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Flow and Sports: Gender Differences between Mens
and Womens Soccer

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Abstract

The purpose of this study was to investigate whether any differences in flow, as measured by the Flow State Scale-2 (FSS-2) (Jackson, S.A., & Eklund R.C., 2004), exist between men's and women's soccer at the intercollegiate level. Participants for this study consisted of a population of 45 undergraduate male and female varsity soccer student athletes who voluntarily choose to participate in the study. The final participants in the study included 14 female and 19 male soccer athletes ranging in ages between 18 and 22. The independent samples t-test was used to determine to determine if any differences existed between the two groups. Alpha for the test was set at the .05 level. The data analysis demonstrated that significant differences existed between male and female soccer players in their overall total flow scores as well as the balance/skill and the autotelic flow dimensions.

Keywords: Flow, Team Sports, Gender, Sport

Introduction

Flow has been described as a state of consciousness where one becomes totally absorbed in what one is doing, to the exclusion of all other thoughts and emotions (Csikszentmihalyi, M. 1975; Csikszentmihalyi, M., & Jackson. A. S., 1999). In other words, Flow is a harmonious experience where mind and body work together effortlessly, leaving a person feeling that something special has just occurred (Csikszentmihalyi, M. 1975). Csikszentmihalyi (1975& 1990) states that flow is about more than just winning as it appears to lift the individual above the ordinary experience to an optimal arousal where the person feels truly alive and in tune with the activity.

Previous research has examined flow and sports in order to better understand how athletes enter flow. For instance, recent research has examined possible associations between Flow and Sport, Team Sports and Flow, and Flow and team Sports Gender. (Young, A. J., & Pain. D. P. 1999; Takuya, 2005; Russell, 2001; Flood, S., & Hellstedt, J., 1991)

Literature Review

Flow and Sport

Young and Pain (1999) examined states of consciousness during participation in sport termed being in the zone or experiencing flow. The researchers compared 31 Australian professional female tennis players and 28 elite athletes, 14 male and 14 females, which represented seven sports which included track and field, rowing, swimming, cycling, triathlon, rugby, and field hockey.

Young and Pain, utilizing a procedure first used by Jackson (1993), asked the participants in their study to (a) relate an experience of a time that stood out from average, one involving

total absorption and which was rewarding in and of itself, and (b) respond to the Experience Questionnaire. (Privette, 1984)

It was predicted that the flow state is a universal phenomenon for athletes across all sports. The researchers adopted a total of twenty seven items in the basis of a series of Cronbach alpha coefficients conducted by Young to assess the internal consistency of the inventory (Young & Pain 1999). In order to test the hypothesis, a one way ANOVA was conducted using mean item scores. The test revealed there were no significant differences between tennis players and elite athletes on the items overall. The study analyses suggest that the zone or flow state is a universal phenomenon across all sports and that tennis players and elite athletes from other sports experience flow in a qualitatively similar manner. Young and Pain suggest that future research should further explore the pinnacle of performance and enjoyment for athletes of varying skill levels across a range of sports.

Takuya and Inomata (2005) examined the psychological elements of flow states experienced by top athletes during competition. His research explored the psychological states leading to a flow experience. Participants in the study included 29 university and semi-professional athletes. This group was further segregated into smaller groups which included 10 men and one woman from a university swim team, three men and a woman from a university track and field team, one man from a university skating club, and 11 male semi-professional track and field competitors. The age of participants ranged from 18 to 29 with a mean age of 20.6

Interviews were completed with the athletes to obtain a deep understanding of the participant's subjective experience. This was then followed by a semi-structured interview, during which investigators tried not to interrupt the participant's ongoing account. On average,

the interviews lasted between 20 to 50 minutes in length and were conducted with each individual who participated in the study. The interviews were then transcribed for analysis.

Participant's results that related to flow were extracted and an individual list was made for each participant. Each individual's list was then compared and classified against the flow characteristics as identified by Csikszentmihalyi (1990). Takuya then examined the individual's interview characteristics with the data obtained from the descriptions of the preparatory state questionnaire obtained immediately before competition.

Analysis indicated that 92.6% of the elements were in agreement with Csikszentmihalyi's model of flow. Additionally the analysis was successful in grouping the psychological states leading to flow into six categories which included: 1. relaxed, 2. self-confident, 3. highly motivated, 4. completely focused, 5. lack of negative thoughts and feelings, and 6. extremely positive. The data analysis also suggested that the categories of relaxed, self confident and highly motivated were, for this reporting group, the highest categories. This suggests that, for this group, these areas may be the primary elements for an optimal, or flow, experience.

