

This is an Accepted Manuscript of an article published by Taylor & Francis in Tourism Recreation Research on 16 Mar 2021 (Published online), available online: <http://www.tandfonline.com/10.1080/02508281.2021.1894043>.

How does adventure sport tourism enhance well-being? A conceptual model

Abstract

Sport tourism literature has paid limited attention to the psychological well-being benefits derived from participating in this form of tourism. This is especially the case for adventure sport tourism, which is characterised by travel to a destination to participate in an adventure sport event, such as competitive surfing or mountain biking. Through an analysis of the contemporary literature regarding adventure sport, tourism and psychological well-being, we propose a conceptual model of the psychological processes underlying well-being outcomes for adventure sport tourists. The conceptual model explains how adventure sport tourism participation affects hedonic and eudaimonic psychological well-being via the satisfaction of basic psychological needs (autonomy, competence, relatedness) and nature connectedness. We argue that this conceptual model has the potential to advance knowledge in relation to the theory, practice and design of adventure sport tourism. We outline research propositions emanating from the conceptual model and directions for future research on adventure sport tourism and psychological well-being.

Keywords: sport tourism; adventure tourism; psychological well-being; nature connectedness; self-determination theory; eudaimonia

How does adventure sport tourism enhance psychological well-being? A conceptual model

Adventure sports are growing in popularity and have been linked to a range of positive outcomes for participants, including enhanced self-esteem, positive affect, intrinsic motivation, resilience, enjoyment, competence, relatedness, autonomy, personal transformations, and the development of eco-centric perspectives (e.g., Brymer & Schweitzer, 2013; Ewert & Yoshino, 2011; Hattie et al., 1997; Lee et al., 2020; Scarf et al., 2018; Sibthorp et al., 2008). While some of these benefits are shared with traditional sports (e.g., Balish et al., 2016), others appear to be directly related to the adventure context and/or the unique interactions with nature inherent in this form of tourism (e.g., Krein, 2007; Lynch & Dibben, 2016; Nisbet et al., 2011; Ryan et al., 2010; Willig, 2008). Within the larger discipline of sport tourism, travel involving observation or participation in a sporting event (Gammon & Robinson, 2003), the psychological experiences of adventure sport tourism participants have become the focus of increasing research attention (e.g., Filo & Coghlan, 2016; Hungenberg et al., 2016; Lynch, & Dibben, 2016).

Adventure sport tourism is a specific type of sport tourism focused on participation in hard and soft adventure activities, normally involving some form of competitive event (e.g., Costa & Chalip, 2005; Getz & McConnell, 2011). Adventure sport events include endurance competitions across a range of challenging adventure disciplines (e.g., kayaking or rafting, mountain biking, mountain running, orienteering, rock climbing, surfing), which can be completed by individuals or teams (Lynch & Dibben, 2016). Consequently, adventure sport events may have skill and training prerequisites for entrants and often attract groups of visitors (e.g., team members and/or support teams) for longer periods.

Over the past two decades, adventure sport tourism has become increasingly popular, as evidenced by the growth of highly competitive ‘extreme’ adventure racing events and series for

elite participants, such as Eco-Challenge, GODZone, XPD Expedition Race, Raid in France, and the Adventure Racing World Series. This trend is also reflected in the global growth of non-elite, adventure events and series catering to a range of participants, such as Questars adventure race series (UK), Yeti Adventure Challenge (Denmark), Island Quest Adventure Race (USA), and the increasing popularity of women-only adventure events (e.g., Spring Challenge, New Zealand). As the COVID-19 pandemic unfolded during the writing of this paper and many nations presently remain in some form of lockdown (as of January 2021), it is too early to predict how these trends may develop in the future. However, Sanjay Nepal (2020) offers initial insights which suggest that adventure travel will endure in a post-pandemic world, albeit with changes in relation to destinations and target markets. Nepal suggests that we should anticipate further diversification of adventure sport offerings, destinations, and target markets post-pandemic, with an emphasis on markets reflecting a heightened awareness of environmental health and personal well-being. While some research suggests that adventure sport tourism is well-suited to visitors seeking various well-being outcomes (e.g., Lynch & Dibben, 2016; Mykletun & Mazza, 2016), few studies have investigated the psychological processes underlying adventure sport tourism outcomes. In particular, little research has examined how hedonic psychological well-being (characterised by fun and pleasure) and eudaimonic psychological well-being (characterised by a sense of meaning and purpose) outcomes are achieved through adventure participation (Fletcher & Prince, 2017; Houge Mackenzie & Brymer, 2020).

Given the absence of psychological models to guide future research on adventure sport tourism, the purpose of the current paper was to propose a conceptual model of psychological well-being in adventure sport tourism and an agenda for future research in this area. The paper lays the groundwork for this model by examining the relationship between adventure sport tourism and

eudaimonic and hedonic psychological well-being in a number of ways. First, we analyse linking adventure sport tourism with psychological well-being. Second, we explore how leading and emerging psychological well-being concepts can explain the hedonic and eudaimonic well-being outcomes of adventure sport tourism participation. Third, we use this analysis to propose a conceptual model of the psychological processes underlying well-being outcomes for adventure sport tourists, and research propositions for testing this model.

