The Relationship of Young Adults’ Health and Their Sports Participation

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Traditional sport participation has been associated with improved physical, psychological, and social skill outcomes. Engagement in action sports has increased considerably since the late 1980s, yet associated research is limited. This study examines and compares young adults’ health and their participation in action sports, traditional sports, both sports types, or in neither of the sports types. Data were collected from 687 traditional public university students who self-reported their sport participation history, frequency and mode. Health was assessed with the young adult Salutogenic Wellness Promotion Scale (SWPS-YA). While no significant differences, positive or negative, in overall health benefits between sports types were found, differences in the health behavior across the seven measured domains by sport participation were observed. In all cases, involvement in action or traditional sports was associated with greater health benefits than non-participation suggesting youth should be encouraged to participate in either or both sport types for health promotion.

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Sports such as baseball, basketball, volleyball and football have a range of positive outcomes associated with participation. For example, research has shown that participation in these “traditional” sports can generate positive educational, health, and socio-emotional outcomes (Le Menestrel & Perkins, 2007) enhanced self-esteem, higher rates of high school graduation (Hagen, 2005) as well as a significantly lower probability for emotional distress and suicidal behavior (Harrison & Narayan, 2003). According to Pate, Trost, Levin, and Dowda (2000), sport participation is widespread among high school students in the United States and is associated with several positive health behaviors such as vegetable consumption, and fewer negative health behaviors including a reduced likelihood to use illegal drugs and a reduced likelihood of cigarette smoking.

In the last 20 years, another category of sport, action sports, has emerged as a mainstay in American communities. Although there is no one definition of action sports, they share the characteristics of being non-traditional and possess risk, danger, rules and techniques atypical of mainstream sports (Bennet & Henson, 2003). Some examples of action sports include: surfing, skateboarding, snowboarding, eco-challenge, and rock climbing (Bennet & Henson). Action sports are differentiated from traditional sports since they evolved from a subculture with elements of non-traditional music and lifestyles, such as the desire to be different, an anti-establishment attitude, and a desire for separation from traditional sports (Buresti & Rosenberger, 2006). Action sports are also different from traditional sports because they emphasize style along with increased risk (Wagner, 2008).

The number of participants in action sports has grown significantly since the late 1980s (Puchan, 2004). According to Cianfrone and Zhang (2006), close to 100 million people participated in action sports during the year 2000. Bennet and Henson (2003) estimated that currently more people in the Generation Y population (born from 1980-1997) are interested in skateboarding than baseball, long identified as America’s pastime. Ewert and colleagues (2006) reported that action sports showed the highest participation growth in all U.S. sports from 1998-2001. According to Bryant and Roskos-Ewoldsen (2003), action sports have demonstrated the greatest increase in sports spectatorship. They also report that participation in action sports has increased 70% among people born from 1977-1989.

Despite the rapid increase in participation, research on any beneficial outcomes associated with action sports has lagged. What research there is on action sports has centered on medical data describing accidents and injuries. For example, Kirkpatrick, Hunter, Janes, Mastrangelo, and Nichols (1998) studied the distribution and type of ankle and foot snowboarding injuries. Another example is a study conducted over 10 seasons (1988 to 1998) in which survey data from 47 medical providers around Colorado ski resorts reported 7,430 snowboarding-related injuries (Idzikowski, Janes & Abbott, 2000). Forsman and
Eriksson (2001) performed a study designed to explain and describe the injury pattern that occurs among skateboarders.

The purpose of this study was to examine the relationship between participation in action sports and young adults’ positive health. Young adults’ health can be predicted according to their frequency, duration, and mode of participation in health behaviors (Becker, et al., 2009).

Theoretical Foundation

The notion of positive health is the presence of physical, mental and social well-being which is more positive than just the absence of negative health, disease and infirmity. The concept of positive health is derived from the broader concept of salutogenesis. Salutogenesis, as developed by Aaron Antonovsky, provides a health-causing or promoting framework to guide actions in achieving these ideals. Salutogenesis is the study of the origins or genesis of health and the exploration of methods to achieve optimal health (Antonovsky, 1980).

