed, including the sporting and societal pressures, internalisation, body dissatisfaction, negative affect, restrained eating, and binge eating and bulimia. The objectification theory (Fredrickson & Roberts, 1997) is also discussed to provide a greater understanding on how social forces can influence athletes' perceptions of their body image, followed by how body image dissatisfaction develops in relation to sporting body image ideals. The chapter then reviews the existing disordered eating and body image literature specifically in relation to judo. The experiences of retired athletes and judoka are considered, discussing Papathomas et al.'s (2018) retired female athlete paradox and Buckley et al.'s (2019) athlete body transition. The chapter then ends by suggesting gaps in the literature, provides the research rationale, and closes with an outline of the aims of this programme of research.

The third chapter of this thesis consists of the first study of this programme of research, which undertook an ethnographic approach. The aim of this first study was to understand the unique cultural dynamics of judo, and the potential relationship with disordered eating behaviours and body image perceptions of elite judokas. This chapter provides context to the culture and participants that were under study in this ethnography, which consisted of 16 judoka and one judo coach from an elite fulltime judo training facility. Data collection methods included observations and fieldwork, to fully immerse the researcher within the environment (Emerson et al., 2001; Hoey, 2014), followed by five story-completion focus groups with the 16 judokas, who then participated in semi-structured interviews. Reflexive thematic analysis (Braun & Clarke, 2019; Braun & Clarke, 2021) was conducted on all collected data independently, in which three overarching themes and nine subthemes were developed: Embedded in the sporting culture (collective environment, modelled behaviours, cutting weight pressures), navigating the mental battle (negative psychological consequences, weight and food obsessed, cutting weight is suffering), and the judoka body experiences (body image and weight cutting relationship, weight category identity, female body functioning). These themes were discussed in relation to the existing literature and indicated that unhealthy and potentially dangerous cutting weight behaviours, which were considered to be synonymous with disordered eating, were deeply embedded within the judo culture.

Following on from this, Chapter Four aimed to investigate how cutting and monitoring weight in judokas' competitive careers impacts them in their retirement from judo. This study consisted of conducting two semi-structured interviews followed by a letter writing task to a younger self with 15 retired judokas. Interviews were analysed using reflexive thematic analysis (Braun & Clarke, 2019; Braun &

Clarke, 2021), whereby three themes were developed: Trying to maintain the impossible, a health awakening, and the weight category stronghold. The participant letters were analysed using similar methods to Schinke et al. (2016) and Szedlak et al. (2020) to create a composite letter to younger self (Blodgett & Schinke, 2015). Findings revealed that the disordered eating behaviours in these former judokas were a continuation of cutting weight practices from their competitive careers, but following many years of retirement, judokas re-educated themselves and lead a healthier life now compared to when they were competitors.

Chapter Three and Chapter Four highlighted the need for resources to be developed to educate those involved in judo (and other weight categorised sports) on the physical and psychological consequences of cutting weight. As such, Chapter Five was a multi-study chapter that aimed to: 1) detail the construction of evidence-based ABKT resources, and 2) disseminate these resources to assess their impact on potential users (i.e., athletes, coaches, parents, and practitioners). Following the ABKT creation, 37 participants from the potential user groups were recruited to participate in a survey, where three different versions of the resources were provided (video, audio, written). The free-text comments from the survey were analysed using thematic analysis (Braun & Clarke, 2006), whereby four themes were developed: The emotive impact, issues raised in the resource, take home messages, and future dissemination and education. As such, these resources facilitated the uptake of the findings from this programme of research, raising awareness of and educating potential users of the cutting weight practices of these athletes and their relationship to disordered eating and body image dissatisfaction.

The final chapter (Chapter Six) brought this thesis to an end, drawing conclusions across the entire programme of research. This chapter started with a

summary of the studies, followed by detailing the conceptual, empirical, theoretical, and methodological contributions to existing knowledge. It also provided the reader with practical implications for athletes, coaches, parents, and practitioners, limitations of the study, future research avenues, and finally, reflections on the research process. This thesis then came to a close with some concluding thoughts bringing together the key aspects of this programme of research.

Chapter 2: Literature Review

2.0 Literature Review

2.0.1 Disordered Eating Conceptualisation

Eating disorders are defined as conditions which cause a disturbance in eating habits consisting of either insufficient or excessive food intake and are diagnosed according to the Diagnostic and Statistical Manual of Mental Disorders 5th edition (DSM-5) (American Psychiatric Association, 2020; Haslam et al., 2021; Rikani et al., 2013). According to the DSM-5, anorexia nervosa, bulimia nervosa, and binge eating disorder are the three most common types of clinically diagnosed eating disorders. Anorexia nervosa is characterised by excessive dieting, a fear of becoming fat, and negative body image, resulting in extreme weight loss, whereas bulimia nervosa is characterised by episodes of frequent bingeing followed by behaviours such as self-induced vomiting to prevent weight gain (American Psychiatric Association, 2020). However, binge eating disorder is a new addition to the DSM-5, and is associated with a lack of control, consisting of recurring bingeing episodes where an individual consumes significantly more food in a short space of time compared to their non-disordered counterparts (American Psychiatric Association, 2020).

Between these clinical eating conditions and non-disordered counterparts, the term disordered eating has been commonly used, which is defined as a subclinical eating disorder (Cohen & Petrie, 2005). Here individuals display behaviours that are not as severe and intense as an eating disorder, and therefore a clinical diagnosis cannot be established (American Psychiatric Association, 2013; Labossiere & Thibault, 2020). Disordered eating thereby sits on a spectrum of maladaptive and problematic behaviours, thoughts, feelings, and attitudes surrounding eating, which is underpinned by an unhealthy obsession with one's weight and a concern with body image (Bonci et al., 2008; Papathomas, 2018; Sundgot-Borgen & Torstveit, 2010). On

this spectrum, disordered eating attitudes and behaviours range from less severe symptoms to major eating disturbances (McGannon & McMahon, 2019; Papathomas & Lavallee, 2010; Vargas & Winter, 2021). These less severe symptoms include mild abnormal behaviours such as excessive exercising and skipping meals, whereas major eating disturbances include behaviours that have the potential to meet a clinical eating disorder diagnosis, such as bingeing, purging, and starvation (American Psychiatric Association, 2013).

2.0.2 Body Image

Body image is a multidimensional construct which concerns how an individual internally views their physical appearance and other's reactions to their appearance (Bennett et al., 2022; Fischetti et al., 2020). The construct is made up of four components, consisting of the evaluation of one's body, affect (i.e., feelings and emotions associated with the body), cognitions (i.e., appearance investment and beliefs about the body), and behaviours (i.e., avoiding situations where the body is exposed) (Tort-Nasarre et al., 2021). Different cultures, ethnicities, and groups determine an ideal body image which individuals strive towards, as it represents beauty and success in these groups (Martin, 2010).

For example, within Western cultures, the ideal body image for women has become increasingly thinner and more athletic (Mahon & Hevey, 2021; Thornborrow et al., 2020). However, women in Western societies have not always strived for thinness. Up until the early-20th Century, the ideal body image for women was curvy, round, and full-bodied (Swami, 2015). However, during the mid-20th Century a shift occurred with the assistance of the media, displaying women in magazines, television, films, and adverts looking increasingly slender, promoting this new thin and athletic body ideal for women (Calogero et al., 2007). The men's ideal body image has not

changed much over the years, and is often portrayed in two ways, a muscular ideal and a lean ideal. Firstly, the muscular ideal for men consists of a V-shaped torso, visible muscles, and low body fat, whereas a lean/aesthetic ideal is characterised by a toned body with a low body fat (Edwards et al., 2014; Mahon & Hevey, 2021).

2.0.2.1 Body Image Dissatisfaction

Concerns surrounding body image can cause an individual to develop body image dissatisfaction, often resulting in the engagement of modifying behaviours to alter one's body and appearance (Daniel & Bridges, 2010). Body image dissatisfaction is defined as negative thoughts surrounding one's body which comes from a perceived discrepancy between the evaluation of one's own body and the ideal body (Tort-Nasarre et al., 2021). However, not all individuals develop body image dissatisfaction, as the degree to which someone internalises body image ideals will dictate how dissatisfied they are with their own body (Jiosta et al., 2021).

Body image dissatisfaction is typically associated with a drive for thinness in women and a drive for muscularity in men (Jones et al., 2014). More so now than ever before, a slim body ideal for women is portrayed on social media platforms such as Instagram, where users edit photos with filters, promoting unrealistic ideals, which in turn affects the body image of viewers (Papageorgiou et al., 2022). As well as influence from the media, individuals also experience pressure from their peers and their parents to fulfil these body ideals (Tylka, 2011). For example, researchers have found that pressure from parents and peers had a significant impact on a drive for thinness in undergraduate women and a drive for muscularity in undergraduate men respectively (Pritchard & Cramblitt, 2014; You & Shin, 2020). Nonetheless, women are becoming increasingly exposed to pressure to be more muscular and athletic as a result of 'fitspiration' posts on social media (Girard et al., 2018). Subsequently, this

has led women to experience a drive for muscularity, which can become extremely consuming and cause body image dissatisfaction (Edwards et al., 2021; Pritchard & Cramblitt, 2014). These findings therefore demonstrate that this drive for muscularity does not solely affect men.

In more traditional and non-Westernised cultures, such as African and South Pacific countries, the ideal body image for women is often curvier than that in Western societies, as this is a symbol of fertility and femininity (Pollock, 1995; Swami, 2015). Nonetheless, with the increase in Western media being broadcast around the world, this has led to non-Western countries being exposed to these body image ideals (Thornborrow et al., 2020). This exposure to Western media has been associated with an increase in a desire for thinness and a lower body-mass index in women and a drive for muscularity in men, which could result in body image dissatisfaction (Ando et al., 2021; Holmqvist & Frisen, 2010; Thompson et al., 2020).

2.0.3 The Etiological Model

The complex relationship within the sporting population between disordered eating and body image, can be seen in Petrie and Greenleaf's (2007, 2012) etiological model. The model aims to predict how sporting and societal pressures together influence the development of disordered eating behaviours in the form of dietary restraint and bulimic symptomatology in athletes. Firstly, with regards to sporting pressures these can include an athlete's level of competition, the type of sport they practice (i.e., individual vs team sport, aesthetic vs weight categorised sport), and the gender of the athlete. This will now lead into a literature overview of the sport specific pressures and prevalent factors within this culture.

2.0.3.1 Prevalence Factors

Involvement in sport can cause athletes to be at a greater risk of developing disordered eating behaviours compared to the general population (Chapman & Woodman, 2016; Goncalves et al., 2021; Sundgot-Borgen & Torstveit, 2004). In fact, unanimous across the literature, the prevalence of disordered eating and eating disorders is higher among both male and female athletes when compared to non-athletes, and eating disorders are one of the most reported psychiatric pathologies in elite sport (Bratland-Sanda & Sundgot-Borgen, 2013; Haslam et al., 2021; Karrer et al., 2020; Scott et al., 2021).

Sport specific pressures are often witnessed within aesthetic sports (i.e., gymnastics, figure skating, physique athletes) whereby athletes are judged on their performance and appearance. In gymnastics for example, advantages are associated with having a low body mass to perform techniques, as gymnasts often attribute failure in competition to perceiving that they are overweight, convincing themselves that 'thin is going to win' (de Bruin et al., 2007; Kontele et al., 2022). However, these athletes are not solely judged on their physical and athletic capability. Gymnasts are also judged on their appearance in an aesthetic component within tournaments, where they face pressures associated with their revealing uniform, and are required to wear make-up and style their hair in particular ways (Fairchild & Gregg, 2021; Kontele et al., 2022). Similar findings have also been witnessed in other sports such as swimming, where athletes are subject to a 'slim to win' narrative (McMahon et al., 2012; McMahon & Barker-Ruchti, 2017). Analysing two elite swimmers' autobiographies, McGannon and McMahon (2019) highlighted that this narrative emphasises the need for female athletes to be lean to win, with their bodies resembling a pre-pubescent boy (i.e., low body fat, small hips, no breasts). Runners, specifically endurance runners,

also face a similar pressure of 'being thin makes you fast' (Barrack et al., 2021; Tenforde et al., 2015). Both these pressures in swimming and endurance running indicates that having a lean and skinny physique will lead to better performances, promoting the use of unhealthy weight control behaviours to achieve these physiques. Therefore, the sport specific pressures associated with these sports align with societal pressures, often causing athletes to internalise these beliefs, leading to body image dissatisfaction and the development of disordered eating.

Although it is generally considered that those who compete in aesthetic and lean sports are more at risk for the development of disordered eating, those who compete in weight categorised sports (i.e., powerlifting, judo, taekwondo, wrestling), are also at a heightened risk. These athletes are subject to weight categories and weigh ins, which are designed to provide an equal and fair match between competitors (Artioli et al., 2016; Gordon et al., 2021; Reale et al., 2016). Nonetheless, it is common practice within these sports for athletes to engage in rapid weight loss (RWL), commonly known as weight cutting or making weight, as it is believed to have a competitive advantage over opponents (Pettersson et al., 2012; Sitch & Day, 2015; Thomas et al., 2021). Methods include dieting and fasting, restricting fluid intake, as well as the use of saunas, baths, and sweat suits to induce sweating (Barley et al., 2019). Some athletes use more extreme methods such as the use of laxatives, self-induced vomiting, diuretics, and diet pills (Thomas et al., 2021; Uddin et al., 2022). The use of these techniques can often lead to negative affect, such as an increase in anger, confusion, tension, depression, and fatigue, resulting in disordered eating behaviours developing (Caulfield & Karageorghis, 2008; Gordon et al., 2021; Rossi et al., 2022). Although the pressures associated with weight cutting within these sports can lead to disordered eating directly, they can also lead to its development through

body dissatisfaction. For example, using one-off semi-structured interviews with female powerlifters, Vargas and Winter (2021) found that a muscular physique is sought in these athletes over the thin body image ideal projected in Western media for women. Therefore, this contradicts societal ideals, causing a dissatisfaction with one's body image, resulting in disordered eating**.**

Within the sporting context, performance is a dominant narrative which can offer an explanation as to why elite athletes may engage in these harmful and disordered practices. Proposed by Douglas and Carless (2006), the performance narrative suggests that "winning is prioritised to the extent that discipline, sacrifice, and pain are accepted in the pursuit of glory, and failure is accompanied by feelings of shame" (Carless & Douglas, 2009, p.54). In this regard, to be successful in elite sport, athletes possess a single-minded dedication, drive, and focus to their sport, dedicating their lives to preparation, training, and competition (Carless & Douglas, 2013). The performance narrative therefore emphasises that the identities and self-worth of athletes is strongly related to their sporting performances and successes, driving athletes to achieve elite accomplishments (Book et al., 2024; Vargas et al., 2021). However, this single-minded focus on sporting performance and success may have potentially harmful side effects, such as the development of disordered eating (Book et al., 2024). This is due to the performance narrative providing athletes with narrow and limited meanings of food, exercise, and the body, allowing them to view weight-loss strategies as essential and beneficial to sporting performance and success, as found in running (Busanich et al., 2014; Busanich et al., 2016), football (Papathomas & Lavallee, 2006), and basketball (Papathomas & Lavallee, 2014). As previously stated, within weight categorised sports, such as judo, cutting weight is believed be a competitive advantage (Pettersson et al., 2012; Sitch & Day, 2015;

Thomas et al., 2021), aligning with the performance narrative as elite judoka may engage in these disordered practices as they believe it will give them the best opportunity of winning.

2.0.3.2 Societal Ideals

Secondly within the etiological model, societal pressures are proposed to derive from an athlete's teammates, family members, the media, and social media, with each of these often depicting a thin body ideal for women and a muscular body ideal for men (Reel et al., 2013; Stoyel et al., 2021). Nonetheless, the influence of these pressures does not act in isolation, in fact societal pressures can either compound or contradict the previously reviewed sporting pressures (Cooper & Winter, 2017; Stoyel et al., 2021; Sundgot-Borgen & Torstveit, 2004). For example, societal and sporting pressures can lead to messages regarding one's body to be internalised, which manifests in the form of body surveillance (Fitzsimmons-Craft et al., 2014). In this situation, individuals are more likely to compare their appearance to that of others, which causes dissatisfaction with one's body and predicts disordered eating (Saunders & Eaton, 2018). While body dissatisfaction can result in the direct development of disordered eating, it can also lead to negative effect. This is when an athlete experiences a stressful situation triggering fear and guilt, as well as poor moods, anxiety, and depression. (Stoyel et al., 2020). Those who experience negative affect often perceive events to be more stressful than their non-disordered counterparts, therefore resulting in the development of disordered eating because of heightened perceived stress (Chen et al., 2012; Tuschen-Caffier & Vogele, 2000).

Modelled behaviours of peers and family is depicted as another mediating factor in the etiological model (Petrie & Greenleaf, 2007, 2012). Modelling occurs as a result of athletes copying the behaviours of others within a group, as it is seen as

normal and/or expected (Stoyel et al., 2019). Within the child disordered eating literature, family and peer disordered eating behaviours have been found to cause the development of eating pathology among children (Fortesa & Ajete, 2014; Houldcraft et al., 2014). Furthermore, adolescent girls have reported having similar dietary restraint and weight-loss behaviours as those in their friendship group, supporting the notion of modelling these disordered eating behaviours (Hutchinson & Rapee, 2007). However, limited support for modelling exists within the sport psychology literature, and therefore more research is needed in order to understand this concept in athletes.

Although there has been support for the etiological model, there has been some, albeit limited, critique. Unlike what the original model theoretically proposed, the development of disordered eating may not be associated with the sporting pressures that athletes experience (de Sousa Fortes et al., 2015; Shanmugam et al., 2011). Researchers have supported this notion, with their findings demonstrating that sport-specific pressures have not been associated with disordered eating in athletes (Pallotto et al., 2022; Stoyel et al., 2020). Instead, using a questionnaire with 1,017 participants from various sports, Stoyel et al. (2020) suggests that societal pressures and body dissatisfaction act independently of each other in the development of disordered eating, being mediated by internalisation and negative affect respectively. Thus, it could be postulated that in comparison to sport related pressures, sociocultural pressures play a bigger role in the development of disordered eating in athletes.

2.0.3.3 Objectification Theory

Although the etiological model explains how body dissatisfaction leads to disordered eating in sport, a sociocultural theory can be drawn upon to help us understand how social forces surrounding body image can influence athletes. The objectification theory, proposed by Fredrickson and Roberts (1997), was designed to

understand how body image concerns and disordered eating develops within women through links between the internalisation of body image ideals, sexual objectification, and self-objectification. The objectification theory was developed using Bartky's (1990) definition of sexual objectification whereby a woman's body or body parts are separated from their identity, reducing them to a physical object for men's sexual desires (Daniel & Bridges, 2010; Szymanski, 2011). As a result of this, women's bodies can be sexually objectified by gazes and evaluations from men and sometimes other women, and can also come from the media, which portrays the ideal woman as being slim and slender (Strelan & Hargreaves, 2005a). This puts pressure on women to look good and to conform to these sociocultural ideals, leading to internalisation, causing individuals to become preoccupied with their own appearance, otherwise known as self-objectification (Daniel & Bridges, 2010). Self-objectification can then lead to the development of body image dissatisfaction and disordered eating behaviours.

Increased body surveillance has been related to body shaming in Western women, which are both components of self-objectification (Wollast et al., 2021). This can be supported by Holland et al. (2017) who found that women in Australia experience objectifying gazes every other day on average, and witness objectification in the media just over once per day. Therefore, leading to increased self-objectification in these women, through processes such as body surveillance and shame. Although it is believed that the prevalence of self-objectification is higher in Western nations and lower in Eastern nations, it is not exclusively associated with the West (Holland et al., 2017; Loughnan et al., 2015). Indian women are subjected to sexual objectification from Bollywood films, which portrays women as being slim, with a large amount of their body on display (Slatewala, 2019). This could lead young Indian women

internalising the images displayed in Bollywood media, subsequently leading to self-objectification, and possible body dissatisfaction. One population that might be less susceptible to sexual objectification is Muslim women. Muslim women who wear Islamic veils have been found to be subjected to less sexual objectification than those who do not, as more of their body is covered (Al-Mutawa et al., 2019). Nonetheless, evidence has suggested that wearing the Islamic veil does not have an impact on Muslim women's perceptions of their own bodies, suggesting that they are equally as susceptible to self-objectification as non-veiled women (Al-Mutawa et al., 2019; Mussap, 2009). This research together suggests that women across the world experience sexual and self-objectification, however many cultural differences exist to what extent they experience these two types of objectifications.

While the original objectification theory focused on women, researchers have suggested that its basic principles can be applied to men (Strelan & Hargreaves, 2005b; Wagner Oehlhof et al., 2009). Men experience similar cultural body image ideals as women that are perpetuated within the media, often portraying men as having a muscular and mesomorphic (i.e., V-shaped torso) body shape (Calogero, 2009; Daniels & Bridges, 2010). When applied to men, the objectification theory proposes that exposure to the ideal male body image in the media (sexual objectification) can cause men to internalise these ideals, and believe that to be valued they must attain this body (Strelan & Hargreaves, 2005b). Internalisation can subsequently cause men to self-objectify, where they compare their own bodies to these ideals, resulting in a drive for muscularity, body dissatisfaction, and potential disordered eating behaviours (Leit et al., 2001; Morrison et al., 2003).

A common assumption is that men experience lower levels of self-objectification and body shame than women. However, men do experience self-

objectification and concerns with their body image, and it is often based on wanting to achieve a more muscular physique (Schwartz et al., 2010). For example, when men are exposed to sexualised images of male athletes, they are more likely to internalise these images (Daffern et al., 2019; Linder & Daniels, 2018). This could cause them to engage in appearance enhancing exercise, which can result in lower self-esteem, heightened levels of self-objectification, and body image dissatisfaction (Strelan & Hargreaves, 2005b). Nevertheless, research on male body image dissatisfaction and objectification is limited, and therefore additional research is required to understand this phenomenon.

2.0.3.4 Body Dissatisfaction in Sport

Although previous researchers have suggested that engaging in sport aids women in valuing their bodies, other findings have been contradictory (Menzel & Levine, 2011; Osa & Calogero, 2020). For example, participation and involvement in sport where objectification is present can cause women to experience body shame, resulting in body dissatisfaction, and the potential for athletes to withdraw from sport (Pritchard & Tiggemann, 2008; Vani et al., 2021). One sporting group where this might be particularly relevant is in appearance emphasised sports. Within these sports, an increase in body image concerns because of self-objectification can come from pressure from the sport itself, as physical attractiveness is highly valued and can enhance performance (Kong & Harris, 2015; Krentz & Warschburger, 2011). Further to this, body commentary from coaches, peers, and parents can cause athletes to internalise these comments, resulting in self-objectification and body dissatisfaction (Slater & Tiggemann, 2011).

Away from sporting environments, women in the media have traditionally been portrayed as being skinny. However, there is now an increasing focus on

muscularity within sport and sport media, creating a paradox for female athletes and moving them away from traditional views (Dafferner et al., 2019; Krane et al., 2004; Vargas & Winter, 2021). This paradox therefore conflicts female athletes as they want to fulfil the body image ideals that society creates whilst also fulfilling sporting ideals. Male athletes also face these pressures to fulfil societal and sporting body ideals. However, in both social and sport environments, male athletes experience pressures to be both muscular and lean, which can encourage the pursuit of a mesomorphic body ideal (Gibson et al., 2019; Gultzow et al., 2020; Heath et al., 2016). Therefore, exposure to these societal and sporting body image ideals could lead to athletes internalising them, causing self-objectification, and the development of body image dissatisfaction and disordered eating.

2.0.4 Disordered Eating and Body Image in Judo

Within judo, physical performance impacts have been witnessed due to weight cutting. It has been reported that even after a 15-hour recovery period following the official weigh in and a 5% weight increase, judokas were still experiencing high levels of dehydration (Ceylan et al., 2021; Ceylan et al., 2022; IJF, 2022). This indicates that judoka dehydrate to such an extent that they cannot rehydrate quick enough pre-competition and thus are not rehydrated at the point of the first contest. With the use of extreme dehydration and other methods of weight reduction, physical performance may also be at risk. Using the Special Judo Fitness Test, Fortes et al. (2017) demonstrated that cutting weight can result in a decrease in high-intensity intermittent performance, which was shown through a reduction in the number of throws performed in this test. This is interesting, as for judoka to feel like a ‘real athlete’ and give themselves a perceived mental advantage, they often believe that they must cut

weight to be best prepared for the competition (Pettersson et al., 2013; Stavrinou et al., 2022).

Nonetheless, there is very little research on the psychological impacts that cutting weight has on judoka's disordered eating. Amongst the scant literature, researchers have demonstrated that engaging in cutting weight practices induces an increase in negative mood states (i.e., anger, confusion, tension, fatigue, and depression), and a decrease in positive mood states (i.e., vigour) in judoka (Fortes et al., 2018; Koral & Dosseville, 2009). This demonstrates the negative effect that cutting weight can have on a judoka's mental wellbeing, which could potentially lead to the development of disordered eating, and a sharp increase in these negative mood states can differentiate a successful judoka from a less successful one (Rossi et al., 2022). Expanding on the mental wellbeing of judo athletes, a quantitative study reported that the female Cadet and Junior judoka were more likely to experience negative psychological consequences, such as anxiety and eating disordered symptomatology than their Senior counterparts (Escobar-Molina et al., 2014). The researchers attributed this to the Senior judoka being more experienced and having more effective coping mechanisms in place for dealing with the psychological consequences of cutting weight.

Researchers have further reported the impact that cutting weight can have on the development of disordered eating and eating disorders in judoka. For example, when a judoka experiences a decrease in their body mass index, there is a heightened risk for the development of eating disorders (Rouveix et al., 2007). This can be supported by Stavrinou et al. (2022), who suggested that those judo athletes who are practicing cutting weight and often lose weight and re-gain weight over a short period of time, are more at risk for the development of disordered eating and eating disorders.

In a recent qualitative study utilising one-off semi-structured interviews, the participants acknowledged that they felt guilty when they ate normally and indulged in food outside of a competition cycle and therefore, outside of cutting weight (Gordon et al., 2021). Thus, this could lead judoka to engage in disordered eating practices throughout this period to prevent themselves from feeling guilty for eating normally or indulging in food.

As with the disordered eating literature in judo presented previously, there is also limited research on the body image concerns of judokas. Nonetheless, quantitative research has provided some evidence of dissatisfaction with body image in judokas. For example, Rani (2016) found that male judokas have higher levels of self-perception of their body image and are therefore more satisfied with their body than their female judoka counterparts. This can be supported by findings from Rouveix et al. (2007), as the female judoka participants in this study reported that they desired a lower ideal body weight than the male judokas, indicating a greater dissatisfaction with their body image. On average, the female judokas in Rouveix et al.'s (2007) study revealed that if they gained 2.2 kilos, this would negatively impact their self-image and self-worth, further demonstrating a dissatisfaction with their body image. Moreover, other research has indicated that judokas became more satisfied with their bodies when they started to cut weight as there was a perceived aesthetic improvement in their body image, suggesting the existence of body image dissatisfaction prior to the commencement of the weight cut (Yoshioka et al., 2006).

Considering judo is a weight categorised sport, the very limited literature in the field of disordered eating and body image is surprising. As a result of this, more in-depth qualitative research is required to further understand these processes and how they are related to each other within judoka.

2.0.5 Retired Athletes

Upon retirement, athletes go through a shift of changing their identity from that of an athlete to a non-athlete. However, many former athletes have difficulty in letting go of their athletic identity, still viewing themselves as an athlete (Beamon, 2012; Fuller, 2014). Carrying one's athletic identity through to retirement has been associated with negative retirement outcomes, causing athletes to have a psychologically challenging retirement from their athletic career (Cosh et al., 2013; Buckley et al., 2019; Samuel & Tenenbaum, 2011). Such experiences include a reduction in physical training, loss of muscle mass, decreased fitness levels, and changes to nutrition (Liu et al., 2008). These negative outcomes and experiences can cause retired athletes to develop body image dissatisfaction and concerns, and disordered eating behaviours (Laure & Meline, 2018; Stirling et al., 2012).