As adventure sport tourism is situated at the nexus of sport, leisure and tourism, our analysis considers broader literature across sport and leisure disciplines on adventure sport to complement the tourism literature reviewed. Researchers can use the proposed model and associated research propositions to examine psychological well-being amongst adventure sport tourists. In addition, adventure sport tourism destinations and event organisers can use this model to enhance the design of adventure sport tourism events and optimise hedonic and eudaimonic well-being outcomes for participants. Via this conceptual model, we suggest promising areas of future research regarding adventure sport tourism and psychological well-being, and potential implications for the practice and design of adventure sport tourism.

Literature Review

The following section begins by defining adventure sport tourism, with reference to a range of illustrative destination events, and exploring motives associated with these diverse adventure events. Subsequently, the well-being outcomes of adventure sport are discussed alongside critical literature highlighting the need to better understand how these outcomes are attained. Promising psychological well-being explanations for these outcomes are then presented via an analysis of evidence linking basic psychological needs (e.g., Ryan & Deci, 2017) and connections to nature with psychological well-being in adventure contexts. This analysis of convergent evidence from

diverse sport and adventure contexts forms the basis for the conceptual model of psychological well-being in adventure sport tourism, and agenda for future research, that is proposed in the latter half of the paper.

Adventure sport motives and destination events

Although definitions of ‘adventure’ vary across academic literature, physical activity, uncertainty, personal skill development, pleasurable sensations, novelty, and voluntary seeking of physical and mental challenges (often, contentiously, framed as ‘risk’) in outdoor environments have been cited as key components (e.g., Boudreau et al., 2020). Adventure sport tourists often travel to remote destinations and develop ‘travel careers’ centered on competitive events that offer unique immersive experiences and social worlds (Aicher et al., 2020; Getz & McConnell, 2011; Krein, 2007). Hungenberg et al. (2016) found that adventure sport tourists have a range of motives related to both the sport itself, as well as the tourism destination and social outcomes. While opportunities to challenge oneself, experience nature, and foster meaningful friendships have been identified as key motives for a range of adventure participants, it is noteworthy that recent studies often refute traditional explanations of adventure sport motives linked to experiencing fear and risk-seeking (e.g., Brymer, & Gray, 2009, 2010; Brymer & Schweitzer, 2013; Frühauf et al., 2017).

Adventure sport tourism events encompass a range of active outdoor pursuits such as kayaking, rafting, mountain biking, rock climbing, hang gliding, winter sports, endurance or ‘off-road’ running. While nearly all of these activities are also practiced recreationally, the focus of this paper is on adventure sport tourists who travel to participate in structured competitive activities and/or regulated performance environments at destinations (e.g., Getz & McConnell, 2011). These adventure sport events often involve a combination of competitive activities such as running, mountain biking, paddling, and swimming as well as various skills such as navigation and

orienteering. These competitions are also offered at varying durations, such as ‘sprints’ (e.g., 3 to 6 hours), 12-hour races, or multi-day races. Adventure sport tourism events and destinations are diverse and may include multi-disciplinary races in nature-based settings (e.g., Ironman and Ironwoman events; Speights Coast to Coast in New Zealand), multi-day marathons (e.g., Marathon des Sables in Morocco), and charity-oriented adventure events that fund charitable foundations (e.g., Rat Race Scotland, a 105 km run-bike-kayak race which raises money for Children with Cancer UK). While high profile adventure sport events are often large and may span multiple days, there are also smaller-scale competitive adventure events open to novice participants, families, and businesses. One such event is the Anglesea Sprint Adventure Race, which provides options ranging from a 3 to 5 km run, a 10 to 20km mountain bike, and a 2 to 4 km kayak (<http://adventuresprint.com.au/>).

Traditional explanations of adventure sport, including adventure sport tourism, have framed participation motives in terms of risk or thrill-seeking, sensation-seeking dispositions (e.g., Cater, 2006; Lyng, 2005; Zuckerman, 2007), or ‘rush’ experiences (Buckley, 2012). Research increasingly suggests, however, that adventure should be re-examined in terms of how it can promote well-being outcomes for diverse populations (Clough et al., 2016). One example of this shift is the suggestion that eudaimonic motives, such as achieving challenging goals or creating valued relationships, provide a more useful way of understanding adventure sport experiences and well-being than hedonic motives, such as thrill or sensation-seeking (e.g., Willig, 2008). For instance, Getz and McConnell’s (2011) study of competitive mountain bikers found that they primarily travelled to compete in these specialised events, and that they were motivated by self-development through overcoming the challenges posed by diverse mountain biking events and destinations.