Salutogenesis underlies a model described by Becker and colleagues (2008, 2009). This model, the Holistic Ecological Assessment of Lifestyles for Total Health or H.E.A.L.T.H. model, illustrates the dynamic influence positive and negative factors have on overall health (Becker, Moore, Whetstone, Glascoff, Chaney, Felts, &Anderson, 2009). The H.E.A.L.T.H. model is based on seven dimensions that influence health: physical, social, emotional, spiritual, intellectual, vocational, and environmental. As shown in Figure 1, each dimension is represented by an individual oval, with each oval divided into both a positive (white) and negative (black) health factor. These positive and negative based factors influence one’s health where positive factors add to health while negative factors decrease health. This approach provides the theoretical foundation for this study. (Figure 1)

Methods

Sampling and Data Collection

The target population for this study is young adults born between 1980 and 1997. Individuals from these birth years are considered to be members of Generation Y and have the greatest likelihood of action sport participation (Bennet & Henson, 2003). To reach this age group, undergraduate students enrolled in general studies courses at a public university in the south were sampled. Census sampling was utilized and questionnaires were distributed to all enrolled students in any section of a required freshman/sophomore general education course. After receiving approval from the University Internal Review Board and
following training by the lead researcher, the class instructor administered the survey during a face-to-face class session. Participation was voluntary and no incentives were provided for respondents. Data were collected during four weeks in early winter, 2009. Respondents born before 1980 or after 1997 were excluded from analysis.

Instrumentation
This study utilized the Salutogenic Wellness Promotion Scale, Young Adult (SWPS-YA) version to assess participants’ health. The SWPS-YA is a positive-health based assessment tool that uses 25 items on a 5-point Likert-type scale (Becker, et al., 2009) with response options of never to always. The instrument assesses the frequency in which people participate in health promoting behaviors along the seven interrelated dimensions of health illustrated in the HEALTH Model. For example, questions about social wellness ask respondents about actions they take to develop social connections such as beneficial communication and pleasant interactions with family and friends (Becker et al, 2009). Each individual dimension of health is described using a mean score. Overall health assessment is calculated as the grand mean of seven dimension scores. Past investigations have reported overall scale reliability of 0.89 and the Cronbach alphas of each subscale were above 0.7 (0.70-0.86), with the exception of the environmental subscale, the alpha of which was 0.60 (Becker, et al., 2009).

In the current study, overall health scores were deemed very reliable ($\alpha = .78$) and six of the seven dimensions achieved adequate reliability ($\alpha > .70$). Only items indicating “vocational” health-promoting behaviors did not meet this standard ($\alpha = .61$).

Respondents were also asked to indicate their sport participation. Both traditional sports and action sports were defined for respondents, and a sample of each sport type was provided on the questionnaire. Respondents were then instructed to list each sport in which they participated and to indicate if they felt that this was a traditional sport or an action sport. From their responses on these questions, respondents were classified as participants in (a) traditional sports only, (b) action sports only, (c) both traditional sports and action sports, or (d) neither traditional or action sports. Additionally, respondents were instructed to indicate, on average, the number of days per week that they participate in that sport and how many years of participation they had accrued. Data related to respondents’ frequency and duration of sports’ participation was used for descriptive purposes. The only demographic information collected from the sample was respondent birth year and gender.
Figure 1

H.E.A.L.T.H. Model
Holistic Ecological Assessment of Lifestyles for Total Health

Description: This model represents both positive and negative influences on health. The surrounding 7 ovals represent the 7 dimensions of health and each dimension has a representative positive influence in white and a representative negative influence in black. There are plus signs emanating positive influences, indicating the positive influence or addition it would be to health potential and negative signs emanating negative influences, indicating the negative influence or subtraction it would be from health potential. This model infers that an assessment of health needs to include both the positive and negative influences on health to fully understand health and to learn how it can be influenced.
Analysis

The association of (a) sports type, (b) frequency of participation and length of time playing a sport and (c) that respondent’s health were described with Kendall’s Tau B correlations. Analyses of variance (ANOVA) tests were undertaken to compare the relationship between the respondents’ health and their sport participation. An ANOVA was conducted to test for group differences in overall health. Additional ANOVAs were conducted to understand if health-promoting behaviors (dimensions of wellness) were related to individuals’ sport participation.