The notion that a continuation of athletic identity can lead to body image dissatisfaction in retired athletes has been conceptualised. Papathomas et al. (2018) proposed the retired female athlete paradox, which suggests that post-retirement, athletes will initially become increasingly satisfied with their body because it closely resembles feminine body ideals. However, as they progress through retirement, athletes will experience a dissatisfaction with this change because it is moving away from the desired athletic body ideal. Therefore, tension exists between these two ideals, which can lead to body image dissatisfaction in these retired athletes. As an expansion of Papathomas et al.'s (2018) retired female athlete paradox, Buckley et al. (2019) proposed athlete body transition, which can be explained as a retired athlete's body image or dissatisfaction experiences based on several factors. These factors include the sporting culture, former athletic body ideal pressure, body composition genetics, body composition changes in retirement, and the level of continued athletic

identity. Athletic body transition suggests that as an athlete retires, their body composition changes, and they move away from aspiring for an athletic body ideal to a societal body ideal. At this stage, if an individual's body changes are aligned with societal ideals, they will experience increased body acceptance and generally experience a more positive retirement. However, if an individual has continuing athletic identity or their body image moves away from societal ideas, they will experience a decrease in body acceptance, causing maladaptive behaviours, such as increased exercise and restrictive eating, to develop. Buckley et al.'s (2019) athletic body transition therefore suggests that during retirement from an athletic career, a decreased body acceptance and heightened body image dissatisfaction can lead to maladaptive behaviours. These subclinical and disordered eating behaviours used to control weight are often endorsed by retired athletes, who utilise practices that they had learnt during their athletic career to lose weight in their retirement (Stirling et al., 2012; Thompson et al., 2021).

Wanting to fulfil an athletic identity and therefore, an athletic body post-retirement has been observed in aesthetic and lean sports. For example, using the Eating Disorder Examination Questionnaire 6.0 (EDE-Q 6.0) and a follow up semi-structured interview in a study with retired swimmers, Cooper and Winter (2017) found that those who had memories of their bodies when they were athletes, often resorted to engaging in disordered eating behaviours. These behaviours were a result of the retired swimmers becoming dissatisfied with their bodies during retirement, as their bodies did not mirror societal body ideals. Further to this, those who are dissatisfied with the weight and shape of their bodies during retirement are more likely to experience negative emotions such as stress and shame, and are therefore more likely to engage in disordered eating behaviours (Barrett & Petrie, 2020; Papathomas

et al., 2018). Together, these research findings provide support for athletic body transition, demonstrating that when a retired athlete's body moves away from societal ideals and they engage with their athletic identity, they are more likely to develop a dissatisfaction with their body, resulting in disordered eating practices.

Although literature surrounding athletic retirement is vast, there is little research on the impact that this period of an athlete's life has on their disordered eating behaviours and body image concerns (Perelman & Reel, 2022). Further to this, much of the existing research indicates that body changes in retirement are more detrimental to female athletes who participated in aesthetic and lean sports (Barrett & Petrie, 2020), with very little consideration for male athletes. Thus, there is very scant research that exists on those who have competed in weight-controlled sports, or on retired male athletes, where in both populations of their active competitors' counterparts, evidence of body image dissatisfaction and disordered eating exists. Thus, more research is required in the field of retired athletes body dissatisfaction and disordered eating, as every athlete will eventually retire from their athletic career (Cooper & Winter, 2017).

2.1 Research Rationale

As previously demonstrated, there has been a large amount of research surrounding disordered eating across multiple sports. Previous researchers have suggested that current athletes develop disordered eating through a range of different factors such as societal and sporting pressures, body image dissatisfaction, internalisation, negative affect, and the modelling of behaviours (Petrie & Greenleaf, 2007; 2012).

Much of the research surrounding disordered eating in athletes has been conducted on those who compete in aesthetic and lean sports, where athletes strive for

a slim physique, such as gymnastics, swimming, dance, and endurance running (e.g., Barrack et al., 2021; Kontele et al., 2022; McGannon & McMahon, 2019). Although this research is useful in helping researchers and sport psychology practitioners to understand the development of disordered eating in athletes, there has been little qualitative research on its development in weight-controlled sports. All athletes within these sports are subject to weight categories and often cut weight to fit their bodies into a predefined category. This process of cutting weight often consists of maladaptive eating patterns and exercise behaviours, which could develop into disordered eating (Barley et al., 2019; Gordon et al., 2021; Rossi et al., 2022). Nonetheless, the research surrounding this phenomenon in these athletes has been conducted on sports such as wrestling and taekwondo, with little focus on other sports that fall under this discipline. One such sport is judo, whereby athletes also go through a cutting weight process, which could cause these athletes to develop disordered eating, as seen in other sports. Although research from other combat sports could be applied to judo, the rules of the sports differ, which could mean that these findings cannot necessarily be applied to judokas

Disordered eating can also be a cause of, or result in, body image concerns within athletes (Vargas & Winter, 2021). As those in aesthetic sports often compete in revealing uniforms and success is associated with being slim, these athletes experience a sporting pressure to be thin. The sporting pressure to be thin also compounds the sociocultural pressure to be lean and slim, which contributes to these athletes' body image dissatisfaction (Kong & Harris, 2015; Stoyel et al., 2021; Sundgot-Borgen & Torstveit, 2004). However, little consideration has been made throughout the literature in relation to combat sport and weight categorised athletes' relationship with their bodies. This is surprising because of the sport related pressures

associated with weight categories and athletes believing that cutting weight to these predefined categories gives them a competitive advantage. Further to this, these combat sport athletes are not immune to sociocultural pressures, and the sport related pressures may contradict societal body image ideals.

Research has also mainly been conducted on current competitive athletes, as demonstrated previously. However, body image dissatisfaction and disordered eating behaviours do not have an expiry date, and therefore studying retired athletes is also important. Athletic retirement is a psychologically challenging time for many athletes, as they move away from sport and into a more 'normal' life (Beamon, 2012; Cosh et al., 2013; Fuller, 2014). As athletes go through retirement, they may experience a dissatisfaction with their body image, as they are still striving towards their athletic bodies, potentially resulting in disordered eating (e.g., Buckley et al, 2019; Cooper & Winter, 2017; Laure & Meline, 2018; Papathomas et al., 2018). Nevertheless, research into disordered eating in retired athletes is extremely limited, let alone research into retired judo athletes.

2.2 Research Aims

Therefore, the overall aim of this programme of research is to explore and understand, through utilising longitudinal qualitative methods, the disordered eating behaviours and body image perceptions of current elite and retired judo athletes. Specifically, in the first study with current elite athletes, an ethnographic approach was employed, using observations and fieldwork, story completion focus groups, and semi-structured interviews. In the second study with retired judo athletes, semi-structured interviews and a letter to their former selves was used. Both male and female judoka were researched throughout, which allowed for comparisons to be

drawn between the two sexes to best understand the development of these processes, which is another aim of the research.

Through applying these in-depth, qualitative methods, the research aims to develop a greater understanding of the real-life disordered eating and body image experiences of both male and female judoka, helping to gain insight into the factors that influence and contribute to these processes, such as cutting weight. In relation to this, another aim of the research is to shed light on the ways in which athletes within combat sports, namely judo, make weight. This will subsequently allow athletes, coaches, parents, and practitioners to understand the risks associated with cutting a large amount of weight for competitions. Although not an aim of the research, the findings highlighted within it could lead to the development of education programmes. Such programmes could be delivered to athletes, coaches, parents, and practitioners on the risks associated with cutting weight, and safe ways to cut weight to help limit the development of potential negative psychological consequences, such as disordered eating behaviours and body image dissatisfaction.

Chapter 3: An Ethnographic Approach to Disordered Eating and Body Image in Elite Judokas

3.0 Introduction

Disordered eating is classified as subclinical, sitting on a spectrum of maladaptive eating practices, thoughts, and attitudes (American Psychiatric Association, 2013). These disordered eating behaviours range from less severe and mild (i.e., excessive exercise and skipping meals) to major eating disturbances (i.e., bingeing, purging, and starvation) (McGannon & McMahon, 2019; Vargas & Winter, 2021). Disordered eating is often associated with body image concerns and a harmful obsession with weight (Bonci et al., 2008; Jones et al., 2014; Papathomas, 2018). Body image is a complex and multidimensional construct, underlined by how an individual views their physical appearance and other's reactions to it (Bennett et al., 2022; Fischetti et al., 2020). As such, when a perceived discrepancy exists between the ideal body (e.g., drive for muscularity in men and a drive for thinness in women) and one's own body, a negative body image perception can emerge (Tort-Nasarre et al., 2021).

Petrie and Greenleaf's (2007, 2012) etiological model attempts to explain the complicated relationship between body image dissatisfaction and disordered eating. Sporting pressures (i.e., competitive level, sport type, and athlete gender) and societal pressures (i.e., teammates, peers, family members, the media, and social media) can consolidate or contradict each other, contributing to messages about one's body to be internalised, resulting in body image dissatisfaction (Fitzsimmons-Craft et al., 2014; Saunders & Eaton, 2018). Body image dissatisfaction can subsequently lead to negative affect, which is when fear and guilt, as well as poor moods, anxiety, and depression is triggered by stressful situations (Stoyel et al., 2020). As a result of this, athletes may distract themselves from these negative emotions through engaging in binge eating, which is also described as emotional eating (Petrie et al., 2014; Tylka & Kroon Van Diest, 2013). Following such episodes of eating, athletes may experience

additional negative emotions, which can in turn lead them to engage in compensatory behaviours, such as overexercising (Goodwin et al., 2016; Meyer et al., 2011). Disordered eating can also derive externally from modelled behaviours of peers and family. In a sporting environment, this occurs when athletes copy the common behaviours of those within a group because it is seen as the norm and expected (Stoyel et al., 2019).

One sport in particular where both the sporting and societal pressures can put their athletes at risk for developing body image dissatisfaction and disordered eating practices is judo. Judo is an Olympic combat sport, characterised by weight categories and weigh ins, created to ensure a fair match between competitors (Artioli et al., 2016; Reale et al., 2016). Within combat sports and judo alike, athletes use RWL strategies, widely referred to as cutting weight, as athletes perceive these practices to have a competitive advantage over their theoretically weaker opponents (Sitch & Day, 2015; Thomas et al., 2021). Such strategies range from less severe to extreme methods, of dieting, restricting fluids, and self-induced sweating (i.e., sauna use, baths, and sweat suits) to laxatives, self-induced vomiting, diuretics, and diet pills (Barley et al., 2019; Thomas et al., 2021; Uddin et al., 2022).

Researchers suggest that cutting weight can cause athletes to experience negative affect, such as an increase in anger, confusion, tension, fatigue, and depression (Caulfield & Karageorghis, 2008; Fortes et al., 2018; Gordon et al., 2021; Rossi et al., 2022). However, it could be argued that judoka's cutting weight practices are synonymous with disordered eating practices. As such, the disordered eating practices used by judoka have the potential to occur outside of the cutting weight cycle. For example, when judoka are not cutting weight, they may indulge in food causing them to gain weight, thus altering their body image. According to Petrie and

Greenleaf (2012), if athletes compare their own appearance with that of others body dissatisfactions can arise. Combined with resultant negative affects, this may lead to more permanent disordered eating behaviours to counteract these emotions (Fitzsimmons-Craft et al., 2014; Gordon et al., 2021; Saunders & eaton, 2018).

The performance focus of elite sport is a dominant narrative that offers an explanation for why athletes engage in these potentially damaging and harmful practices. Proposed by Douglas and Carless (2006), the performance narrative suggests that to be successful in elite sport, athletes dedicate their lives to training, preparation, and competition, having a single-minded dedication, drive, and focus (Carless & Douglas, 2013). As a result, researchers have reported that the performance narrative enables athletes to view weight-loss strategies as essential and beneficial to sporting success in running (Busanich et al., 2014), football (Papathomas & Lavallee, 2006), and basketball (Papathomas & Lavallee, 2014). Furthermore, with athlete results often tied to their mental wellbeing, identity, and self-worth (Vargas et al., 2021) the complexity surrounding weight categorised sports such as judo, where cutting weight is seen as advantageous to performance, is an additional important facet to consider.

Taken together, these findings indicate there is a need for longitudinal research into weight cutting, disordered eating, and body image experiences, in order to understand the inner workings of this potentially complex relationship within a weight categorised sports culture. Therefore, this study aimed to explore and understand, through an ethnographic approach, the unique cultural dynamics of judo and the potential relationship with disordered eating behaviours and body image perceptions of elite judokas. Underpinning this aim were the following research questions: (1) How does the cutting weight culture contribute to disordered eating and body image

concerns? (2) What are the impacts of engaging in potentially damaging and harmful practices for elite judoka? It is hoped that by answering these research questions, insight can be provided into the weight cutting culture of judo and its potential contribution to disordered eating and body image dissatisfaction within its athletes. This will hereby expand knowledge in this area, helping to increase awareness within judo and other weight categorised sports.

3.1 Method

3.1.1 Context and Participants

The research was conducted at a judo club which offers judo from a grassroots level to recreational adults. The judo club also provides an elite, full-time training programme where the judokas are members of a centralised training environment, in which they live, train, eat, and sleep. Those athletes training as part of the elite programme were the focus of this study. The elite judoka train two to three times a day from Monday to Friday, with sessions including judo technical and tactical, randori (freestyle practice, sparring), and judo specific strength and conditioning. Within the elite group of judoka, there has been a large amount of success on the international stage, with athletes being selected for major tournaments and representing their country at events such as the Olympic and Commonwealth Games.

Throughout the duration of the ethnography, the elite judo head coach provided the researcher with access to all areas of the facility, including the dojo, gym area, and the accommodation block. Thus, giving the researcher an insight into all areas of the elite athletes training and down time periods of the day. Prior to the commencement of the study, 16 elite judo athletes (fifteen British athletes and one Cypriot athlete) and one judo coach (elite head coach) were given a verbal and written explanation of the aims and rationale of the research during an initial meeting with the

researcher. Following this, a total of 17 participants (*Mean age* = 24, *SD* = 7 years old), 11 men (*Mean age* = 25, *SD* = 8 years old) and six women (*Mean age* = 22, *SD* = 2 years old) gave written and informed consent for the research.

3.1.2 Research Approach

An ethnographic approach and methodology was undertaken throughout this study, aligning with the overarching research philosophy of interpretivism, and is underpinned by ontological relativism and epistemological constructivism (please refer to section 1.0.3). Ethnographies have several key features, including long-term data collection methods, is heavily reliant upon participant observation, details what occurs within the environment with a focus on understanding the meaning people give to themselves and the culture, and finally takes on a holistic focus, therefore looking at all aspects of the environment (Hammersley, 2018). In this sense, ethnography is a method used to understand the environment and culture of a specific group from the members perspective (Hammersley & Atkinson, 2007; Krane & Baird, 2005). Thus, aligning with the research aim, which is to gain an in-depth understanding, through utilising longitudinal methods, of the disordered eating behaviours and practices, and body image concerns of elite judoka. To gain this understanding, the researcher immersed herself within the judo club environment, enabling her to become a member of its culture, aligning with Atkinson's (2016) suggestions, aiding in the shift from outsider to insider (Pitt et al., 2020). Within ethnographic research, several different methods are utilised to gain a complete understanding of the inner working of the research environment (Eriksson & Kovalainen, 2015; Hammersley, 2018). These methods include, but are not limited to, conducting fieldwork and generating fieldnotes, participant observation, interviews, focus groups, collecting texts and

documents, taking photographs, and questionnaires (Cavallerio et al., 2016; Eriksson & Kovalainen, 2015; Krane & Baird, 2005; Sands, 2002).

3.1.3 Ethnographic Methods

Following a process of gaining entry using previous personal connections with one of the elite athletes within the group and the head coach, who acted as the key gate keepers to the judo club, data collection commenced for the ethnographic study. These methods of data collection included observations and fieldwork, story completion focus groups, and semi-structured interviews.

3.1.3.1 Observations and Fieldwork

Observations and fieldwork are a key piece of the ethnographic research process, which enabled the researcher to become fully immersed within and gain access to the judo club environment (Emerson et al., 2001; Hoey, 2014). This process of immersion and observation, a total of 188.65 hours, allowed the researcher to become a participant within the judo club environment, subsequently gaining more knowledge and a deeper understanding of what it is like to be a fulltime and elite judoka (Hoey, 2014). The observations took place in the dojo and the accommodation block so that the researcher could observe the participant's behaviours during the judo sessions, strength and conditioning sessions, mealtimes, and downtime periods of the day. During these observations, data was generated by writing fieldnotes on-site, noting down behaviours witnessed, and conversations had and overheard with the participants (Blommaert & Jie, 2010). These written notes were initially bullet points of what had been observed in the field, for example the food athletes were eating, conversations surrounding weight and weight cutting, and any cutting weight practices witnessed (i.e., wearing extra layers when training). Once the researcher returned home from the field, she wrote up a digital copy of the observations, alongside a

reflexive journal, whereby she documented any assumptions, thoughts, and feelings about what was witnessed in the field (Finefter-Rosenbluh, 2017). This process also helped the researcher to immerse herself within the observational data.

3.1.3.2 Story Completion Focus Groups

Following the extensive observations and fieldwork, story completion focus groups were conducted. Early researchers classified focus groups as a cross between a meeting and a conversation, as although they have structure to them, discussions are often spontaneous and the members within the group pick up on each other's inputs (Agar & MacDonald, 1995). To facilitate these group discussions, a focus group requires a moderator, which in this case was the researcher (Stewart, 2018).

The story completion focus group was piloted with two BJJ practitioners. Although not elite full-time athletes, they both train five times a week, are active competitors, and are also high grades. The purpose of the pilot study was to test and evaluate the story completion focus group guide, and to therefore ensure that the research was of high quality (Lowe, 2019; Malmqvist et al., 2019). From the pilot study, it was concluded that a handout needed to be drawn up for the participants to facilitate their story completion. Once this had been completed, the focus groups with the athlete participants commenced.

Five story completion focus groups were conducted with the athlete participants, with three male groups (two groups of three participants and one group of four participants) and two female groups (three participants in each). To aid in the organising of the focus groups, the judo club's head coach gave the researcher access to the elite team's WhatsApp group chat, in which she asked the participants when they were available and arranged the focus groups around their schedules. By using the WhatsApp group chat to coordinate the focus groups, the researcher could give the

head coach complete transparency on what research would be occurring and when within the facility. Subsequently, the head coach could inform her where the focus groups could take place within the dojo at the allotted time.

Prior to their commencement, the researcher asked the participants if she had their consent for the focus group to be video recorded. This was asked so that when transcribing the focus groups, the video recordings could be watched to differentiate between which participants were talking at any given time. Following this, she gave the participants a brief overview of the method, emphasising that they could add to their accounts at any point throughout the focus group, and then invited the participants to write their stories after being provided with a short story stem (i.e., one or two sentences to start the story) (Clarke et al., 2017; Williams et al., 2021). For these focus groups, two story stems were developed (one male and one female story stem), allowing for a deeper exploration and understanding of potential differences between the two groups, and help understand how phenomena are socially constructed (Clarke et al., 2019; Kitzinger & Powell, 1995; Lewis & McNaughton Nicholls, 2013). To reflect this, the story character's pronouns and names were changed accordingly: *Tom has an important competition coming up in two weeks' time. Over the next two weeks, Tom will…* (male participants story stem), *Kelly has an important competition coming up in two weeks' time. Over the next two weeks, Kelly will…* (female participants story stem).

Once the participants had completed their initial story, each of them discussed what they had written in turn. Following this, the participants were asked by the researcher to discuss and write about several different topics within their stories. This was done in a semi-structured way through a topic being suggested by the researcher, the participants writing down some notes, and then a discussion occurring between the

participants with the researcher acting as a moderator and facilitator (Guest et al., 2013). The topics covered in the focus groups, some of which were witnessed in the observations, included athletes' thoughts, feelings, and emotions during a cutting weight cycle, behaviours and practices during this cycle, training programme, food and fluid intake both within and outside of a cycle, support and advice, pressure to cut weight, and any personal challenges they may have experienced. Upon completion of the focus groups, the participants were asked if they had anything else to add and were then asked to hand in their written stories. The focus groups were transcribed verbatim using the video recordings and on average lasted 63.26 minutes.

The focus groups were firstly conducted to aid in the further building of rapport with the participants following the observations (Hennink, 2013), allowing the researcher to gain a deeper understanding of the observed behaviours, and helping the participants to comprehend their own practices. They also aided in facilitating interaction and conversation between the participants, which contributed to the generation of a wider discussion, and therefore the creation of more knowledge (Gravett, 2019; Martin et al. 2017). Story completion methods can also be helpful to the researcher in gaining an understanding of the participants views of the topic in question, which in this case was disordered eating and body image concerns. This is because story completion enables the researcher to speak about the topic without directly asking the participants, which may make them feel more comfortable when discussing a potentially sensitive subject (Clarke et al., 2017; Colucci, 2007).

3.1.3.3 Semi-Structured Interviews

Following the story completion focus groups, 15 out of the original 16 athlete participants were available for the follow up interviews, which were semi-structured in nature. In this type of interview the researcher and participant engage in a

conversation, which is facilitated by a flexible guide, and supplemented with follow-up questions and probes (DeJonckhee & Vaughn, 2019). As a result of this, semi-structured interviews enabled the researcher to remain focused with the topic but also gave her autonomy to explore other areas that came up within the interview (Adams, 2015; Adeoye-Olatunde & Olenik, 2021). Through exploring the thoughts, feelings, and beliefs of participants about a specific topic, the researcher can discover how the individual experiences of the participants may be informed by traditions and discourses that are present within wider society (Braun & Clarke, 2006). Thus, this allowed the researcher to elicit a deeper understanding of the participants experiences and the judo environment and culture they belong to (Evans, 2018; Eriksson & Kovalainen, 2015).

To prepare for the follow up interviews, the focus group transcripts were read and re-read to help identify what needed to be discussed in more depth with the participants. Following this initial analysis of the focus groups, a general guide was created which included points to cover in the interviews with all the participants. These topics consisted of, thoughts, feelings, and emotions when cutting weight, food and fluid intake both during and outside a cutting weight cycle, training programme, behaviours and practices when in this cycle, and cutting weight support, advice, pressures, and challenges. Further to this general interview guide, a more tailored guide was developed for each individual participant by drawing out specific quotes from the focus groups and having a discussion around these.

Prior to the interviews commencing, the researcher and the head coach agreed that the gym area of the training facility was the most ideal location for the interviews to be carried out. As with the focus groups, the interviews were arranged using the elite team's WhatsApp group chat. The researcher asked the participants what days

they would be available, and all athletes responded saying that Wednesday was the best day for them, as they had the most amount of free time both before and after the randori session. As there was a consensus with the athletes, the researcher then asked what times on a Wednesday would be suitable for the participants and created a schedule for the interviews around this.

At the start of each interview, the researcher asked the participants if the interviews could be audio recorded. This consent was required to allow her to transcribe the interviews upon their completion. Once this was granted, the audio recording started, and the interview began. The interview started with the researcher asking participants about their judo career thus far, including questions about what weight they currently compete at, what age they started cutting weight, and how their weight cutting practices have developed and changed overtime. Following this, the participants were asked questions from the interview guides that were created. Aligning with the semi-structured interview method, the guide simply acted as a prompt, and if a point of interest was discussed that could possibly develop understanding further, a line of questioning was followed. Upon completion of the interviews, participants were asked if they had anything else to add and then thanked for their time. All interviews were then transcribed verbatim for the data analysis phase of the research, and lasted 33 minutes and 44 seconds on average.

3.1.4 Data Analysis

The data was analysed using Braun and Clarke's (2019) reflexive thematic analysis, which they identified as being a theoretically flexible method of data analysis, where the researcher's subjectivity is seen as a key component of knowledge production. In a recent review, Braun and Clarke (2021) proposed an amended six-phase process of thematic analysis to emphasise its reflexive nature: data

familiarisation and writing notes, systematic data coding, generating initial themes from the collected and coded data, developing and reviewing themes, refining, defining, and naming themes, and finally writing up the report. Although this six-phase process exists, Braun and Clarke (2021) suggested that it simply acts as a set of guidelines for researchers that should be applied in a flexible and reflexive manner.

Aligning with the first phase of reflexive thematic analysis, the researcher transcribed verbatim the focus group video recordings and interview audio recordings to help with the initial data familiarisation and deep immersion with the data (Byrne, 2022). Following transcription, the researcher read and re-read the observation and fieldwork notes and the focus group and interview transcripts. Alongside this, familiarisation notes were written around each individual dataset which included the researcher's initial ideas and thoughts on the data. In order for this to be completed in manageable chunks, the familiarisation process was conducted one dataset at a time (i.e., all observation and fieldwork notes were read and re-read before moving onto the focus group transcripts, and so on). Subsequently, in the second phase, the researcher engaged in data coding utilising the fieldnotes and transcripts together with the familiarisation notes. Codes are defined as labels that one assigns to the potentially relevant segments within the raw data and have been characterised as the foundation for the development of themes within research (Braun et al., 2016). The coding was carried out systematically, with each different dataset being coded individually before moving onto the next, and in the case of the focus groups and interviews, the researcher focused on the explicit meanings of what was said by the participants (Trainor & Bundon, 2021). To code the data, a table was developed for the focus group and interview transcripts in which the line number, raw data, and the code were displayed side-by-side to make it clear what was being drawn out of the datasets.

The codes and labels generated by the researcher were then collated and sorted into initial themes in the third phases of analysis. This was done through a procedure of reviewing the observational, focus group, and interview data notes and generated codes, followed by combining them according to a shared meaning to form the overarching themes and the subthemes (Braun & Clarke, 2013; Byrne, 2022). The researcher conducted this initial theme development by hand, which included her developing a mind-map of the coded focus group and interview data and writing a selection of raw quotes under the relevant code. Observation and fieldwork notes were also reviewed to make sense of the behaviours witnessed, using supporting statements from the focus groups and interviews. Subsequently, the codes were arranged into initial candidate themes, and they were then cross referenced between all datasets to check for both similarities and differences. Through going back and forth between the observation notes, transcripts, and coding, the researcher engaged in an active process, whereby themes did not simply emerge from the data, instead they were developed (Braun & Clarke, 2019). This was followed by phase four of reflexive analysis in which the themes were developed and reviewed further through an iterative process. At this stage, the researcher used her supervisors as critical friends to gain differing interpretations of the data and codes developed thus far, and to aid in the generation of meaningful themes. Throughout this phase, some of the candidate themes were collapsed together to create a more comprehensive sub-theme that better demonstrated the interpretation and understanding of the data (Maguire & Delahunt, 2017).

The developing and reviewing of themes lead to the fifth and penultimate phase of refining, defining, and naming the developed themes. This was done through going back and forth between the previous stages of analysis and having discussions with the critical friends in order to construct a thorough and coherent representation

of the analysis and interpretations (Campbell et al., 2021). Therefore, this process led to the development of three overarching themes and nine subthemes. During this phase of the analysis, the names of the themes were also reviewed and created, and it has been recommended that although these names need to communicate what the theme is generally about, they should also be 'catchy' and grasp the reader's attention (Braun & Clarke, 2021). Finally, the sixth phase of the reflexive thematic analysis was carried out, which was the write-up of the report. Although this is the final stage, it is worth noting that the researcher engaged in the writing process throughout the majority of the data analysis phases, as recommended by Braun and Clarke (2012). During this phase, the researcher made sure that the ordering of themes in the write-up was logical to help the reader understand the interpretations of the dataset, and to help demonstrate diversity and meaning within the themes (Braun & Clarke, 2022). To aid in this, the observation notes, transcripts, and coded data were used, which also helped to ensure that the write-up was a recursive process.