Increasingly, a range of eudaimonic and hedonic well-being outcomes have been linked to adventure activities, such as positive life transformations, personal development, mental restoration, enhanced emotion regulation, quality of life, goal achievement, self-esteem, self-determination, pro-social behaviours, and social connections (e.g., Brymer & Schweitzer, 2013; Castanier et al., 2011; Holland et al., 2018; Lee & Ewert, 2019). Research also suggests that the unique interactions with nature (e.g., ‘green’ or ‘blue’ outdoor spaces, such as forests or rivers; Barton & Pretty, 2010) afforded by adventure sport tourism may offer more substantive explanations of participant motivation and benefits than risk-focused explanations (e.g., Brymer & Gray, 2009; Kerr & Houge Mackenzie, 2018; Krein, 2007).

While the literature has progressed in terms of evaluating the psychological well-being outcomes of adventure in both tourism and non-tourism contexts, this approach has mainly been applied to adventure education, adventure recreation and non-competitive sport tourism (e.g., Coghlan, 2015; Filo & Coghlan, 2016; Lee & Ewert, 2019; Woodman et al., 2019) with minimal focus on adventure sport tourism involving competitive adventure activities at destinations. Furthermore, although research has documented a range of adventure benefits, there remains a need to map out psychological processes underlying the hedonic and eudaimonic outcomes for adventure sport tourists. In a review of subjective well-being (SWB) and ‘risk- tourism’, which included adventure sport tourism activities, Holm et al. (2017, p. 116) identified the need to “develop a theoretical model... to establish the linking mechanisms between SWB and risk activity [in tourism].” Similarly, Gibson (2004, p. 248) has long argued that sport tourism “should be looking to ... parent disciplines for guidance in shaping our future work in sport tourism...by using theories from sociology and social psychology to help us explain rather than to describe sport tourist's behaviors.” This issue persists in sport tourism (e.g., Gibson, 2017), and in adventure sport

tourism in particular.

The following sections addressed calls for the development of psychologically-based theories in sport tourism (e.g., Gibson, 2004) by analysing key psychological concepts that can help explain how adventure sport tourism enhances well-being. In subsequent sections, these conceptual building blocks are used to create a conceptual model of psychological well-being through adventure sport tourism and an agenda for future research.

Psychological well-being outcomes of adventure sport

Sport participation across tourism and non-tourism contexts, and across recreational and elite levels, has been shown to improve a range of psychological well-being outcomes, such as long-term subjective well-being and life satisfaction (e.g., Adie et al., 2012). As a result, positive psychology approaches (i.e., the study of human flourishing) have been increasingly used in sport and tourism research to explain well-being outcomes in these contexts (e.g., Coghlan, 2015; Doyle et al., 2016; Filo & Coghlan, 2016; Filep & Laing, 2018; Friesen & Orlick, 2011; Nawijn & Filep, 2016). Filo and Coghlan (2016), for example, examined how positive psychology can inform the design of charity sport tourism events to foster outcomes such as flourishing. Their work suggests that these tourism events can directly facilitate well-being by supporting intentional activity, motivation, activation of signature strengths, positive emotions, and the sharing of positive events. This growing body of research has examined how sport can be transformative and promote flourishing across a range of domains beyond *performance* excellence to also include *personal* excellence (e.g., life skills development, psychological well-being; Friesen & Orlick, 2011; Hardcastle et al., 2015; Miller & Kerr, 2002). Ferguson et al. (2019), for instance, identified multidimensional community support, personal accomplishments, persistent growth, and wholistic athletic excellence as core elements of flourishing in sport for indigenous women athletes.

Within traditional sport literature, basic psychological needs theory (a sub-theory within self-determination theory, Ryan & Deci, 2017) has emerged as a robust explanation for both the hedonic and eudaimonic well-being outcomes of traditional sport. However, this conceptual approach has rarely been used to account for the well-being outcomes of adventure sport tourism. The following section explores how basic psychological needs (Ryan & Deci, 2017) are linked to both hedonic and eudaimonic well-being outcomes, and the implications of these links for adventure sport tourism. This literature underpins a central component of the conceptual model of psychological well-being in adventure sport tourism proposed later in the paper.

The role of basic psychological needs in well-being

Diener et al. (1999) define subjective well-being both in terms of immediate emotions and longer-term overall life satisfaction. The key distinctions amongst these components are reflected by the two overarching approaches to well-being in the psychology and tourism literature: hedonic and eudaimonic well-being. Hedonic well-being is generally framed in terms of immediate enjoyment or happiness, characterised by positive affect and the absence of pain (Huta & Waterman, 2014). In contrast, eudaimonia is defined as a higher state of thriving attained through individual self-development and self-realisation (Filep & Laing, 2018). While eudaimonic well-being may involve hedonia, it may also result from circumstances devoid of immediate pleasure that are experienced as arduous or unpleasant (e.g., high negative affect), such as some of the challenges experienced in adventure sport. In adventure tourism activities, for example, Knobloch et al. (2017) found that overcoming negative emotions and challenges promoted eudaimonic well-being outcomes for adventure tourists (e.g., enhanced meaning). While the relative importance of hedonic (e.g., immediate, affective experiences) versus eudaimonic (e.g., meaning, fulfilment) well-being outcomes remains robustly debated (e.g., Huta & Waterman, 2014; Ryan & Martela,

2016), theorists generally accept that optimal psychological well-being includes both hedonic and eudaimonic dimensions.

