

RESILIENCY IN WINTER SPORT ATHLETES

Running head: RESILIENCY IN WINTER SPORT ATHLETES

In the face of adversity: Resiliency in winter sport athletes

Faire-face à l'adversité : La résilience chez les athlètes de sports d'hiver

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Short title: Resiliency in winter sport athletes

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RESILIENCY IN WINTER SPORT ATHLETES

Summary:

Objectives.- To explore winter sports athletes' experiences of adversity within their sporting careers.

Methods.- Data were collected from semi structured interviews with seven British elite winter sports athletes (mean age =23.1 years, *SD* =2.4), representing a range of winter sport disciplines.

Results.- Twelve general dimensions emerged, serving to support the pioneering conceptual model of sport resilience, and emphasizing the role previous experiences of adversity have on the acquisition of resilient qualities.

Conclusions.- The findings from this study have the potential to inform applied sport psychology practice. Specifically regarding the development of a 'resiliency package', which could aim to protect athletes from maladaptive and/or dysfunctional responses to adversity, and encourage adaptive and resilient reintegration.

Key words: Resilience, reintegration, qualitative, elite

Résumé:

Objectifs.- Explorer le vécu de sportifs de haut niveau (sport d'hiver) en difficultés au cours de leur carrière pour étudier les processus psychologiques de résilience.

Méthodes.- Analyse de contenu à partir d'entretiens semi-directifs recueillis chez 7 athlètes anglais de haut niveau (âge moyen=23.1, écart-type= 2.4) pratiquant différentes disciplines sportives (sports d'hiver).

Résultats.- Douze dimensions principales sont mises en évidence comme facteurs psychologiques impliqués dans le processus de résilience (Galli & Vealey, 2008) ; Les expériences difficiles antérieures apparaissent être un facteur important dans le développement de la résilience.

RESILIENCY IN WINTER SPORT ATHLETES

Conclusions.- Les résultats de cette étude permettent de proposer des applications pratiques en psychologie du sport. Plus précisément, ils dessinent un pattern protecteur de réponses émotionnelles et comportementales à développer pour favoriser la résilience et la réinsertion des athlètes en difficultés au cours de leur carrière sportive.

Mots clés: Résilience, réinsertion, analyse qualitative, sport de haut niveau

1. Introduction

- 1.1. In recent years there has been a notable increase in media reports with regard to athletes' staying "positive in the face of adversity" [1, p.1], and showing "their resilience to prevail amid overwhelming odds" [2,p.1]. Arguably, these statements have been universally employed to emphasize an athlete's arduous path to victory, and attempt to encapsulate the undulating nature of an elite sporting career. Constant fluctuations in performance and uncertainty regarding uncontrollable incidents are inherent adversities faced by most elite athletes; meaning inevitably they experience both the pleasure of success and the upset of misfortune during their sporting careers [3].
- 1.2. The complexities of developing an operational definition of resilience are widely recognized [4]. With evidence of contrasting conceptualizations of the terms resilience and resiliency, varying from an individual's dynamic processes in modifying responses to psychological risk [5], to one's ability to avoid the manifestation of psychological dysfunction [6], providing a sporting definition without meticulous and specific methodological assessment is problematic. However, drawing upon the conceptualizations of resilience emerging from outside sporting literature, the common premise behind resilience in sport being that it describes an athlete's ability to positively adapt and develop resilient qualities in the presence of adversity [7].
- 1.3. Due to the unpredictable nature of elite athletic careers, an exploration into the ways in which an individual's resilient qualities interact to deal with varying levels of sporting stress and adversity warrants consideration. Research on resilience, both within and beyond a sporting context, has demonstrated that the process engaged in by an athlete not only permits recovery from adversity, but also an increase in resilient qualities serving to facilitate and inform adaptation to future stressors [7]. In response, there has been an increased focus on how exposure to, and experiences of, adversity provide opportunities for athletes' growth and development [3].

- 1.4** Major adversities experienced by athletes throughout their careers have been highlighted by a variety of researchers, including; career transitions [8], extreme sport challenges [9], behavioural consequences [10], serious injury [11], and stressful events [12]. All of these adversities have been shown to have the potential to challenge an athlete's resiliency qualities and ultimately their ability to 'bounce back' to previous performance levels within their chosen sport [3].
- 1.5.** Methods that have been used to investigate this area have been grounded within the metatheory of resilience and resiliency [13], which explores the personal strengths and interpersonal dynamics accessed through responses to adversity. The research that has been carried out has frequently adopted the form of a three wave resiliency inquiry [14]. The first wave concerns the resilient qualities of individuals' that predict a positive response to adversity, such as hardiness (i.e. predisposition); the second involves an analysis of how individuals' acquire the qualities that allow them to successfully adapt (i.e. prevention/protective factors); and finally, the third focuses on the development of resilience (i.e. learning), through experience and activation of positive processes associated with resiliency [13]. Although the metatheory of resilience was designed to integrate both academic and professional experiences of adversity, there remains a noticeable link between these observed qualities and those of resilient individuals within a sporting context.
- 1.6.** Sport psychology research has predominantly focused on the second wave of resiliency inquiry examining how individuals' successfully adapt to adversity [7, 13]. Consequently, researchers in sport have employed the multidimensional conceptualisation of resilience [15] to promote understanding of athletes protective mechanisms, and to recognise the different ways in which athletes respond to adversity. This conceptualisation suggests that individuals can react to adversity in one of three ways; 'resistance' to the negative effects of adversity, 'recovery' to a pre-stress level of functioning, and an 'adaptive' process that involves the return to a pre-stress level of functioning and most importantly gaining positive

RESILIENCY IN WINTER SPORT ATHLETES

attributes [15]. Most research concerning the multidimensional conceptualisation of resilience has been conducted with individuals who have overcome traumatic life-changing circumstances, such as; cancer [16] and war [17]. Whilst life-changing events in sport are commonplace, there remains a lack of qualitative, detailed research into the resiliency processes experienced by athletes and the protective factors predicting different paths of reintegration back into sport.