Results

Respondent Characteristics and Sport Participation

Of the approximately 1200 questionnaires distributed, 702 were completed. Fifteen respondents were born before 1980 and were removed from the analysis, resulting in 687 useable questionnaires (57% response rate). No respondents were born after 1997. There were 276 male respondents comprising 40.2% of the sample and 404 female respondents comprising 58.8% of the data set. Seven participants (1.0%) did not indicate gender. The year of birth of the participants ranged from 1956-1991. Most respondents clustered in birth years 1989-1991 (ages 18-20).

With regard to action sports, while almost half did not respond (337, 49.1%), the largest group of respondents (105, 15.3%) indicated they had participated in action sports for 0.1 to 5 years. (Table 1) With regard to traditional sports, the largest group of respondents (273, 39.7%) indicated they had been involved with traditional sports for 10.1-15 years. Ninety-four participants did not respond to this question. (Table 2)

The most popular traditional sport reported was basketball, accounting for 19.9%, or 117 participants of the sample. The next most popular traditional sports were soccer and baseball (n=82, 14%; n=54, 9.2% respectively). The most common action sports among participants were surfing, snowboarding, and skateboarding. Surfing was the most popular response (n= 52, 20.5%) followed by snowboarding (n=50, 19.7%) and skateboarding (n=42, 16.5%).

As a group, respondents had an overall SWPS score of 3.51. As shown in Table 3, respondents of all sports types tended to report the highest engagement in the social area. Intellectual and physical areas showed the second and third highest dimension scores. On average, the spiritual area had the lowest score, suggesting lower engagement in spiritual activities, but it also registered the largest standard deviation. (Table 3)
Correlation Analysis

Non-parametric correlation analyses were conducted to identify significant associations between respondents’ years of sports participation, average frequency of sports participation and respondent health. Overall health, as measured by the SWPS was significantly and positively associated with respondents’ years of participation in traditional sports ($r_b = .063$, $p < .05$). Examination of results indicates significant associations with overall health began after one year and climbed steadily. After five years of continued participation in traditional sports, no further gains in overall health were realized. Only 0.4% of the variance is explained by the model ($r = .0039$), thus the findings should be considered with caution.

Next, health was significantly and negatively associated with frequency of participation in traditional sports ($r_b = .095$, $p < .05$). To understand the threshold at which participation began to have a negative effect, mean SWPS scores were explored to determine a threshold of ideal participation frequency among this sample. Findings indicate that a positive relationship with health was evident for participants engaged in sports participation one and two days per week. Participation of three and four days per week did not have a significant relationship with overall health. As participation reached five days per week or more, the negative relationship emerged. Only 0.9% of the variance is explained by the model ($r = .0090$), thus these findings should be considered with caution.

Of the seven health dimensions measured, only the physical and emotional subscales were significantly associated with respondents’ duration and frequency of sport participation. Years of participation in traditional sports were significantly and positively associated with engagement in physical and emotional wellness activities ($r_b = .212$, $p < .01$; $r_b = .136$, $p < .01$). Years of participation in action sports were also significantly and positively associated with engagement in physical and emotional wellness activities ($r_b = .115$, $p < .05$). Similar to the finding for overall health, frequency of participation in traditional sports was significantly and negatively associated with respondents’ emotional activities ($r_b = -.232$, $p < .01$; $r_b = -.163$, $p < .01$).

Analyses of Variance

To examine the relationship of sports type and health, an analysis of variance was conducted (Table 4). The relationship between total SWPS score and sports type was not significant. This indicates that participants in all four sports classifications (both action and traditional sports, action sports only, traditional sports only, no sport participation) demonstrated equivalent health.
Next, specific dimensions of health were compared across each sports type. Each dimension score indicates an individual's engagement in health promoting behavior in that domain. For example, items in the physical health dimension ask participants about their physical activity and nutrition habits. Thus, a higher score in this dimension indicates positive physical health habits. When averaged with the other six dimensions, their overall health is determined.

