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A National Inquiry of Mountain Bikers: Applying the Benefits of Hiking Scale

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Mountain biking is currently one of the fastest growing recreational activities in the world (Outdoor Foundation, 2013), but documenting the benefits has been challenging. The Benefits of Hiking Scale (BHS), a 38-item instrument assessing the values and benefits of using trails, has been used in national and state park trail research (Freidt, Hill, Gómez, Goldenberg, & Hill, 2010; Hill et al., 2014). The BHS is theoretically grounded, reflecting Gutman's (1982) means-end theory and reflecting Driver's (1998) leisure benefits. Gutman identified three key concepts within means-end: *attributes, consequences,* and *values*. Means-end theory links the physical objects (e.g., trail) and the means with the outcomes/personal values (e.g., health) of the individual, the ends (Klenosky, Frauman, Norman, & Gengler, 1998). A benefit of leisure, as defined by Driver (2008), is an outcome that causes (a) a change resulting in a more desirable condition (improvement) over a previous existing state, (b) the continuance of a desired condition in order to prevent an undesired condition from occurring, or (c) the realization of a satisfying (psychological) experience with regard to recreation. Research demonstrating objective, measurable benefits is needed to justify funding, advocate for and guide the development of new facilities, improve best practices for management and programming, and increase participation (Driver, 2008). Empirical evidence of health benefits is also instrumental in positioning and promoting recreation and parks as a means to address current public issues, especially those related to health and quality of life. Recreation professionals should not assume that recreation is inherently rewarding, but instead should identify and measure outcomes (Allen & Cooper, 2003). The purpose of this study was to examine findings associated with mountain biking in the United States by using a modified BHS.

Method

Using a convenience sample, the researchers collected data with a self-administered online survey through the International Mountain Biking Association's (IMBA) electronic mailing list and posted on its website in the summer of 2015. For the purposes of this study, the word *hiking* in the BHS was substituted with the word *biking* to reflect the specific recreation activity context related to trail use; thus, the modified BHS is the Benefits of Biking Scale (BBS) in this study.

The survey included the BBS items, which comprise 14 means-end questions and 14 Perceived Health of Recreation Scale (PHORS) benefits questions (Gómez, Hill, Zhu, & Freidt, 2016). The survey also included demographic questions, as well as open-ended questions such as this: What would you like to see added to or taken away from mountain bike trails and/or trail systems?

Results

The national sample (N = 1,319) represented all states except North Dakota and Delaware. The sample represented the following demographic aspects: gender (80.7% male), race (92.2% White), marital status (66.0% married), and IMBA membership (49.9% members). The PHORS was found to have evidence of acceptable psychometric properties in a number of studies (Gómez et al., 2016).

At a Virginia state park, Hill, Smith, Usher, and Gómez (2015) found no significant differences between IMBA/non-IMBA members and expected values from mountain biking. However, significant differences were found between the attributes ascribed to mountain biking and health consequences expected from mountain biking, with IMBA members scoring higher on both attributes and consequences than non-IMBA members. No differences were found with respect to gender on attributes, but differences were found between men and women and their perceptions of values and consequences, with women scoring higher on both these dimensions. No differences were found between married/nonmarried bikers. No significant differences were found between age groups (13–34, 34–40, 41–50, 51+) and consequences or attributes; however, the 13–34 group viewed perceived values significantly higher than their older counterparts (41–50 and 51+) did.

Hill et al. (2015) also found no significant differences between IMBA/non-IMBA members and prevention benefits from mountain biking. However, significant differences were found between the improvement and psychological benefits of mountain biking, with IMBA members scoring higher on both improvement and psychological benefits than non-IMBA members. Differences were found in terms of prevention and psychological benefits, with men scoring higher on prevention and women scoring higher on psychological benefits. Differences were found related to improvement and prevention benefits. No significant differences were found between age groups and improvement or psychological benefits; however, the 13–34 age group cohort was significantly lower than the 51+ age group cohort in prevention benefits. Semiqualitative data indicated a strong desire for improved flow (n = 1,004), long route options (n = 777), technical (n = 761), signage (n = 733), and bike-specific trails (n = 707). Semiqualitative data also indicated a desire for decreased or eliminated use restrictions (n = 300), multiuse trails (n = 164), and steep climbs (n = 123).

Discussion

This study explored the differences between IMBA and non-IMBA members, and specific trail interests of mountain bikers. Findings from the larger study indicate that IMBA members scored higher on perceived values of mountain biking, as well as improvement and psychological benefits (Hill et al., 2015). It seems that mountain bikers who also belong to IMBA as members gain more value than nonmembers because they are more attached to the sport in its entirety, not just as participants. This is similar to previous research on place attachment and Appalachian Trail hikers (Hill et al., 2014). In addition, this study explored the various elements users would like to see added to or taken away from mountain bike trails and/or trail systems. Open-ended feedback indicated that riders want trails with better flow, longer trails, and trails designed with their specific interests in mind.

Implications for Practice

Public land managers can use this research to guide decisions regarding resource allocation and landscaping of trails. In addition, this research may be useful to outdoor recreation programmers to better understand the "participants" while on park trails and to allow for better recognition of benefits of biking on trails. For example, trail administrators could market the benefits of biking trails differently to women by focusing on the psychological benefits, and they could focus on prevention benefits, particularly to older men (Hill et al., 2015). Last, the data indicate that both men and women perceive similar improvements to their health from biking, but women enjoy the psychological (social) aspects of biking more than men do. Outdoor advocacy groups could also use this research to promote the benefits of mountain biking, as well as to inform their marketing and recruitment strategies. Exploring the needs of mountain bikers, and their differences, might help isolate motives for mountain biking. The building of mountain parks is at an all-time high; researchers need to further investigate the benefits and values for users. These new data will be useful for park managers and programmers to effectively identify the needs of mountain bike trail users and better target market their product.

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