1.7. Instead, sport psychology researchers often attempt to assess resilience alongside the study of coping strategies employed by athletes [6, 3]. Whilst such research provides information on the use of specific coping strategies employed in different situations, it does not record the mechanisms of the resiliency process; both in terms of its multidimensional nature and the interpersonal dynamics of the individual, the situation and their path back into elite sport.

1.8. In response, Galli and Vealey [7] proposed the conceptual model of sport resilience, which incorporates coping strategies as a component of the multidimensional model. The model was developed using information obtained from interviews with 10 current and/or former college and professional athletes (representing nine different sports), and includes the following dimensions; agitation factors, positive outcomes, sociocultural influences and personal resources. Thus suggesting that athletes may enhance personal growth and perspective through exposure to and experience of adverse circumstances. These dimensions are suggested to work together to form the resiliency process in sport, expanding the concept to include both environmental influences and internal processes [7].

1.9. The aim of this study is to utilise both the conceptual model of sport resilience [7] and the multidimensional conceptualisation of resilience [15] to explore winter sports athletes' experiences of adversity within their sporting careers (e.g., misfortune, uncertainty and uncontrollable incidences). Given the qualitative nature of the research, three areas of focus are of interest: (a) What factors contribute to the resilient reintegration of winter sports

RESILIENCY IN WINTER SPORT ATHLETES

athletes?; (b) How does adversity influence an athlete and their ability to adapt? and (c) How do winter sports athletes' acquire the qualities that enable them to successfully adapt to adverse circumstances, and influence their growth as a person and an athlete?

2. Methods

2.1. Recruitment

2.1.1. Athletes were contacted through their National Governing Board Association. The recruitment process involved consultation with coaches who were asked to identify potential participants who they felt may have experienced adversities, performance setbacks or prominent barriers within their athletic careers [18]. Prior to study commencement, approval from the Institutional Review Board was sought, and informed consent was obtained from all participants.

2.2. Participants

2.2.1. Seven (two male and five female; M age = 23.1 years, SD =2.4) Great British elite winter sports athletes representing a range of winter sport disciplines (alpine skiing $n=3$, freestyle skiing $n=2$, snowboard cross $n=1$, and Nordic skiing $n=1$) volunteered to participate in the study. This sample is representative of the athlete numbers within Great Britain performing at the required level within the winter sports represented in the study. Athletes had an average of 11.5 years (SD = 4.2) of competitive experience within their respective sports. The criteria for participation which all participants fulfilled was the need to currently be competing at a national or international level, and to have experience of adversity during their sporting career. Adversities experienced by the athletes were cited as; career impacting injuries ($n=4$), funding issues ($n=1$), performance setbacks ($n=1$), and relocation for career enhancement ($n=1$).

2.3. Interview guide and interview process

2.3.1. A six section interview guide based on the Galli and Vealey [7] framework was adapted for the present study (Table 1).

Insert Table 1 about here

2.3.2. Although the interview guide provided a priori structure, care was taken to ensure no restrictions were placed on the interviewees, thus reducing the potential of interference with the participants' ability to elicit their true experiences or desired information [18]. Due to the location and seasonal timing of athletes training camps, all interviews were conducted via telephone and lasted an average of 47 minutes ($SD = 11.2$).

2.3.3. Each interview was transcribed verbatim immediately after the interview ended. Data was edited with regard to names or references that would compromise anonymity [19]. Verbatim transcripts were reviewed numerous times by the lead researcher (first author) enabling a process of increased familiarisation with the content of the interviews. This process also served to facilitate the content analysis phase of data interpretation, enabling the lead researcher to continually check the trustworthiness of the interview process.

2.4. Data analysis

2.4.1. Transcripts were analysed via a process of inductive thematic analysis [20]. The objective of this was to build a system of themes that would emerge from the data and thus correspond to the athletes' experiences of adversity [18]. MaxQDA software for qualitative data analysis was used to manage the interview data. This method of data collection required two main procedures; data organization and data interpretation [19]. Data organization involved a detailed examination of the interview transcripts, thoroughly exploring the data and dividing the text into *meaningful units*. These meaningful units represented sections of information, patterns and key issues within the athletes' responses [19]. The interview transcripts were independently coded by the lead researcher resulting in a total of approximately 200 meaningful units, from which 52 lower order themes were created and named according to their common attributes.

2.4.2. As the lower order themes were examined, additional commonalities and interactions emerged; allowing a further stage of data interpretation whereby 22 higher order themes emerged. Finally, the relationships between the lower and higher order themes were assessed, creating *general dimensions* where appropriate. This final process enabled insight into the three research questions posited, and also permitted a review of both the Conceptual Model of Sports Resilience [7] and the Multidimensional Conceptualisation of Resilience [15] in light of the findings from the present study.

Insert Figure 1 about here

2.4.3. Trustworthiness of the data was ensured via a series of triangulation processes (figure 1) [18]. Investigator triangulation occurred in two stages. The first was accomplished by conducting reliability checks at the organization and interpretation stages of data analysis; whereby the lead researcher coded the interview transcripts and reached agreement with the other members of the research team on the meaningful units, lower and higher order themes and general dimension representative of the interview content [7]. The second stage of investigator triangulation occurred upon the completion of data analysis, whereby an independent (disinterested) researcher was presented with a selection of 25 meaningful units, asking them to place each into a collection of lower order themes provided by the researcher. The lead researcher and the independent researcher were in agreement for 88% (22/25) of the meaningful units, which is above the stated threshold of acceptable agreement in order ensure reliability and validity of the data [21]. Additionally, theoretical triangulation was attained by utilising the conceptual model of sports resilience [7] and the multidimensional conceptualization of resilience [15] as guiding frameworks to inform the thematic analysis and enable an interpretation of the data from multiple perspectives.