Self-determination theory (Ryan & Deci, 2017) identifies specific mechanisms that may promote both eudaimonic and hedonic well-being outcomes in adventure sport tourism. Thus, it provides a robust foundation for understanding *how* adventure sport tourism may promote multidimensional psychological well-being. A key self-determination sub-theory, basic psychological needs theory (BPN), holds that satisfying the basic psychological needs for autonomy, competence, and relatedness is vital for psychological growth (e.g., intrinsic motivation) and well-being (e.g., life satisfaction; psychological health) (Ryan & Deci, 2017). *Autonomy* satisfaction results from the experience of volition, or free will, in one's behaviour, whereas autonomy is thwarted when an individual feels externally controlled. *Competence* satisfaction results from feeling capable of reaching personally-determined goals, whereas competence is thwarted by doubts about one's capabilities. *Relatedness* satisfaction results from feeling deeply connected to important others, whereas relatedness is thwarted by feeling disconnected or excluded from others. Considerable evidence demonstrates how satisfying these three needs facilitates psychological well-being (see Ryan & Deci, 2017 for a review), and frustrating these needs leads to ill-being (e.g., Vansteenkiste & Ryan, 2013).

Whether these basic needs are satisfied or thwarted is strongly influenced by the *motivational climate* within which the person is participating. Motivational climate refers to the goals and behaviours emphasised, and the values that are salient, in the social environment created by significant others (e.g., leaders, team members, peers; Adie et al., 2012; Cheon et al., 2012). From a self-determination perspective, a motivational climate can be either need-supportive or controlling (Ryan & Deci, 2017). A need-supportive motivational climate is created when

participants are provided with choices and rationales for tasks; their feelings are acknowledged; and opportunities for personal initiative, independence and connection to others are provided. Motivational climate has been found to significantly influence basic need satisfaction across a range of life domains (e.g., Adie et al., 2012; Cheon et al., 2012; Cheon et al., 2019; Mallett, 2005; Ryan & Deci, 2017); including adventure activities (e.g., Scarf et al., 2018).

The influence of the three basic psychological needs on well-being has been consistently documented across a range of life domains (e.g., work, Van den Broeck et al., 2010; education, Mouratidis et al., 2011) including sport (Adie et al., 2012) and adventure education (Scarf et al., 2018), but to date is quite limited in tourism. Beyond the BPN sub-theory, the broader umbrella of self-determination theory has been used to understand mobility-impaired travel (Zhang et al., 2017) and suicide travel (Yu et al., 2019); to compare motives among mountain biking tourists (Schlemmer et al., 2020); and to examine identity among ski tourists (Bosnjak et al., 2016). Aicher and colleagues have also successfully applied self-determination theory concepts (i.e., motivational quality) to explain sport tourism motivation for events such as marathons (e.g., Aicher et al., 2017; Aicher, Brenner, & Eddosary, 2015; Aicher, Karadakis, & Eddosary, 2015). Sirgy and Uysal (2016) recognised the potential for BPN in particular to inform tourism theory and advocated for models underpinned by self-determination theory concepts across tourism contexts. They further argue that “tourist activities that have elements of competence, relatedness, and autonomy are likely to contribute significantly to tourists’ eudaimonia” (p.488).

Basic psychological needs as mediators: Convergent evidence from adventure contexts

In tourism and non-tourism contexts, adventure activities have been shown to facilitate a range of well-being outcomes including: increased resilience, self-esteem, autonomy, competence, social connections, physical activity levels, enhanced connections to nature, and opportunities to

experience mastery and flow (e.g., Brymer & Gray, 2009; Brymer & Schweitzer, 2013; Ewert & Yoshino, 2011; Sibthorp et al., 2008; Woodman et al., 2019). Studies of both recreational and competitive adventure activities, such as rock climbing, whitewater paddling, downhill skiing, paragliding, and skydiving provide strong evidence that these activities support key constructs associated with well-being (e.g., agentic emotion regulation, self-esteem, flow; Buckley, 2012, 2020; Castanier et al., 2011; Willig, 2008). Although limited, research on competitive adventure suggests that self-determination theory constructs may be vital to understanding adventure sport tourists' experiences. For instance, Sklett et al. (2018) reported that ski jumping performance was related to psychological factors associated with well-being, such as negative affect, worry, self-efficacy, and flow; while Mykletun and Mazza (2016) found that psychosocial benefits of adventure tourism racing included positive social interactions, paratelic (play) states, flow, exploration, self-insight, and transformations. In addition, Lynch and Dibben (2016) identified enjoyment, challenge, progressively improving performance, opportunities for self-responsibility, and balancing challenge and skill as key intrinsic motivations for adventure racers. These authors further identified competition, social interaction, personal identity, aesthetics of place and novelty as key extrinsic motivations.