3.1.5 Methodological Rigor

Drawing on Sparkes and Smith's (2009) relativist approach to qualitative research, this ethnography was grounded in this approach, which encompasses evaluative criteria that is study specific (Burke, 2016). Sparkes and Smith (2009) originally stated that this approach to rigor should not be limited to a pre-defined list of criteria and instead should be based on characterising qualities, in which standards are founded on the way researchers appear to be doing their research at this present time (Alexander et al., 2019; Ronkainen & Wiltshire, 2021). However, Smith and Caddik (2012) developed criteria to act as a starting point for researchers to adopt when assessing qualitative research, which the researcher used to evaluate the quality of this ethnography. Although the researcher is required to judge the quality of the

research, the relativist approach also encourages the reader to consider this (Burke, 2016; Rolfe, 2006). Therefore, the researcher invites the reader to assess this ethnography using the following quality indicators: worthy topic (i.e., relevant and timely research), meaningful coherence (i.e., the ethnography achieved what it set out to using appropriate methods), credibility (i.e., the use of thick description and triangulation of methods), sincerity (i.e., self-reflection, transparency about challenges and methods), and transparency (i.e., critical friend) (Sparkes & Smith, 2014; Smith et al., 2014).

The credibility of qualitative research is characterised by how well the participants' views throughout the research align with the researcher's interpretation of them (Nowell et al., 2017). To ensure credibility within this ethnography, each theme consists of a rich and thick description along with quotes of the participants' responses to the questions and conversations in the focus groups and interviews (Tracy & Hinrichs, 2017). This was done to illustrate the participants opinions and perspectives of disordered eating and body image in judo. The researcher also engaged in a process of triangulation to help assert credibility, which is common within ethnographies given the number of data sources used within this method. Triangulation consists of using multiple modes of data, which in this case was observations and fieldnotes, focus groups, and interviews, in a search for converging and similar evidence in relation to the research topic (Bradshaw et al., 2020; Liao & Hitchcock, 2018).

Due to the researcher's previous experience and involvement in elite judo and the judo club itself, it was deemed necessary for her to engage in a process of self-reflexivity throughout the duration of the ethnography. Being an insider was considered as a benefit to the research as the researcher could understand sport specific

terminology, which helped to build rapport with participants, aiding in eliciting greater detail in the focus groups and interviews (Salim & Winter, 2022). Self-reflexivity was achieved by the researcher through keeping a written reflexive journal, which conveyed meaning to the standpoints and assumptions she held throughout the process of the ethnography (Mruck & Mey, 2019). The journal was kept alongside the different methods of data collection and detailed the researcher's thoughts and feelings about the behaviours observed, informal conversations, and the focus group and interview dialogues. This therefore aligns with recent definitions of reflexivity, which state that it is an ongoing and multifaceted practice, in which researchers' critique and evaluate how their subjectivity influences the research process and its findings (Olmos-Vega et al., 2023; Shai, 2020).

The researcher utilised the two supervisors as critical friends throughout the data analysis process. This was to ensure transparency was achieved, which is described as the need to make data, analysis, methods, and interpretations explicit and clear so that it can be evaluated by the readers (Moravcsik, 2019). Aligning with Smith and McGannon (2018), the supervisors were presented with the initial data interpretations and then engaged in a critical dialogue with the researcher in which alternate analyses and viewpoints were discussed. These discussions with the supervisors as critical friends occurred over a number of meetings in which the researcher first presented the focus group coded and raw data and then the interview coded and raw data in a second meeting. Throughout these meetings and discussions, the two critical friends offered a differing interpretation and perspective to some of the codes that had been framed in a relatively positive way by the researcher. Instead, the supervisors interpreted these codes and raw data to demonstrate somewhat maladaptive behaviours and practices within the environment. As a result of this, the

researcher went back through the coded and raw data and provided a different elucidation to the previously positively framed codes. Therefore, the role of the critical friends was not to agree with the researcher's initial interpretations, but instead was to facilitate reflexivity and challenge knowledge construction in help encourage alternative explanations (Cowan & Taylor, 2016).

3.2 Results and Discussion

Following reflexive thematic analysis, three overarching themes and nine subthemes were developed, as seen in Table 1. Themes are presented with excerpts from both the story completion focus groups and semi-structured interviews, with supporting extracts from the observational and fieldwork notes. This analysis of the research findings is displayed alongside and in relation to the existing literature. Participant identities are protected through the use of pseudonyms.

Table 1. Overarching themes and subthemes.

Overarching Theme	Subthemes
Embedded in the Sporting Culture	Collective Environment
	Modelled Behaviours
	Cutting Weight Pressures
Navigating the Mental Battle	Negative Psychological Consequences
	Weight and Food Obsessed
	Cutting Weight is Suffering
The Judoka Body Experiences	Body Image and Weight Cutting Relationship
	Weight Category Identity
	Female Body Functioning

3.2.1 Embedded in the Sporting Culture

This theme indicated that cutting weight is heavily embedded in both the participant's specific performance environment and within their judo culture. Participants engaged in similar, and sometimes quite extreme weight cutting practices, often copying the behaviours of older, more experienced judokas. There was a shared belief regarding the pressure both within the environment and wider culture of judo to engage in cutting weight practices. Within this overarching theme, three subthemes were constructed: collective environment, modelled behaviours, and cutting weight pressures.

3.2.1.1 Collective Environment

The athletes suggested that everyone within the judo club were part of a shared environment regarding cutting weight, indicating that it is "forced on you" (Jamie) and that "everyone does it" (Ava). These quotes imply that weight cutting is an acknowledged and innate part of the sport: "I didn't really know any different, I've done judo since I was four years old. It was an accepted part of it" (Adam). Within this collective environment, athletes reported that they were often cutting weight at the same time as others, which provided them with moral support: "We're all in the same boat, we're a team, we're all in it together, we're all doing the same comps and stuff" (Jamie). This was supported further by Emma: "Me and [Judoka] will talk about it and will be like what did you weigh, and because we go on trips together, we are each other's moral support, like we sweat off together". These judokas were speaking quite openly to each other about their weight cutting practices and supported each other throughout. This openness that was witnessed and described by the participants in this study is in contrast to other sports, such as athletics (Plateau et al., 2014) and swimming (McGannon, 2019; McGannon & McMahon, 2019). In these sports,

athletes often conceal their weight cutting behaviours, which causes athletes to appear functional and normal, when they are in fact struggling and engaging in disordered eating practices (Papathomas, 2018; Papathomas & Lavallee, 2010; Sandgren et al., 2023). Although athletes in other sports may not be engaging in weight cutting, it could be said that disordered eating behaviours and weight cutting practices are synonymous with each other.

Weight categories were designed to give athletes a fair competition by facing opponents of a similar size, however athletes often perceived it as an immense pressure (Franchini et al., 2012; Lakicevic, Matthews et al., 2022). Weigh-ins have been reported to heighten athletes' awareness of their weight, body shape, and appearance, and if a weigh-in during the weight cutting cycle does not meet expectations, athletes will engage in weight loss strategies to change this (Galli et al., 2017). As such, most, if not all elite athletes, engage in some form of weight management practices, indicating that it is part of the sport's subculture (Gordon et al., 2021; Liu et al., 2022): "Everyone does it pretty much, it's kind of like a catch twenty-two…you take the advantage of doing it and being bigger" (Samuel). This can be associated with Douglas and Carless's (2006) performance narrative, as judoka view it to be a physical disadvantage in terms of both strength and size if they do not cut weight and is therefore considered as a necessity for successful performance (Hammer et al., 2023; Martinez-Aranda et al., 2023).

Although a perceived competitive advantage does exist, some participants recognised that it was their choice to cut weight in order to compete: "As I was starting to get older, it was like no actually making weight is part of it, but the reason why I am making weight is to fight" (Toby). A paradox appears to exist between weight cutting being part of judo and its associated pressures, and judokas recognising that

they engage in the practice because they decided to compete at a specific weight category and have to cut weight to remain in it: “It is a cultural thing…I’m not actively like oh other people do it so I should do it. I just do it because the culture maybe taught me to do it. But it is my decision” (Liam). Despite the fact that it is the athlete’s decision to engage in weight cutting to make the weight category they want to compete in, the judo environment plays a role in teaching athletes how to cut weight. It could be argued that athletes have been surrounded by these practices for most of their competitive career and whilst they claim that it is their choice, they may still be influenced by the culture of the sport to engage in these practices.

3.2.1.2 Modelled Behaviours

As a result of the collective environment, athletes often copy the weight cutting practices of others. This is known as modelling and is a mediating factor for the development of disordered eating within Petrie and Greenleaf’s (2007, 2012) etiological model. This modelling of behaviours is demonstrated in the following discussion:

> Jamie: You learn new things from people as well, like you’ve got people at the club who are obviously a lot more experienced and more clued up nutritionally.
>
> Zach: You see everyone else doing what they’re doing, and you just pick up things really.

Through simply being in the club environment, judokas observed and adopted different methods of cutting weight to develop their own strategies, seeking information on the most effective practices (Cruwys et al., 2015). A frequently modelled practice was self-induced sweating, of which there were several methods. One method was through using a sauna: “I was getting close to having to go to the competition, so I put my sweat suit on and sat in the sauna” (Luca). Another method

of sweating was through the athletes immersing themselves in a hot bath, which was then followed by wrapping themselves up in towels and/or bedsheets (Connor & Egan, 2019; Kasper et al., 2019): “The bath just gets me sweating. I lose most of the weight wrapped up in towels and things like that” (Samuel).

Findings from the child disordered eating literature can support the modelling reported in the present study. Hutchinson and Rapee (2007) found that dietary restraint and weight-loss strategies of adolescent girls were similar to those of their peers. In regard to the current study, it could be suggested that judokas would engage in certain practices because they had witnessed them working for others, regardless of the impact they had. One weight cutting practice in particular, which was learnt from the older and since retired judoka, was Vitamin C loading:

> 2000mg of Vitamin C, which is above your daily average by far, every two hours for 36 hours, or every four, I think every four. And then, so that’s like an outrageous amount. Outrageous. You're talking about 50, 60,000mg… It is excreting the Vitamin C. So, anything in your gut or anything gets flushed as well. So, you're flushing more, and then when you start to sweat off, you’ll sweat better (Liam).

This method can cause diarrhoea and nausea, as well as more detrimental repercussions such as kidney stones and kidney failure in more extreme cases (Massey et al., 2005; McHugh et al., 2008; Pacier & Matirasyan, 2015). After engaging in Vitamin C loading, Toby reported that he had problems trying to rehydrate, potentially causing him to still feel fatigued when going into the tournament: “I was still flushing everything out of my system, and nothing would stick”. As highlighted earlier, judokas and other combat sport athletes engage in weight cutting strategies to give them a

competitive advantage, however the use of Vitamin C loading could have an adverse effect on performance (Uddin et al., 2022).

Teammates can have a negative impact on the dietary and eating behaviours of others within sporting environments (Scott et al., 2019). This was demonstrated by Jamie, who stated that when he was in an environment where maladaptive weight cutting practices were used, he copied these: “When I started making weight, I was pretty bad at it to be honest because the people around me who were doing it were making it badly”. However, when surrounded by athletes who cut weight differently, his methods changed:

> Having the positive influences around me I think was a big change for making weight…If they’re doing that, then you’d think oh yeah it must be right because they’ve done the research and they obviously do well and they look good and they don’t lack energy or anything like that, they kind of convinced me a bit better that that’s what I should be doing.

Together, these quotes represent the collective environment that exists within judo, demonstrating that athletes will model the weight cutting behaviours of those within it.

3.2.1.3 Cutting Weight Pressures

Aligning with Petrie and Greenleaf’s (2007, 2012) etiological model, participants discussed how they experienced sport-specific pressures to cut weight from several different sources, which included the sporting culture itself, people within the judo environment, and self-imposed pressures.

Athletes perceived there to be a pressure when being selected and qualifying for tournaments, having to make the weight they qualify for: “If you get selected to fight abroad at a certain weight you're obligated to fight that weight, and if you don’t

make that weight, then you're not going to get selected" (Toby). This was also discussed by Emma, who has experienced being deselected:

> They deselected me when I was a Cadet because I was like point five over, and they were like no, too heavy. Then as soon as I've done well at Juniors and got a medal, they're like, we will have you back now.

An additional selection pressure to cut weight came from athletes not wanting to change their weight if they were already on the ranking list for a specific weight category: "In Pre-Cadets when you're younger it didn't really matter what you fought but trying to get into the Cadet Europeans, you're looking at the ranking lists and you don't want to move up because you're already on that one" (Samuel). In 2009, the IJF introduced the World Ranking List, which ensures that the best players in each weight category do not face each other during the elimination round through seeding the top eight judoka (Santos et al., 2023). The top six results obtained in the two years prior to the Olympic Games are considered during the qualification phase. However, if an athlete changes weight category all previous ranking points are lost (Santos et al., 2023). Although the excerpt is not related to the Olympics, the same principles for international tournaments are in place. Therefore, it is understandable that ranking lists act as a pressure for these athletes to stay in the same weight category and get selected for major competitions.

People within the environment placed further pressure on the athletes to cut weight, which McMahon et al. (2021) identified as the athlete entourage. One member of the athlete entourage who provided a source of pressure was the athlete's coaches: "I mean you don't want to let people down, you don't want to let your coach down" (Adam). This notion was further supported by Molly, who stated that she feels like there are certain expectations associated with weight that she needs to meet:

> I do kind of feel like there is a pressure from [Judo Coach] as well. Even though he is calm and honest, I really don't want to let him down. I feel like there is some sort of expectation, and I get scared to not meet that.

This expectation to make weight from the athletes' coaches has previously been found to cause the development of disordered eating through athletes engaging in weight control behaviours (Boudreault et al., 2022; Coker-Cranney & Reel, 2015; Pallotto et al., 2022). Coaches can also heavily influence and shape the sport club environment, as those who attribute cutting weight to competitive success often promote this belief, causing athletes to develop pathological eating behaviours and attitudes (Schotzko, 2021; Sanford-Martens et al., 2005). Families, were another member of the judoka's entourage that they experienced a weight related pressure from: "Family, constantly being like have you weighed yourself, are you heavy this morning? It just makes you feel like you're not going to make it because you're constantly worrying about being lighter the next morning" (Lily). Lily perceives her family asking her how her weight cut is going as a pressure, instilling doubt in her mind that she is not going to make the weight. These parental comments can exert pressure on individuals to follow cultural body image ideals, resulting in the development of disordered eating to meet these (Arroyo & Andersen, 2016; Hage, 2021; You & Shin, 2020).

3.2.2 Navigating the Mental Battle

The second overarching theme demonstrates the athlete's psychological experiences associated with the cutting weight process, consisting of feeling fatigued and depressed, and behaviours such as obsessive activities and experiencing breakdowns. Researchers have illustrated that weight cutting can harm an athlete's mental wellbeing, increasing experiences of depression and guilt (Bar & Markser,

2013). This was exhibited with three subthemes: negative psychological consequences, weight and food obsessed, and cutting weight is suffering.

3.2.2.1 Negative Psychological Consequences

Throughout the weight cut, participants often experienced more negative psychological and physical consequences than positive ones, such as fatigue, anger, and hunger. This is well documented within the literature, with findings indicating that weight cutting increases negative affect, such as anger, confusion, depression, fatigue, and tension (Marttinen et al., 2011; Petrie & Greenleaf, 2007, 2012; Rossi et al., 2022). Two athletes in this study described how sometimes they experienced feelings of being depressed, among other negative feelings, when cutting weight:

> Daisy: Sometimes depressed, like proper crying. But also, towards the end, the last two days, the last two times I was very calm and happy.
>
> Researcher: Okay.
>
> Daisy: Which is weird…Stressed the following day, but not after, not straight away.
>
> Researcher: Okay sure. Molly?
>
> Molly: So, for before I have stressed, grumpy, not in the mood, frustrated, tired, lethargic, and I added depressed after what Daisy said.

When Daisy was asked about these negative feelings in the follow-up interview, she expanded further:

> A lot of negative feelings, like being sad a lot, being really angry, like getting mad at people for no reason…Being really pessimistic as well, finding it really hard to look for the positives, thinking like the world is going to end, nothing good is happening. There weren't too many positive thoughts.

Such emotions can cause athletes to experience depressive symptoms and difficulties coping with rigorous and demanding training sessions as a result of cutting weight, which is not desirable for judo performance (Brandt et al., 2019; Franchini et al., 2012; Lane & Terry, 2000). Another psychological consequence documented by the participants was a lack of motivation: "F*** I hate dieting and limiting my food. Sometimes lack of motivation as energy levels are low" (Toby). This was supported by Kobayashi and Kida (2022), who reported that losing motivation was an adverse effect of cutting weight in Japanese professional boxers. This could be related to the secretion of the hormone ghrelin, as when its secretion rhythm is disturbed by irregular eating habits, motivation levels can decrease (Mifune et al., 2020). Therefore, this could cause a lack of engagement in training sessions as well as a decrease in competitive motivation (Kobayashi & Kida, 2022), potentially negatively impacting performance.

Another athlete described how cutting weight alters their behaviours and moods: "Normally really social and loud, but notice I spend more time by myself as I sometimes get more argumentative" (Toby). This indicates that he often isolates himself to prevent conflict between him and other athletes, which is an important factor in the development of disordered eating and eating disorders, as individuals often experience disconnect from their families, friends, and sometimes even their own bodies (Papathomas & Lavallee, 2014; Rich, 2006). From observations in the field, this change in behaviour was also witnessed, with the researcher reporting that the accommodation block felt quiet, with not a lot going on, and not many conversations being had when the athletes were cutting weight. This was mirrored in the follow-up interview with Liam:

> I'm loud, I sing, I dance, I wind people up, put me in front of anyone and I'll mess around. But I just don't do that when I'm 61 kilos or 60 kilos. I just literally, I'm like a shell of who I am.

Throughout the weight cutting process, it was reported that feeling hungry and unsatisfied with meals negatively impacted how the athletes felt: "Unsatisfied with my meals as I'm never full, which can make me a little bit grumpy" (Samuel). Emma spoke in more detail about how hunger affects how she feels: "I'm more miserable because I'm more hungry and I'm having less sugar, and I'm more tired because of like work and training, and just eating less". This is synonymous with low energy availability (LEA), which is defined as inadequate energy intake in relation to energy expenditure when exercising (Logue et al., 2020). Psychological disturbances have been associated with LEA, such as an increase in stress, anxiety, anger, confusion, and trouble sleeping (Melin et al., 2023; Mountjoy et al., 2014). Cutting weight in judo requires athletes to reduce their energy intake, which could cause LEA in its athletes, predisposing them to health risks, such as eating disorders, as it is a disordered eating practice (Pensgaard et al., 2023; Torres-McGehee et al., 2021).

Such negative psychological consequences sometimes caused athletes to experience emotional breakdowns when they were cutting weight: "I've had moments before when I've cracked on sessions when I've been struggling with making weight…you get thrown ten times in one practice and you just f***ing breakdown at the side of the mat" (Toby). When asked about this in the interviews, Toby spoke about what was going through his head during these breakdowns: "Sometimes I just used to crack and just, I would be at the back door crying, just like f*** why am I doing this to myself, why am I torturing myself" (Toby). The demands of the sport in these instances exceeded the athlete's resources available to cope in this stressful and

challenging situation, which lead to emotional breakdowns (Lazarus & Folkman, 1984), demonstrating the mental turmoil that athletes experience when cutting weight.

3.2.2.2 Weight and Food Obsessed

Athletes were obsessed with their weight both during a competition cycle and outside of one: “Your weight is always on your mind no matter if you haven’t got a competition or if you do have a competition” (Emma). This represents a preoccupation with weight, which is a characteristic of both disordered eating and eating disorders in athletes, and could be a result of living in a weight-obsessed environment (Keel & Forney, 2013; Papathomas, 2018; Sundgot-Borgen & Torstveit, 2010). Athletes characterised being obsessed with weight as being ‘scales obsessed’, as the participants stated that they would often weigh themselves as soon as they had eaten anything: “Whenever I would put anything into me, any water, any food, anything at all, I would jump straight on the scales, and if I didn’t like what I saw, then I would straight panic” (Jamie). Being obsessed with the scales and weight also included weight checking behaviours after going to the toilet: “You obsess about how much you're s****ing and p***ing” (George). Constantly thinking about weight has been associated with an obsession with weight in a group of elite female boxers, who stated that they paid constant attention to their weight in the form of checking it daily, mirroring the results of the present study (Mills & James, 2022).

As a result of these weight obsessions, the athletes reported that they were obsessed with their food and diet: “Instantly obsessed with food” (Liam). This was discussed in more detail by Toby:

> A lot of your life is revolving around your diet because you can’t just do what you want. There’s no relaxing, it’s just ah this is what I’m eating, I’m low on this, low on that. So, your whole life is literally that diet, and then whatever

you do around it. So, 80% of your day is really just thinking about your diet and what you're doing with it.

This indicates that even when not cutting weight, athletes were still watching their food intake and monitoring their diet, demonstrating their obsession with food. This aligns with the symptoms of orthorexia nervosa, which is defined as an obsession with high-quality nutrition, and characterised by a restrictive diet, strict eating patterns, as well as avoiding foods which are classed as unhealthy (Hafstad et al.,2023). The dietary habits and behaviours of athletes can often become restricted, strict, and obsessive, mirroring the symptoms of orthorexia nervosa (Segura-Garcia et al., 2012; Uriegas et al., 2021). More specifically, Clifford and Blyth (2019) found that 41% of participants from weight-restricted sports were at risk for the development of orthorexia nervosa, indicating that judoka should take caution when experiencing such obsessions with food. Although orthorexia nervosa is not a clinical eating disorder, the obsession with healthy foods has the potential to lead to disordered eating behaviours and in severe cases, a clinically diagnosed eating disorder (Chaki et al., 2013; Surala et al., 2020).

Daisy documented how her obsession with food was via watching other people eat:

I was looking at people's plates that was passing by. I would smell food, look at food, if somebody was eating then I would want to cut up their food. I didn't do it, but I had this urge to do it. It was weird things, like almost psychotic.

This could be explained by research surrounding a social media trend, known as 'mukbang', which has been found to contribute to disordered eating behaviours within its viewers (Kircaburun, Yurdagul et al., 2021). Mukbang is an online phenomenon whereby viewers watch a mukbanger consume large portions of food

whilst interacting with audiences (Kircaburun, Harris et al., 2021). Through watching someone else eat, viewers are eating vicariously, making them feel like they do not need to eat themselves (von Ash et al, 2023; Strand & Gustafsson, 2020). This could be the case for Daisy in the current study, who may experience this vicarious eating through watching others eat in restaurants. Another element of mukbang viewing is binge eating. Von Ash et al. (2023) found that those who watch mukbang videos engage in binge eating shortly afterwards, which was described by Toby in the current study: "I like watching people making things that you know are just s*** for you, or people doing food challenges…I'm suffering now but it's going to be worth it because I can do this after".

These quotations can be supported by field notes, for example, Liam was observed reading the nutritional content of a protein bar. Conversations were also overheard between the athletes and the head coach, and some had conversations with the researcher herself about food and weight. An example of this was when the researcher overheard a conversation between two of the male athletes: Toby: "They're talking about weight again in there". Elliot: "Again? They've not got to make weight for ages". The use of the word 'again' in this conversation demonstrates that talking about weight is a common practice.

Altogether, the athletes were most obsessed with their weight and food when they were cutting weight, but they did also experience obsessive thoughts and behaviours outside of the cutting weight cycle. These behaviours included the athletes weighing themselves after a training session, after going to the toilet, or after eating any food, and therefore being obsessed with the scales and what they were weighing. The athletes also reported that they had obsessions with food, stating how they lived on a diet and that was often all they thought about. Therefore, obsessive thoughts and

behaviours surrounding weight and food were persistent throughout the day in most instances, which has been identified as a tendency of eating disorders in the International Olympic Committee consensus statement of 2019 (Reardon et al., 2019). This could cause athletes to engage in disordered eating practices outside of the weight cutting cycle to maintain a certain weight.

3.2.2.3 Cutting Weight is Suffering

Athletes characterised the process of cutting weight and some of the methods used as suffering: "When you're nearly at weight…it's like literally two more days of this and then you can eat whatever you want, like you're done, it's done, it's not that long of a suffering" (Emma). Adam further demonstrated this point: "For me particularly, the last day with the dehydration strategies, there would be an element of dread leading up to that because it hurt, it physically hurt". It is recognised that dehydration can negatively impact an individual's physical and cognitive health and performance (Adan, 2012), as denoted by Adam, who physically suffered during the dehydration phase of cutting weight, causing him to experience anxiety. Negative conditions and environments, such as excessive exercise or restricted fluid induced dehydration, can cause individuals to experience pain (Ogino et al., 2014). More specifically, Shah et al. (2004) found that physical activity in hot environments that causes dehydration can lead to low salt levels in the muscles, leading to muscle spasms and pain in the abdomen and lower limbs. Although Adam recognised that these strategies hurt him both physically and mentally, he continued to use them.

Another athlete suggested that weight cutting strategies were not dissimilar to torturing somebody:

> It is like torture, I think. Every aspect of it I can see it being used as torture. In somewhere like in the Medieval times, I could see this as torture. Not being

> able to eat, like depriving a person of food, depriving a person of rest because you have to run more, you have to do more. Have to exercise while having no energy because of no food, being in the sauna, like doesn't make any sense exposing your body to such high temperatures. Yeah, that's why it reminds me of like torture strategies (Daisy).

The use of the word torture emphasises the severity of some of Daisy's cutting weight methods, as it reveals that she feels as though she is suffering tremendously during this period. Torture can be defined as any act in which severe pain or suffering, both mentally and physically, is inflicted intentionally on a person by a public official to obtain information (Rodley, 2002). Although cutting weight is a self-inflicted act, this is clearly the way that Daisy perceives it due to the amount of suffering she goes through.

Jamie also used the word torture, but associated it with feeling mentally ready for a competition, as some athletes engage in harder and stricter weight cutting processes to make themselves suffer, instilling a belief that they would perform better:

> I think some people have a pre-comp ritual they like have to go through a certain amount of torture that they have to put themselves through…To make themselves mentally ready for the comp.

This was further demonstrated by Toby:

> Sometimes it feels like if you can find a way to… just get to the end of the session… even if it's just to survive, not even to do anything special, just got get to the end of the session, just make it through, and then you can feel proud of yourself that you've felt that way, you've still managed to complete it.

Athletes are therefore prepared to go through suffering and torture all for a perceived mental advantage. This can be associated with the performance narrative,

as through demonstrating a single-minded dedication to cutting weight, athletes believed that they were superior to their opponents, providing them with this supposed advantage (Carless & Douglas, 2013; Pettersson et al., 2013; Vargas & Winter, 2021).

3.2.3 The Judoka Body Experiences

In the final theme, athletes experienced body image changes which were a result of weight cutting, causing either a dissatisfaction or satisfaction with their bodies. Body image dissatisfaction was also related to athletes possessing a strong athletic identity and identifying with the weight category they competed in. For the female athletes in particular, bodily changes were further associated with the menstrual cycle, which added an extra facet to weight cutting. Within this overarching theme, three subthemes represent the judoka body experiences: body image and weight cutting relationship, weight category identity, and female body functioning.

3.2.3.1 Body Image and Weight Cutting Relationship

Both the male and female judokas experienced some dissatisfaction with their body image. Findings pointed to the fact that body image ideals come from the sporting environment they associate themselves with, as suggested by Petrie and Greenleaf's (2007, 2012) etiological model. For example, Jamie suggested that men who are involved in judo and in fact any sport, strive towards a muscular physique:

> The ideal male body image changes all the time. I think it's just, especially people that are in a sport lifestyle, they're athletic and stuff, it's always like, it's almost like an alpha male type thing. Everyone always wanted to be the biggest man in the room.