3. Results

RESILIENCY IN WINTER SPORT ATHLETES

3.1. The results have been presented to show lower order themes (n=52) along with a selection of corresponding meaningful units, higher order themes (n=22) and dimensions (n=12). These are further organised to correspond with the following research questions: (a) What factors contribute to the resilient reintegration of winter sports athletes?; (b) How does adversity influence an athlete and their ability to adapt? and (c) How do winter sports athletes acquire the qualities that enable them to successfully adapt to adverse circumstances, and influence their growth as both a person and athlete?

3.2. What factors contribute to the resilient reintegration of winter sports athletes? (Table 2)

3.2.1. During the interview process athletes were invited to explore the characteristics of their experience of adversity and the interactions between their protective and vulnerability factors, which they felt had contributed to a resilient reintegration into their respective sports. In examining the seven verbatim transcripts four main dimensions emerged: Adversity characteristics, reactions to adversity, importance of social support and importance of passion.

Adversity characteristics.

3.2.2. This dimension referred to the specific characteristics of the adversity faced by an individual. The importance of the *type of adversity* in resilient reintegration was indicated by a number of participants. After suffering a potentially career ending injury participant#3 reflected on how this affected her reintegration:

I couldn't have ignored it when I was injured... just because of the nature of it. It felt like there is more at stake when it's to do with your body if you know what I mean... sort of they could both end your career but being injured was different because it affected me more mentally [than other adversities].

3.2.3. The importance of the *timing of the adversity* was expressed by five out of the seven of the athletes in relation to their ability to successfully reintegrate into winter sports. These ‘timing’ issues generally related to the time periods between the adversity occurring and previously scheduled important performances, such as the Winter Olympic Games:

...the only thing I was worried about was that I had already qualified for the Olympics that were in February... and I really wanted to compete in those. In fact it was probably good that they were at that time because it gave me a really good thing to aim for. (Participant#4)

Reactions to adversity.

3.2.4. Within section four of the interview, athletes were encouraged to highlight the factors that facilitated their resilient reintegration within their sport. Numerous cognitive and behavioral strategies and characteristics emerged, which included; *internal focus*, *competitiveness* and *perseverance*. Six of the seven athletes commented on how their *self belief* as an athlete had contributed to their success in overcoming adversity: ‘I think just that I didn’t really have any doubt that I would get snowboarding again. I’m not completely sure where this came from’ (Participant#4).

Importance of social support.

3.2.5. Reflecting on their experience of adversity, all of the athletes, irrespective of their adverse circumstance, indicated the importance of an external support system relative to their resilient reintegration. In this quote participant#5 revealed how family support factored within her resiliency process; ‘I spoke with my parents while I was away and they were really helpful and just kept me going really.’ Negative issues relating to social support also emerged, including support problems and issues concerning accepting specialist advice.

Importance of passion.

3.2.6. Participants highlighted passion in sport to be a key element in contributing to resilient reintegration into elite winter sports. This is demonstrated within the following extract from participant#3:

I would say... being able to get myself back on track when I was having a bad day like being really motivated to stick at it and not give up... but I guess that kind of thing comes from loving what I do so much and not wanting to stop.

Insert Table 2 about here

3.3. How does adversity influence an athlete and their ability to adapt? (Table 3)

3.3.1. In response to the second research question, athletes were encouraged to describe the ways in which they felt their adversity had influenced their athletic career, and also to consider the effects these influences may have had on their ability to adapt. As a result of this inquiry three main dimensions emerged: responses to adversity, modifying training agenda and career ambiguity.

Responses to adversity.

3.3.2. Both positive and negative responses to adversity emerged as primary factors influencing the athlete and playing a crucial role in an athletes' ability to adapt in the face of adversity. These responses were not specific to the type of adversity or sport involved.

3.3.3. In total, all seven athletes had experienced a negative impact on their emotions as a response to their adversity. Specifically, four participants were subjected to *heightened levels of anger* immediately after the occurrence of the adverse circumstance. For example participant#1 stated: 'I think I at first obviously as is with anyone you're pretty upset and angry that it happened because I was angry at myself because I had let that happen.' In

RESILIENCY IN WINTER SPORT ATHLETES

addition, participants also encountered *increased worry*, particularly regarding new and uncertain circumstances.

Modifying training agenda because of adversity.

3.3.4. From the interview transcripts it emerged that five of the participants had been forced to deviate from their normal training schedules, to accommodate their reintegration process. These behavioural changes were categorized further, and took the forms of commitments to rehabilitation schedules:

...but you know what the rehab was really tough, a lot of training and a lot of traveling. I travelled through to [TOWN], I live about an hour and a half from [TOWN] and I had to travel there to the physio three times a week to do rehab.
(Participant#1)

and other sporting sacrifices:

I think the most annoying thing is that I can't play sports like football or rugby or tennis or things. I don't really have too much of an inclination to actually go for a run because I never really liked running before I hurt my foot. But I do want to be able to play sports which I can't do any more. (Participant#4)

Career ambiguity.

3.3.5. The dimension labelled career ambiguity emerged from the interview data, encompassing the athletes' feelings of uncertainty following both their adversity and reintegration into winter sports.

3.3.6. Acceptance of the adverse situation was revealed within the interview data as a lower order theme directly influencing an athlete and their ability to adapt in the face of adversity. A

RESILIENCY IN WINTER SPORT ATHLETES

realization of adversity was identified as a key component of resilience, allowing an athlete to accept the sacrifices and negative responses to adversity and progress through the reintegration process. Participant#1 describes the importance of this realization of adversity:

I kind of realized that I couldn't do anything about it and I had to very quickly after my operation I realized that you know I need to just get on with it and do as much I can to kind of get over it so it was a pretty good learning experience for me.

3.3.7. In addition to an acceptance of their adverse circumstance, a perceived lack of control was also discussed by a number of participants and encompassed three lower order themes: denial, uncertainty and failure.

Insert Table 3 about here

3.4. How do winter sports athletes' acquire the qualities that enable them to successfully adapt to adverse circumstances, and influence their growth as a person and an athlete? (Table 4)

3.4.1. One of the key aims of the inductive thematic analysis was to explore the interview transcripts for any meaningful units referring to an athlete's means of acquiring resilient qualities. From this, several dimensions emerged.