Takuya & Inomata recommend that further research should gather data on a greater number of athletes in different events at different competition levels. Takuya further suggests that research be conducted which provides more longitudinal data collection of both sexes.

Team Sports and Flow

Russell (2001) studied the flow state occurrence in college athletes. He examined the qualitative and quantitative aspects of flow within his population. The participants in the study included 42 college-age athletes (27 males, 15 females) from a large Midwest University. Participants in the study ranged in age between 17 and 22 years and the mean age of the group was 20.43. These athletes represented a wide range of different team sports (football, baseball,

volleyball, softball, and basketball) and individual sports (swimming, track, wrestling, and triathlon).

Participants were given a qualitative interview that followed previous flow research completed by Csikszentmihalyi (1975) and Jackson (1995). The technique provided a detailed qualitative analysis of factors associated with flow (Jackson & Marsh, 1996). In addition to the personal interviews, each participant was administered the Flow State Scale-2 (Jackson & Eklund 2004). This instrument measures nine spatial dimensions within flow that is based on the research completed by Jackson (1995). The Flow State Scale-2 (FSS-2) has shown internal consistency for the nine dimensions identified within the instrument with a mean score of .83.

Results from this study supported previous conclusions on the importance of confidence and positive thinking in achieving flow:

“The quantitative results from the flow state scale assessment provided empirical support for the construct of flow for males and females across team and individual sport settings. The non-significant results for gender and sport setting indicated that the college athletes experienced flow factors similarly, regardless of gender or sport setting.” (Russell, 2001 p. 101)

Additionally, the data analysis reported a significantly higher level of action awareness merging for individual sport athletes.

The research suggested that future studies should: 1. investigate less elite athletes to determine whether flow can be experienced in these populations and 2. future studies should continue to examine the complex nature of flow by systematically comparing various methods of inferring flow.

Team Sports and Gender

Flood and Hellstedt (1991) examined the participation motives of 161 intercollegiate athletes at a medium sized public university in the Northeastern United States. The study examined the difference between male and female intercollegiate athletes in sport motivation. Participants consisted of 116 males and 45 females. Students ranged in age from 18 to 28 with a mean age of 20. One hundred and sixty four of these students were white and 7 were black students. Most of the participants in this study participated at the division II level of the National Collegiate Athletic Association.

Participants were administered a questionnaire during a team practice or meeting. The questionnaire was an adaptation of the participation motivation instrument developed by Gill, Gross, and Huddleston (1983). Participants were then asked to rate the items on a 9-point Likert-type scale (Flood & Hellstedt, 1991). Gender differences were then compared on each item using MANOVA and t-test. Additionally, the researchers conducted a secondary analysis which compared members of the men's and women's teams in order to provide a comparison between males and females participating in the same or similar sport.

Results from this experience identified that making friends, learning new skills and exercise are more important motives for females than for males. Additionally, the data suggested that males value winning, competition, and the challenge of sport participation. A third analysis supported findings suggesting that all athletes value fitness, skill, and teamwork as motivators for participation in their sport.

It should be noted that the researchers suggest that due to the small sample size that these particular findings should not be generalized to other collegiate athletic programs. The author(s) suggest that further investigation is needed to determine what motivates athletic participation.

Study Purpose and Research Hypotheses

The purpose of this study was to investigate whether any differences in flow, as measured by the Flow State Scale-2 (FSS-2) (Jackson, S.A., & Eklund R.C., 2004), exist between men's and women's soccer at the intercollegiate level. Therefore the following hypotheses were developed.

1). There is no statistical difference between male and female soccer player's experiential state scale scores as measured by the Flow State Scale 2, (FSS-2), as a result of participation in a regularly scheduled soccer match.

2). There is no statistical difference between male and female soccer player's experiential state scale attributes as measured by the Flow State Scale 2, (FSS-2), as a result of participation in a regularly scheduled soccer match.

Methods

Activity Exposure

Both groups were exposed to a regularly scheduled NCAA Division I league game for the fall 2007 season.

Selection of Subjects

Participants for this study consisted of a population of 45 undergraduate male and female varsity soccer student athletes. The teams were approached by the researchers, after a scheduled team practice, and asked to voluntarily participate in the study. During this solicitation the researchers discussed the proposed research and provided a brief description of the survey and types of questions it entailed. The final participants in the study included 14 female and 19 male soccer athletes ranging in ages between 18 and 22.