This can be supported by findings from Statterfield and Stutts (2021), who found that male wrestlers had a moderate to high drive for muscularity as a result of the general sports pressures that exist within the sporting culture. Male athletes further

suggested that they like to look good as a representation of how hard they train: “I think it’s kind of like a display of how hard you're working. For yourself. I don’t really care what other people think, but it’s just kind of a reward for all the work you're doing” (Jamie). This could be related to self-esteem, as it can contribute to the formation of a positive body image, leading to increased mental wellbeing (Shang et al., 2021). This can further be supported by Toby: “I like to feel like I’m looking good. I like to feel like I’m in shape, because of the effort I put in as well”. Although not directly related to cutting weight, this demonstrates that having a positive body image as a result of sport does have rewarding and mental wellbeing protecting abilities.

The female athletes within this study acknowledged that judo has its own body image standards, and recognised how cutting weight influenced their body image concerns:

> It means the rest of the time you're not making weight, I’m kind of like hmm, I want to look like this. I want to be 63-kilos. So, I guess it makes me more conscious of how I look the rest of the time (Molly).

This excerpt demonstrates how looking lean when at weigh-in weight influences an athlete’s body image concerns when they are not cutting weight. As judoka moved through the weight cutting cycle, they experienced an increased satisfaction with their bodies due to a perceived aesthetic improvement because of weight reduction (Yoshioka et al., 2006). This was supported by Emma, who discussed how she feels miserable and unhappy with her body when she is not cutting weight: “I’m a lot happier when I make weight. I look so much better. I’m miserable when I’m not making weight, because I’m like I look fat, I look horrible”. These body image concerns related to weight categorised sports was supported by de Bruin and Oudejans (2018), who found that the two judokas in their study associated their eating disorder

symptomatology with weight concerns due to making weight within the sport. Similarly, in Vargas and Winter's (2021) the female powerlifters stated that weight categories and weight cutting were embedded within the sporting culture, which caused athletes to monitor their weight excessively, impacting body image perceptions and disordered eating behaviours.

Aligning with Petrie and Greenleaf's (2007, 2012) etiological model, the judoka suggested that their body image ideals were influenced by the wider society: "Social media wise, like you know all the Gymshark people…I just wish I looked like that. But then I can never look like that because of what we do…Doing judo, you're never going to look like that" (Emma), demonstrating that she strives towards a certain gym culture, which is indicative of 'fitspiration' social media posts (Girard et al., 2018). Fredrickson and Roberts's (1997) objectification theory could further help to explain and understand the body image dissatisfaction that Emma experiences from observing certain images on social media. The theory suggests that women's bodies can be sexually objectified through gazes from both men and women, as well as from the media (Strelan & Hargreaves, 2005a). By observing these images online, the judoka wish to conform to and internalise these sociocultural ideals, which results in self-objectification (Daniel & Bridges, 2010). However, as Emma's athletic body image is not transferrable to the social contexts of 'fitspiration' and the demands of Western society, body image dissatisfaction emerges (Russell, 2004). This suggests that female athletes experience a paradox of the athletic body and the social body, which often clash with each other (de Bruin & Oudejans, 2018; Krane et al., 2004).

In contrast to this, some of the female judoka rejected the thin and athletic social cultural body image ideals and were unsatisfied with their bodies when they were looking lean and down to their weigh-in weight. For example, Ava stated: "I

don't like being skinny. But now when I'm like down to weight, I don't look as skinny as I did look when I was 52s. I hated what I looked like then". At Ava's previous, lighter weight category, she was unsatisfied with her body image, as indicated further in her interview: "I don't like being really lean…I don't like having a really flat stomach". Ava used to strive to lose weight in order to make the under 52-kilo weight category, where she became thin, however, she now rejects this goal and instead strives to increase her weight for her new category of under 57-kilos (Chase, 2006; Mischke, 2015). Galli and Reel (2009) reported that male participants who rejected the societal expectations often felt more positively towards their bodies. Although this research was conducted on male athletes, it can still be applied to the female athletes in this study, as through rejecting the female thin body ideal, Ava felt more confident with her increased weight and new weight category.

Mirroring this belief, Lily added that she felt she looked ill when down to weight: "Like sick people. Like I actually look ill, like very ill, and I'm like nah I could never actually just sit at 52s". Similarly, Ruby perceives her weight cut body to be thin and weak: "After I've sweated off, I feel a bit skinny…just look in the mirror and I'm like ugh, skinny. I'm not even skinny, just a bit like weaker". Together, this reveals how these athletes were more satisfied with their bodies before cutting weight, and therefore experienced body image dissatisfaction when they are on-weight, often perceiving themselves to look weaker or ill when they are at their lightest. This can be supported by research from Vargas and Winter (2021) on female powerlifters. As with the athletes in the current study, they found that the powerlifters embraced their muscular bodies, resulting in positive body image. This allowed athletes to appreciate their bodies for what they could do, making the athletes feel empowered, and therefore not internalising the female athlete paradox.

3.2.3.2 Weight Category Identity

Judokas reported that they perceived the category they fight in as "their weight category", and moving up or changing their weight is a strange concept: "When I first moved to 57s, I never would of if [Judo Coach] didn't tell me to…Because just 52s is my category" (Ava). This alone indicates how Ava never considered moving up to a heavier weight category as she believed the under 52-kilo category was her weight category. Although identifying with the weight category is a novel finding, it could be related to athletic identity, which is the sport-specific element of an individual's self-concept and is defined as the degree to which an individual identifies with the role of an athlete (Brewer et al., 1993). Weight regulation has been found to help promote such an identity through feelings of commitment and belonging (Pettersson et al., 2013). A strong athletic identity has also been associated with compulsive exercise and a drive for thinness, which could cause the development of body image dissatisfaction and disordered eating (Gapin & Petruzzello, 2011; Taranis & Meyer, 2011):

> I'm a 52-kilo player. I remember one competition, the Heart of England, I was sitting too heavy, and I was going to sweat three kilos for a morning weigh in, and [Judo Coach] was like no. Then he moved me up to 57s…I kind of felt like I had failed weight.

This demonstrates Lily's athletic and weight category identity, as she was willing to engage in potentially harmful weight cutting practices in order to make her weight category of under fifty-twos.

Identifying with the weight category could further cause body image dissatisfaction due to the belief that certain body shapes suit specific weight categories. For example, Daisy stated that she believed her body shape suited the

lighter weight category: “It was the first time I did 57s a month after coming here. [Judo Coach] saw me, he’s like you're not built for 63s, and then I had all the support from everyone to make 57s”. Previous researchers have reported that lightweight, middleweight, and heavyweight categories all have differing body types and physiques in both male and female judoka (Roklicer et al., 2020). Despite judo predominantly displaying a mesomorphic or endomorphic mesomorph physique, differences, albeit slight differences, do exist between the weight categories (Drapsin et al., 2020). As a result of these body types almost being predetermined for judoka in specific weight categories, athletes could develop body image dissatisfaction if their bodies do not meet the requirements of each category.

Extracts from the focus groups and interviews suggest that judoka identified with their weight category for a number of reasons, such as maintaining athletic identity and body type. The female judokas in particular reported that weight category changes had not been considered by the athletes themselves and instead were suggested by their judo coach. It could be said that if their coaches had not suggested the weight category changes, the athletes may still have engaged in severe cutting weight practices to make the lower weight category.

3.2.3.3 Female Body Functioning

For the female athletes in this study, the impacts of the menstrual cycle on cutting weight and vice versa was reported to be an important factor that they had to take into consideration: “Maybe like your period or something…because I know I get a lot heavier when I’m on” (Ruby). As stated by Critchley et al. (2020), women often hold more water when menstruating, making them heavier: “Sometimes I retain water like the week leading up to my period a bit more” (Ava). This would add an additional obstacle for females to overcome when cutting weight around the menstrual cycle, as

suggested by Molly: “If I have a period due then I know that I’m going to be heavy, so it’s going to be so hard to get the weight off. My body will hold more water”.

The increased weight during the menstrual cycle could also be a result of the increased energy intake that is experienced throughout the course of the cycle. For example, Rogan and Black (2023) found that post ovulation, known as the luteal phase, higher energy intake is required compared to the follicular phase, which is from the first day of menstruation until ovulation. This could be the reason as to why Daisy stated that: “I think it also makes it impossible to make weight…Unless I know it in advance, and I plan ahead…these strategies I think for me have to change completely if I know I am due on”. Having this awareness of their menstrual cycles is important, as it can help them prepare for their cycle when they are going to be cutting weight, aiding in the reduction of stress and anxiety in the lead up to a competition (Brown et al., 2021).

As previously discussed, judoka experience a range of negative psychological symptoms when cutting weight. However, female judokas have the added pressure of facing heightened emotions when they are menstruating, potentially exacerbating the impacts of these symptoms. For example, Molly stated: “I’m going to feel grumpy, and more emotional. So yeah, I think it has quite a big impact” (Molly). Experiencing negative affect during the menstrual cycle has been widely documented, with symptoms including lower self-esteem, increased anxiety and depression, as well as a decrease in concentration and an increase in feelings of isolation (Brock et al., 2016; Itaka et al., 2022; van Iersel et al., 2016). These symptoms can be experienced by individuals both during the premenstrual phase and menstruation and therefore, can be experienced at any point throughout the cycle (Jang & Elfenbein, 2019; Le et al., 2020).

As a result of the negative physical and psychological impacts of the menstrual cycle, some athletes may want to reduce its effects (Brown et al., 2020), as demonstrated by Daisy: “I was hoping that I would miss my period, and that dieting a bit more, maybe exercising a bit too much to make it stop, so that it no longer effects, it just disappeared”. Missing or losing menses is associated with Relative Energy Deficiency in Sport (RED-S) syndrome, which is an advancement of the Female Athlete Triad, and has both physiological and psychological ramifications (Cabre et al., 2022; Dave & Fisher, 2022). Underlying RED-S is LEA, which can occur with or without disordered eating or an eating disorder, whereby daily energy intake does not align with exercise energy expenditure (Loucks et al., 2011; Mountjoy et al., 2023; Verhoef et al., 2021). The risk of RED-S has been found to be higher among athletes who participate in weight-sensitive sports, such as endurance, aesthetic, and weight categorised sports, with those engaging in regular weight cutting being at the highest risk (Thomas et al., 2021; Vardardottir et al., 2023). Therefore, due to the risks associated with RED-S, it is important that its symptoms are detected early to protect athletes from long-term harm (De Souza et al., 2014).

To prevent the negative effects that the menstrual cycle has on cutting weight, such as additional weight and heightened emotions, the female judoka would engage in tougher weight cutting practices such as a stricter diet, increased training, and sweating more weight off. Together, these quotes demonstrate how female judoka, compared to their male counterparts, experienced an added pressure and stress which they have to take into consideration when cutting weight.

Findings from this study would suggest that weight categories place an immense pressure on athletes to cut weight in judo. As discussed, cutting weight behaviours are synonymous with disordered eating practices, and the findings point

towards the maintenance of these practices outside of a cutting weight cycle. One way of attempting to reduce or eliminate the potential for disordered eating to occur both inside and outside of cutting weight is via rule changes. For example, following the death of three wrestlers, the National Collegiate Athletics Association introduced the Wrestling Weight Certification Programme (WWCP) in 1998, which consisted of new rules surrounding weight categories and cutting weight in the sport (Burke et al., 2021; Davis et al., 2002; Deitch, 1998). Within these new rules, 3.2 kilos were added to each weight category, wrestlers were prohibited from using unsafe cutting weight methods, they were required to perform a hydration test at weigh-in, were limited to a weight loss of 1.5% of body mass or less per week, and the order of contest was randomised instead of the lighter athletes competing first and heavier ones competing later (Burke et al., 2021). The introduction of the WWCP reduced the frequency of harmful cutting weight practices in wrestling (Burke et al., 2021), and therefore it is important to consider whether changing the rules in judo would have a similar effect.

The findings further suggest that cutting weight is heavily embedded within the culture of judo, with it often being labelled as a weight cutting sport. When described in this way, it is implied that cutting weight is required in judo and combat sports alike, therefore overemphasising tactics for manipulating one's weight (Martinkova et al., 2024). As weight categories were designed to ensure inclusion, fairness, and safety, labelling these sports in such a way is counterproductive to the reasons for introducing weight categories (Artioli et al., 2016; Gordon et al., 2021; Martinkova et al., 2023). This is because those who are in a lower weight category that the heavier athletes are engaging in RWL to attain, are no longer protected from these heavier opponents. (Martinkova et al., 2024). This not only points to a need for rule changes as previously stated, but also to the need for a culture shift within judo.

This shift could be aided by providing educational tools to athletes, coaches, parents and practitioners (i.e., psychologists, nutritionists, strength and conditioning coaches) on the physiological and psychological consequences of cutting weight throughout the entirety of an athlete's career (Noonan-Holohan et al., 2024; Stangar et al., 2022; Sundgot-Borgen et al., 2013). Educating athletes on cutting weight practices and the negative consequences associated during their early career years, could help in the prevention of them utilising such harmful practices (Noon-Holohan et al., 2024).

This study suggested that a weight category identity exists within the judo culture and environment, which could be a sport-specific component of athletic identity. As previously discussed, a strong athletic identity can contribute to the development of body image dissatisfaction and disordered eating through a drive for thinness and compulsive exercise, promoting a sense of commitment and belonging through engaging in these practices (Gapin & Petruzzello, 2011; Pettersson et al., 2013; Taranis & Meyer, 2011). The concept of a weight category identity is a novel finding from this study, and as a result, little is known on this sport specific component of athletic identity that develops in judokas. As such, further research that assesses the impacts of a weight category identity is warranted, as it could help those involved within judo and other weight categorised sports to understand athlete decisions and reasons for cutting weight. Future research would also greatly benefit from intervention-based studies that investigate the effectiveness of an educational programme. Previous research into cutting weight interventions has found that over the course of 12-weeks, a boxer was able to cut weight in a safe way (Morton et al., 2010). Although Morton et al.'s (2010) study did not assess psychological variables, the findings from the intervention demonstrate that it is possible to cut weight without using extreme and dangerous practices. Alternative weigh-in and cutting weight rules

could also be examined, which could help to inform policy at a national and international governing body level. Lenten and Kendall (2022) found various cases in which research has helped to inform policy across sports such as cricket, football, and rugby, making the case for more collaboration between researchers and policy makers in the future.

Although the judo coach of the elite, full-time judoka was observed during the observations and fieldwork, they were not included in the latter phases of the ethnography. As ethnographies look at all aspects of the environment to understand the culture of a specific group (Hammersley, 2018; Hammersley & Atkinson, 2007; Krane & Baird, 2005), this could be considered as a limitation of this study. Involving the coach in the latter phases of this study would have provided an alternative perspective on the impacts of cutting weight and its relationship to disordered eating and body image. Whilst being an insider to the culture of judo was considered as an advantage and benefit of this ethnography, it did come with its challenges and could be considered as a limitation. For example, as suggested by Naaeke et al. (2012), as an insider to a culture, participants may think that the researcher should know the answer to some of the questions asked in the focus groups and interviews and may not have gone into as much depth when answering these questions as they would have done with an outsider. On the other hand, through being an insider to the culture of judo, the researcher had an understanding of terminology that was sport specific, which therefore helped to build rapport with the participants and aid in the elicitation of openness in the observations and greater detail in the focus groups and interviews (Salim & Winter, 2022).

3.3 Conclusion

The findings from this ethnography indicated that complex relationships between the cutting weight culture, disordered eating, and body image were present within the elite judo environment. Largely aligning with Petrie and Greenleaf's (2007; 2012) etiological model, the findings revealed that cutting weight is heavily embedded within the culture of judo, with judoka learning and mirroring the often dangerous and extreme practices of those around them. As a result of cutting weight, the judoka experienced many resultant negative affects, such as feelings of depression and anxiety, as well as being obsessed with food and weight both during and outside of cutting weight cycles. Experiences related to the body were found to be both psychological and physical. Body image ideals came from the sporting environment and society, and these ideals influenced the judokas' perceptions of their bodies. A weight category identity was also found to be persistent, which often prevented judoka from moving up to a healthier weight category. For the female judokas in particular, cutting weight often impacted their menstrual cycle, and vice versa, meaning that it was an extra factor that these judoka had to consider when entering a cutting weight cycle. Those working within judo should consider the long-term psychological and physical impacts from engaging in extreme cutting weight behaviours, and the development of informed guidelines and safe practices

Chapter 4: “Dear Younger Self…”: Using Letter Writing to Understand the Disordered Eating Experiences of Retired Elite Judokas.

4.0 Overview

As found in Chapter Three, cutting weight is heavily embedded in the judo culture, with many practices used to cut weight being synonymous with disordered eating behaviours. Such practices resulted in negative psychological consequences such as anxiety, depression, and having an obsession with food and weight. Body image ideals that the judokas strived towards came from both society and the sporting environment, which caused body image dissatisfaction in some and satisfaction in others. There was also the discovery of a weight category identity, which often caused judokas to avoid changing their weight category and moving to a heavier one. However, body image concerns and disordered eating behaviours do not have an expiry date, and therefore it would be incorrect to assume that upon retirement, these issues simply cease to exist in judokas. As judokas have looked a certain way for the majority of their lives and also potentially engaged in some extreme practices to make weight, researching retired athletes, particularly retired judoka who come from a weight categorised sport, is important. It can help to deepen understanding and develop knowledge on the long-term psychological and physical impacts of cutting weight.

4.1 Introduction

Retiring from elite sport is a major life transition, which every athlete will experience, requiring them to redefine their identities away from that of an athlete (Cooper & Winter, 2017; Ronkainen et al., 2023). Transitioning out of sport can be challenging, with implications for physical and mental health, as well as development in social and professional settings (Bullock et al., 2022; Voorheis et al., 2023). This is due to athletes being so consumed by their sport, that there is little time for them to explore and engage in other roles outside of their sporting careers (Lavallee &

Robinson, 2007; Shander & Petrie, 2021). As such, the extant literature has reported that this can cause several adjustment difficulties such as: low self-confidence, heightened anxiety, depression, disordered eating, substance abuse, and even suicide (Mannes et al., 2019; Schmid et al., 2023; Thompson et al., 2021; van Ramele et al., 2017). The strength of an individual's athletic identity has been highlighted as a central factor in athletic retirement, contributing to the development of disordered eating and body image dissatisfaction due a reduction in physical activity, fitness, muscle mass, and changes to nutrition (Laure & Meline, 2018; Liu et al., 2008; Stirling et al., 2012).

A strong and continuing athletic identity contributing to body image dissatisfaction has been conceptualised by Papathomas et al.'s (2018) retired female athlete paradox, which suggests that former athletes experience a developing tension between two body image ideals following retirement. As athletes transition out of sport and retire, they will often be satisfied with their bodies as they lose muscle mass and therefore experience heightened levels of femininity. At the same time however, they will experience an inner conflict due to their bodies losing musculature and moving away from the athletic ideal. As a result of these changes in retirement, body image issues will arise as former athletes try to cope with these opposing ideals. Expanding on the retired female athlete paradox to include the influence of athletic and gender body idealisation, identity, body grief, and changes to body composition, Buckley et al. (2019) proposed the concept of athletic body transition.

Buckley et al. (2019) described athletic body transition as the retired athlete's body image or dissatisfaction experiences, which is based on both active and passive factors. These factors include the sporting culture, former athletic body ideal pressure, body composition genetics, body composition changes in retirement, and the level of continued athletic identity. Buckley et al. (2019) suggest that as an athlete retires, their

body composition changes, and they move towards aspiring for a societal body ideal as opposed to an athletic one. If a former athlete's body changes aligns with societal ideals, then they will experience heightened levels of body acceptance and positive retirement outcomes. However, decreased body acceptance emerges when continued athletic identity and/or body image is internalised and aligns with an athletic body image rather than a societal one (Fatt et al., 2024). This can result in disordered eating behaviours, such as compensatory exercise, restrictive eating, and binge eating to develop (Barrett & Petrie, 2020; Hardie et al., 2022). Such behaviours are often endorsed by former athletes who used the practices they learnt in their athletic careers to lose weight in their retirement from sport (Stirling et al., 2012; Thompson et al., 2021).

This desire for former athletes to fulfil an athletic identity and an athletic body image ideal in retirement has been observed. For example, in a study on retired swimmers, Cooper and Winter (2017) found that disordered eating behaviours developed due to the retired athletes having memory of their former athletic bodies. This in turn caused body dissatisfaction to arise during retirement because their bodies did not mirror societal body image ideals. Research on retired gymnasts further supports this, reporting heightened body dissatisfaction due to changes to their body compositions following retirement (Stirling et al., 2012). However, compared to the findings from Cooper and Winter (2017), this dissatisfaction often came from former athletes experiencing an existing pressure to maintain an athletic physique from gymnastics, and therefore wanting to fulfil an athletic body image ideal, as opposed to a societal one (Casanova, 2019; Stirling et al., 2012). Further to this, it is common knowledge within the existing literature that in sports such as gymnastics and swimming, athletes often report high prevalences of disordered eating and eating

disorders due to both social and sporting demands (de Bruin et al., 2007; Deziel & Debeliso, 2020; McGannon & McMahon, 2019 Petrie & Greenleaf, 2007; Petrie & Greenleaf 2012). As such, when athletes from these sports retire, they are more likely to report disordered eating if they engaged in such behaviours during their competitive careers (Ravi et al., 2023; Thompson et al., 2021).

However, one athlete group that has had little to no attention in the existing sport retirement literature is former judo athletes, in which athletes are subjected to weight categories and weigh-ins (Artoli et al., 2016; Reale et al., 2016). As a result of this, judokas engage in RWL strategies such as dieting, restricting fluids, and self-induced sweating, and more extreme methods such as taking laxatives, diuretics, and diet pills, as well as self-induced vomiting (Barley et al., 2019; Sitch & Day, 2015; Thomas et al., 2021; Uddin et al., 2022). It could be argued that these cutting weight behaviours are synonymous with disordered eating practices, and if a judo athlete has engaged in such behaviours during their career, they may be at an increased risk for the continuation or development of disordered eating in their retirement (Ravi et al., 2023; Thompson et al., 2021). This notion can be supported by research on active and retired female boxers. Mills and James (2022) found that cutting weight is normalised within boxing gyms, and when an athlete retires, cutting weight behaviours continue into retirement. This was attributed to boxers experiencing fear and anxiety about gaining weight and seeing a bigger number on the scales in retirement.

These findings indicate that there is a need for research into retired judokas and the impact that cutting weight in their competitive careers has on their lives post-judo. This is important to investigate due to cutting weight behaviours being synonymous with disordered eating, with the potential for this to continue into retirement. Further to this, when an athlete eventually retires from sport, their body

composition changes, which could lead to heightened levels of body image dissatisfaction, contributing to the development of disordered eating in retirement (Buckley et al., 2019). Therefore, the aim of this study was to gain an understanding on the impacts that cutting and monitoring weight has on judokas into their retirement from sport. Underpinning this research aim is the following research question: How have cutting weight practices and weight monitoring throughout their competitive career impacted judokas into their retirement? It is hoped that by answering this question, insights can be gained into the complex relationship between cutting weight, disordered eating, and body image in retired judo athletes. This will therefore expand knowledge in this area with this athlete population and potentially help to heighten awareness around retirement from weight categorised sports.

4.2 Method

4.2.1 Research Approach

This study aligns with the overarching research philosophy of interpretivism and is underpinned by ontological relativism and epistemological constructivism, please refer to section 1.0.3.

4.2.2 Participants

The research was conducted with retired elite judo players, who had to have competed to at least a National level to participate in the study. The inclusion criteria allowed for an exploration of the long-term impacts of cutting weight at an elite level, as previous researchers have reported that athletes can normalise their experiences whilst in the sporting context but be more reflective of their experiences once retired from sport (Salim & Winter, 2022). The participants were recruited via a Facebook post and the researcher's own connections, and had competed in both National (e.g.,

British Open) and International Tournaments (e.g., European, World Championships, Commonwealth, and Olympic Games). Before commencement, participants were given both written and verbal explanations of the study, which included the aim and rationale. Following this, 15 retired judoka (*Mean age* = 42.7, *SD* = 11.4 years old), six men (*Mean age* = 42, *SD* = 13.9 years old) and nine women (*Mean age* = 43.2, *SD* = 10.4 years old) gave written informed consent for their participation in the research. Of the 15 participants, 14 were British and one was Japanese. Participants reported being retired from the sport between one and 32 years (*M* = 14.8, *SD* = 10.9 years), with career lengths between 10 and 27 years (*M* = 20.1, *SD* = 4.8 years).

4.2.3 Procedure

4.2.3.1 Pilot Study

Prior to the research commencing, a pilot study was conducted with a retired female Mixed Martial Arts (MMA) athlete. In the first phase, two semi-structured interviews were piloted to see how effective the guides were in eliciting the content required for the study (Majid et al., 2017). As the study design included two interviews, it was important to pilot the sequencing of them. The interviews were conducted a day apart, enabling both the researcher and participant to remember points discussed in the first which could be followed up in the second interview. At the end of the last interview, the second phase of the research was explained which involved writing a letter to their younger self, enabling the researcher to assess the implementation of both interviews and the letter writing within the study (Gudmundsdottir & Brock-Utne, 2010). Piloting of the letter allowed a timeframe to be agreed, and it was decided that three weeks was an appropriate amount of time for the letter to be written in. Once the letter had been returned, it was read to assess

whether it aligned with the research. It was concluded that all the research instruments worked effectively in gaining relevant information and no changes were required.

4.2.3.2 Semi-Structured Interviews

For the purpose of this study, two interviews were conducted. The first interview addressed the participants competitive career, with the second interview covering their life since retiring. The use of two interviews can aid in the development of a deeper understanding of the context and can also help the participants feel more comfortable with the researcher, especially when the topic is of a sensitive nature (Knox & Burkard, 2014). Both interviews were semi-structured in nature, which is classified as an exploratory style of interviewing (Magaldi & Berler, 2020). Semi-structured interviews generally follow an interview guide, but they also give researchers the opportunity to discover and understand participant experiences of the topic in question through the probing of responses (McIntosh & Morse, 2015; Rabionet, 2011). At the start of both interviews, timelines were co-created by the researcher and the participants. Timelines are a visual method in which significant life events are displayed in chronological order (Berends, 2011). Creating timelines within interviews is a person-centred approach to qualitative research which can help the participants to reflect on their experiences as well as facilitate the interviewer's understanding of these (Kolar et al., 2015; Pell et al., 2020).

In the first interview, the researcher asked the participants to create a timeline from when they first started judo to the day they retired, including highs, lows, and challenges throughout their competitive career. Following the co-generation of the timeline, the researcher discussed events, experiences, and associated topics with the participants. These topics included weight making practices used throughout their judo career, thoughts, feelings, and emotions surrounding eating, food, cutting weight,

body image, their training programme, and sources of support and pressure (e.g., how did your thoughts surrounding eating/food/cutting weight/body image effect you?). Before the interview finished, the participants were asked if they had anything else to add and thanked for their time. Following this, the second interview was scheduled with the participants.

In the second interview the participants were first asked some contextual questions, which included the number of years retired from judo, the age of retirement, reasons for retiring, and finally their current involvement in the sport (e.g., what were your reasons for retiring from judo? What is your involvement with the sport now?) Following this, the participants created a timeline of events from their early retirement through to the current day, including challenges, achievements, and the transition into a retired athlete. As the timeline was generated, the researcher discussed points on the timeline with the participant (e.g., what was your transition from being an active competitor to retired athlete like?). Following this, other topics were discussed which included the impact that weight monitoring and cutting weight during their competitive years had on them throughout retirement, as well as any support and pressure they received (e.g., does the nature of the sport, i.e., weight categories and cutting weight, still have an impact on you in retirement? If so, how?). Prior to the conclusion of the second interview, the researcher gave the participants an opportunity to discuss anything further and then explained the letter writing task to them. Following this, the participants were thanked for their time and the interview ended. All interviews were transcribed verbatim for the data analyses stage of the study, with interview one lasting 50.9 minutes on average (SD = 20.4), and interview two lasting 45.5 minutes on average (SD = 16.2).