Importance of significant others.

3.4.2. Four of the winter sports athletes named their parents and family environment as having a significant influence on their ability to acquire resilient qualities. An example of this parental influence was expressed by participant#5; 'I think it's sort of to do with how I've been brought up...my mum would always tell us not to give in.'

Positive impact of previous experience with adversity.

3.4.3. Elite sporting careers are littered with numerous possible adversities and it was found winter sports athletes were no exception. In fact, prior experiences with adversity were suggested by all participants to have a noticeable positive impact on the acquisition of resilient qualities. In discussing this with the athletes, it was indicated that this positive impact embraced three key higher order themes: knowledge acquired through previous experiences, application of acquired knowledge and recognition of own capabilities.

3.4.4. A consistent finding across all athletes was that the knowledge gained through previous experiences of adversity, and in particular the application of this knowledge is pivotal in relation to the acquisition of resilient qualities. Specifically, this knowledge allowed the athletes to constructively reflect on their prior experiences; ‘looking back I think I responded quite well but even when stuff didn’t go the way I wanted it to, I’ll know next time not to do it’ (participant#7) and adapt or maintain previous strategies; ‘all in all I think I would keep most things the same...maybe change the odd thing but most of it worked quite well’ (participant#6).

3.4.5. In total three athletes highlighted how self-recognition in the form of heightened confidence, and being safe in the knowledge that their capabilities allow them to reintegrate, would enable them to be more self-assured when dealing with future adversities: ‘It has made me a lot more confident and a lot stronger like compared to others around me at competitions’ (participant#2).

Negative impact of previous experience with adversity.

3.4.6. Although there was an overall consensus regarding the influence of previous experiences with adversity on the acquisition of resilient qualities; participant#7 also suggested that previous adversities may have a negative effect on subsequent adverse circumstances due to an influence of acquired knowledge: ‘I think so...but maybe...I think it might be harder to do it again because you’d know what it would feel like... I think I’d find myself comparing one experience to other one.’

Impact on growth.

3.4.7. The impact of overcoming adversity and reintegrating into their respective sports was a dimension raised by all of the participants. This perceived growth encompassed both growth as an athlete and growth as a person.

3.4.8. In reference to their perceived growth as an athlete, five out of the seven participants stated that subsequent to their reintegration into their respective sports, they felt less worried particularly concerning the threat of re-injury, as participant#6 explains: ‘I don’t really worry any more...because I know I can get over it.’

3.4.9. Psychological strength emerged as an important attribute gained through experiences with adversity and enabling personal growth. The psychological strength alluded to by the athletes was not specifically defined, therefore it only acts as a subjective component of perceived growth. However, it was identified as a key quality gained through a successful reintegration experience. For example participant#4 stated: ‘it sounds a bit cliché but if you really want something if you work hard enough you can get it.’

Insert Table 4 about here

4. Discussion

4.1. The aim of the present study was to explore winter sports athletes’ experiences of adversity within their sporting careers, and to attempt to identify athletes’ resiliency characteristics influencing adaptive reintegration into winter sport. In addition to this it was intended that the qualitative inquiry would produce detailed data relating to athletes’ experiences of adversity and their acquisition of resilient qualities. For ease of comprehension, the results will be discussed in respect to the three research questions posed.

4.2. What factors contribute to the resilient reintegration into winter sports?

- 4.2.1.** The timing and the type of adversity were common components discussed by participants in the current study as contributors to resilient reintegration. However, the type of adversity was not identified as an important factor contributing to resilient reintegration within either the multidimensional conceptualisation of resilience [15] or the conceptual model of sport resilience [7]. Nevertheless, both models did serve to evoke debate concerning the timing issues surrounding adversity. The relationship between the type of adversity encountered and the timing of adversity within an athlete's career may be of interest when considering long term resiliency processes (e.g., across career transitions, long term illnesses or injury bouts) and, ultimately allow a more comprehensive understanding of reintegration patterns.
- 4.2.2.** The conceptual model of sport resilience [7] also contains an overall theme relating to the length and breadth of the reintegration process, but not to the timing of adversity relative to an athlete's career or goals, which is pertinent relative to the aforementioned issue raised. However, by combining these issues, it could be said that interactions between athletes', their environments, and their goals or long term aims; plays a pivotal role in an athletes' ability to adapt and/or optimise the dynamic process of recovery and promote resilience [13, 22].
- 4.2.3.** Intrinsic motivation was also considered a key aspect that many of the winter sport athletes felt enabled them to respond to adversity in a positive way. An internal focus, or more distinctively a focus on personal performance and recovery, was stated by four athletes as a cognitive strategy which enabled them to concentrate on the controllable aspects of their recovery period and block any unwanted or debilitating stimuli. Kumpfer [23] identified motivational characteristics such as optimism, life purpose and an internal locus of control as one of five clusters of internal protective factors serving to aid resilience. These characteristics may represent key motivational components of what Richardson [13] refers to as "innate resilience", or the inherent motivation required for individuals to reintegrate.

- 4.2.4.** Behavioural strategies emerging from the interview data included actively widening social circles, using objective measures of performance and perseverance, which were perceived as contributors to resilient reintegration. Cognitive and behavioural coping strategies play a prominent role within the conceptual model of sport resilience [7], and are shown to directly influence an individual's agitation following adversity. By configuring these cognitions and behaviours in order to respond in a positive way to the adversities, the winter sports athletes in the present study also appeared to have experienced the process of adaptive reconfiguration outlined by the multidimensional conceptualisation of resilience [15].
- 4.2.5.** The most prominent strategies associated with resilient reintegration by the winter sports athletes included; objective measures of performance, focus on long term aims, motivation and goal setting. All of which have also been identified as key components of self-regulation [24]; and as inherent to the ability to successfully regulate the psychological state of an individual threatened by perceivably uncontrollable circumstances. Self-regulation allows an individual to guide their own goal-directed processes (i.e. affect, behaviour), promoting confidence and perceived control; ultimately increasing an individual's capacity for success and reducing self-destructive behaviours. By applying the theory of self-regulation to an athlete's resiliency process, it is believed that links can emerge between the self-regulatory strategies employed when facing adversity, and the overall resiliency outcome they achieve (i.e. resilient, homeostatic, maladaptive or dysfunctional reintegration) [14].
- 4.2.6.** All of the athletes, irrespective of their adverse circumstance indicated the importance of parental and/or family support within the resiliency process. In addition, two participants recalled how aside from the support from others, an acknowledgement of their own achievements in facing and overcoming their adversity was beneficial to their reintegration process. Martin-Krumm, Sarrazin, Peterson, and Famose [25] revealed that an *optimistic* explanatory style such as this, whereby individuals attribute negative experiences to factors