Partington et al.'s (2009) study of big wave surfing competitors also highlighted the critical role that psychological need satisfaction may play in determining positive versus negative outcomes for adventure sport tourists. Experiencing flow during surfing competitions was related to improved performance, moods, self-esteem and a sense of fulfillment. Conversely, surfers reported ill-being outcomes associated with feeling 'controlled' by their surfing (i.e., when surfing hindered their autonomy). These surfers reported being addicted to euphoric feelings associated with surfing and needing to continue competing despite negative physical or social outcomes.

Despite the lack of research examining adventure sport tourism and psychological well-being, these studies suggest that basic psychological needs may play a key mediating role in hedonic and eudaimonic well-being outcomes that emanate from adventure sport tourism participation.

While the BPN model has not been used to guide research into adventure sport tourism specifically, numerous studies have linked specific BPN constructs, such as enhanced autonomy, competence, or relatedness, with adventure pursuits. For example, the unique challenges posed by adventure tourism activities have been found to facilitate psychological well-being outcomes by fostering feelings of competence and accomplishment (e.g., Tsaur et al., 2015). Autonomy in particular has been consistently identified as a key mechanism via which adventure facilitates positive psychological outcomes (e.g., Lee et al., 2020; Sibthorp et al., 2008). For instance, the importance of autonomy in rock-climbing has been supported across adventure tourism and recreation contexts (e.g., Pomfret, 2006). MacGregor et al. (2014, p. 175) found that “regular climbing provides participants with an agentic emotional experience that then benefits their everyday functioning; such benefits are not derived from other (low-risk) activities.”

Enhanced social connection (i.e., relatedness) has also been identified as a key motivation underpinning a range of adventure pursuits (Ewert et al., 2013) and a core benefit of adventure sport events (e.g., Lynch & Dibben, 2016). Relatedness may be further bolstered by the sense that one has a positive impact on others, which may be particularly relevant to charity-oriented adventure sport tourism, wherein participants compete to support a charitable cause (e.g., Coghlan, 2015), as well as team-based adventure sport tourism. In many team-based adventure sport events, participants may each contribute a unique skill for the benefit of the team (e.g., navigational skills), lead a portion of the course, and/or rely on each other for social and emotional support over an extended period (e.g., multi-day races). Recent studies have shown that a sense of relatedness and

having a positive impact on others may foster psychological well-being in adventure sport and tourism contexts (e.g., Coghlan, 2015; Houge Mackenzie & Raymond, 2020).

Beyond opportunities to satisfy the psychological need for relatedness, adventure sport tourism activities may also foster a sense of having positive relationships with, and impacts on, the natural environment. For instance, engaging in adventure activities has been shown to promote eco-centric perspectives and pro-environmental behaviours, and to foster ‘intimate’ relationships with nature (e.g., Brymer & Gray, 2009, 2010). Thus, the wider adventure literature suggests that satisfaction of basic psychological needs for competence, autonomy and relatedness may be important mechanisms through which well-being outcomes emanate from adventure sport tourism, and that relationships with nature may also play a role in these outcomes.

The role of nature connectedness in well-being

Despite the robust evidence linking BPN concepts with well-being outcomes, the critical role of connecting with the natural environment is currently unaccounted for in this theory. Beyond psychological need satisfaction, adventure research has identified that the natural environment inherent in these activities may motivate participation and influence well-being outcomes (e.g., Brymer & Gray 2009; Budruk & Stanis 2013; Ryan et al., 2010), particularly in tourism contexts (e.g., Buckley, 2020; Getz & McConnell, 2011). Moreover, Buckley (2020) found that people may deliberately use nature-based tourism as mental health therapy. The central role of the natural environment in adventure experiences has been identified across a range of ‘extreme’ to ‘lower risk’ adventure activities. For instance, Taylor (2010) concluded that “natural landscapes, whether consumed dynamically or more passively appreciated, are important settings for mountain bikers” (p. 268). In a systematic review of tourism and psychological well-being, Garcês et al. (2018) also noted a unique association between nature and well-being and called for further research on this

topic. Even at the most ‘extreme’ end of the adventure spectrum, there is evidence that nature plays a critical role in facilitating well-being benefits (Brymer & Schweitzer, 2013). For example, Kerr and Houge Mackenzie (2018) reported that connecting with nature was a primary motivation for BASE jumping, rather than thrill-seeking. Studies by Brymer and colleagues have repeatedly identified connections to the natural world as fundamental to understanding ‘extreme’ adventure motivations and well-being outcomes in both recreational (e.g., Brymer & Gray 2009, 2010; Brymer & Schweitzer, 2013) and tourism (e.g., Peacock et al., 2017) contexts.

