

Being Physically Active during Menstruation: Using the Theory of Planned Behavior to Predict the Intention and Behavior

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Introduction

- As of recent years, the physical activity (PA) level of females in the United States has increased (Schultz, 2004)
- However, as females tend to be less active than their male counterparts (Troiano et al. 2007), there is need to examine correlates of PA specific to females
- Research focusing on females specifically have examined the physiological effects of exercise (Nattiv et al., 2007) and how menstrual hormones affect performance (Janse de Jonge, 2003)
- Little research has examined menstruation and PA participation
 - Two qualitative studies examined menstruation in sport and focused on the cultural implications and social behavior (Held, 2013; Moreno-Black & Vallianatos, 2005)
- The Theory of Planned Behavior (TPB) has been shown useful in predicting exercise intentions in specific contexts (Spink et al., 2012) and might be an appropriate framework

Methods

Participants:

- Females ($N=167$; $M_{age} = 24.5$ years, $SD=4.2$)
- Inclusion criteria was between the ages 18 and 35, not menopausal, not pregnant and had a period in the last 6 months

Procedures:

- Participated in a cross-sectional online survey via Qualtrics
- Interested participants were emailed a link to the survey that took about 10-15 minutes to complete.

Measures:

Physical Activity

- Assessed using the Godin Leisure Time Exercise Questionnaire (GLTEQ; Godin & Shephard, 1997)
 - a) Overall Physical Activity Questionnaire – original GLTEQ
 - b) Physical Activity During Menstruation Questionnaire – modified GLTEQ recalled PA during last period
 - Moderate and strenuous activity combined for MVPA score

Theory of Planned Behavior Constructs

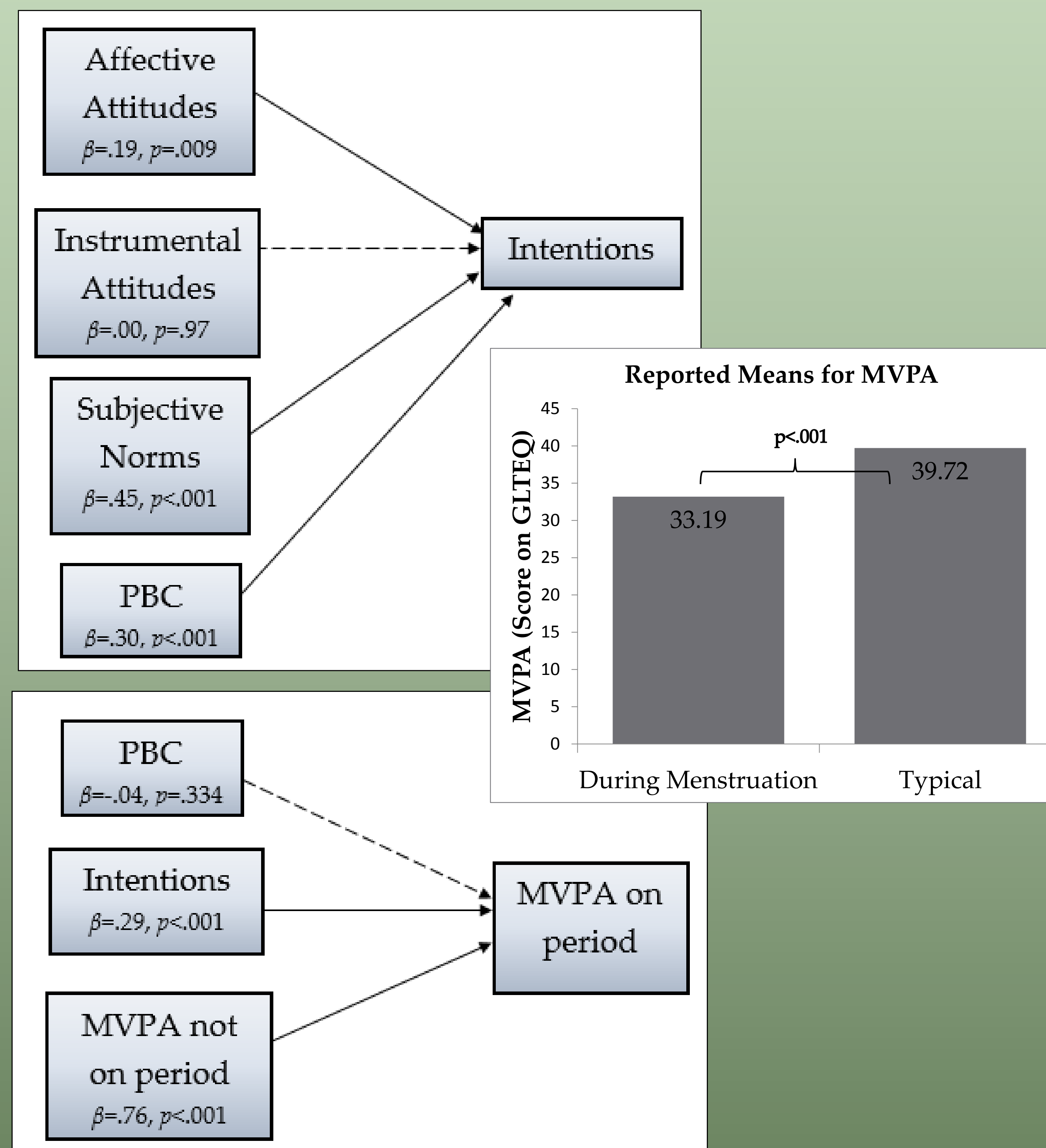
- Assessed using items used previously in the activity setting (Spink et al., 2012)
- Perceptions for being active while on my **upcoming period**
- **Attitudes:**
 - Instrumental (3 items; $\alpha = .86$): Harmful to beneficial
 - Affective (3 items; $\alpha = .84$): Unpleasant to pleasant
- **Subjective norms** (5 items; $\alpha = .74$): “It is expected of me...”
- **Perceived behavior control** (4 items; $\alpha = .74$): “How much control do you believe you have...”
- **Intention** (3 items; $\alpha = .91$): I plan to be active...”