RESILIENCY IN WINTER SPORT ATHLETES

that are external, unstable and specific, and positive experiences to factors that are internal, stable and global, were equipped for better protection against adversity. This research demonstrated that athletes categorized as having optimistic explanatory style were more confident, less anxious and ultimately performed better than *pessimistic* athletes, and as such could better moderate their response to sporting failure.

4.2.7. An individual's coping skills can mediate the role of social support and athletes' dependence on specialist advice, and thus can co-occur within the resilience process to maximise the potential of a positive outcome from serious life stress [26, 3, 27). A perceived contribution of social support to winter sports athletes' resilient reintegration was clearly established in the present study, reflecting the sociocultural influences that have been identified within the conceptual model of sport resilience [7], and also the envirosocial protective factors influencing disorganization within resiliency model [14].

4.2.8. Passion in sport has been previously highlighted by Vallerand and colleagues [28] and Galli and Vealey [7] as a prominent and vital prerequisite to a successful response to adversity. This arguably links to the love of the sport, a personal resource central to the conceptual model of sport resilience [7], being demonstrated by all of the athletes upon their reintegration following adversity.

4.2.9. Although not contained within the conceptual model of sport resilience [7] or the multidimensional conceptualisation of resilience [15], the nature of the sport as a form of passion emerged within the current study as an important contributor to resilient reintegration. This could be due to the actual nature of the sports that the athletes in the current study participated in; winter sports differ from those previously examined in resiliency research in terms of their structure and qualities, which include the connection with the winter elements, feelings of freedom and escapism. In contrast to many sports, winter sport athletes are immersed in the environment and success is dependent on their ability to read and respond immediately to changes in their physical surroundings, whilst at the same time regulating

their emotional arousal. This suggests a need to focus on the present and avoid ruminating on past events and actions that may impede performance by distracting from an engagement with the environment.

4.2.10. As previously mentioned, Galli and Vealey's [7] conceptual model of sport resilience includes the *love of sport* as a fundamental personal resource, which influences the agitation phase of the resiliency process and buffers the negative emotional effects of adversity. All of the winter sports athletes referred to a passion for their respective sports, and thus the current research provides further evidence of the need for passion relative to successful responses to adversity [29].

4.3. How does adversity influence an athlete and their ability to adapt?

4.3.1. The dimension labelled *responses to adversity*, relating to the way in which adversity can influence an athlete and their ability to adapt, can be compared to the component of 'unpleasant emotions' described by Galli and Vealey [7]. These unpleasant emotions are included within the agitation phase of this model, and are linked with the cognitive and behavioural strategies employed by an athlete facing adverse circumstances. This link represents the interactions between the emotions experienced by an athlete and as a consequence of these, the strategies they employ [7]. The addition of *responses to adversity* within this model would not only support the inclusion of emotional interactions, but would also enhance the overall scope of the dimension, drawing attention to specific emotional impacts and accentuating the role of *performance* impacts within the resiliency process.

4.3.2. The emergence in this study of *positive impacts on emotion* within the hierarchical representation of how an adverse circumstance influences an athlete's ability to successfully adapt is contrary to the findings of Galli and Vealey [7]. This consequently provides the multidimensional topic of resilience with an additional dimension specifically relating to efficacy beliefs and enjoyment in sport. Podlog and Eklund [11] reported that the process of overcoming adversity can positively influence athletes' self-belief, confidence and feelings of

self-worth; which results in greater determination and perceptions of success during their reintegration into sport. In addition, numerous authors have proposed that certain challenges are essential for enhancing enjoyment in sport [11]. These findings would suggest that a positive emotional response to adversity (albeit small in comparison to negative emotional responses) plays a vital role in resilient reintegration and perceptions of success in returning to sport.

4.3.3. Following adversity, especially when it takes the form of career impacting injury, it is inevitable that changes to an athlete's training regime must occur, that is in order to accommodate the rehabilitation process [11]. Although these behavioural and environmental changes may be somewhat obvious reconfigurations within the process of recovery [15], they are often over-generalised into 'behavioural coping strategies'. Consequently, their specific role of influencing reintegration remains under researched.

4.3.4. As adversities are classified by their uncontrollable nature, it is understandable that a lack of control could significantly influence an athlete's stress responses and coping resources in relation to an effective adaptation. Nicholls and colleagues [30] examined stressors, coping strategies and coping effectiveness amongst professional rugby union players, and found that emotion-focussed coping and problem-focussed coping strategies were employed; dependent upon the perceived controllability of the stressor. The themes that emerged from the current study suggest that the perceived level of control that an athlete possesses concerning their particular adversity and their reintegration processes, has a significant influence on an athlete's ability to adapt. Specifically, problem-focussed coping strategies were found to be more effective when the stressor was controllable (the aim being to directly influence its effects), whereas emotion-focussed coping strategies were considered more successful when the stressor was perceived to be uncontrollable [30]. In successful athletes career ambiguity and a lack of control should therefore initiate emotion-focused coping strategies (i.e.

reappraisal, putting things into perspective), which would in turn regulate the impact of such circumstances on an athlete and ultimately facilitate their ability to adapt [31].