Since years and frequency of traditional sport participation demonstrated significant associations with the physical health dimension, these factors were included as covariates in the model. Similarly, years of traditional sport participation, years of action sport participation and frequency of traditional sport participation were included as covariates when emotional health was tested as the dependent variable. (Table 4)

When comparing means of the SWPS subscales (physical, environmental, vocational, emotional, spiritual, intellectual, social) by sports type, findings indicated that there were significant relationships between sports type and three of the subscales (physical, emotional, environmental). The results and estimated marginal means for each group of respondents are summarized in Table 3. Not surprisingly, findings for the physical dimension indicate that participants of both action and traditional sports had the highest scores in the physical health-promoting behaviors (M = 3.64). Participants in traditional sports or action sports had the second highest mean scores for physical health (M = 3.51). Respondents who engaged in neither sports type reported significantly lower scores (M = 3.23) related to physical health promoting behaviors.

The emotional subscale also indicated a significant relationship according to sports type. Participants of neither sports type again reported the lowest mean score (M = 3.23). Participants of both action and traditional sports type demonstrated engagement in more emotional health promoting actions (M = 3.68, 3.56).

Finally, the environmental subscale also showed a significant relationship between sports type and SWPS subscale mean scores. Mean scores indicated that respondents who participated only in action sports showed more engagement in health promoting environmental activities (M = 3.68). Participants in both sports types or neither sports type had statistically similar means in this dimension (M = 3.42, 3.46), whereas participants reporting only traditional sport participation recorded the lowest engagement in health promoting actions related to the environment (M = 3.23). (Table 5)
Table 1

Respondents’ Action Sports Participation

<table>
<thead>
<tr>
<th>Years</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 years</td>
<td>87</td>
<td>12.6%</td>
</tr>
<tr>
<td>&lt; 0.1-5.0 years</td>
<td>105</td>
<td>15.3%</td>
</tr>
<tr>
<td>5.1-10 years</td>
<td>95</td>
<td>13.8%</td>
</tr>
<tr>
<td>10.1-15 years</td>
<td>48</td>
<td>7.0%</td>
</tr>
<tr>
<td>15.1+ years</td>
<td>15</td>
<td>2.2%</td>
</tr>
<tr>
<td>No Response</td>
<td>337</td>
<td>49.1%</td>
</tr>
<tr>
<td>Total</td>
<td>687</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Table 2

Respondents’ Traditional Sports Participation

<table>
<thead>
<tr>
<th>Years</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>24</td>
<td>3.5%</td>
</tr>
<tr>
<td>&lt;1-5.0</td>
<td>79</td>
<td>11.5%</td>
</tr>
<tr>
<td>5.1-10</td>
<td>144</td>
<td>21.0%</td>
</tr>
<tr>
<td>10.1-15</td>
<td>273</td>
<td>39.7%</td>
</tr>
<tr>
<td>&gt;15.1</td>
<td>73</td>
<td>10.6%</td>
</tr>
<tr>
<td>No Response</td>
<td>94</td>
<td>13.7%</td>
</tr>
<tr>
<td>Total</td>
<td>687</td>
<td>100.0%</td>
</tr>
</tbody>
</table>
### Table 3