4.2.3.3 Letter Writing

The method of writing a letter to a younger self is reflective in nature, giving participants the opportunity to write about changes to specific situations and conversations they wish to have, as well as having the ability to communicate experiences and feelings they may not have discussed previously (Day et al., 2023; Pithouse-Morgan et al., 2012). As stated by Day et al. (2023) in writing letters to their younger self, hindsight is seen as a useful perspective. They suggested that retrospection can provide the perspective of an older and wiser self, who is invaluable in understanding the wide variety of experiences that occur within sporting contexts. This knowledge can help the writer give advice, encouragement, and find solutions to situations when writing letters to their younger self (Day et al., 2023).

The participants were provided with a letter writing information sheet via email after the second interview, which detailed what was required of them to complete this phase of the research. To write their letter to their younger self, they were asked to draw on the discussions from the two interviews and think of a time within their competitive career that they would have liked to receive a letter from their older, wiser, and more knowledgeable self. The participants were asked to consider the following points when writing the letter; advice they would give, words of encouragement, challenges that their younger self will face, anything they would do differently, and what the future holds for them. They were also asked to keep in mind the focus of the study and include topics such as disordered eating behaviours, cutting weight practices, body image concerns, and any experiences and challenges related to those previously. Although they were asked to write about these points and topics, they were not limited to just discussing these within their letter. The participants were also told that there was no right or wrong way to write the letter, and that they should

not be concerned with spelling and grammar. Once their letter was completed, they were asked to email it to the researcher, who responded to each participant individually, thanking them for their time and for participating in the research.

4.2.4 Data Analysis

4.2.4.1 Semi-Structured Interviews

Braun and Clarke's (2019) reflexive thematic analysis was used to analyse the interview data. This method of data analysis is a six-phase process; acting as a set of guidelines that researchers should apply in a flexible and reflexive manner (Braun & Clarke, 2021): data familiarisation and writing notes, systematic data coding, generating initial themes from the collected and coded data, developing and reviewing themes, refining, defining, and naming themes, and finally writing up the report.

Aligning with the initial phase of reflexive thematic analysis, and therefore aiding with data familiarisation and immersion, the researcher transcribed verbatim all interview audio recordings (Byrne, 2022). Following interview transcription, the researcher read and re-read all transcripts, highlighting interesting and relevant data and writing familiarisation notes in the transcript margins. Once the familiarisation process was complete, the researcher moved onto the second stage of reflexive thematic analysis of coding the data in a systematic manner. This was done through extracting the highlighted data from the interview transcripts one transcript at a time. The extracted data was put into a table, which consisted of the line number, raw data, and the data code displayed side-by-side to make it clear what was being taken from the transcripts.

The codes generated in this second phase lead to the researcher collating and sorting them into initial themes for the third phase of data analysis. The researcher engaged in a process of reviewing and combining the generated codes to form initial

themes based on a shared meaning (Byrne, 2022). This was done through going back and forth between the interview transcripts and codes, creating a mind-map of the coded interview data and raw data quotes. This was followed by the fourth phase of data analysis whereby themes were developed and reviewed, discussing different interpretations of the interview data and codes with the researcher's supervisors who acted as critical friends.

Themes were then developed and reviewed in the fifth phase of data analysis. Through going back and forth between the previous stages of analysis and having discussions with the critical friends, three themes were developed that provided a comprehensive representation of the data analysis (Campbell et al., 2021). It was also during this phase that theme names were created which both communicated what the theme was about and grasped the attention of the reader (Braun & Clarke, 2021). The sixth and final phase of writing up the final report was then carried out, using the transcripts and coded data documents to ensure that the write-up remained a reflexive process.

4.2.4.2 Letter Writing

The analysis of the letters to their younger self was conducted to generate a composite letter in which the experiences and voices of all participants were integrated into a single account (Blodgett & Schinke, 2015). In creating this composite letter, it allowed the researcher to draw together both insightful and common elements of the letters and then weave them together to create a powerful, comprehensive, and shared account. (Schinke et al., 2016). As such, the letter should be read as coming from a singular composite character in relation to advice that he/she would give their younger self on their judo journey (Szedlak et al., 2020).

Following a similar analysis of the letters to that of Schinke et al. (2016) and Szedlak et al. (2020), the researcher read and re-read all the letters individually, highlighting sentences that were relevant to the research. However, rather than creating themes from the participant letters, the researcher extracted the highlighted segments for use within the composite letter. These extracts were merged through a process of re-organising and fitting together parts of the participant's letters to create a captivating and coherent composite character and letter (Smith et al., 2016). Within the process of re-organising and fitting together the letter, the researcher worked closely with her supervisor who acted as a critical friend, who was provided with the letter extracts and the initial composite letter. Following discussions with the supervisor and after the generation of three drafts, a final composite letter was agreed upon.

4.2.5 Methodological Rigor

The researcher draws on the relativist approach to qualitative research (Sparkes & Smith, 2009) and used a number of quality indicators proposed by Smith and Caddik (2012) and Smith et al. (2014). The reader is invited to assess the research based on these indicators: worth topic (e.g., timely, significant, and evocative research), transparency (e.g., the use of a critical friend to ensure the research was transparent), coherence (e.g., the way in which parts of the interpretation create a complete picture), and impact (e.g., does the research affect readers emotionally and intellectually?). To attain transparency, coherence, and impact, critical friends were used, the researcher ensured that the letter to younger self provided a meaningful overview of the letters, and that the letter emotionally and intellectually moved readers respectively.

The researcher's supervisors were used as critical friends throughout the data analysis of the interviews and the participant letters to achieve transparency. Regarding the interview data, this was done through presenting the interpretations of findings to the critical friends, who then engaged in a discussion with the researcher offering alternative explanations and interpretations of the data (Smith & McGannon, 2018). The researcher also worked closely with the critical friend when generating the composite letter, going back and forth in conversation to create the most comprehensive letter. To assess the coherence of the research, it was considered how the different letter extracts were morphed together to create the composite letter (Szedlak et al., 2020). The researcher therefore asked herself whether the composite letter provided the reader with a meaningful and sound overview of the advice being given to the younger self. Finally, the composite letter aimed to be provoking, having the potential to move readers. This assesses the impact of the research, and therefore the researcher asked herself whether the readers would be affected emotionally and intellectually by the composite letter (Richardson, 2000).

4.3 Results

Following reflexive thematic analysis of the interview data, three themes were developed: Trying to maintain the impossible, a health awakening, and the weight category stronghold. Themes are presented along with excerpts from both semi-structured interviews undertaken with the participants. The composite letter generated from each participant's letter to their younger self is displayed thereafter. For the purpose of anonymity, participant identities are protected using pseudonyms.

4.3.1 Trying to Maintain the Impossible

This theme demonstrated how retired judokas initially tried to maintain their athletic bodies. Into their retirement years, they experienced changes in their eating practices, as well as their body weight, shape, and size. These changes were often met with struggles, as participants tried to come to terms with and recognised that maintaining such athletic bodies was often not possible.

When retiring from judo the participants reported that they put on weight, which Charlotte attributed to being able to eat whatever and whenever she wanted due to now not having to cut weight: “I do think that there is that, you know, I wasn't allowed to have this, and now I can”, and also by Olivia: “I think when I first stopped, I wanted to eat everything because I could eat anything I wanted”. Ella discussed a different experience with eating in her retirement from judo, which demonstrated how she continued to eat the same as when she was a competitive athlete, resulting in an increase in weight:

> It was that first two years where I really struggled with coming out, I really ballooned up. I was having sort of what I would obviously now classify during those last couple of years of being a competitor that I had disordered eating basically. But because I was like bingeing and then restricting, obviously the weight was coming down. But after I retired, there was no need to then do the restriction. So, I was still like binge eating because I was unhappy, but I wasn't then doing the restricting. So, I went up to like, I don't even know probably like sixty-seven kilos or something like that.

This indicates that Ella maintained the disordered eating practice of binge eating into her early retirement but was no longer engaging in dietary restriction

because she was not cutting weight anymore. This resulted in an increase in weight alongside a change to her body shape and size.

As a result of their dietary intake in retirement, participants recognised a change in their body weight, shape, and size upon retiring from judo, reporting that they struggled with this: “A little bit of body image as well, as you’re used to seeing your body in a certain way as well, and then suddenly, you're, like, bigger than it used to be” (Alice). This led to participants being unsatisfied with their retired bodies as they were no longer the size they were when they were an active competitor:

> From where I had held my weight for so long, I’d put probably about two and a half stone on, and still now I struggle with it, because I'm just not what I was. Like, I can be that skinny so why am I not that skinny now? I don't fit in the clothes; I had to buy a whole new wardrobe. I'm making out like I’m b***** fat, but I'm not, I'm just a bigger person. I’m just like a 10 or a 12, but before I was very skinny. So, even now looking in the mirror, I didn't used to like this, and still now I don’t like it, I'd rather be a bit smaller, but I just don’t have the motivation to cut any weight because that's all I've ever done for that period of my life, and people comment, they’re like oh you’ve put weight on haven’t you, and I'm like, yeah I have put a bit on. So, that's the hardest part of coming out of judo, trying to recognise you still look nice in a different size or shape (Izzy).

Body image dissatisfaction therefore derived from looking a certain way throughout their sporting careers and this changing once retired from judo because participants were no longer training at such a high volume, nor restricting their food intake:

> One of the things I struggled with was the sort of accepting the size I now am, you know people say oh you're not big or whatever, but when you're used to training four times a day on some days, you end up a certain size. And then entering the real world, and you can't ever be that size again, unless you hardly eat and you don't work, because I can't physically train four times a day whilst trying to have a job (Olivia).

On the other hand, James reported a weight reduction which was a result of muscle mass loss post-retirement: "If I stop judo, the muscle is lost fast, I think. That's why the number of weight looks nice, but looks, appearance, I don't know, it's not good" (James). This demonstrates how James experienced body dissatisfaction due to him being smaller and having less muscle mass, compared to his retired counterparts who gained weight.

Some of the participants who had been retired for over 18 years reported how they began to embrace their new retired body image in the later phases of their retirement: "But then the psychological aspect of that was accepting that I'm okay not to be a chiselled athlete, I guess, and the persona of that" (Alex). Georgia also reflected on her new retired body, accepting the way she looks now because she is able to live her life unrestricted: "So, no I won't have the body I had when I was an elite athlete, but that's okay because I live now. Like it was a different life. Every little bit is because I'm having a great time". These athletes in particular recognised that they cannot maintain the athletic bodies they once had, and after many years of struggling and being retired from sport, they can finally come to terms with the bodies they now have. However, not all participants experienced this acceptance of their new retired bodies. This was due to an adjustment to their eating habits or restricting behaviours, causing body weight and shape changes. Athletes struggled with these changes due to their

bodies looking a certain way during their athletic career, which resulted in body dissatisfaction.

4.3.2 A Health Awakening

Within this theme, participants reported that they went through a transition within their retirement, which included a shift from cutting weight and restricting food for performance enhancements to eating for health benefits. This often involved the participants educating themselves on appropriate dietary requirements for a life retired from sport.

Alice reported that early on in her retirement she would still monitor and restrict her dietary intake: “Whereas before, I think I’d eat a lot and then think right, okay, well I’m not going to have a big dinner”, however overtime, this changed as she gained a more balanced outlook:

> I think I suddenly realised that I was going to start eating to be healthy rather than eating to control my weight. And over the last three to five years, my weights really stabilised, and I've lost that sort of anxiety, even that hunger, it's more I make sure every meal is balanced, and if I eat more one time, it doesn't matter.

As such, instead of restricting their dietary intake, participants reported that they gained self-awareness and a change in attitude towards food compared to when they were an active competitor and in the early days of their retirement: “I feel a lot more aware about eating choices and what’s healthy, but equally I’m very happy to have the odd treats. So, I feel like I’ve got a balanced attitude towards food now” (Ella). This compares to the way in which Ella was treating her body when she was an active competitor:

> I remember getting there on the Monday morning, weighing myself and I was 56.9 kilos, and I was fighting fifty-twos on the Saturday. I did a training camp that week, basically, I ate nothing and was gradually dehydrating myself that week to be able to do the tournament.

The transition reported was often due to the participants recognising that they could not continue eating and training the way they did as an athlete, as well as ensuring longevity: "It's only ever now about being healthy and living as long as I possibly can" (Olivia). This notion was mirrored by Harry:

> It's more for my ongoing health. I want to eat healthily and exercise because I'm fifty-three and I've got a five-year-old. You know, a lot of my family on my father's side died at fifty-six and that's playing on my mind. So, I eat a lot more fruit, vegetables now than I have done for a very, very long time.

However, this transition to leading a healthier lifestyle did not happen overnight and without help. Instead, participants actively educated themselves on more appropriate nutrition: "When I finished judo, I educated myself on nutrition and on eating, and I think there's been a culture shift just in society as well, not just in judo, but people are eating to nourish their bodies now" (Ella). For one participant in particular, this occurred after she had a baby, asking the nurse to educate her on the correct nutrition for her son, which she also followed herself:

> I was at the children's centre, and I was with a nurse, and she said well I don't need to speak to you about nutrition because I know what you've done in sport. And I said no, you need to speak to me about nutrition, I said the things that I've done through sport are hideous. But what I can tell you is that whatever you tell me I need to do, it will happen to the book. So, she went through every

> meal, every snack of the day that he was going to need… and it was the best reset for my life because I followed that (Georgia).

With these changes in their eating habits, it could be argued that they now lead a healthier lifestyle compared to what they did when they were an active competitor. This is ironic, as it is assumed from the nurse in the above quote that it would be expected for participants to be healthier when they were elite athletes. Being healthier in retirement was suggested by Jess: "I think my lifestyle, is much better than it's ever been. You know, if I trained like I train now, and ate like I eat now, when I was competing, it might even be a completely different ballgame". On the other hand, some athletes still liked to monitor their dietary intake: "Think an awful lot about what's the best food to eat today that you know, so I plan my meals in my head, but it's around optimal nutrition, what's the healthiest I can eat today" (Alex). These obsessive thoughts and behaviours around food were also implied by Georgia, who would sometimes engage in compensatory behaviours, such as food restriction, in an attempt to limit the impacts of eating a large amount of food:

> I am still really conscious of, oh my God you've just absolutely pigged out there. If I'd had a day where we go out for a meal and we have something else, and we do, and the next day or the day before, I keep an eye on it.

Taken together, these quotes demonstrated that as former athletes moved through their retirement journey, they began to re-educate themselves on what was the best nutrition for health, rather than for cutting weight and performance. As such, athletes are arguably healthier now in their retirement than when they were an elite athlete. However, some participants would still monitor their food intake, suggesting that their experiences of being an elite judoka still live with them into retirement.

4.3.3 The Weight Category Stronghold

This final theme demonstrated how participants identifying with their weight category transitioned from their competitive years into their retirement from judo. As such, the participant's weight category still influenced and impacted them, often causing them to internally struggle with their retirement weight.

Within their competitive careers, athletes documented how they identified with their weight category, not wanting to change their category for risk of not performing very well: "I just couldn't let go of the idea that I was a 73-kilo fighter and that's where my best chance was" (Tom). This was reflected by Ella, who stated that she felt like a counterfeit athlete for changing her weight category: "You know, like, when you went to Japan, and I had my name, and then 52 on my belt. So, I remember when I was not 52, then I felt like a fraud" (Ella).

This stronghold with the weight category followed the participants into their retirement, with Zoe in particular using the number 48 in her account passwords, which she will potentially use for the rest of her life: "The number 48 has been with me like my whole life in a way. So, it's almost, it's not a lucky number, but I can tell you, it's in a lot of my passwords for things". In doing this, Zoe is constantly reminded of the weight category she was when she was competing.

As a result of identifying with the weight category, participants reported weighing themselves in their retirement to keep an eye on their weight, ensuring that it did not deviate too much from what it was when they were competitive, and therefore trying to maintain a particular body weight as discussed in the first theme:

> I weigh myself once a week. I don't want to do any more than that, because I think you can get a bit, you can go down a slippery slope, and so long as it's within a kilo either side, then I'm happy. If it starts going up a bit, I'm like

> okay, I'll be careful this week. So, it's a case of just being a little bit more conscious of what I eat (Rosie).

For some on the other hand, the stronghold that the weight category has, caused them to not want to weigh themselves for fear of not being the same weight they were when they were an athlete: “I generally don’t even get on the scales anymore, so I think I’d be 63s, minimum. If not, 70s, and it’s just like God no. No, no, no” (Olivia). This was further echoed by Georgia:

> I watch normal people, what I call normal people, and they will just jump, like oh look there’s some scales, they’re fun and jump on and jump off, and I’m like oh my God that’s just not fun. But the thing is because it’s so hard wired of what my fight weight was and what I could be, rather than what I am now.

One athlete in particular, who had been retired for 23 years at the time of the study, discussed her relationship with the scales throughout her retirement journey:

> For a long time, I would get on the scales, if I was light, I think great, and I'd eat more, and it was heavy, I think ah I’ll eat less…But then I went through a stage where I refused to weigh for probably a couple of years, three years. That's it, not getting on the scales, rubbish. And then [Wife] convinced me to weigh once a week, and I was very resistant at the beginning. But obviously, we started doing that, and I, and now and then, because my weight is more or less the same, it doesn't really matter. So, I'm just like, that is what I am, I’m that again, you know, so yeah. It doesn't have the effect that it used to have (Alice).

For Alice, the stronghold of the weight category was persistent for the majority of her retirement, however in her later years, she was able to relinquish the stronghold. This was not the case for all in this study, as they experienced an inner strife with not

being able to maintain their fighting weight. As a result, some continued to weigh themselves to keep an eye on their weight, while others were fearful of seeing a number on the scales they deemed too large, demonstrating the persistence of the weight category stronghold.

4.3.4 Composite Letter to Younger Self

The participants were asked to write a letter to their younger self which detailed advice and words of encouragement, challenges the younger self would face, anything they would have done differently, and what the future holds. More specific to the study, the participants were also asked to write about any experiences and challenges related to disordered eating behaviours, cutting weight practices, and body image concerns.

The letter was developed by taking extracts from each participant letter and engaging in a process of merging and re-organising to create a single and coherent character and letter (Smith et al., 2016). The final version of the composite letter is presented below:

Dear Younger Self,

I'm your older self here with some words of wisdom to try and help you navigate this judo journey. Firstly, I wanted to say well done, judo is a tough sport, so cut yourself some slack. The most important thing is that you are able to train hard, relish the opportunities you are having at this moment in time, and above all enjoy your judo!

I want to talk to you about the weight making side of things, it has such a huge impact on your quality of life, your injuries, the longevity of your career, and your happiness. I know how much you are emotionally attached to all of this, and may be

too stubborn to listen, but here are a few words of advice that I wish I knew when I was you.

All your life you have been brought up with a philosophy that being lighter is better. I'm sure the most important thing to you right now is making the weight – it's not about competing and it's not about winning. But remember, the reason you are competing in this weight category is because you consider it your best opportunity to win! It is no mean feat that you have never missed weight, however cutting the way you have been is affecting your training, your energy levels, your mood, and your ability to win. Nothing is good when you are hungry! Consider the relationship between those things; living in hunger and unhappiness. If you want success on the judo mat, a healthy future life, as well as happiness, it is possible that the cycle needs to be broken.

To naturally be a certain percentage over your fighting weight can contribute positively to performances. You've used that well to your advantage over the years, many times. But let's examine what's going on for you currently, from a more neutral perspective. You can't enjoy quality time with your family. You feel lonely and isolated. You have a very short temper. You constantly think about food, in fact you are asking yourself if you will ever have a healthy relationship with it again. You may have taken laxatives, sweated off while already malnourished and dehydrated, and/or put your fingers down your throat to throw up food you've just binged on.

Crashing weight and doing these things is not healthy, and your biggest fight should not be with the scales. Trying to maintain a weight which you do not sit at naturally is not only unhealthy, it is mentally draining, and your life should not be dictated by a number on the scale. Do not be afraid to move up a weight group or two. Listen to and trust your body – if you are finding it hard to make a weight category,

then that is your body trying to tell you something. Grow and develop in a weight category, fuel your performance, and use and rely on your judo ability to be better and rise to the challenges, instead of trying to escape them by moving down weights or restricting your growth by starving. Your weight does not define who you are and any weight category that you naturally fall into, you can be an incredible athlete. So, put trust in your abilities, eat healthily, grow into new weight categories and let your body settle, it will take some time and patience, but long term it will be worth it.

Judo is a sport, it is a way of life, and it has always dominated you, but it is only one part of you. Judo will be a big chapter in your book of life, but there will be many other chapters, and they will be as significant, if not more, at times. Remember to be kind to yourself and have as much fun whilst doing this along the way, the memories, medals, and friends stay.

I always knew judo would be with me forever, and I guess this is proof that it is and will be.

Yours in Judo,

Your Older Self

4.4 Discussion

The aim of this study was to gain an understanding of the impacts that cutting weight has on judoka upon their retirement from sport. The former judoka experienced heightened body image dissatisfaction, which was often caused by attempting to maintain their athletic bodies once retired. In line with this, internal struggles followed them into retirement, as a result of their identity still being associated with their competitive weight category. Resulting from this continued identity and the body image dissatisfaction, disordered eating behaviours both developed and persisted in retirement, with former judokas engaging in some of the weight cutting practices used

in their competitive careers. However, many years into their retirement, the participants experienced a shift from cutting weight and the accompanying maladaptive behaviours, to learning how and what to eat for their physical and mental health.

Buckley et al.'s (2019) concept of athletic body transition suggests that as athletes retire from sport their body composition changes. If upon retirement a continued athletic identity and/or the athlete body image ideal is internalised, body image dissatisfaction and subsequent disordered eating practices can develop. Within the current study, the retired judoka experienced a continuing athletic identity, which contributed to the development and continuation of body image dissatisfaction and disordered eating, aligning with the athletic body transition (Buckley et al., 2019; Laure & Meline, 2018; Liu et al., 2008; Stirling et al., 2012). A continuing athletic identity manifested in the form of a weight category identity, which started during the judoka's athletic careers and persisted into retirement. Judokas are subjected to the body weight and shape demands of different weight categories, which they must maintain throughout the majority of their competitive careers (Roklicer et al., 2020). Former judokas engaged in different forms of weight category identity behaviour, such as weighing themselves in their retirement to keep an eye on their weight. In doing this, the judoka were comparing their current body weight and shape with their previous athlete body, shaping how they felt about their body image (Galli et al., 2022; Greenleaf, 2002; Hardie et al., 2022). As the judokas had maintained an athletic body image ideal throughout their careers, when they retired from judo this ideal was internalised as they still wished to fulfil it (Buckley et al., 2019; Fatt et al., 2024). However, when they inevitably gained weight upon leaving the sport and saw a bigger

number on the scales, body image dissatisfaction was perpetuated into their retirement years.

Further aligning with Buckley et al.'s (2019) concept of athletic body transition, the reported body image dissatisfaction in athletic retirement triggered the continuation of disordered eating behaviours (Barrett & Petrie, 2020; Hardie et al., 2022). Such disordered eating cognitions and behaviours included obsessive thoughts about food, as well as monitoring and restricting their dietary intake, which were synonymous with cutting weight practices used in their competitive careers. As suggested by Papathomas et al. (2018) in their retired female athlete paradox, prior to retirement, athletes viewed their bodies as vehicles for their sport (Harry & Hammit, 2024; Stokowski et al., 2019). This is in line with the performance narrative, in which athletes view cutting weight as necessary for sporting performance and success, in sports such as running, football, and basketball (Busanich et al., 2014; Carless & Douglas, 2013; Douglas & Carless, 2006; Papathomas & Lavallee, 2006; Papathomas & Lavallee, 2014), and also in elite judoka (Chapter Three). Once an athlete retires from sport, the reasons for weight-loss change. In this context, former judokas are no longer cutting weight for performance but instead want to lose weight due to body composition changes (Buckley et al., 2019; Papathomas et al., 2018). Consequently, the former judokas engaged in some of the disordered eating behaviours they used for weight cutting, such as monitoring and restricting their dietary intake, in order to alter their bodies that they became dissatisfied with (Barrett & Petrie, 2020; Buckley et al., 2019; Hardie et al., 2022).

However, it could be argued that these behaviours did not develop in retirement but were instead a continuation of disordered eating from their competitive careers (Benavides, 2022; Ravi et al., 2023; Thompson et al., 2021). The former

judokas maintained the disordered eating practice of binge eating, which is characterised by experiencing a loss of control over eating and engaging in regular episodes of consuming large amounts of food (American Psychiatric Association, 2013), into retirement following many years of dietary restriction. An eating disorder and disordered eating model from the general psychology and health literature demonstrates that dietary restraint is a main risk and maintaining factor of binge eating (Fairburn et al., 2003). Fairburn et al.'s (2003) model indicates that when an individual's control over their restrictive eating is disturbed, such as via negative moods and feeling unhappy, they are at a higher risk for engaging in binge eating (Linardon, 2018). They stated that this is due to what they term mood intolerance, in which individuals are unable to cope with certain emotions, leading to 'dysfunctional mood modulatory behaviour'. One form of this behaviour is binge eating, which reduces awareness of and neutralises the triggering emotion, as it helps individuals to modulate their mood and can become habitual (Fairburn et al., 2003). This was found in the current study through retired athletes feeling unhappy and unsatisfied in their retirement, causing them to break away from their restrictive eating and engage in binge eating. Further to these general psychology and health findings, the nutrition literature has found that when individuals engage in dieting behaviour, it predicts the onset of binge eating and subsequent weight gain (Andres & Saldana, 2014; Goldschmidt et al., 2012). This helps to provide an understanding as to why these retired judoka continued to engage specifically in the disordered practice of binge eating following their retirement from the sport.

As suggested by Hardie et al. (2022), the transition period and years that follow are an iterative process for retired athletes, in which they move "past insecurity, relearning, redefining, analysing, and re-situating" (p. 405) themselves into new

routines, norms, behaviours, and careers. This includes relearning and redefining what is healthy versus unhealthy, as well as what is now normal for them in their new life away from sport (Buckley et al., 2019; Hardie et al., 2022). Within the current study, this iterative process presented itself with a shift from the former judokas cutting weight and restricting their dietary intake for performance, to eating for health, longevity, and fuelling their bodies (Cooper & Winter, 2017; Plateau et al., 2017). Indeed, various studies with retired adults from the general population, have demonstrated that dietary intake becomes healthier as they make positive lifestyle choices to spend more time with their families (Smed et al., 2022; Tripp & McLeod, 2024; Zantinge et al., 2014). This finding was mirrored in the present study, as former judoka wished to maintain a healthier lifestyle for themselves, as well as wanting to ensure longevity due to having their own families. Although lacking in retired sporting populations, researchers who have investigated current athletes have found that while they appear to have adequate levels of general nutritional knowledge, they struggled to understand which foods were most beneficial for both athletic performance and general health away from sport (Alaunyte et al., 2015; Benavides, 2022). Therefore, sporting National Governing Bodies (NGBs) and practitioners should be educating athletes nutritionally for a life away from sport. Most of the former judoka in this study had to do this education themselves, with little help from their NGBs, arguing that they re-educated themselves to such an extent, that they now lead healthier lifestyles in retirement than they did when they were active competitors.