4.4. How do winter sports athletes' acquire the qualities that enable them to successfully adapt to adverse circumstances, and influence their growth as a person and an athlete?

4.4.1. The importance of parental influence on athlete development and achievement in sport has been well documented [32]; however, the link between parental influence during early stages of an athlete's career and their resilience at an elite level has yet to be fully explored. Research concerning parental modelling has shown that at an early stage, parents can act as role models for their children, transferring values such as hard work, persistence, and the importance of achievement [32]. Therefore, an athlete's experiences of parental modelling and support during these investment years [33] may also have a significant impact on the cognitive characteristics and attachment style later in life, which may in turn have a direct impact on their ability to bounce back following severe adversity and/or life stress. In a recent study by Fletcher and Sarkar [34] examining the resilience of Olympic champions, the athlete-parent interaction was revealed as a protective mechanism mediating the pressures of elite sport and competition. The established trust and respect in the relationship with parents and significant others led to a secure attachment style, and gave athletes confidence in sharing problems and anxieties. Consequently, it can be argued that resilience is influenced by both support and attachment style formation during the early stages of an athlete's development [33].

4.4.2. Although the conceptual model of sport resilience does not include the positive impact of previous experiences of adversity, Galli and Vealey [7] acknowledged that future research focussing on how resilient qualities are attained in athletes is necessary to enhance the topic's potential to inform sport psychology practice. The results from the present study appear to have validated this necessity and have served to taper a void that has been highlighted within previous research; illustrating how previous encounters with adversity can have a facilitative

RESILIENCY IN WINTER SPORT ATHLETES

effect on the acquisition of resilience qualities. More specifically, the winter sport athletes alluded to an increase in confidence through recognition of one's capabilities; and in particular, the acquisition of overall knowledge relating to the resiliency process.

4.4.3. The findings from this research have also suggested that the dynamic process of resilience, outlined by Richardson and colleagues [14] and Lepore and Revenson [15], goes beyond the single cycle of reconfiguration and reintegration, and instead involves a positive link between numerous experiences with adversity and the resilient qualities gained from each encounter. In the present study it was found that important knowledge regarding the resiliency process was gained through experience with adversity, this corresponds to previous research concerning reintegration following negative emotional experiences and failure within sport [25]. However, further research is required to improve our understanding of the processes, specifically, how previously acquired resilient qualities can influence future adversities, and indeed if qualities gained from different types of adversity (i.e. injury, funding issues) can be used within a variety of contexts.

4.4.4. The perceived negative impact of acquired knowledge concerning reintegration on subsequent responses to adversity has not been considered within the conceptual model of sport resilience [7]. The lead researcher believes that this factor could represent an aspect of dysfunctional reintegration [14]. Although mentioned by only one athlete in the current study, when probed more specifically, additional athletes may have expressed similar experiences. This assumption posed by the lead researcher suggests that even those athletes experiencing resilient reintegration would not necessarily escape the influence of vulnerability processes when facing additional adversities. When reviewing an athlete's premonitions of how they feel regarding how a future adversity would affect them, an applied psychologist could identify the potentially disruptive vulnerability processes that have the potential to negatively influence resilience response and target them through proactive interventions.

- 4.4.5.** Following adversity a number of the winter sports athletes found that they could not only increase their confidence and determination, but they could apply this behavioural change as a form of strategy both within their sporting careers and within their personal life. Within the higher order themes that emerged from the interview data, it became obvious that subsequent to overcoming adversity and successfully reintegrating into elite winter sports, the athletes' felt they had also experienced personal growth, that is as an athlete and as a person. This finding supports the conceptual model of sport resilience [7] and the positive outcomes of adversity that it posits. Although it was apparent in the current study that the themes could be further categorized by their enduring or transient qualities, it is felt that to enhance the model and develop its use within an applied setting, 'positive outcomes' should be categorized in respect to these attributes. Differentiating between these outcomes would no doubt have implications for a sport psychologist when attempting to enhance the protective factors acquired by an athlete to positively shield them from future adverse circumstances. As such, the outcomes that are transient in nature may require strategies to maintain them, whereas, more enduring qualities may not be in need of such direct applied intervention.
- 4.4.6.** In line with previous research the winter sports athletes' within this study have demonstrated how they have not only recovered from adversity but also how they have acquired additional resilient qualities as a response to adversity [35, 36]. These findings are synonymous with the change in focus from viewing critical events as having a definite negative effect on an athlete's experiences, to perceiving adversity as the provision of opportunities for personal growth [3, 13].
- 4.4.7.** The findings concerning the acquisition of resilient qualities identified in the present study, and their link between the conceptual model of sport resilience [7] and the multidimensional conceptualisation of resilience [15], have many implications for the applied sport psychology practitioner. Research into the development of an applied 'resiliency package' aiming to improve resilience among athletes has thus far provided equivocal results

[36, 3, 37]. However, the dimensions emerging within the present study (i.e. previous experiences with adversity, social support, seeking knowledge) present a much clearer depiction of the factors influencing resilient reintegration, which would allow an applied practitioner to formulate more specific strategies to promote resilience via interventions with current or aspiring elite athletes.

There are a number of limitations to consider in the current study. In particular, the qualitative nature of the study meant that only a small number of participants were included. Although efforts were made to ensure data saturation was achieved, the small sample may be viewed as a limitation. The results may only be specific to winter sports athletes, and may not be easily generalised to alternative populations. In addition, the heterogeneity of the sample in relation to the representation of a number of different winter sport disciplines may have restricted the emergence of any discipline specific resilience qualities. Future research should examine experiences of adversity with athletes from different sporting populations, including both team and individual disciplines.

5. Conclusion

5.1. The results from the current study provided support for the efficacy of the conceptual model of sport resilience that explains resilience among athletes [7], and substantiates the influences of behavioural and cognitive strategies on the resiliency process. Furthermore, the findings have reinforced the role of social support in protecting athletes from the negative impacts of adversity and ultimately facilitate a reintegration process. However, the data has also provided evidence for new dimensions that could enable refinement of the conceptual model of sport resilience [7], and offer greater depth to the description of the resiliency process, specifically experienced by elite winter sports athletes.