**A Summary of Participants’ SWPS Health Scores according to 7 Domains of Health-Promoting Behaviors**

<table>
<thead>
<tr>
<th>Dimensions of Wellness</th>
<th>Both sports types (n=198) Mean (SD)</th>
<th>Traditional sports (n=291) Mean (SD)</th>
<th>Action sports (n=78) Mean (SD)</th>
<th>Neither sports type (n=100) Mean (SD)</th>
<th>All Respondents n (= 648) Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social</td>
<td>4.41 (0.61)</td>
<td>4.42 (0.62)</td>
<td>4.47 (0.60)</td>
<td>4.34 (0.74)</td>
<td>4.40 (0.65)</td>
</tr>
<tr>
<td>Spiritual</td>
<td>2.93 (1.39)</td>
<td>3.05 (1.46)</td>
<td>2.67 (1.58)</td>
<td>3.13 (1.45)</td>
<td>2.99 (1.48)</td>
</tr>
<tr>
<td>Intellectual</td>
<td>3.32 (0.87)</td>
<td>3.47 (0.88)</td>
<td>3.68 (0.82)</td>
<td>3.44 (1.04)</td>
<td>3.42 (0.90)</td>
</tr>
<tr>
<td>Vocational</td>
<td>3.18 (1.22)</td>
<td>3.26 (1.11)</td>
<td>3.19 (0.85)</td>
<td>3.33 (1.03)</td>
<td>3.22 (1.09)</td>
</tr>
<tr>
<td>Physical</td>
<td>3.65 (0.69)</td>
<td>3.23 (0.82)</td>
<td>3.51 (0.87)</td>
<td>3.23 (0.82)</td>
<td>3.54 (0.76)</td>
</tr>
<tr>
<td>Emotional</td>
<td>3.79 (1.28)</td>
<td>3.68 (0.82)</td>
<td>3.56 (0.56)</td>
<td>3.41 (0.84)</td>
<td>3.62 (0.95)</td>
</tr>
<tr>
<td>Environmental</td>
<td>3.42 (0.87)</td>
<td>3.23 (0.98)</td>
<td>3.68 (1.01)</td>
<td>3.46 (0.99)</td>
<td>3.36 (0.96)</td>
</tr>
<tr>
<td>Overall</td>
<td>3.54 (0.60)</td>
<td>3.54 (0.59)</td>
<td>3.55 (0.54)</td>
<td>3.45 (0.65)</td>
<td>3.51 (0.60)</td>
</tr>
</tbody>
</table>

Note: Responses are means measured on a scale from (1-5) where higher scores indicate greater health.
Table 4

Analysis of variance comparing overall wellness by sports type

<table>
<thead>
<tr>
<th>Type of Sports</th>
<th>Sum of Squares</th>
<th>DF</th>
<th>Mean Square</th>
<th>F</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>3.98E6</td>
<td>1</td>
<td>3.98E6</td>
<td>16442.349</td>
<td>0.000</td>
</tr>
<tr>
<td>Sports type</td>
<td>864.994</td>
<td>4</td>
<td>216.258</td>
<td>0.892</td>
<td>0.468</td>
</tr>
<tr>
<td>Error</td>
<td>16394.801</td>
<td>678</td>
<td>242.470</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>683</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 5

Differences in SWPS Mean* Health Behaviors by Sports Type

<table>
<thead>
<tr>
<th></th>
<th>Both sports types (n=198)</th>
<th>Traditional sports (n=291)</th>
<th>Action sports (n=78)</th>
<th>Neither sports type (n=100)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Wellness</td>
<td>3.64&lt;sub&gt;a&lt;/sub&gt;</td>
<td>3.58&lt;sub&gt;b&lt;/sub&gt;</td>
<td>3.51&lt;sub&gt;b&lt;/sub&gt;</td>
<td>3.23&lt;sub&gt;c&lt;/sub&gt;</td>
</tr>
<tr>
<td>Emotional Wellness</td>
<td>3.79&lt;sub&gt;a&lt;/sub&gt;</td>
<td>3.68&lt;sub&gt;b&lt;/sub&gt;</td>
<td>3.66&lt;sub&gt;b&lt;/sub&gt;</td>
<td>3.41&lt;sub&gt;c&lt;/sub&gt;</td>
</tr>
<tr>
<td>Environmental Wellness</td>
<td>3.42&lt;sub&gt;b&lt;/sub&gt;</td>
<td>3.23&lt;sub&gt;c&lt;/sub&gt;</td>
<td>3.68&lt;sub&gt;a&lt;/sub&gt;</td>
<td>3.46&lt;sub&gt;b&lt;/sub&gt;</td>
</tr>
</tbody>
</table>

Note: Responses were measured on a scale from (1-5) where higher scores indicate greater health. Means in the same row with different subscripts are not equivalent (p<.05). *Mean scores for physical and emotional wellness are estimated marginal means to account for the inclusion of covariates (frequency or participation, year of participation) in the model.
Discussion

This study was conducted in order to investigate the health benefits derived from participation in action sports and traditional sports. Although action sports have not received the same positive attention as traditional sports in the scientific literature (Nemeth, 2006), the current study results indicate that there was no significant difference, positive or negative, in health benefits between sports types. These results lead the researchers to conclude that participation in action and traditional sports are both health promoting.