Further nutritional education occurred for the former female judoka during pregnancy and childbirth, which presented itself as a positive factor in their retirement. Researchers have shown that the postpartum period is an opportune time for women to engage in education and interventions for dietary changes, as during this time they

are more connected to health and nutrition services (Falciglia et al., 2014; Olson, 2005). Such interventions have been associated with positive changes in postpartum dietary practices and have the potential to provide a basis for good nutrition to be continued in later years of life (Falciglia et al., 2014; Liu et al., 2009). Although the women in this study were not part of a nutrition intervention per se, they did have conversations with health care professionals about appropriate nutrition for themselves and their babies, which they followed well after the postpartum period. Due to childbirth and forming a family of their own, the former female judoka had a change in priorities and circumstances following childbirth, leading to a new sense of purpose for their bodies (Hardie et al., 2022). As such, this pushed these women to re-educate themselves on what nutrition was best for their health to ensure longevity and to spend as much time with their families as possible (Tripp & McLeod, 2024).

Findings from the current study would suggest that there is a need for inter/multi-disciplinary work to be conducted with athletes nearing and/or contemplating retirement. Such an approach involves researchers and practitioners from different disciplines (i.e., sport psychologists, nutritionists, physiotherapists, team doctors) working together to research or find solutions to a problem (Rollo et al., 2021). According to the Australian Institute of Sport and the National Eating Disorders Collaboration (NEDC) joint position statement, support systems, which involve the multi-disciplinary team who have specific expertise in disordered eating and eating disorders, should be put in place to ensure athletes experience a healthy participation in sport (Wells et al., 2019). One such way the multi-disciplinary team can provide this support to athletes and retired athletes is via the delivery of educational programmes. These educational programmes should aim to reduce stigma, promote healthy relationships with food and the body, encourage open discussions, educate

about potential consequences to health and performance, and on appropriate and optimal nutrition (Bonci et al., 2008; Coelho et al., 2014; Wells et al., 2019).

Retired athletes and personnel would greatly benefit from longitudinal research studies, of which there is a call for, covering periods such as athlete transition, early retirement, and the years following (Schmid et al., 2023). In doing so, a comprehensive understanding and overview could be achieved of the experiences of judoka throughout their transition and retirement journey. The knowledge generated from such research could help to inform practice and contribute to policymaking through providing practitioners and organisations empirical evidence and recommendations to help address the challenges that athletes face during this time (Hong & Fraser, 2023; Knights et al., 2016). One such challenge that should be investigated further is the impact that a weight category identity has on judoka. It was suggested in this study that a weight category identity is a component of a continuing athletic identity, which can contribute to the development of disordered eating and eating disorders through body image dissatisfaction in retired athletes (Buckley et al., 2019; Laure & Meline, 2018; Liu et al., 2008; Stirling et al., 2012). This is a novel finding from this study, and as a result little is known on this sport specific identity that develops in judoka. Therefore, further research on the weight category identity could help to advise coaches, practitioners, sport clubs, and NGBs on this specific challenge to combat sport and weight categorised athletes.

This study was not without its limitations. The older participants in this study who had been retired for over 20 years struggled to remember some of their experiences with cutting weight and their early retirement. This is consistent with recall bias in which participants may be unable to recall or describe details of an experience accurately (Talari & Goyal, 2020). The impacts of recall bias were instead

mitigated through using timelines in the semi-structured interviews conducted with the participants. This is because timelines can help individuals to recall and organise events more accurately (Bremmer, 2020) facilitating memory recollection of events and experiences during their competitive careers and early retirement years. A further limitation of this study was that in using letter writing as a method, there is often a lack of control as to how words are received and perceived by the reader of the letter (Bosworth et al., 2005). As such, the letter writer (i.e., the participant) must be able to articulate their thoughts in one attempt, meaning that some differed in depth and description (Charlton, 2024; Szedlak et al., 2020). However, interviews were also used in this study prior to the letter writing, in which the participants were required to use what was discussed in the interviews when writing the letter. The interviews therefore allowed the researcher and participant to clarify and interpret statements (Charlton, 2024), meaning that when reading the letters, the researcher could deduce the letter content with more ease.

4.5 Conclusion

The retired judoka experienced a range of maladaptive thoughts, disordered eating practices, and body image dissatisfaction upon leaving their sport. This was attributed to a strong athletic identity and a persistence of the weight category identity that they had developed across their sporting careers. During retirement, judoka's bodies changed, and as they had fulfilled an athletic body ideal for the majority of their careers, they internalised this ideal. When this ideal was not met, body image dissatisfaction arose, causing disordered eating behaviours to develop, aligning with the athletic body transition (Buckley et al., 2019). The disordered eating behaviours of binge eating and food restriction that were reported amongst the former judoka were a continuation of practices from their competitive careers. This indicates that instead

of disordered eating developing in retirement, there is a continuation of weight cutting practices, which are synonymous with disordered eating behaviours from their competitive careers. In the later years of their retirement, the former judokas educated themselves on the appropriate nutrition for a life outside of sport, fuelling their bodies for longevity rather than restricting their diets. As a result of this re-education, the participants argued that they lead a healthier life now than they did when they were elite, competitive judoka.

Chapter 5: The Development, Dissemination, and Assessment of a Knowledge Translation Tool for Disordered Eating and Body Image Dissatisfaction in Judo

5.0 Overview

Despite not being an initial aim of this programme of research, the findings from Chapter Three and Chapter Four highlighted the need for educational resources to be produced for those involved in judo and other weight categorised sports. Chapter Three findings indicated that cutting weight is heavily embedded in the culture of judo, highlighting some of the extreme practices that athletes engage in to gain a perceived competitive advantage, some of which being synonymous with disordered eating. These practices resulted in a number of negative affects, such as feelings of depression and anxiety, and a weight category identity which often prevented the judokas from changing their weight category. The sporting environment also influenced the judokas' perceptions of their bodies due to sport specific body image ideals. Following on from this Chapter, the findings from Chapter Four revealed that the weight category identity, disordered eating practices, and body image dissatisfaction from the judokas' competitive careers were perpetuated into retirement. As such, through developing and disseminating a resource, those who work within judo, and other weight categorised sports, can be educated and made aware of the long-term psychological and physical impacts of cutting weight.

5.1 Introduction

The mental health and wellbeing of elite athletes has received attention in both the scientific literature and in sporting organisations (Lundqvist et al., 2023; Prior et al., 2022; Reardon et al., 2019; Vella et al., 2021). As previously demonstrated in Chapter Three and Chapter Four, disordered eating and body image dissatisfaction is a concern for both current and retired athletes. Participation in sport, its related pressures, and body image dissatisfaction have been found to put athletes at a greater risk for the development of disordered eating compared to the general population, with

eating disorders being one of the most reported psychiatric pathologies in elite sport (Chapman & Woodman, 2016; Goncalves et al., 2021; Karrer et al., 2020; Petrie & Greenleaf, 2007; Petrie & Greenleaf, 2017; Sundgot-Borgen & Torstveit, 2004). Disordered eating, eating disorders, and body image dissatisfaction in athletes have recently received a large amount of media coverage. For example, in 2020, the BBC released two documentaries about eating disorders in athletes, one presented by former athlete Colin Jackson (Sport's Hidden Crisis) and the other presented by retired England cricketer Freddie Flintoff (Freddie Flintoff: Living with Bulimia). In a BBC Sport article, England footballer Fran Kirby spoke about negative body image comments she had received online and on social media, which she stated still impacts her (Sanders, 2024). Within newspapers, researchers have found that the reporting of eating disorders within sport and its athletes has almost doubled from 2012 to 2021 (Feng & Duncan, 2024).

Despite the vast amount of scientific research and publicity disordered eating, eating disorders, and body image dissatisfaction has received, and the continued calls for reducing stigma surrounding mental health and wellbeing in sport, athletes, coaches, and practitioners still experience barriers preventing them from addressing these issues (Lundqvist et al., 2023). This therefore stresses the importance of developing appropriate knowledge translation tools for these individuals to use (Leggat, 2020; Lundqvist et al., 2023). Knowledge translation is defined as a process consisting of multiple phases, such as the synthesis and dissemination of knowledge, and includes interactions with researchers and knowledge users to create resources and products (Canadian Institute of Health Research, 2016; Leggat, 2020). Nonetheless, a knowledge-transfer gap appears to exist between the research carried out by sport science and sport psychology researchers, and the potential users of the

research, such as athletes, coaches, parents, and practitioners (McCormick et al., 2020).

There are a number of reasons as to why this knowledge-transfer gap exists, such as issues with dissemination and translation (Everard et al., 2023; Leggat, 2020). Issues with the dissemination relates to the research not reaching the potential users. This could be due to published research sitting behind paywalls, making the research findings inaccessible to potential users, as well as research findings only being presented at scientific conferences, which athletes, coaches, parents, and practitioners often do not attend (Brink et al., 2018; Everard et al., 2023; Pope et al., 2015). Regarding issues with the translation of research, this occurs when the knowledge reaches the potential users, but they have problems with understanding and implementing the findings (Everard et al., 2023; Holt et al., 2018; McCormick et al., 2020; Pope et al., 2015). As suggested by McCormick et al. (2020), scientific research that is written in an inaccessible language, has unclear relevance, and does not consist of content that could be applied practically, will create a barrier for potential users. Therefore, potential users will consider not using these sources, as found by Reardon et al. (2008), who reported that sport science journal articles were ranked as the lowest source of information for new ideas.

Despite this, researchers have found that some of these potential users, such as coaches, recognise the benefits of using sport science research within their coaching practice (Farhat et al., 2022; Reardon et al., 2008; Rodgers et al., 2007). As such, this paves the way for the development of accessible, usable, and coproduced outputs to help reduce the knowledge-transfer gap between research and practice (Schaillée et al., 2019; Safford et al., 2017). One output method is the use of videos, which is an is an arts-based knowledge translation (ABKT) tool (Archibald et al., 2018; Archibald

& Scot, 2019). ABKT is defined as a knowledge translation tool that incorporates the arts (i.e., videos) to aid in the dissemination of knowledge, whilst also offering the opportunity for viewers to experience engagement and embodied learning (Archibald et al., 2014). Outside of the sport psychology domain, researchers have found that using videos as knowledge translation sources was effective in communicating health information to individuals with differing levels of understanding (Meppelink et al., 2015).

Interactive videos have been successfully used to help educate and raise awareness in dentists and dental hygienists regarding the identification of disordered eating and eating disorders in their patients (DeBate et al., 2017). Knowledge translation training programmes have also been used within teachers, fitness instructors, and public health practitioners to help them identify disordered eating (McVey et al., 2008; Solsand, 2024). Those who took part in the training programmes, of which one was an online programme consisting of education videos and the other a series of face-to-face sessions, experienced increased improvements in their knowledge and confidence levels regarding disordered eating symptoms, and signs of LEA and RED-S (McVey et al., 2008; Solsand, 2024). The knowledge gained in both training programmes could therefore aid in the secondary prevention of disordered eating. Further aiding in the prevention of disordered eating is the implementation of body image dissatisfaction interventions. Researchers have found that such interventions can help to decrease negative body image perceptions and increases in other components of body image dissatisfaction, such as body esteem and appearance satisfaction (Beinther et al., 2012; Franko et al., 2012; Misener, 2022).

Despite video resources offering an alternative to text-based knowledge translation tools, their uptake in the field of disordered eating and body image

dissatisfaction in sport has been limited. This could be due to the obscurity surrounding the construction of such tools and the perceptions of potential users (Archibald et al., 2018; Everard et al., 2023). Therefore, the purpose of this study was twofold, consisting of constructing a video resource and assessing the potential users' perceptions of the resource. The resource created in this study was underpinned by the composite 'Letter to Younger Self' generated from the participant letters in study two of this programme of research. As such, the aim of this study was to bridge the disordered eating and body image dissatisfaction knowledge-transfer gap by translating the composite letter into an ABKT tool (i.e., video resource) and disseminate the resource to potential users to assess its impact.

5.2 Methods

5.2.1 Research Approach

This study aligns with the overarching research philosophy of interpretivism and is underpinned by ontological relativism and epistemological constructivism, please refer to section 1.0.3.

5.2.2 Resource Creation

5.2.2.1 Participants

The participants for the video resource included the researcher herself, a close friend, and members of a martial arts club. To be a member of the club, all members and parents and guardians (if the member is under the age of 18) must sign a waiver form stating that they agree to being filmed and photographed. Further to this, the researcher made all those who were going to be filmed aware that the filming was taking place and the purpose for it. At this point, they could ask for more information

and were given the opportunity to request to not be included in the footage. No one objected to this and the filmed commenced.

5.2.2.2 Procedure

The video resource was created using the composite letter to younger self from study two. As with Everard et al.'s (2023) study, the procedure of the video resource creation is presented below in steps. Although they are listed systematically, the resource creation process was an iterative and collaborative one and should therefore not be seen as a fixed guide. The researcher had discussions throughout the process with the videographer, who works within the sports industry, largely filming and photographing martial arts, as well as the researcher's supervisor who acted as a critical friend. As part of the creation of the resource, it was decided that there would be two resources, one audio resource for visually impaired judoka and one video resource.

In the first phase, the researcher and a close friend created a voiceover of the letter to younger self. As a result, there was a male and female voice in the audio and video resources, ensuring relatability to the characters, the representation of both sexes, and the transferability of the resources (Everard et al., 2023; Smith, 2018). The letter to younger self was written and narrated in first-person, which researchers have found helps to encourage greater identification, empathy, and perspective-taking with the character (Kaufman & Libby, 2012; Salem et al., 2017; van Lissa et al., 2016). The voiceover was recorded all the way through twice, ensuring that it was read at an appropriate pace, and some segments were recorded for a third time after the second full read-through.

The second phase of the resource creation was the generation of the video. Following a discussion with the videographer about what was required, a date and

time was arranged to film some initial footage of the judo training sessions. After this first round of filming, a second date for more filming was arranged with the videographer. Prior to this second round of filming, a schedule of content was sent to the videographer, which included general filming of judo sessions and close-up footage of the judoka whilst they were training. Using close-up footage in film can capture the facial expressions of characters, helping to communicate different emotions to the viewers (Bálint et al., 2020; Plantinga, 1999). As such, the aim of using close-ups was to aid in the elicitation of empathy within the viewers of the video (Bálint et al., 2018; Cao, 2013; Lankhuizen et al., 2022).

Upon receiving the first edit of the video, the researcher sent it to her supervisor who acted as a critical friend. Following some discussions, the supervisor and the researcher both agreed that some sections of the video needed to be modified. The amendments included adding more specific footage such as depictions of cutting weight practices (i.e., sauna use age and exercising with layers on to induce sweating), weight checking practices (i.e., stepping on the scales), injuries, and emotions. The filming of this more specific footage was done to highlight important sections of the letter, as well as to ensure the viewer resonated with the video by helping them to remember similar experiences and scenarios (Scott et al., 2012; Szedlak et al., 2019). Once the more specific footage had been edited and incorporated into the video, the edit was approved by both the researcher and the supervisor.

The final phase of the resource creation was adding additional content to the audio and video. The videographer suggested selecting background music to go behind the voiceover of the letter. According to Murrock and Higgins's (2009) theory of music, mood, and movement, the rhythm, melody, pitch, and harmony of music can psychologically effect listeners, helping to capture attention and stimulate certain

emotions. Furthermore, de la Mora Velasco et al. (2021) suggested that background music should be easy to listen to and should not be instrumentally complex or contain lyrics for it to capture viewer's attention and increase engagement. Aligning with this, the researcher selected a piece of music that was instrumental in nature, and maintained a steady rhythm and melody throughout as to not distract the listeners and viewers (de la More Velasco et al., 2021; Murrock and Higgins, 2009).

5.2.2.3 Methodological Rigor

To judge the quality of this research, the researcher draws on Sparkes and Smith's (2009) relativist approach to qualitative research, drawing on several quality indicators (Smith & Caddik, 2012; Smith et al., 2014). The researcher invites the viewers of the video to assess its quality using these characterising traits: transparency (e.g., did the researcher use a critical friend during the creation of the video?), impact (e.g., does the video impact viewers emotionally?), and resonance (e.g., is the video evocative and visually appealing?). Another quality indicator proposed by Everard et al. (2023) is video coherence, which the researcher also invites the viewers to use when assessing its quality. This refers to the way in which all the components of the video (i.e., audio, visual, background music) fit together to create a coherent piece.

The researcher's supervisor acted as a critical friend throughout the duration of the resource creation to ensure transparency. Together, the researcher and supervisor discussed all elements of the video edits, such as the audio, visual, and background music, suggesting edits to be made. The critical friend was also used to help assess the impact and resonance of the video. During the discussions between the researcher and the supervisor, some of the edits that were suggested included filming content to elicit certain emotions in viewers, such as specific emotions when cutting weight, therefore ensuring impact (Scarnato, 2019). The resonance of the video was enhanced through

not just the filming of generic judo content, but also by filming cutting weight methods (i.e., exercising with layers on) and stepping on the scales. As such, this makes the video evocative to its viewers, helping them remember similar experiences (Scott et al., 2012; Szedlak et al., 2019). Finally, video coherence was assessed by considering whether the video remained consistent throughout (Everard et al., 2023), making sure the narration of the letter aligned with what the viewers were seeing on the screen.

5.2.3 Resource Impact

5.2.3.1 Participants

The research was conducted on potential users of the resource, namely athletes, coaches, parents, and practitioners (i.e., psychologists, nutritionists, physiotherapists). The participants for this research were recruited via the researcher's personal connections and via social media channels (i.e., Facebook, Instagram, LinkedIn). Prior to the research commencing, participants were given a written explanation of the study, which included the aim, rationale, and why they had been selected to participate. Following this, 37 participants (*Mean age* = 40, *SD* = 14 years old), 15 athletes, 11 coaches, 11 parents, six practitioners, and two other (i.e., former athletes) gave written informed consent for the participation in the research (participants could select more than one potential user group). Of the 37 participants, 23 were male (*Mean age* = 41, *SD* = 14 years old) and 14 were female (*Mean age* = 38; *SD* = 15 years old). Within this study, the participants identified themselves as nationals of nine countries, 23 British, two Irish, Welsh, Brazilian, Asian British, and one Egyptian, Ukrainian, Spanish, Italian, Dutch, and Mixed British.

5.2.3.2 Procedure

5.2.3.2.1 Pilot Study. Before the research commenced, a pilot study was carried out with a parent of a judoka. The pilot study consisted of all parts of the

study, where the parent was required to watch the video resource and listen to the audio resource before completing the survey. The purpose of the pilot study was to practice and assess the effectiveness of the research protocol, ensuring that the survey elicited the data required for the study (Doody & Doody, 2015; Majid et al., 2017). The survey link was provided to the parent via email, and within the survey were the links to the video, audio, and written versions of the resource. The resource links were provided by Dropbox, and to test whether they worked effectively, the parent was asked to use the video and audio resource links, and open the written letter link to assess whether using Dropbox was an appropriate way to disseminate the resources.

Following the completion of the pilot survey, the researcher had a discussion with the parent, who stated that the survey was easy to use, and the questions were easy to understand. The parent also stated that all three links provided on the survey for the resources worked well and therefore, these did not need changing. The parent's responses were read by the researcher and as they elicited appropriate information for the purpose of the study, no changes were required, and the survey was launched.

5.2.3.2.2 Survey. The survey was created using Jisc Online Surveys, which is an online platform for generating, running, and analysing surveys. An online survey was used for this study to reach a wide variety of participants, as well as ensure quick deployment and completion, which have been identified as advantages to using this type of data collection method (Ball, 2019; van Selm & Jankowski, 2006). Using online surveys also allows researchers to be flexible in the construction of the survey, giving them the ability to use different question types and ask complex questions,

which could be challenging to implement with traditional pen-and-paper surveys (Ball, 2019; Bernard, 2011).

The survey comprised of three sections, with the first consisting of demographic questions and background information, such as participant's age, gender identity, nationality, and were asked to specify which potential user they were (i.e., an athlete, coach, parent, practitioner, or other). If the participants answered practitioner or other to the final question, they were asked to specify. In the next section of the survey, the participants were provided with the links to the video, audio and written version of the resource, but were only asked to listen to the audio file if they were visually impaired. The participants were informed that they could, if they wanted to, watch or listen to the resource as many times as they wished before moving onto the next section.

In the final section of the survey, the participants were asked a number of questions in order to assess the impact of the video. These questions included, what are your initial thoughts about the resource? In what way does it impact you? How does it make you feel about cutting weight? Why does it make you feel this way? What would your take home message be from the resource? Who do you think this resource would impact the most, and why? The questions were followed by asking the participants if they had any other comments to make about the resource, and the survey ended by thanking the participants for their participation.

5.2.3.3 Data Analysis

Following the completion of the surveys, the free-text comments were retrieved from Jisc and analysed thematically using Braun and Clarke's (2006) six-step protocol. In the first phase of analysis, the researcher familiarised herself with the data by reading and re-reading the downloaded survey responses. During the re-reading of responses, the researcher highlighted extracts and made notes to help with

the subsequent phases of analysis. Following this immersion, the researcher used the highlighted extracts and notes to systematically generate codes of the data. Codes identify and provide a label for a feature of the data that is interesting or relevant to the research (Braun & Clarke, 2006; Braun & Clarke, 2012). Once codes had been created, they were sorted into potential themes, moving the focus of the analysis from codes to themes (Braun & Clarke, 2012). This was done through collating codes that overlapped or were similar in nature to generate potential themes, which were then reviewed in the fourth phase of analysis.

Reviewing the potential themes was done to ensure that the most important and relevant elements of the data were captured (Braun & Clarke, 2012). This phase was done in two stages; by reviewing the potential themes in relation to the codes and in relation to the entire data set to make sure they formed a coherent pattern and reflected an accurate representation of the data (Braun & Clarke, 2006). Themes were then defined and named once the researcher was satisfied with the themes, which lead to the final phase of the analysis, the write up of the report.

5.2.3.4 Methodological Rigor

To assess the quality of this research, the researcher invites the reader to consider the following (Sparkes & Smith, 2009): worthy topic (e.g., is the research topic relevant, timely, and significant?), rich rigor (e.g., did the research employ an appropriate sample?), and transparency (e.g., was a critical friend used during data analysis?). The research topic was deemed as being relevant, timely, and significant due to recent calls to bridge the knowledge-transfer gap between researchers and potential users (Leggat, 2020; Lundqvist et al., 2023). Rich rigor was achieved by choosing an appropriate sample, via purposive sampling, to participate in the research (Johnson et al., 2020). The participants recruited for the study were all potential users,

who would best be able to assess the impact of the resource and who it should be disseminated to and used with. Finally, transparency was ensured by using the supervisor as a critical friend throughout the generation of the survey and during the analysis phase of the free-text comments.

5.3 Results

5.3.1 Resource Creation

Two resources were created from the Letter to Younger Self developed in Chapter Four: Video Resource and Audio Resource. A link was also provided to the participants for the written version: Letter Resource.

5.3.2 Resource Impact

Following a thematic analysis of the free text comments, four themes were developed: The emotive impact, issues raised in the resource, take home messages, and future dissemination and education. The themes are presented with extracts from the survey responses. The participant potential user group is displayed next to pseudonyms, which were used to protect their identities.

5.3.2.1 The Emotive Impact. This theme demonstrated the emotive impact of the resources. Individuals found the resources moving, stating that they: "Feel upset and disappointed" (Catherine, parent) by the content of the video, as well as feeling: "Uncomfortable, concerned, and even a little bit disgusted" (Jo, practitioner). This demonstrated the powerful emotions the resources elicited in the participants. One participant felt that the resource may have been triggering to them when they were an active competitor: "I had an eating disorder in my teenage years and watching a very slim girl telling me not to worry about my weight would have been triggering back then" (Anna, retired athlete).

The resources also helped participants consider components of judo that they may not have done in the past: “As a parent of two boys who participant in judo and BJJ, I hadn’t realised the impact that competition and weight categories can have on individuals” (Aaron, parent). A sport psychology practitioner mirrored this, stating she had not previously considered that living in hunger and loneliness are by-products of cutting weight:

> The resource highlighted aspects I had not previously considered e.g., living in hunger and the loneliness and isolation associated with this that athletes might experience every time they go through a weight cutting period and how they may never have a healthy relationship with food again (Emily, practitioner).

Portraying such information is important, as stated by Chris: “It does touch on some quite serious aspects around eating disorders, which may or may not align with all of the audience, however, it is important to make athletes aware of this” (practitioner).

However, some did not think the resource would have impacted them in their competitive years. As a retired athlete now turned coach, Susan stated that the resources would not have impacted her during her competitive years: “Honestly, I don’t think it would have changed my decisions if I read it 15 years ago”. In response to a following question, Susan stated that this was because: “Winning was too important to me, and even current day athletes are still needing to cut”. This demonstrates how deeply embedded within the culture of sport the practice of cutting weight is, which was further stated by Jack: “My 16-year-old daughter is less stressed about it, but I expect that is because she is… aware that at international level everyone cuts” (parent and practitioner). As Chris suggested, this could be due to athletes often

mirroring the behaviours of those around them: “They often aspire to do what others do, and sporting cultures and traditions can have a big part to play in what people do. Copying others and following anecdotal processes is not always appropriate and safe” (practitioner).

5.3.2.2 Issues Raised in the Resource. The participants reported on the many issues that the resources raised in relation to cutting weight. Such issues included how unhealthy the practice is, the social consequences associated with cutting weight, and the physical and mental health challenges. Many of the coaches who participated in this study were once competitive athletes, and the resources helped them to reflect on their past experiences. For example, Antonio stated: “The resource resonated with me a lot and it made me reflect on how I’ve cut weight in the past and how unhealthy it was” (coach). As such, the resource facilitated reflection on unhealthy cutting weight practices: “I can remember the unhealthy weight cutting practices and training in bin bags to dehydrate. It takes me back to a very unhealthy time where my relationship with food was all about that cut” (Sharon, coach). Using the resource to reflect on his own experiences, Louis, a retired athlete turned coach, stated that: “Competing as closely as possible to one’s natural weight rather than trying to gain an advantage incorrectly”, which gives athletes the best chances at a good performance, rather than cutting weight. This was something Louis used to do himself, further reflecting on his past experiences as an athlete:

> As a former judo competitor at the highest Olympic level, I always preferred to move up a weight class rather than drop to the lighter category. I witnessed teammates in the past not being able to compete after the weigh in because they were dangerously drained of all energy.

The athletes recognised the social repercussions that come with cutting weight: “I get it’s part of the sport, but for me I personally don’t do it as I want to enjoy my life outside of judo and not be worried constantly about everything I eat or drink and worry about the scale” (Harvey, current athlete). The social element of cutting weight was portrayed in the resources, which highlighted the loneliness and isolation that athletes who engage in cutting weight experience. This resonated with Martin, a current athlete, who missed out of university social events as a result of cutting weight:

> Makes complete sense and I can resonate with it. Having cut weight for competitions in the past I used to feel so lonely, especially as I was a first-year student in university and in turn, missed out or didn’t fully enjoy many social events.

Avoiding social occasions, worrying about food and fluid consumption due to cutting weight, and engaging in quite extreme practices could have severe physical and mental health consequences: “It brought to the forefront the unhealthy and arguably dangerous practices these athletes are engaging in without considering the long and short-term physical and mental health consequences” (Emily, practitioner) and another practitioner considered the impact that engaging in such practices can have in their later life: “It can really lead to long term issues (beyond sport) and one that needs to be taken with professional support” (Chris).

These concerns and issues raised by the practitioners were also mirrored by the parents: “It makes me think about the long-term impacts of cutting weight. I worry about children cutting weight and this restricting their growth and development outside judo. They are not considering the long-term impact and just short-term goals/winning” (Yvonne). Tariq, a parent, further echoed these thoughts:

> It's not just about balancing strength, health, and weight, there's also the social side of it. Being around friends and family, it's hard to stay away from food and isn't the healthiest, especially when you don't want to seem rude or ungrateful. You want to enjoy these moments and feel part of the group, but at the same time, you're trying to keep on track with your goals. It's like you're constantly balancing between being healthy and just being able to relax and connect with the people you care about.