5.2 This research has served to highlight the importance of previous experiences of adversity relative to the enhancement of resiliency qualities. Although experiencing personal

RESILIENCY IN WINTER SPORT ATHLETES

growth following adversity is not a new phenomenon [36, 3], the current findings present an association between the means by which athletes acquire resilient qualities and their potential to influence a positive response to subsequent adversities. Whilst the findings in the current study reflect the mechanisms of a resilient reintegration into elite sport, the conclusions may also be applied when considering individuals' experiences of stress and trauma external to the sporting arena, whereby general personal growth, goal achievement and a superior level of functioning are the desired products of reintegration.

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RESILIENCY IN WINTER SPORT ATHLETES

Table file

Table 1.

Interview section	Aim	Exemplar questions
I. Introduction	To explain the focus of the research and identify key demographic information.	What is your current level of participation? How old were you when you started competing?
II. Rapport building	To develop a level of trust and rapport between the researcher and the interviewee.	What do you enjoy the most about your winter sport? What accomplishment are you most proud of within this sport?
III. Identification of adversity experience	To identify the most significant sporting adversity encountered by the athlete, and explore their physical, cognitive and emotional responses.	Tell me about the biggest adversity that you have faced as an athlete...
IV. Reconfiguration process	To explore the factors enabling an adaptive reconfiguration and return to pre-stress level of functioning.	What aspect do you feel was the most important in overcoming your adversity?
V. Protective/vulnerability qualities	To examine the athletes' protective, persistent and/or vulnerability qualities which determine their capability to react positively to some adverse conditions but less so to others.	What qualities do you feel enabled you to be successful in overcoming these obstacles with greater ease?
VI. Additional comments	To raise and discuss any other issues that athletes felt would enhance understanding of their experiences.	Would you like to add anything that we have not yet discussed that you feel may add to my understanding of your experiences?

RESILIENCY IN WINTER SPORT ATHLETES

Table 2.

Exemplar meaningful unit	Lower order theme	Higher order theme	Dimension	Associated general dimensions
“Being injured was difficult because it affected me more mentally [than other adversities]”	Type of adversity (n=3)	Elements of adversity	Adversity characteristics	Adversity (breadth and duration)
“It was probably good that they were at that time because it gave me a really good thing to aim for”	Timing of adversity (n=5)			
“When the cat-suit goes on it goes out of my head”	Internal focus (n=4)	Cognitive strategies/ characteristics	Reactions to adversity	Agitation
“I was trying to focus on getting a good start to the next season”	Focus on long term aims (n=5)			
“I knew what I wanted to do for about a year before”	Process goals (n=6)			
“really motivated to stick at it and not give up”	Internal motivation (n=6)			
“I knew that I would come back”	Self belief (n=6)			
“I wanted to get back to the sport I was doing”	Commitment (n=4)			
“it’s the mental side if you don’t have that then it doesn’t matter how technically good you are”	Mind over body (n=4)			
“I’m very competitive”	Competitiveness (n=4)			
“Just think it doesn’t matter if I get it wrong who cares I just have to try”	Perseverance (n=6)	Behavioural strategies/ characteristics		
“Keeping track of every little thing I could see that I was actually getting better”	Objective measures of performance			

RESILIENCY IN WINTER SPORT ATHLETES

	(n=2)			
“Try not to be such a one to sit in the background so much”	Widen social circle (n=1)			
“I had really good support from my physios and strength coaches”	Specialist support (n=4)	Sources of social support	Importance on social support	Positive outcomes/ sociocultural influences
“I talked to my family every day”	Parental/ family support (n=6)			
“I didn’t feel like I had loads of support on my doorstep”	Support problems (n=3)	Social support issues		
“I just filtered out what I wanted and what I didn’t want to hear”	Accepting specialist advise (n=2)			
“everyone else said after that I had done really well”	Acknowledgement of achievement (n=2)	Type of support		
“I like the fact that there is a lot of risk involved”	Nature of the sport (n=5)	Passion	Importance of passion	Personal resources
“I just love it”	Love of the sport (n=5)			

Table 3.

Exemplar meaningful unit	Lower order theme	Higher order theme	Dimension	Associated general dimensions
“I was really angry with myself”	Increased anger (n=4)	Negative impact on emotions	Responses to adversity	Positive outcomes
“Knocked my confidence”	Decreased confidence (n=4)			

RESILIENCY IN WINTER SPORT ATHLETES

“I felt sort of very worried”	Increased worry (n=2)			
“When I think I found out my results I was upset and pretty gutted”	Increased frustration (n=4)			
“I’ve managed to overcome more than I thought I had”	Increased sense of accomplishment (n=4)	Positive impact on emotions		
“A change of language that effected my skiing quite a bit”	Negative impact on performance (n=4)	Performance impacts		
“I’d go for physio every single day”	Rehabilitation schedules (n=4)	Behavioural change	Modifying training agenda	Sociocultural influences
“There wasn’t much I could do when everyone else was training”	Change in training (n=2)			
“The most annoying thing is that I can’t play sports like football or rugby or tennis”	Sporting sacrifice (n=1)			
“I had never been home for that long over a season”	Situational changes (n=3)	Environmental change		
“I kind of realised that I couldn’t do anything about it”	Realisation of adversity (n=5)	Acceptance of adversity	Career ambiguity	Personal resources
“It might take a while but eventually I will get back on a snowboard”	Length of reintegration process (n=5)			
“They told me it was broken which I never really believed”	Denial (n=2)	Perceived lack of control		
“I didn’t know quite how much work it would involve”	Uncertainty (n=3)			

RESILIENCY IN WINTER SPORT ATHLETES

“It felt like I had failed” Failure (n=3)

Table 4.