Instrumentation

The instrument chosen for this study was the revised flow state scale (FSS-2) developed by Jackson & Marsh (1996). This instrument was chosen because studies have shown that the revised flow state scale (FSS-2) can be used to assess the state of flow and provide a more conceptually coherent and statistically sound measurement of the flow dimensions (Jackson & Marsh, 1996). Most importantly the FSS-2 is an instrument designed to help researchers accurately evaluate the expression of flow during physical activity.

The flow state scale is a 36-item questionnaire that is broken into sub-clusters that measure the nine separate attributes of the flow experience. The nine attributes include 1. Challenge-skill balance, 2. Action-awareness merging, 3. Clear goals, 4. Unambiguous feedback, 5. Total concentration on the task at hand, 6. Sense of control, 7. Loss of self-consciousness, 8. Transformation of time, and 9. Autotelic experience. For each identified attribute/dimension there are 4 questions on the instrument designed to elicit the correct information needed to examine flow. Responses for each question are recorded using a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree).

Reliability of the FSS-2 scale has been consistently shown to be acceptable (Jackson & Marsh, 1996). The FSS-2 scale appears to exhibit internal consistency as strong or stronger than their predecessors. In the Jackson and Eklund (2002) study, item identification sample reliability estimates for the FSS-2 ranged from .80 to .90, with a mean alpha of .85.

Data Collection

Immediately following a regularly scheduled match each participant was asked to complete the FSS-2 scale. All instruments were completed within one hour. The average time between the end of the match and the completion of the FSS-2 scale was 20 minutes. The FSS-2

instrument requires that study participants complete the questions within one hour after completion of their activity.

Analysis Procedure Utilized

In order to determine if any differences existed between the two groups within this study an independent samples t-test was used to determine if any differences existed between the two groups. Alpha for the test was set at the .05 level.

Results

Group Profiles

For the purposes of this study two groups were identified and approached for solicitation to participate. The first group consisted of the men's soccer team and the second group consisted of the woman's soccer team. The demographic data collected for the study consisted of gender and class standing at the University.

Gender. The groups were comprised of University student athletes from a regional Southern University. Females comprised 42.2% of the total sample and males comprised 57.58%.

Class Standing. Participants were asked to report their class standing at the University. The results were as follows: 1). 21.21% were Freshman, 2). 39.39% were Sophomores, 3). 15.15% were Juniors, and 4). 24.24% were Seniors.

Analysis of Data

The data analysis demonstrated that significant differences existed between male and female soccer players in the following: 1). Overall total flow score was significantly higher for females than males ($p = .001$). The value of the t -test was -3.77 with 31 degrees of freedom. 2). The t -test was significantly different between males and females on the balance/skill attribute of

the FSS-2 scale at ($p = .019$). The value of t -test was -2.478 with 31 degrees of freedom. 3). The t -test was significantly different between males and females on the autotelic attribute of the FSS-2 scale ($p = .000$). The value of the t -test was -7.937 with 19.8 degrees of freedom.

Discussion & Recommendations

The purpose of this study was to investigate whether any differences in flow, as measured by the Flow State Scale-2 (FSS-2) (Jackson, S.A., & Eklund R.C., 2004), exist between men's and women's soccer at the intercollegiate level. It would appear from the results of the data analysis that some difference exists between men and women soccer players at the collegiate level. It should be noted that the following conditions may have affected the outcomes observed in this study. First, the men's soccer team lost their match while the women won their match. Secondly, the men's soccer match was very physical with an abundance of complaints concerning the officiating of the match. Lastly, the women's match was an extremely close one which resulted in an overtime period to determine the winner. The women's team scored the winning goal during the last two minutes of the overtime period remaining.

These differences may explain the significant difference found during the data analysis and future research should focus on longitudinal data that takes into account the win/loss record of both male and female teams. It would also be helpful, in future research, to analyze flow and its separate constructs using a regression analysis that would provide information regarding how much of the experience can be explained by other independent variables. These could include sex, age, year in school, GPA, and win/loss records. It might be helpful to utilize Takuya and Inomata's (2005) and Russell's (2001) findings as explanatory variables in a regression model to help explain and or predict a flow experience.

While this study analyzed the differences between men and women's soccer and found some differences, no attempt was made to investigate differences between team sports vs individual sports. Future research should focus on determining if any differences exist between individual and team sports.

While this data set demonstrated some significant differences between the groups, it should be understood that this information should not be generalized to larger populations. Further research should focus on building larger sets of data for both males and females across multiple sports. This would allow for a more inclusive data analysis where the information may be used for generalization.

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