Through engaging with these resources and witnessing what athletes experience, these parents recognised the impacts cutting weight can have on individuals. However, Yvonne did comment on the potential benefits of cutting weight: "If you are a little over your weight category, then I think it is ok to cut a small amount of weight" but also stated that doing it for a substantial period would be detrimental: "As a parent, I see children who are holding back their weight excessively from quite young ages. I think this is wrong and actually the BJA should be doing more about it".

5.3.2.3 Take Home Messages. Many of the messages that the participants took from the resources surrounded both the physical and mental health of athletes participating in weight categorised sports, as well as the consideration of whether athletes should cut weight at all.

The participants recognised from the resources that whilst weight is an innate part of weight categorised sports, it should not dictate an athlete's life, as they need to grow and develop as an individual outside of sport too. For example, Jack stated that:

> Your weight is important as a competitive judoka, but it is not the most important thing in the world, and although judo will be a big part of your life, there will be life after judo that is just as important (parent).

The message of having a life outside of sport was also taken home by Rory, an athlete and coach, who stated that missing out on social events may not be worth it for the sake of cutting weight:

> Is meeting the weight, a potentially unnatural one, worth the missing out on events and being you worth it. This especially so when judo in all its forms can still be part of your life regardless of what the scales say.

Cutting weight can also have long-term impacts on athletes' future and development within the sport: "Although children my son competes against may get a short-term benefit from weight loss in terms of trophies, it might not be good for their long-term future in the sport" (Tim, parent). The practice of cutting weight also has the potential to become habitual: "Cutting weight from a young age can actually grow into a habit that is difficult to break and would never have realised how then it can develop into a lifelong habit" (Ivy, parent). As well as this habit having negative impacts on athletes' long-term development within sport, it can have negative wellbeing and health consequences: "Weight cutting is an important part of the sport however a judoka's life is long and making choices that will sustain health long-term is just as important (if not more) than making weight" (Jo, practitioner).

The resources also made the participants question whether cutting weight benefits sports performance: "Judo is something we do because we enjoy it; if we are killing ourselves in the process and ultimately worsening our ability to train, then something needs to change" (Antonio, coach). This message was also taken from the resources by Emily, a practitioner:

> I loved the section about not being afraid to move up a weight category, listening to your body, growing and developing into a weight category, fuelling your performance, and using and relying on your judo ability as providing a

healthy alternative. There needs to be so much more emphasis on this vs the old unhealthy myth that being lighter is better. It gives hope that the cycle can be broken!

The message of moving to a heavier weight category was also considered by Michael, a parent: “The concept of competing in heavier weight categories is an interesting one worth exploring, in my opinion. Specially for younger judokas”. Therefore, athletes should aim to: “Eat healthy, don’t cut weight, always be true to yourself. Be your natural given weight” (Natalie, current athlete).

5.3.2.4 Future Dissemination and Education. Participants suggested a number of individuals that the resources could be disseminated to in the future. The participant responses to the final question on the survey: “Who do you think this resource would impact the most?” are displayed in Table 2 below. Participants could provide multiple answers to this question, and a range of responses were offered.

Table 2. Participant responses for who the resources would impact the most.

Who would the resources impact the most?	Participant Responses (%)
Youth Athletes	73
Elite Athletes	32
Parents/Guardians	30
Coaches	19
Recreational Athletes	16
Practitioners	11
Retired Athletes	8
Individuals Outside of Weight Cutting Sports	8

As suggested in Table 2, 73% of the participants believed that the resources would most impact youth athletes, and therefore this group are key in their dissemination. For example, Natalie stated that young athletes should be targeted in the distribution of these resources because: “Young athletes may worry about weight in and outside of sport” (current athlete). Going into more depth on the reasons why youth athletes need to see the messages conveyed in these resources, Lydia (current athlete) stated:

> It’s important to explain to them that it’s absolutely alright to change weight categories related to their current weight, as it will put less pressure on their mental health and overall wellbeing, and they will be able to enjoy their sport journey as they should do.

This was supported by Freddie, a coach, who stated that in these youth athletes, there is often a fear of naturally gaining weight and changing their weight category: “There is a reluctance to move up because they have had success at one weight category and are worried that they will not enjoy the same success at a higher weight category”.

Developing body image concerns were another reason as to why these resources should be disseminated to youth athletes: “Young competitive female judoka because they are the ones most at risk when we also take into account other societal and social pressures surrounding diet and body shape” (Jack, parent). This notion of body image concerns developing was further supported by Rory (athlete and coach):

> Body issues can seep through into adult fighters, but those at a younger age – around teenagers – stage would be more impacted by the video. At this age,

changes can cause insecurities, or competitive judo begins to drive cutting more so than before. This more so for female fighters too, as bodies can often seemingly get linked to their worth, wellbeing, looks, etc., which while stays beyond judo, weight cutting can perhaps make weight and eating disordered behaviour be cyclic in nature.

The third most important group for the resources to be disseminated to was parents/guardians. One such reason for this was to bring awareness: “Parents, mine had no idea I was being expected to make a weight” (Megan, retired athlete). As opposed to people within sport expecting Megan to cut weight, Sharon, a coach, reported that the resources should be distributed to parents as they are the ones who often believe that cutting weight is the right choice for their children: “Parents, especially those who see lighter as a way of success in early judo careers”. Coaches were also identified as a key group for dissemination, with 19% of the participants suggesting the resources be disseminated to these individuals. In disseminating to coaches, it will aid in the achievement of successful performances, whilst also maintaining athlete welfare: “Help them support their athletes in healthier ways, creating a better balance between performance and wellbeing in weight-focused sports” (Tariq, parent). As such, athletes, parents/guardians, and coaches are three significant groups of people that the participants believed the resources should be disseminated to as it would impact them the most: “Young judo athletes, their parents and their coaches as they are the starting points of any athletes’ career” (Ivy, parent).

5.4 Discussion

This study aimed to bridge the disordered eating and body image dissatisfaction knowledge-transfer gap by translating the composite letter from Chapter Four into an ABKT tool. Following the creation of the resources, the

secondary aim was to disseminate them to potential users in order to assess their impact. Participants found the resources very moving, eliciting feelings such as disappointment and concern, bringing to light cutting weight and the negative impacts these practices can have. The resources helped the participants to recognise and reflect on how unhealthy the practice is, as well as the social consequences, and physical and mental challenges associated with cutting weight. Participants reported several key take home messages, such as the impacts of cutting weight on the long-term development of an athlete both inside and outside of judo, an athlete's life should not be dictated by their weight, practices can become habitual, and questioning whether engaging in cutting weight is worth it. Finally, when asked about future dissemination, participants suggested that youth athletes were the most important group for the resources to be distributed to, with parents/guardians and coaches also being a key group.

Video clips have been found to have the power to activate many different emotions in their viewers, both positive (i.e., amusement and happiness) and negative (i.e., anger, fear, and sadness) (Cabral et al., 2018; Gross & Levenson, 1995; Kreibig, 2010). Upon engaging with the resources in this study, whether it was the video, audio, or written version, participants reported that strong emotions were elicited, such as feeling upset, disappointed, uncomfortable, concerned, and disgusted by their contents. During the creation of the resources, the use of close-up and specific footage in the video resource, as well as using music were used to communicate certain emotions in viewers and listeners through capturing attention and evoking empathy (Bálint et al., 2018; Murrock & Higgins, 2009; Szedlak et al., 2019). Whilst the way the resources were created helped to elicit these emotions, the content of them also aided with this. The athlete and coach participants in this study reflected on their past

experiences of cutting weight when engaging with the resources, which is an emotional experience in itself (Sparrow, 2009). In re-experiencing and re-feeling past events and emotions, the participants were able to form a personal connection with the content of the resources (Everard et al., 2023; Sparrow, 2009). As such, by generating such emotions via the use of visual and audio, and participants drawing on past experiences, the resources were deemed to be evocative, having the potential to mobilise those who engage with them through developing a deeper understanding of the content (Everard et al., 2023).

The resources raised important issues regarding cutting weight for all potential users, such as the unhealthy cutting weight practices, the associated social repercussions, as well as the physical and mental health consequences. Some participants, such as the parents and practitioners, had not considered these issues previously, and through engaging with these resources, they were made aware of them. Bringing to light and raising awareness of the impacts and issues associated with cutting weight has been identified as an important factor in the early identification and prevention of disordered eating in athletes (Bergeron et al., 2015; National Centre for Sport and Exercise Medicine, 2020; Wells et al., 2019), reinforcing the user case for these resources. The findings also demonstrated that using video as one of the resource mediums was an appropriate choice. This is because videos are a good way of presenting new information, due to the combination of both audio and visual material, which helps to enhance learning (Mitra et al., 2010).

The participants identified a number of individuals that the resources should be disseminated to, the most important one being youth athletes. Multiple studies have found that youth athletes engage in cutting weight practices almost as much as adults, with some reporting that they have been cutting weight since the age of four (Artioli

et al., 2010; Berkovich et al., 2016). As well as engaging in cutting weight from a young age, it has also been reported that youth athletes try to remain in the same weight category for periods of up to two years or longer (Berkovich et al., 2016). These researchers suggested that this was due to youth athletes not wanting to change their weight category to a heavier one in order to compete in the lowest weight category possible. Young athletes engaging in these practices is concerning, as it can have major physical and psychological implications, such as impairing physical maturation and development, as well as having a heightened awareness of weight and body image from a young age, which have been found to lead to the development of disordered eating and eating disorders (do Nascimento et al., 2020; Sundgot-Borgen et al., 2013).

Parents/guardians and coaches were also identified as two important groups that the resources should be disseminated to. This further aligns with previous researchers who found that youth combat sport athletes are heavily influenced by their parents and coaches (Berkovich et al., 2016; Lakicevic, Reale et al., 2022). These two groups of people were also identified in Chapter Three as being individuals who put pressure on elite athletes to cut weight, suggesting that this influence is consistent throughout an athlete's career. This is equally as concerning as parents/guardians and coaches may not have the correct education to support these athletes in making decisions to cut weight (Berkovich et al., 2016). Rather than being advised on methods of cutting weight, some researchers have suggested youth athletes should instead be encouraged to achieve performance success without engaging in such practices and be educated on both the negative physical and psychological impacts (do Nascimento et al., 2020; Reale et al., 2017).

Being encouraged not to cut weight was one of the key take home messages from engaging with the resources, demonstrating that the information was taken on

board by participants. This is promising, as the translating of scientific research and knowledge has previously been reported to be one of the reasons for the existence of a knowledge-transfer gap (Everard et al., 2023; Leggat, 2020). As such, the translation of disordered eating and body image research, as well as sport psychology research more broadly, into ABKT resources could be successfully argued, as they were effective in communicating information to the participants (Meppelink et al., 2015).

These findings suggest that ABKT resources can be disseminated and used as education tools for coaches, athletes, parents, and practitioners in relation to enhancing knowledge on the physical and psychological implications of cutting weight in sport. This aligns with findings from the existing literature, as ABKT tools utilising videos have been found to increase knowledge of body image dissatisfaction and disordered eating, both of which are associated with cutting weight, inside and outside of the sporting domain (Beinther et al., 2012; DeBate et al., 2017; Franko et al., 2012; McVey et al., 2008; Misener, 2022; Solsand, 2024). One group in particular that would greatly benefit from the dissemination of these is youth athletes, as identified by the participants. As discussed previously, studies on youth combat sport athletes have found that these athletes would have been cutting weight from a very young age and will also attempt to maintain their weight category for a period of two years or more (Berkovich et al., 2016). Due to this, youth athletes are more likely to have a heightened awareness of their bodies, which could lead to the development of disordered eating, as well as increasing the risk of having a negative impact on physical development (do Nascimento et al., 2020; Sundgot-Borgen et al., 2013). Therefore, in disseminating these resources to youth athletes and more broadly, it is hoped they can increase understanding and awareness of the potentially damaging behaviours that weight categorised athletes engage in, and aid in preventing cutting

weight and limiting body image dissatisfaction and disordered eating risk (Bar et al., 2016). Educating individuals in this sense was in fact called for by some of the coaches who participated in this study.

It could be recommended from this study that future researchers investigate the effectiveness of these resources in raising awareness of the impacts of cutting weight in youth athletes, as well as the effect on their decision making towards engaging in these practices. Previous research on intervention programmes in youth athletes have demonstrated that they were largely effective in preventing eating disorders in this population (Bar et al., 2016). Although the resources created in this current study were not intervention programmes per se, the resources could help in the prevention of cutting weight, reducing the risk for disordered eating, body image dissatisfaction, and clinical eating disorders (Bratland-Sanda & Sundgot-Borgen, 2013). Despite, elite athletes being identified as the second most important group for dissemination, the retired athlete participants from this study believed that they would not have been impacted by the resources when they were active competitors, due to cutting weight being heavily embedded in the culture of judo. This further puts forward the case for these resources to be assessed in youth athletes, to see if they are effective in reducing cutting weight in this group.

Nonetheless, this study was not without its limitations. For one participant in particular who suffered with an eating disorder in her youth, she believed the resources would have been triggering to her at that time. This concept of triggering describes the re-experiencing of unpleasant emotions and symptoms, such as intrusive thoughts, following exposure to materials that evoke traumatic memories (Charles et al., 2022). To limit individuals feeling triggered when engaging in both the resources created in this study and ABKT tools more generally, researchers should include a ‘trigger

warning' prior to the start of the resource content. Trigger warnings generally involve including a statement at the beginning of a piece of media (i.e., written text, video, audio) to alert the consumer that it contains information and material that they may find distressing (Bridgland et al., 2019). Through including such a warning, individuals can prepare themselves or avoid the content altogether, thereby reducing any negative reactions they may experience and protecting their mental health (Bridgland et al., 2019; Lockhart, 2016).

Although both a male and female voice was used in the audio to ensure relatability and representations of both sexes (Everard et al., 2023), there was no continuity of this into the video resource. This was noticed by some of the participants of this study, who suggested that both male and female athletes should have been represented in the video resource. As stated by Shifflett et al. (2016), the media conveys societal norms that have the power to reinforce and influence both beliefs and behaviours of individuals and organisations. Therefore, in order to be more representative of the general population, as well as more specific sporting populations and those who cutting weight impacts, both male and female athletes should be used in future ABKT development.

5.5 Conclusion

It is hoped that through demonstrating how these resources were developed, it will remove some of the ambiguity surrounding the generation of ABKT tools and perceptions of potential users (Archibald et al., 2018; Everard et al., 2023), therefore increasing the uptake of creating and using such resources. The ABKT resources generated in this study should be disseminated to wider populations, both inside and outside of sport, helping them to develop a deeper understanding of the unsafe cutting

weight practices that athletes engage in, as well as the impacts, issues and consequences of these practices on their physiological and psychological health.

Chapter 6: Conclusion

6.0 Summary of the Studies

The overall aim of this thesis was to gain insight into the real-life disordered eating and body image experiences of both male and female judokas, helping to develop a greater understanding into the factors that influenced and contributed to these processes, such as cutting weight. This was achieved through the use of qualitative methods, firstly conducting an ethnography within an elite fulltime judoka performance facility (Chapter Three). Followed by a letter writing study with retired judoka (Chapter Four). The final study in this thesis, used the knowledge generated from Chapter Four to create and disseminate ABKT resources, namely a video and audio resource (Chapter Five). Through conducting this programme of research, insight was gained into the complex relationship between cutting weight, disordered eating, and body image faced by both current elite judokas and the subsequent impacts for those well into their retirement years.

The first study in this thesis (Chapter Three) used an ethnographic approach to explore and understand the unique cultural dynamics of judo, and the potential relationship with disordered eating behaviours and body image perceptions of elite judokas. The ethnography was conducted with 16 judoka and one judo coach from an elite fulltime judo training club, where the researcher had access to all areas of the facility, including the dojo, gym, and accommodation centre. Extensive observations and fieldwork were carried out as the first stage of the study, enabling full immersion with the environment (Emerson et al., 2001; Hoey, 2014). Following the observations and fieldwork, five story-completion focus groups (three male and two female) were conducted with the 16 athlete participants, of whom went on to partake in the semi-structured interviews. All data from the three methods of data collection were analysed independently from each other using reflexive thematic analysis (Braun & Clarke,

2019; Braun & Clarke, 2021). Three overarching themes and nine subthemes were developed: Embedded in the sporting culture (collective environment, modelled behaviours, cutting weight pressures), navigating the mental battle (negative psychological consequences, weight and food obsessed, cutting weight is suffering), and the judoka body experiences (body image and weight cutting relationship, weight category identity, female body functioning). The findings from this ethnography aligned with Petrie and Greenleaf's (2007, 2012) etiological model, indicating that elite athletes copy the cutting weight practices of those around them, sporting and societal pressures to cut weight exist, cutting weight induces negative affect, and increases awareness of their bodies. As such, cutting weight was considered to be synonymous with disordered eating, and the findings indicated that these unhealthy and potentially dangerous behaviours are heavily and deeply embedded within the judo culture.

Following on from the findings of the first study (Chapter Three) and the impacts of disordered eating behaviours and body image concerns of elite judoka, Chapter Four aimed to investigate the impacts that cutting and monitoring weight has on retired judokas. This study consisted of conducting two semi-structured interviews, with 15 retired judokas. The first interview focused on the participant's athletic career and the second on their retirement phase. Following the two interviews, the 15 retired judokas were tasked with writing a letter to their younger self. Both semi-structured interviews were analysed using Braun and Clarke's (2019) reflexive thematic analysis, where three themes were developed: Trying to maintain the impossible, a health awakening, and the weight category stronghold. The 15 participant letters were analysed using a similar method to Schinke et al. (2016) and Szedlak et al. (2020) to create one single account of the participant experiences (Blodgett & Schinke, 2015).

The findings from this study largely aligned with Buckley et al.'s (2019) athletic body transition, whereby retired athletes were not satisfied with their bodies, resulting in disordered eating behaviours. However, rather than these behaviours developing, they were instead a continuation of what they had learnt through cutting weight in their competitive years. Following many years of being retired, the judokas reflected on these practices and re-educated themselves on appropriate nutrition and leading a healthier life now than they did when they were active competitors.

Although constructing an education programme was not an initial aim of this thesis, the findings from Chapter Three and Chapter Four highlighted the need for those involved in judo and other weight categorised sports to be educated on the physical and psychological health risks and impacts that cutting weight can have. As such, the final study (Chapter Five) was a multi-study chapter that firstly detailed the construction of evidence-based ABKT resources and secondly disseminated these resources to potential users to assess their impact. To assess their impact, 37 participants from the potential user groups identified were recruited to take part in a survey, where they were given access to three different versions of the ABKT resources (video, audio, written) before answering the survey questions. Free-text comments were analysed using Braun and Clarke's (2006) thematic analysis whereby four themes were developed: The emotive impact, issues raised in the resource, take home messages, and future dissemination and education. This study facilitated the uptake of the findings from this programme of research by translating them into accessible ABKT resources that should be disseminated to individuals both inside and outside of sport. Despite the ABKT resources not being developed as educational programmes, they are an important stepping stone in raising awareness of and educating the next generation of athletes, coaches, parents, and practitioners of the

unsafe practices that athletes engage in when cutting weight, and their corresponding relationship with disordered eating and body image dissatisfaction.

6.1 Contributing to Existing Knowledge

The findings from the different chapters of this thesis contribute and extend existing knowledge and literature in a number of conceptual, empirical, and theoretical ways. Firstly, this programme of research investigated an under-researched group, namely judoka, across both elite and retired sporting domains. Previous disordered eating and body image research on current and competitive athletes has mainly been conducted on aesthetic (gymnasts, dancers) and lean sport (swimmers, endurance runners) athletes (e.g., Barrack et al., 2021; Kontele et al., 2022; McGannon & McMahon, 2019). However, little consideration within the literature has been given to those who compete in weight categorised sports (i.e., judoka), which is surprising considering the relationship between body image dissatisfaction, disordered eating, and cutting weight (Barley et al., 2019; Gordon et al., 2021; Rossi et al., 2022). Researchers have also mainly focused on current athletes, meaning little is known of the experiences of retired athletes, in relation to body image dissatisfaction and disordered eating behaviours. As such, through investigating both current elite and retired judoka, this programme of research helped to understand the complex relationship that exists between cutting weight, body image dissatisfaction, and disordered eating in these athletes and how it impacts them throughout their competitive and retirement years.

The findings from study one (Chapter Three) helped to generate a greater understanding of cutting weight in judo and its relationship to disordered eating and body image dissatisfaction, extending existing knowledge. Findings indicated that the judokas felt like they were physically suffering when they were cutting weight,

likening it to torture. The processes and practices of cutting weight being described in such an extreme way has not been found before, and it demonstrates what judokas are willing to put themselves through to gain a competitive advantage. Another finding from this study was the impact that the menstrual cycle can have on cutting weight, and vice versa. The menstrual cycle impacted the female judokas in a number of ways, such as increased weight and heightened emotions (Brock et al., 2016; Critchley et al., 2020; Itaka et al., 2022; Rogan & Black, 2023; van Iersel et al., 2016), both of which had implications for cutting weight. The female judokas thus often used even stricter cutting weight practices to limit the impacts of the menstrual cycle, and suggested it was an extra factor they had to consider when entering a weight cutting cycle. As such, there were a number of specific cutting weight issues that have not previously been raised by Petrie and Greenleaf's (2007, 2012) etiological model, further extending knowledge for this particular sporting population and potentially other weight categorised sports.

One of the key contributions to existing knowledge was the discovery of a weight category identity, which was considered to be a sport-specific component of Brewer et al.'s (1993) concept of athletic identity. The findings from study one (Chapter Three) indicated that the judokas identified with the weight category for a number of different reasons, such as maintaining their athletic identity and the body type of their weight category. As a result of the weight category identity, the judokas would often not change their weight category and move up to the heavier one, meaning that they may engage in extreme weight cutting practices to make the lower weight category. When athletes retired, this weight category identity did not just cease to exist, judokas still identified with it into their retirement years. As discussed in study two (Chapter Four), this continuing weight category identity was associated with a

continuing athletic identity, which caused the former judokas to struggle with their retirement weight. This raises important issues on the impacts of a weight category identity when it occurs during judokas competitive careers, and how it can impact them still when they retire from judo, therefore extending the athlete identity literature and making it more sports specific.

Retired judokas body image dissatisfaction and disordered eating behaviours also continued into their retirement, as found in study two (Chapter Four). Although the findings mainly supported Buckley et al.'s (2019) athletic body transition, such as a continuing athletic identity leading to the internalisation of an athletic body image ideal, resulting in body image dissatisfaction and disordered eating to occur, these behaviours were not newly developed, but were perpetuated into retirement. The previously discussed weight category identity caused athletes to keep an eye on their weight, meaning that they were constantly comparing their retired body to their previous athletic one (Galli et al., 2022; Greenleaf, 2002; Hardie et al., 2022). As judoka had experienced body image dissatisfaction in their competitive careers, the internalisation of the athletic body ideal did not cause a new dissatisfaction to arise, but rather resulted in its continuation, alongside the persistence of cutting weight practices, which are synonymous with disordered eating behaviours. As such, this research demonstrates that whilst judokas' competitive careers may have come to an end, concerns about their bodies and disordered eating practices have not, indicating that they still impact them and continue well into retirement. Therefore, this research helps to extend existing knowledge by providing important insights into the long-term impacts that cutting weight can have on judokas.

As well as these contributions, this thesis contributed to existing knowledge in a number of methodological ways, which lie in the number of different and novel

approaches to research (i.e., ethnography, letter writing, ABKT). In conducting a longitudinal study through using ethnography in Chapter Three, it enabled the researcher to gain an in-depth understanding of the unique cultural dynamics of judo, and the relationship it has with disordered eating behaviours and body image perceptions of elite judokas (Hammersley & Atkinson, 2007; Krane & Baird, 2005). Although ethnographies are not a novel method of research, using this method in this area of sport psychology with this participant population is uncommon. As such, through conducting a longitudinal study and doing a deep dive into the unique culture of judo, which is an under-researched sporting population, it helped to expand the knowledge of disordered eating practices and body image concerns in judo and weight categorised sports more broadly.

Chapter Four involved participants engaging in a letter writing task following two interviews in order to reflect upon their past experiences in judo in relation to cutting weight, disordered eating, and body image dissatisfaction. By utilising this method, the participants were asked to write from their older and wiser self to their younger self, providing an invaluable understanding of the experiences that occur within unique sporting environments through the use of retrospection (Day et al., 2023). This highlights the benefits of using letter writing to promote reflection amongst participants and give them a space to communicate experiences they may have not previously discussed (Day et al., 2023; Pithouse-Morgan et al., 2012). As suggested by Day et al. (2023), there has been limited research conducted both within and outside of the sporting domain that explores the use of letter writing as a qualitative method, making this a novel method of data collection.

As suggested in Chapter Five, there is an ongoing knowledge-transfer gap that exists not just in translating disordered eating and body image dissatisfaction

knowledge, but also in translating sport psychology research more broadly. This gap led to the researcher developing ABKT resources (Chapter Five) to translate the existing knowledge base from Chapter Four (composite letter to younger self). Through detailing the process of video and audio resource creation, it is hoped that it helped to mitigate the obscurity and vagueness that surrounds the construction of ABKT tools (Archibald et al., 2018; Everard et al., 2023), as well as promote other researchers to translate their research findings into such resources. Chapter Five also explored the perceptions and impacts of the ABKT resources on potential users (i.e., athletes, coaches, parents, and practitioners). Findings indicated that the ABKT resources helped these potential users develop a deeper understanding of cutting weight practices, and the consequences of these practices in relation to disordered eating behaviours and body image dissatisfaction should be disseminated to wider groups of people both in and outside the sport.

6.2 Practical Implications

Findings from this thesis would suggest that NGBs need to do more to help athletes manage their decisions around cutting weight, which was called for by the participants in Chapter Five. This call for NGBs to do more is supported by both UK Sport (n.d.) and NEDC (n.d.) guidelines and frameworks on the detection and prevention of clinical eating disorders in high performance athletes. These documents indicate that universal good practice is required across an entire organisation and prevention initiatives should be implemented into policy and training. The UK Sport (n.d.) guidelines on making weight suggest that sports should consider including some of the following into their codes of practice: (a) Methods, such as dehydration through fluid restriction or excess sweating, starvation, self-induced vomiting, and laxative and diuretic use, should be considered as high risk; (b) A registered dietitian or

nutritionist should supervise weight loss; (c) Weight loss of more than one kilo per week is not recommended due to a restrictive diet, loss of lean muscle mass, and the detrimental impact on health and performance; (d) The provision of accurate food records, as failure to do so could result in a cycle of unsuitable advice, poor compliance, and inappropriate weight loss strategies; and (e) Meals should not be missed. However, the findings from this programme of research indicated that the high-risk methods detailed by UK Sport (n.d.) are frequently used by judokas, they are not being guided by a registered dietitian or nutritionist, they are losing more that one kilo per week, food records are not being recorded, and if they are it raises questions of who are they being reviewed by and are coaches suitably qualified, and finally, meals are frequently missed when judokas are cutting weight. Despite these suggestions being a step in the right direction for limiting the detrimental impacts of cutting weight in these athletes, it would suggest that current guidelines and codes of practice are not being adhered to. Therefore, an argument could be made they need to be more specific, catering to the demands and current practices of each sport.