These findings complement research that highlights how exposure to nature is an important component of health and well-being though the lifespan (Capaldi et al., 2015), and that psychological well-being is enhanced by time spent in nature (Nisbet et al., 2011). Green spaces are associated with stress and illness reduction, as well as increased physical activity, social connections, positive emotions, and well-being (e.g., Frumkin et al., 2017). A recent systematic review of outdoor and adventure activities (Eigenschenk et al., 2019) identified that being active in natural environments has positive mental health effects (e.g., enhanced quality of life, happiness). These findings were particularly compelling across studies that showed enhanced psychological benefits from outdoor activities when directly compared with indoor activities. Eigenschenk et al.’s (2019) review concluded that the benefits of nature-based physical activity included support for basic psychological needs (autonomy, competence, relatedness), engagement, revitalisation, and decreased tension, anger, and depression. Further, Nisbet et al. (2011) found that ‘nature relatedness’ (a trait-like, subjective sense of connectedness with nature) was associated with changes in hedonic and eudaimonic well-being. Although considerable evidence illustrates the importance of connecting with nature for well-being, the literature has not directly

examined how nature connectedness influences psychological well-being outcomes for adventure sport tourists.

It is worth noting that nature contact has been correlated with a range of well-being outcomes in both adventure tourism and non-adventure contexts, such as positive affect, vitality, autonomy, personal growth, and life satisfaction (e.g., Capaldi et al., 2015; Frumkin et al., 2017; Hanna et al., 2019; Ryan et al., 2010). Both the frequency of nature contact and the degree of nature present are positively correlated with subjective well-being (e.g., Cartwright et al., 2018). These findings suggest that feeling connected to nature may have a direct relationship with well-being outcomes that is not accounted for by other factors, such as basic psychological needs. Based on considerable evidence that nature provides a range of direct well-being benefits, both for the general population and adventure participants, the construct of nature connectedness (i.e., a sense of psychological connection with nature) is included in the model below as a key mediator of hedonic and eudaimonic well-being outcomes in adventure sport tourism.

A Conceptual Model of Adventure Sport Tourism and Well-Being

Based on the evidence reviewed, we propose that adventure sport tourism facilitates both hedonic and eudaimonic psychological well-being via satisfaction of the three basic psychological needs (autonomy, competence, relatedness) and nature connectedness (see Figure 1). This model is designed to integrate existing lines of research, and to guide future theoretical and applied investigations of adventure sport tourism. As shown in Figure 1 (left side), well-being development begins with the adventure sport tourism context, which consists of two key domains: the adventure sport tourism activity itself (e.g., event structure, team or individual activity, motivational climate) and the tourism destination (e.g., the natural and social environments). This context will only satisfy

the three basic psychological needs if the motivational climate created by team members, other visitors, event organisers, and destination managers is need-supportive.

A need-supportive motivational climate is created when adventure sport tourists are provided with choices and rationales for tasks; their feelings are acknowledged (particularly those related to fear or anxiety in relation to risk); opportunities for personal initiative, independence and connection to others are provided; and expressions of overt control are avoided by event organisers and/or destination managers (see Mallett, 2005 for practical examples). Team members or fellow participants can also influence the creation of need-supportive motivational climates through similar means. If a need-supportive climate is created, then adventure sport tourists are expected to report greater satisfaction of their basic psychological needs (Adie et al., 2012; Cheon et al., 2019). Higher levels of need satisfaction will then result in better psychological well-being outcomes for adventure sport tourists (Ryan & Deci, 2017).

We argue that the positive influences of nature connectedness and basic psychological need satisfaction operate in tandem during adventure sport tourism experiences. We propose that the greater the level of nature connectedness an adventure sport tourist experiences at a destination, the more likely they are to report enhanced psychological well-being outcomes. Overall, in this model we propose that as levels of basic psychological need satisfaction and nature connectedness increase, adventure sport tourists will report correspondingly increased levels of key psychological well-being indicators, such as subjective well-being (i.e., positive affect, negative affect, life satisfaction), meaning, purpose, significance, and other established hedonic and eudaimonic well-being indicators (e.g., Ryan & Deci, 2017; Waterman et al., 2010) (right side of Figure 1).

Propositions for Future Research

Based on the literature reviewed and the conceptual model proposed above, this section

identifies a number of research propositions regarding the influence of adventure sport tourism participation on psychological well-being that warrant empirical examination. The proposed model is designed to support direct examinations of the psychological well-being effects derived from adventure sport tourism participation. Based on this model, we offer the following research propositions as suggested research questions/hypotheses that can guide future research. Specifically, the research propositions suggest a research agenda focused on investigations of how adventure sport tourism enhances psychological well-being via supporting basic psychological needs (i.e., autonomy, competence, relatedness) and fostering nature connectedness.

Proposition 1.0. Basic psychological need satisfaction in adventure sport tourism activities will have a strong relationship with enhanced psychological well-being outcomes for adventure sport tourism participants. The important role of a need satisfaction, with respect to well-being, has been examined in a number of life domains such as work (Van den Broeck et al., 2010), education (Mouratidis et al., 2011), physical education (Cheon et al., 2012, 2019), sport (Adie et al., 2012), and adventure education (Scarf et al., 2018). Building on these findings, we offer the following specific propositions regarding need-supportive strategies (i.e., motivational climate) for adventure sport event organisers, destination managers, and adventure team leaders and coaches as a means to examine the promotion of psychological well-being outcomes for adventure sport tourists:

Proposition 1.1: Enhancing autonomy and competence, by providing ‘challenge by choice’ options, particularly with regard to selecting appropriate risk levels (e.g., include adventure sport tourists in decision-making, such as tactical strategies, route options and risk management strategies) will lead to increased psychological well-being.