Researchers also observed a significant relationship between sport participation and specific domains of health promoting behavior. Within the physical dimension subscale, participants of only action sports, only traditional sports, and both sports types reported higher health scores than participants of neither sports type. These findings suggest sports participants may be engaged in more health promoting physical health behaviors.

Within the emotional subscale, all categories of sports participants again reported higher mean scores than participants of neither sports type. Thus, those individuals who participate in action sports, traditional sports, or both sports types report engagement in emotional health promoting practices more often than individuals who do not participate in any type of sports. This result dovetails with previous research by Donaldson and Ronan (2006) who observed that sport participation was directly related to improved behavioral and emotional well-being. However, this finding extends that research in that the sports explored were of a broader variety.

Within the environmental subscale, participants of only action sports reported higher mean scores than other participants. In particular, items in this subscale assessed engagement in recycling and actions to protect and support the environment. Since the instrument deals with the physical environment, it may be inferred that action sports athletes care more than other types of athletes about a healthy environment. In this sample, surfing and snowboarding were the two most popular action sports. These and other action sports are often dependent on healthy environmental conditions. For example, surfers facing contaminated water or hikers experiencing litter on a wilderness trail may be more likely to become advocates for the environments they utilize. This hypothesis merits additional investigation.

Significant relationships were also observed between respondents’ health and their frequency and duration in sports. Although these correlations were modest, years of participation in traditional sports had a positive association with overall health as well as emotional and physical health promoting behaviors in particular. Results suggest a history of sport engagement is beneficial as adults are coming of age. Early engagement in traditional
sports may provide a healthy foundation for emotional and physical health in young adults. In contrast, respondents' frequency of participation in traditional sports was negatively associated with emotional health promoting activities. These results suggest that too much participation may erode emotional and overall health.

It is also worth noting that on balance, participants of any sports type as well as those who reported no sport participation had globally high SWPS health scores with little variance between groups. Although there are no referent categories that have been established for “high” or “low” health using the SWPS, the selection of young adults as the targeted sample may have minimized differences in measures. Young adults are in a developmental stage that is characterized by robust physical health and frequent socialization. Moreover, the current sample is comprised of enrolled university students, who experience social, emotional and intellectual stimuli inherent in face-to-face university experiences. Thus, differences in health and wellness may reasonably occur later in these participants’ lives. Although young adulthood is not without challenges, the results of healthy (and unhealthy) living choices become more apparent as individuals age. It is recommended that this study be replicated with college students, among active adults in midlife as well as those in older adulthood.

Given the inverse relationship observed in participation frequency and overall positive benefits of sport participation, it will be important for recreation and physical education providers to strike a balance between intensity and fun to allow for continued, healthy participation. Future researchers will need to explicitly examine the appropriate “dose” of sports that is required to achieve maximum health benefits in all domains. Results from this sample suggest that one to three episodes of weekly participation in any one sport for a minimum of one year offers an opportunity for health benefits. In line with existing literature, these results suggest that variety in physical activity behaviors supports adherence, which in turn supports a healthy lifestyle.

Limitations

The primary limitation in this study is the researchers’ inability to control for or measure a complete array of lifestyle factors that likely contribute to young adults’ overall health. While sport participation is one facet of these young adults’ lives, their academic, personal and family lives are likely to have a considerable impact on their overall health and engagement in health promoting behaviors. Further, it is important to remember that this instrument captured only sports’ participation and non-participation. It is possible that respondents were physically active but were not engaged in either traditional sports or action
sports, such as exercise. There are limitations with the analysis because of low measures of associations between health and years and frequency of participation in traditional and action sports. There are also the limitations associated with self-reported data. Despite that, recognition of differential outcomes in this population suggests that this is a valuable avenue for more robust future studies.

References