Exemplar meaningful unit	Lower order theme	Higher order theme	Dimension	Associated general dimensions
“They [parents] taught us to take everything in a stride rather than panic or get too upset”	Family environment (n=4)	Parental influence	Importance of significant others	Sociocultural influences
“I’ve read a lot of books about how to look at things in a different way”	Personal research (n=1)	Knowledge	Seeking knowledge	Positive outcomes
“Every now and then I think back to what I went through or some of the things I got wrong”	Reflection on prior experiences (n=4)	Application of acquired knowledge	Positive impact of previous experience with adversity	Positive outcomes
“altered parameters of time and everything like that to fit the new circumstance”	Adapting/maintaining previous strategies (n=4)			
“[learning that] it takes a while to understand or be able to better guess how long things are going to take”	Knowledge of reintegration periods (n=2)	Knowledge acquired through previous experience		
“I think it may have helped to an extent having gone through... the same thing before”	Similar reintegration experiences (n=4)			
“I’ve learnt something every time something bad has happened”	Adversity as a learning experience (n=6)			
“I know how much hard work it would be whereas I was probably a bit naïve last time”	Increased understanding of the resiliency process (n=3)			
“I know I can pull myself out of bad bits”	Increased confidence (n=3)	Recognition of own capabilities		

RESILIENCY IN WINTER SPORT ATHLETES

“I think it would be much harder knowing how much it would take and how long and hard it was going to be”	Knowledge of difficulties facing adversity (n=2)	Influence of acquired knowledge	Negative impact of previous adversity	Positive outcomes
“I don’t really worry about it any more”	Decreased worry (n=5)	Growth as an athlete	Impact on growth	Positive outcomes
“I think I can trust myself now like when something happens or if I get injured again”	Increased trust in one’s ability (n=3)			
“A bit more determined”	Increased determination (n=2)			
“I think it had made me more mentally strong and for that I think a better athlete as well”	Psychological strength (n=6)			
“I think I have learnt loads”	Knowledge about oneself (n=2)	Personal growth		
“It has probably made me stronger mentally”	Psychological strength (n=6)			
“I feel like I can approach more people now whereas I wouldn’t have done that before”	Behavioural change (n=1)			

Figure file
Figure 1.

RESILIENCY IN WINTER SPORT ATHLETES

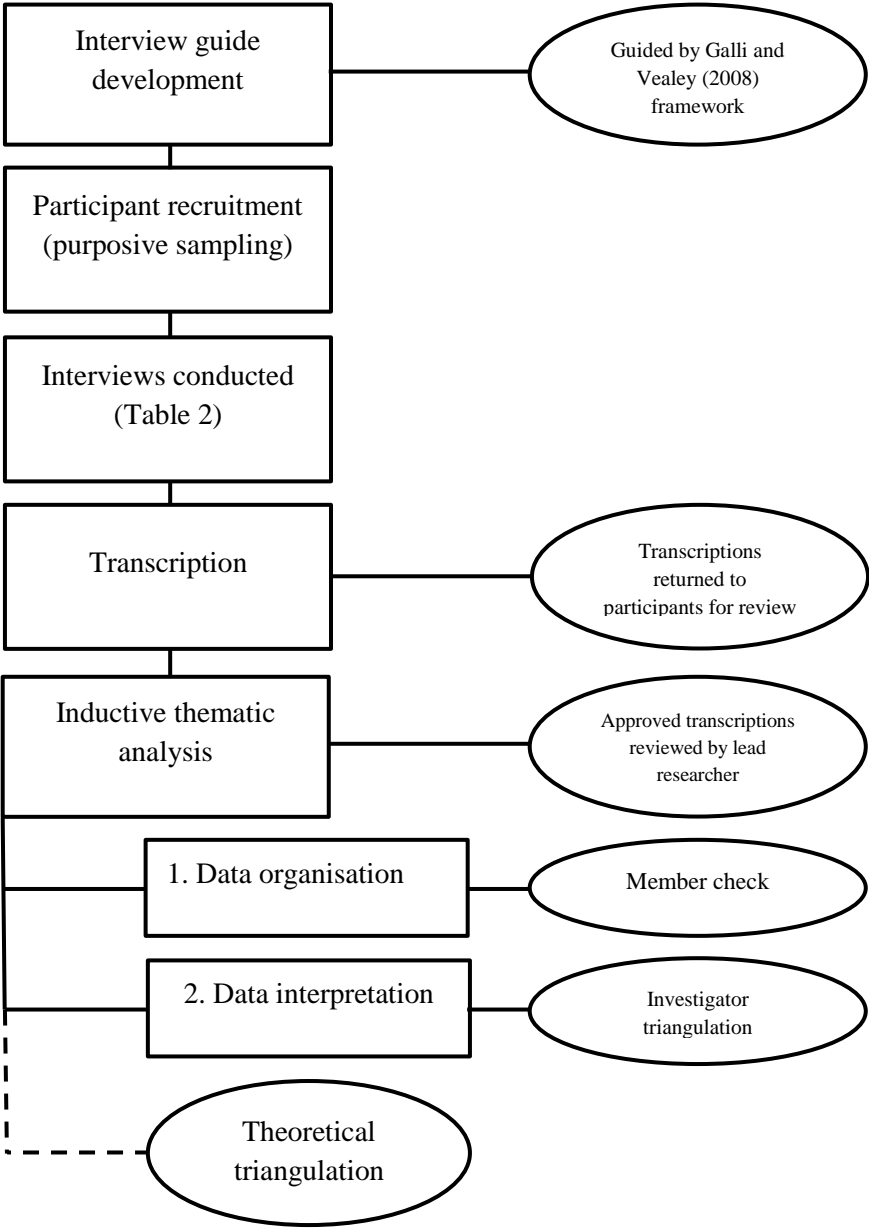


Table captions:

Table 1.

RESILIENCY IN WINTER SPORT ATHLETES

Interview guide structure

Table 2.

Factors contributing to the resilient reintegration into winter sports

Table 3.

Influence of adversity on an athlete and their ability to adapt

Table 4.

Winter sports athletes acquisition of resilient qualities

Figure captions:

Figure 1.

Reliability and validity procedures

Conflict of interest: none