Proposition 1.2: Providing rationales for tasks (e.g., explaining the logic behind key decisions, such as activity location choices or risk management strategies) will help participants develop competence in relation to accurately judging risk and making effective decisions regarding activity options, locations, and group management, which will in turn enhance well-being outcomes.

Proposition 1.3: Providing opportunities for adventure sport tourists to co-create event activities (e.g., fostering autonomy via empowering participants to select activity locations, lead race sections or specific activities) will enhance psychological well-being.

Proposition 1.4: De-emphasising risk and reframing adventure events in terms of personal challenge and inclusion will increase psychological well-being. We propose that this will be particularly relevant in elite and/or highly competitive adventure sport tourism subcultures that may promote ever-increasing levels of risk-taking for participants to ‘prove’ their value to teammates or sponsors, and/or to reinforce an image of ‘fearlessness’ (e.g., Hsu, 2019; Laver et al., 2017). Well-being will be optimised by ensuring that participants can voice any concerns about activities they do not deem safe without fear of exclusion.

Proposition 1.5: Minimising ego-involvement of adventure sport tourists (e.g., emphasising self-referenced competition goals in communications) will lead to increased psychological well-being. Again, this may be particularly relevant for elite events involving highly competitive adventure sport tourists who may feel pressured to engage in higher levels of risk-taking (e.g., Hsu, 2019; Laver et al., 2017).

Proposition 1.6: Supporting relatedness by actively fostering an ‘adventure sport community’, characterised by a shared purpose and philosophy and positive enduring social connections, will lead to enhanced psychological well-being. This might involve event organisers,

destination managers, and participants actively espousing and modelling cooperative competition amongst adventure sport tourists, and ensuring that athletes consider the entire team, the larger event, and the host community in their decision-making. An adventure sport community, and associated well-being benefits, could also be fostered over time by encouraging adventure sport tourists to consider volunteering at future events (e.g., assisting in event planning and coordination, serving on governing bodies, and/or marshalling) or to act as mentors for novice adventure sport participants.

Proposition 2.0. Fostering nature connectedness will lead to increased psychological well-being for adventure sport participants. The following propositions emanate from research in adventure recreation (e.g., Eigenschenk et al., 2019; Nisbet et al., 2011) and public health (e.g., Capaldi et al., 2015).

Proposition 2.1: Providing opportunities for participants to feel psychologically connected with nature will contribute to enhanced psychological well-being. This may be achieved by encouraging purposeful selection of outdoor venues for distinct types of adventure sport tourism experiences. We recommend investigating the influence of a variety of unique natural areas and landscapes (e.g., blue and green spaces, back country, urban parkland), on well-being outcomes for adventure sport tourists. As a corollary to this, we recommend research examining indoor versus outdoor versions of adventure sport activities (e.g., rock climbing vs. indoor climbing walls). When considering the increasing ‘indoorisation’ of many adventure activities, the proposed model suggests that there are important benefits afforded by the natural environments in which adventure sports are traditionally practiced. Therefore, the well-being outcomes of both indoor and outdoor adventure should be further examined and considered when designing adventure sport tourism events.

Proposition 2.2: Providing opportunities for participants to mindfully connect with the natural landscapes (e.g., green spaces, vistas, unique ecosystems) they compete in will lead to increased psychological well-being. Encouraging a mindfulness approach in adventure sport tourism events, which entails “paying attention on purpose, in the present moment, and non-judgmentally to the unfolding of experience moment by moment” (Kabat-Zinn, 2003, p. 145), may further facilitate participants’ sense of connection to the environments their events unfold within. Such a ‘mindful adventure’ approach would involve encouraging participants to mentally focus on the natural environment (e.g., via provision of mindfulness training techniques prior to an event and/or signage and reminders at key points during an event), in addition to the physical and technical challenge aspects of adventure sports.

Proposition 2.3: Providing opportunities for adventure tourists to address potential environmental impacts of their adventure sport activities and engage pro-environmental behaviours will lead to enhanced psychological well-being. This might include adopting commitments that go beyond mitigation of environmental impacts (e.g., Leave No Trace sustainability practices; Marion, 2014) to those which actively enhance the natural environments that support an adventure sport event. Guidelines that may help direct these efforts include principles and checklists for sustainable adventure sports (e.g., GreenShoot Adventure Races Sustainable Event Checklist; UN Sports for Climate Action Framework. This might also entail providing adventure sport tourists the opportunity to donate a percentage of their entry fee (or any potential prize money) to a local environmental protection charity or a non-profit organisation.