The 2024/25 England Programme Fighter Agreement (BJA, 2024) outlines weight control guidance for Pre-Cadets, Cadets, and Junior judokas. The agreement firstly differentiates between the terms weight management and weight cutting. They define weight management as the use of techniques that contribute towards maintaining a certain weight, which generally encompasses healthy eating and daily physical activity, whereas weight cutting is defined as the practice of fast weight loss to qualify for a lighter/lower weight category (BJA, 2024). For Pre-Cadet judoka, the agreement does not condone any weight management and weight cutting strategies, advising them to compete at the weight category that suits their natural weight (BJA, 2024). Weight management strategies are allowed to maintain a healthy weight at

Cadet level, but weight cutting is advised against, whereas for Junior athletes, weight management and weight cutting strategies can be used to maintain a competition weight (BJA, 2024). These guidelines outlined in the agreement indicate that whilst weight management and weight cutting at Pre-Cadet is not tolerated, once athletes reach the age of 14, they are allowed to engage in these practices. Although weight management is classified in this agreement as a healthy, long-term lifestyle change, engaging in weight management could lead judoka to cut weight and use unhealthy practices to gain a perceived advantage over lighter opponents (Pettersson et al., 2012; Sitch & Day, 2015; Thomas et al., 2021).

The above guidelines alongside the findings from this thesis would lead one to suggest that policy and rule changes around cutting weight in judo need to be changed. Although Cadet judoka will be required to move to a heavier weight category if they are seen to be weighing over 5% above their fighting weight category, and at an international level athletes can be randomly selected to weigh-in on the day of the competition where they must weigh within 5% of their fighting weight category, to the researcher's knowledge, there is currently no way of knowing whether these athletes are or are not using unhealthy weight cutting practices (BJA, 2024; IJF, 2022). Judo governing bodies, both national and international could implement similar weigh-in and weight cutting rules as wrestling, which have proven to be successful in reducing harmful weight making (Burke et al., 2021). Within these rules, athletes are required to pass hydration tests at weigh in, are prohibited from using unsafe cutting weight methods, and are limited to a weight loss of 1.5% of body mass or less per week (Burke et al., 2021; Deitch, 1998). Weigh-ins were also moved to occur between one- and two-hours pre-competition and 3.2 kilos were added to each weight category limit (Burke et al., 2021; Deitch, 1998). Implementing similar rules in judo could help

in limiting the negative effects of cutting weight on psychological and physical health in both current and retired athletes, as well as help coaches and supporting staff monitor their athletes weight cutting practices more closely.

As well as these possible rule and policy changes, athletes, coaches, parents, and practitioners working within judo should be educated on the consequences associated with cutting weight. It was identified in Chapter Five that youth athletes would greatly benefit from being educated on the impacts of cutting weight. As found by Berkovich et al. (2016), youth combat sport athletes have been cutting weight from a young age, attempting to hold and maintain their weight category for a minimum of two years. Therefore, these youth athletes will have an increased awareness of their bodies, leading to the development of disordered eating behaviours and potentially limiting their physical development (do Nascimento et al., 2020; Sundgot-Borgen et al., 2013). In providing education to these younger athletes, it could aid in the prevention of unhealthy cutting weight practices and limit body image dissatisfaction and disordered eating risk through increasing awareness and deepening understanding of the damaging impacts these behaviours can have, protecting their future as an athlete and post-judo (Bar et al., 2016). Those involved in judo and other weight categorised sports should also be made aware of the impacts that the menstrual cycle has on cutting weight in female judokas, and vice versa. The impacts of the menstrual cycle were both physical and psychological, and these judokas stated it was another factor they had to be aware of when going into a cutting weight cycle, engaging in stricter practices to limit its effects. Therefore, it could be suggested that having an awareness of their menstrual cycles may help to prepare athletes for when they will be cutting weight and menstruating at the same time, helping to reduce stress and the added pressure of increased weight and emotions (Brown et al., 2021).

Pre-retirement planning and retirement support should also be put in place by sport NGBs (Hong & Hong, 2023; Knights et al., 2019). In the non-sporting literature, retirement planning has been found to have a positive impact on adjustment (Donaldson et al., 2010). This has also been found in sport, as Park et al. (2012) demonstrated that planning and preparing for athletic retirement can protect athletes from the negative psychological impacts of removing themselves from high-performance sport (Knights et al., 2019). However, while the importance of pre-retirement planning has been highlighted, high-performance athletes often find it challenging to prepare and establish these plans during their competitive years, unless they receive the appropriate support (Barker-Ruchti et al., 2019; Hong & Hong, 2023; Stambulova et al., 2007). This can cause them to feel unprepared for their retirement, leading to transitional issues (Hong & Coffee, 2018; Mannes et al., 2019; Schmid et al., 2023; Thompson et al., 2021; van Ramele et al., 2017). Therefore, a proactive approach to pre-retirement planning and retirement support at both a social and organisational level is critical, and weight categorised sport NGBs should make sure they are actively engaging their athletes in this planning and make them aware of the support available to them (Hong & Hong, 2023; Knights et al., 2016; Park et al., 2013).

6.3 Limitations

Although this programme of research had significant contributions to the existing literature, it is not without its limitations. Firstly, through adopting an ethnographic approach to research in study one (Chapter Three), it looked at all aspects of the judo club environment in order to understand this specific culture (Hammersley, 2018; Hammersley & Atkinson, 2007; Krane & Baird, 2005). Whilst the judokas participated in all parts of the research, the coach was only included in the observations and fieldwork, and not in the latter stages of the ethnography. Further to this, the

researcher did not attend judo competitions and training camps with the team, meaning that this part of the judo culture could not be observed and later discussed in the focus groups and semi-structured interviews. Future ethnographic research amongst this population and in this field of sport psychology should ensure that coaches are involved in the entire research process as this could provide an alternative perspective. Moreover, in observing judokas at competitions and training camps, followed by discussions of what was witnessed, it would allow for a more comprehensive understanding of cutting weight and its relationship to disordered eating and body image within this athlete group and culture. A second limitation of this thesis was the presence of recall bias in the second study (Chapter Four), in which some of the older participants who had been retired for over 20 years struggled to recollect some of their cutting weight and early retirement experiences (Talari & Goyal, 2020). The impacts of recall bias were mitigated through using timelines in the semi-structured interviews, which have been suggested to help individuals accurately recollect and organise events (Bremmer, 2020). Therefore, future research that may be at risk of recall bias should consider using timelines to aid in the accurate recollection of experiences.

The video version of the resource in study three (Chapter Five) had a lack of representation of both sexes, and as a result of this, it was assumed by these participants that disordered eating and body image dissatisfaction were more a female problem than a male one. Media conveys societal norms that can reinforce and influence beliefs and behaviours of individuals and organisations (Shifflett et al., 2016). Therefore, future ABKT resources should be more representative of sporting populations, as cutting weight, disordered eating, and body image dissatisfaction impacts both male and female athletes. Finally, one participant, who had experienced an eating disorder in her youth, deemed the resources as triggering, which is the re-

experiencing of unpleasant emotions and symptoms following exposure to materials that evoke traumatic memories (Charles et al., 2022). To limit the risk of individuals being triggered, researchers should consider including 'trigger warnings' prior to the start of the resources, which can alert the user of material that may be distressing to them, giving them the opportunity to prepare themselves or avoid the content altogether (Bridgland et al., 2019; Lockhart, 2016).

6.4 Future Research

A common and novel finding from study one (Chapter Three) and study two (Chapter Four) was the existence of a weight category identity. Within these studies it was suggested that a weight category identity is associated with a strong athletic identity during one's competitive years, and a continuation of this identity during one's retirement from judo (Brewer et al., 1993; Buckley et al., 2019). As judokas are subjected to body weight and shape demands of the different weight categories throughout the majority of their careers, it could be suggested that this contributed towards the development and continuation of a weight category identity (Roklicer et al., 2020). As such, it is important to conduct further research to investigate this sport-specific component of a judoka's athletic identity to further understand how such an identity may develop and the impacts it can have on their competitive career and life post-judo. Its development and impacts could also be investigated in other weight categorised athletes and sports to ascertain whether a weight category identity exists in these sports too.

Another finding from study one (Chapter Three) was the impact that the menstrual cycle has on female judoka's making weight. Female judokas indicated that there were both physical and psychological impacts of the menstrual cycle, such as an increase in weight and heightened emotions, which were also found within the existing

literature (Brock et al., 2016; Critchley et al., 2020; Itaka et al., 2022; Rogan & Black, 2023; van Iersel et al., 2016). In order to prevent the negative effects of the menstrual cycle, the female judoka would often engage in stricter weight cutting practices to try and limit these impacts, which lead to the temporary cessation of their menses, something that is associated with RED-S. Previous researchers have indicated the impacts of the menstrual cycle on training, competition, and emotions, and found that athletes manage their menses through taking contraceptives that can help with knowing the timing of bleeds or prevent them altogether (Brown et al., 2021). However, engaging in stricter practices to try and limit the effects of the menstrual cycle have not been researched alongside the impacts of cutting weight, and therefore little is known about how they may interact with one another. The female judoka also indicated that the menstrual cycle is something that they must take into consideration when going into a weight cutting cycle, which they stated was an added pressure and stress. As such, research is required on the impacts the menstrual cycle has on judokas and other weight categorised sport athletes cutting weight practices, to help them best prepare for when the two occur together.

Future research would also benefit from conducting intervention-based studies on the implementation of education and intervention programmes with athletes, coaches, parents, and practitioners. Intervention programmes on youth athletes have been found to be effective in preventing eating disorders, and a 12-week cutting weight intervention with a boxer was successful in teaching the athlete how to cut weight without using extreme practices (Bar et al., 2016; Morton et al., 2010). This demonstrates that education and intervention programmes are successful in stopping the onset of eating disorders, and also have the ability educate individuals on healthier cutting weight methods. These findings can be supported by those from study three

(Chapter Five), which suggested that the ABKT resources created and disseminated were effective in raising awareness of the impacts of cutting weight on athletes' body image dissatisfaction and disordered eating practices. The findings from the study are promising, as if disseminated further, they could help in preventing cutting weight, reducing the risk for body image dissatisfaction, disordered eating, and clinical eating disorders (Bratland-Sanda & Sundgot-Borgen, 2013). Despite these ABKT resources not being education or intervention programmes per se, they could be included in such programmes to increase understanding and raise awareness in athletes, coaches, parents, and practitioners.

As well as intervention-based studies, research could help to inform NGB policies, of which there have been several instances, such as in cricket, football, and rugby (Lenten & Kendall, 2022). Future researchers could investigate the implementation of new weigh-in and weight category rules within judo, which could not only inform policymakers in judo, but in other weight categorised sports. Other research could investigate judokas longitudinally throughout different phases of their retirement, such as athlete transition, early retirement, and the years following. In conducting this longitudinal research, it would help gain a comprehensive understanding of judokas' transition and retirement experiences, providing organisations and practitioners with empirical evidence to help them address the specific challenges that these athletes face during the retirement transition and the years that follow (Hong & Fraser, 2023; Knights et al., 2016). This in turn could aid in the development of new policies regarding sports retirement processes and help in the implementation of pre-retirement planning and retirement support, as suggested in section 6.2 (Hong & Hong, 2023; Knights et al., 2019).

6.5 Reflecting on Conducting the Research

Throughout this programme of research, I have possessed the dual-identity of being both a researcher and a member of the community under research (Berger, 2015). At the start of this thesis, I outlined my own personal judo experiences, and I therefore wish to finish this thesis with some reflections on conducting this research as an insider.

Having been involved in judo for over 20 years, I have witnessed the cutting weight practices of my teammates and other judokas, as well as having a first-hand experience of the pressures associated with weight, body image, and athletic retirement. As such, being a judoka myself, and therefore being an insider to the culture of judo, this influenced the reasons behind wanting to embark on this PhD journey, as it was important to me to shed light on cutting weight, and its relationship to body image and disordered eating in this under-researched sporting group. Alongside by own personal judo experiences, I worked at a martial arts club that offers training in many different disciplines, such as judo, BJJ, kickboxing, and MMA, throughout the duration of my PhD, where I was constantly reminded of why I embarked on this research project. On a weekly basis I interacted with competitive individuals from these different martial art disciplines who often spoke about their current, past, or future cutting weight strategies, as well as how they were feeling physically and psychologically.

Having this insider status comes with many benefits throughout the research process, from the recruitment of participants, data collection and analysis, and drawing conclusions, such as an in-depth understanding of participant experiences and enhancing the collaborative nature of knowledge creation (Berger, 2015). However, it does come with its challenges, such as blurring boundaries, imposing one's own values

and beliefs, and the danger of self-involvement blocking other voices being heard (Berger, 2015; Drake, 2010). As a result of possessing this dual-identity and the challenges associated with it, it was important for me to remain reflexive throughout this programme of research, which included taking steps such as engaging in a reflexive journal and having conversations with my critical friends. The reflexive journal was kept throughout study one (Chapter Three), in which I would reflect on what I had witnessed in the field and how it made me feel. At times, some of what I had observed in the field and was therefore including in the journal felt extremely 'normal' to me, which solidifies how important this reflection was, as to an outsider these observations would not have felt normal. Having conversations with critical friends throughout this first study aided in remaining reflective, by ensuring the participants' voices were being heard throughout analysis.

This was also the case for study two (Chapter Four), in which I was a retired athlete myself when conducting this research with retired judokas. The conversations I had with these former judokas throughout the interviews were somewhat therapeutic to me, as their views and experiences were often very similar to my own. Whilst sharing these experiences with the participants was an advantage and aided the elicitation and generation of knowledge, I had to remain aware of the assumption that my familiarity of judo and its culture could result in the participants withholding information that may have seemed 'obvious' to me (Berger, 2015; Naaeke et al., 2012). Therefore, engaging in these reflexive processes allowed me to be conscious of the impact I may have had on the research process, evaluate my positionality, and consider how my own experiences impacted the co-construction of knowledge. Finally, I wanted to reflect on a participant response from study three (Chapter Five) in relation to the video resource developed. The comment stated that the athlete in the

video was “very slim and fit” and suggested that they did not “appear to have any problem with their weight”. Although some may find it a compliment to have these things said about them, as I was the ‘athlete’ in the video, I found these statements to be quite upsetting and in someways they angered me. Upon reflection of these comments, I realised that this participant does not know that I still do not eat breakfast and often look in the mirror and wonder whether I have put on a few kilos. When discussing these statements with a critical friend, I further reflected on the fact that I should not interpret them as being critical of me, but instead take them onboard for consideration in the creation of any future resources.

It is hoped that by detailing my experiences as an insider to the culture of judo, and therefore my possession of a dual-identity, it can offer insights and provide context to my role as both the researcher and author of this thesis to those who may be in a similar position to myself.

6.6 Concluding Thoughts

The aim of this programme of research was to gain insight into the factors that influence and contribute to the development of body image concerns and disordered eating behaviours, such as cutting weight, and therefore develop a greater understanding of the real-life experiences of both male and female judokas. This thesis, through the use of longitudinal and in-depth qualitative methods has helped to increase understanding on these processes within judo, whilst also providing novel insights, therefore extending knowledge of both current elite and retired athlete experiences. It has also provided opportunities for this knowledge to be understood more broadly and disseminated to a wider population through its conversion into a more accessible format. This final chapter has detailed the conceptual, empirical, theoretical, and methodological contributions of this thesis to existing knowledge, and

also provided the reader with practical implications for athletes, coaches, parents, and practitioners, alongside future research directions and reflections on the research process. Overall, given my experiences as a judoka and my interested in this field of sport psychology, I hope this research gives voice to elite and retired judokas and helps those involved within judo and other weight categorised sports the opportunity to understand and be made aware of the complex relationship between cutting weight, body image, and disordered eating.

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Appendices

Appendix A – Ethnography Ethical Approval

St Mary's University Twickenham London
Sport, Allied Health & Performance Sciences

26th May 2021

Dear Jade,

Re. A longitudinal study investigating disordered eating and body image concerns in elite male judo players

Thank you for submitting your ethics application for consideration.

I can confirm that your application has been considered by the SAHPS Ethics Committee and that ethical approval is granted. Please find attached your signed approval form.

Yours sincerely,

Dr Andre Roca

Faculty of SAHPS Ethics Committee

Appendix B – Ethnography Participant Consent Form

St Mary's University Twickenham London

Name of Participant: _____

Title of the project: A longitudinal study investigating disordered eating and body image concerns in elite male judo players.

Main investigator and contact details: Jade Eccles – 151707@live.stmarys.ac.uk

Members of the research team: Jade Eccles, Dr Stacy Winter and Dr Ross Wadey

1. I agree to take part in the above research. I have read the Participant Information Sheet which is attached to this form. I understand what my role will be in this research, and all my questions have been answered to my satisfaction.
2. I understand that I am free to withdraw from the research at any time, for any reason and without prejudice.
3. I have been informed that the confidentiality of the information I provide will be safeguarded.
4. I am free to ask any questions at any time before and during the study.
5. I have been provided with a copy of this form and the Participant Information Sheet.
6. I agree to the interviews and focus groups being audio recorded.

Data Protection: I agree to the University processing personal data which I have supplied. I agree to the processing of such data for any purposes connected with the Research Project as outlined to me.

Name of participant (print)……

Signed……..…… Date…….....

If you wish to withdraw from the research, please complete the form below and return to the main investigator named above.

I WISH TO WITHDRAW FROM THIS STUDY

Name: _____

Signed: _____ Date:_____

Appendix C – Ethnography Participant Information Sheet

Participant Information Sheet

Section A: The Research Project

Title of Project - *A longitudinal study investigating disordered eating and body image concerns in male elite judo players.*

Judokas often face pressures that can contribute to the development of disordered eating and body image concerns. Such pressures include, making weight, coaches and teammates, the sports culture itself, and social media. One population within the disordered eating and body image literature that is underrepresented is the male athlete population, particularly those who participate in martial arts. Therefore, this population and sports culture are not widely represented, generating scope for research. With that in mind, the aim of this research is to study this phenomenon in elite male judoka within their naturalistic environment through undertaking a longitudinal research approach, to witness such behaviours and concerns over time. Thus, the purpose of this research is to gain an in-depth understanding of disordered eating and concerns surrounding body image in elite male judokas.

I am inviting you to participate in this research as you are an elite male judo competitor, competing and training at a full-time elite training facility in the UK (Camberley Judo Club). Therefore, it is likely that you have experienced the pressures mentioned above. The results of the research will be analysed and stored on the St Mary's University server, and any hard copies of data will be stored appropriately, with only the researcher and supervisors having access to the research data.

This research is being organised and conducted by Jade Eccles and is being supervised by Dr Stacy Winter and Dr Ross Wadey. For any further information or enquiries, please email Jade Eccles: 151707@live.stmarys.ac.uk.

Section B: Your Participation in the Research Project

You have been invited to take part in this research because you are an elite male judoka training at a full-time training facility in the UK (Camberley Judo Club). It is therefore likely that you have experienced any of the pressures mentioned previously, or any other pressures, that have contributed to the development of disordered eating behaviours, unhealthy eating habits, and/or body image concerns.

Once you have read all of the information in this document, you have the right to refuse to take part. If you agree to take part but then later decide that you no longer want to, you also have the right to withdraw from the research project at any time. This can be done by notifying the lead researcher, who will then discard of your data and information appropriately and accordingly.

If you agree to take part, you will firstly be required to continue with your normal practices throughout the observation phase of the research. Following this phase, you will be required to attend interviews and focus groups with other members of the training group and coaches. These interviews and focus groups will take approximately 60 to 120 minutes a piece, with the aim of understanding disordered eating behaviours and concerns surrounding body image. You may also be required to keep a daily diary, either in a written or video format over a number of weeks, documenting specific components of your day, as well as looking at and responding differing modes of visual pieces such as photographs and posters.

Due to the potentially sensitive nature of the research project, you will be able to talk to myself, the lead researcher, if you feel like you need to. However, if you wish to speak to someone further, you will be directed to a support organisation external to St Mary's University. You will have access to this support both during and following data collection.

All information and data collected will be used for the sole purpose of the research project and will not be detrimental to your legal rights and legislations. The General Data Protection Regulation (GDPR) in accordance with St Mary's Privacy Notice will be abided by for data protection, freedom of information, and intellectual property. Furthermore, all data will be coded meaning that only the researcher and supervisors will know what data relates to you. Therefore, all data and your participation in the research project will remain confidential.

A benefit associated with taking part in the research is that it will help you to understand your own disordered eating behaviours and body image concerns. This increased awareness will help change long-term practices that you and your club partake in to help in the prevention of the harmful effects associated with disordered eating. Moreover, I will be at the club on a regular basis, meaning that I am able to help out as and when necessary.

YOU WILL BE GIVEN A COPY OF THIS FORM TO KEEP TOGETHER WITH A COPY OF YOUR CONSENT FORM

Appendix D – Letter Writing Study Ethical Approval

St Mary's University Twickenham London
Sport, Allied Health & Performance Sciences

17 October 2022

Dear Jade Courtney Eccles,

Re. **"Dear younger self…": Using letter writing to understand the disordered eating experiences of retired elite judoka.**

Thank you for submitting your ethics application for consideration.

I can confirm that your application has been considered by the SAHPS Ethics Committee and that ethical approval is granted. Please find attached your signed approval form.

Yours sincerely,

Jamie North

Faculty of SAHPS Ethics Committee

Appendix E – Letter Writing Study Participant Consent Form

St Mary's University Twickenham London

Name of Participant: _____

Title of the project: "Dear younger self…": Using letter writing to understand the disordered eating experiences of retired elite judoka.

Principal investigator and contact details: Jade Eccles; 151707@live.stmarys.ac.uk; 07503363535

Members of the research team: Jade Eccles, Dr Stacy Winter & Dr Ross Wadey

1. I agree to take part in the above research. I have read the Participant Information Sheet which is attached to this form. I understand what my role will be in this research, and all my questions have been answered to my satisfaction.

2. I understand that I am free to withdraw from the research at any time, for any reason and without prejudice.
3. I have been informed that the confidentiality of the information I provide will be safeguarded.
4. I am free to ask any questions at any time before and during the study.
5. I have been provided with a copy of this form and the Participant Information Sheet.
6. I agree for the interviews to be audio recorded.

Data Protection: I agree to the University processing personal data which I have supplied. I agree to the processing of such data for any purposes connected with the Research Project as outlined to me.

Name of participant (print)……

Date of Birth……..

Signed……..…… Date…….....

If you wish to withdraw from the research, please contact the principal investigator on the contact details above.

Appendix F – Letter Writing Study Participant Information Sheet

St Mary's University Twickenham London

Participant Information Sheet

Section A: The Research Project

Title of Project - *"Dear younger self…": Using letter writing to understand the disordered eating experiences of retired elite judoka.*

Retirement from competitive and elite sport is a difficult and complicated time for most athletes, with many experiencing significant changes to their identity and daily routines. This transition into retirement and the subsequent experiences can often lead to the development or persistence of negative eating behaviours, concerns over body shape and image, and disordered eating. Due to the nature of judo, with the existence of weight categories and athletes reducing their weight to fit into these weight categories, disordered eating behaviours and practices can develop. Therefore, with the combination of these behaviours developing throughout an athlete's competitive career, and the experiences associated with retiring from sport, disordered eating behaviours have the potential to develop further into retirement.

I am inviting you to participate in this research as you are a retired elite judo athlete, and therefore, it is likely that you used to cut weight when you were an active competitor and have experienced the behaviours and practices detailed above. The results of the research will be analysed and stored on the St Mary's University server, and any hard copies of data will be stored appropriately, with only the researcher and supervisors having access to the research data.

This research is being organised and conducted by Jade Eccles and is being supervised by Dr Stacy Winter and Dr Ross Wadey. For any further information or enquiries, please email Jade Eccles: 151707@live.stmarys.ac.uk.

Section B: Your Participation in the Research Project

You have been invited to take part in this research because you are retired elite judoka, and it is likely that you cut weight throughout your competitive career. Therefore, you have potentially experienced disordered eating behaviours during your judo career and into retirement.

Once you have read all the information in this document, you have the right to refuse to take part. If you agree to take part but then later decide that you no longer want to, you also have the right to withdraw from the research project at any time. This can be done by notifying the lead researcher, who will then discard of your data and information appropriately and accordingly.

If you agree to take part in this research, you will be required to firstly take part in two interviews, both lasting approximately 60 minutes. The aim of the first interview will be to gain an understanding of your competitive career, including details surrounding potential disordered eating behaviours and experiences, as well as your cutting weight practices. The second interview will be used to discover whether such disordered eating behaviours and experiences have continued through to your retirement from judo, how they affect you, and whether these behaviours are still present, or whether they have since developed throughout retirement. Following on from these two interviews, you will be required to write a letter to your younger self. The aim of these letters is to draw on your own experiences throughout your competitive career and retirement and write a letter from your current self to your younger self. In doing this, we will be able to understand what you, as a retired athlete, have learnt from your time within judo through to retirement regarding potential disordered eating practices and behaviours. These letters will be written in your own time, and you will be given three weeks to write this letter.

Due to the potentially sensitive nature of the research project, you will be able to talk to myself, the lead researcher, if you feel like you need to. However, if you wish to speak to someone further, you will be directed to a support organisation external to St Mary's University. You will have access to this support both during and following data collection.

All information and data collected will be used for the sole purpose of the research project and will not be detrimental to your legal rights and legislations. The General Data Protection Regulation (GDPR) in accordance with St Mary's Privacy Notice will be abided by for data protection, freedom of information, and intellectual property. Furthermore, all data will be coded meaning that only the researcher and supervisors will know what data relates to you. Therefore, all data and your participation in the research project will remain confidential.

A benefit associated with taking part in the research is that it will help you to understand your disordered eating behaviours that may have been present and potentially have developed in retirement from judo. This increased awareness can help you to develop healthier eating habits, therefore reducing behaviours associated to disordered eating. Another benefit associated with taking part in this research, is that lessons can be learnt from your experiences as a retired athlete, thus helping the younger generation of judo athletes.

Appendix G – ABKT Study Participant Consent Form

Resource Impact

Consent

1. I agree to take part in this research. I have read the Research Information page previously. I understand what my role will be in this research and all my questions have been answered to my satisfaction.

2. I understand that I am free to withdraw from the research at any time, for any reason and without prejudice.

3. I have been informed that the confidentiality of the information I prove will be safeguarded.

4. I am free to ask any questions at any time before and during the study.

5. I have been provided with a copy of this form and the Research Information page.

6. I agree to the University processing personal data which I have supplied. I agree to the processing of such data for any purposes connected with the Research Project as outlined to me.

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1. Full Name *

2. Today's Date *

Select date

You will have the opportunity to save the research information page, consent form, and your responses at the end of this survey.

Appendix H – ABKT Study Participant Information Sheet

St Mary's University Twickenham London

Resource Impact

Research Information

Within the sport psychology literature, there is a lack of knowledge translation tools and resources to help those who are not researchers (i.e., coaches, athletes, parents, practitioners) understand the processes and impacts of disordered eating and body image dissatisfaction in sport. Judo is a sport that is characterised by cutting weight due to the weight categories that athletes are subjected to. Many cutting weight practices are synonymous with disordered eating behaviours, and can persist through from a judoka's competitive career into their retirement. As such, we have created a resource that will help athletes, coaches, parents, and practitioners to understand the impacts that cutting weight has on an athlete, specifically judoka.

Therefore, the aim of this survey is to disseminate and assess the impact of this resource on potential users (i.e., coaches, athletes, parents, practitioners). You have been selected to participate in this survey because you fulfil the criteria of a potential user and can contribute towards assessing the impact of this resource.

If you agree to participate in this survey, you will be required to watch a three minute video and then complete this survey, of which will take approximately 15 minutes.

All information and data collected will be used for the sole purpose of the research and will not be detrimental to your legal rights and legislations. The General Data Protection Regulation (GDPR) in accordance with St Mary's Privacy Notice will be abided by for data protection, freedom of information, and intellectual property. Furthermore, all data will be coded ensuring confidentiality throughout.

Once you have read all the information above, you have the right to refuse to take part. If you agree to take part, but then later decide that you no longer want to, you also have the right to withdraw from the research. This can be done by notifying the lead researcher, who will then discard of your data and information appropriately and accordingly.