Analysis:

- Dependent t-test performed to compare PA levels during and not during menstruation
- Multiple regression used TPB constructs to predict intention to be active during menstruation
- Hierarchical regression used MVPA not on period (Step 1) and both PBC and intention (Step 2) to predict MVPA when on period

Purpose

This study explored the components of the Theory of Planned Behavior (TPB: attitudes, subjective norms, and perceived behavioral control or PBC) as predictors of intention to be active and PA during menstruation



Results:

- Results of a dependent t-test showed that females reported less PA during menstruation than typical ($p<.001$)

Intention

- TPB constructs explained for 59% of the variance in intention, $F(4,157)=54.3, p<.001$.
 - Subjective norms ($p<.001$) affective attitudes ($p=.01$) and PBC ($p<.001$) were significant predictors

MVPA during Menstruation

- In step 1, PA not on period predicted for 76% of the variance for PA on period, $F(1,166)=516.1, p<.001$.
- In step 2, intention and PBC explained for an additional 5.7% of the variance in PA on period, $F(3,166)=241.0, p<.001$
 - Both PA not on period and intention were significant predictors of PA on period ($p<.001$)

Discussion

- TPB appears to be useful in predicting intention and behavior during menstruation
 - Extends previous qualitative research on menstruation in sport (Held, 2013; Moreno-Black & Vallianatos, 2005) to leisure time physical activity
 - Showcases the usefulness of TPB to predict behavior in specific contexts as has been done previously with structured and unstructured settings (Spink et al., 2012)
- Subjective norms emerged as the strongest predictor of intention, which contrasts with other TPB activity studies (e.g., Okun et al., 2002; Blanchard et al., 2008).
 - One possible reason may be view of menstruation by society in general (Vertinsky, 1994)
 - Lingering Victorian era beliefs of ‘menstrual disability’ and suppression of exercise or activity during menstruation could influence these perceived social pressures to be active or not active during menstruation (Hargreaves, 2002; Vertinsky, 1994)
- Affective attitudes were more important than instrumental attitudes
 - Consistent with previous research that separates attitudes (French et al., 2005)

Strengths:

- Diverse sample in terms of ethnicity (50% Caucasian) and major (14.3% Kinesiology majors)
- Increased participation rates due to topic uniqueness
- Only previous research on menstruation perceptions in sport (Moreno-Black & Valliantos, 2005)

Limitations:

- Online nature of the questionnaire limits researcher involvement and cannot assist participants or confirm who answers (Schmidt, 1997)
- Cross section survey; based on recollection of previous periods (Boyle & Grant, 1992)

Future Directions:

- These can help further the knowledge surrounding menstruation and physical activity:
 - Expanding the questionnaire to a daily diary (prospective)
 - Controlled PA setting to establish types of exercises
 - Generating more objective information about past exercise

Conclusion

These findings suggest that PA during menstruation differs than other times and that the TPB may be appropriate to understanding both intentions and PA of females during the menstrual cycle