Research Design and Measurement

Based on our proposed conceptual model, and associated research propositions, we offer the following suggestions for applied research opportunities. Below we discuss a range of potential

mixed-methods designs to evaluate the model and research propositions, as well as identifying established measurement options for assessing the mediators and psychological well-being outcomes presented in Figure 1.

Potential Research Designs. Mixed-methods research will allow investigators to directly examine the proposed relationships within the conceptual model and empirically assess how adventure sport participation, nature connectedness and basic need satisfaction may influence psychological well-being development. Sequential exploratory designs (Creswell et al., 2003) are an effective means of evaluating the proposed model by first qualitatively exploring the proposed concepts and relationships, and then using these findings to inform the development of subsequent quantitative designs (e.g., scale development). Sequential exploratory designs offer a widely recognised approach for researchers seeking to first explore proposed concepts and relationships, and then follow up with complementary quantitative data collection, such as questionnaires (e.g., Hanson et al., 2005). This approach may be particularly useful to evaluate the role of emerging concepts such as nature connectedness, and to identify appropriate measurement tools for these constructs. These sequential investigations should also evaluate these proposed relationships across a diverse range of adventure sport experiences (e.g., individual or group; land or water-based; short or extended), and age cohorts (e.g., adolescents, older adults).

In addition to sequential exploratory designs, potential relationships between basic need-satisfaction, nature connectedness, and psychological well-being outcomes can be further evaluated using a wide range of qualitative and quantitative methods. Within-study comparisons, interrupted time-series designs, success case method designs with time-series elements, qualitative impact analyses, and case studies each provide unique ways of assessing the proposed model (Coryn et al., 2009; Mohr, 1999; Scriven, 2008; Shadish et al., 2002). Longitudinal designs can

also experimentally examine the efficacy of interventions aimed at promoting basic psychological need satisfaction and psychological well-being outcomes.

Potential Measurement Options. A range of psychometrically valid measures of basic psychological need satisfaction have been validated across diverse life domains, such as (i) health (Williams et al., 1999), (ii) sport (Ng et al., 2011), and (iii) life in general (Kashdan et al., 2006). For example, Rocchi et al.'s (2017) Interpersonal Behaviours Questionnaire (IBQ) can be used to assess need-support and need- thwarting relative to autonomy, competence and relatedness. While nature connectedness measures have been employed less frequently than SDT instruments, the Connectedness to Nature scale (Mayer & Frantz, 2004) and Nature Relatedness scale (Nisbet et al., 2009) are reliable measures that have been effectively used to operationalise this concept in diverse contexts.

In the absence of a universally accepted measure of psychological well-being outcomes, researchers can either seek to develop a scale purposefully designed for the adventure sport context (e.g., via the sequential exploratory design approach outlined above), or employ some of the robust psychological well-being indicators employed in the psychological literature. For example, researchers could follow the approach employed by Kouali et al. (2020) in applying key constructs from the SDT and eudaimonic well-being literature to develop a eudaimonic well-being measure for traditional sports. Likewise, adventure sport researchers could replicate this approach to develop a eudaimonic wellbeing measure for adventure sport tourism contexts. Alternatively, researchers can employ established measures of psychological well-being (e.g., Ryff & Singer, 2008), subjective well-being and life satisfaction (e.g., Diener et al., 2010), flourishing (e.g., Diener et al., 2010; Su et al., 2014) subjective happiness (Lyubomirsky, 2001), and subjective vitality (Bostic et al., 2000) to assess the relative influence of the proposed mediators on hedonic

and eudaimonic well-being outcomes in adventure sport tourism. While these indicators are not exhaustive, and some are more targeted than others, collectively they reflect widely employed measurement options that can be applied to test the proposed model in future research.

Conclusion

Better understanding of how, when, and why adventure sport tourism may promote psychological well-being has important implications for individuals and society. The potential for adventure sport to become a mainstream approach to promoting not just physical health, but also mental health, for the general population has been identified but remains unrealised (Clough et al., 2016). Framing these unique sport tourism activities in terms of underlying psychological mechanisms (i.e., facilitating basic psychological need satisfaction and nature connectedness) aids our understanding of how adventure sport tourism may facilitate hedonic and eudaimonic psychological well-being. This approach provides a conceptual model for examining adventure sport tourism, which seeks to explain not simply *that* well-being outcomes are achieved, but *how* they are achieved (e.g., Gibson, 2004, 2017) and, in doing so, also moves beyond narratives suggesting that adventure sport is (i) mainly about risk or (ii) inherently ‘good’ for all participants (e.g., Brymer & Gray, 2010; Brymer & Schweitzer, 2013). Thus, this paper advances sport tourism research by proposing a conceptual model of how, and under what conditions, adventure sport tourism participation can enhance psychological well-being. We offer this model, and the associated research propositions, designs and measurement tools, as a potentially useful conceptual foundation for future research and applied opportunities. We hope that these foundations can ultimately help a range of adventure sport tourism stakeholders facilitate positive adventure sport experiences.

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Figure 1. A conceptual model of adventure sport tourism and psychological well-being.

