



## Introduction

- The social stigma of menstruation may have a negative impact on physical and emotional well-being during sport based on qualitative research (Held, 2013; Moreno & Vallianatos, 2005)
- Research has focused on how physical performance (e.g., strength) differs across the different phases of the menstrual cycle (e.g., Janse de Jonge, 2003)
- Limited research has examined factors relating to physical activity (PA) participation during the different phases of the menstrual cycle
- Individual's perceptions of PA appear to vary across the menstrual cycle (Croteau & Wilson, 2016)
- TPB and its constructs (attitudes, subjective norms [SN], perceived behavioral control [PBC], intention; Ajzen, 2001) is useful in predicting PA (Norman & Conner, 2005)

## Purpose

To explore the predictability of the TPB components (e.g., attitudes, subjective norms, perceived behavioral control (PBC), intention) for self-reported PA and intention during the menstrual cycle

## Methods

### Procedures:

Participants recruited via social media posting and class advertising  
 Met with researcher for consent, background questionnaire and training for temperature  
 Took oral temperature and completed a diary daily (M=36.6 days) via text message

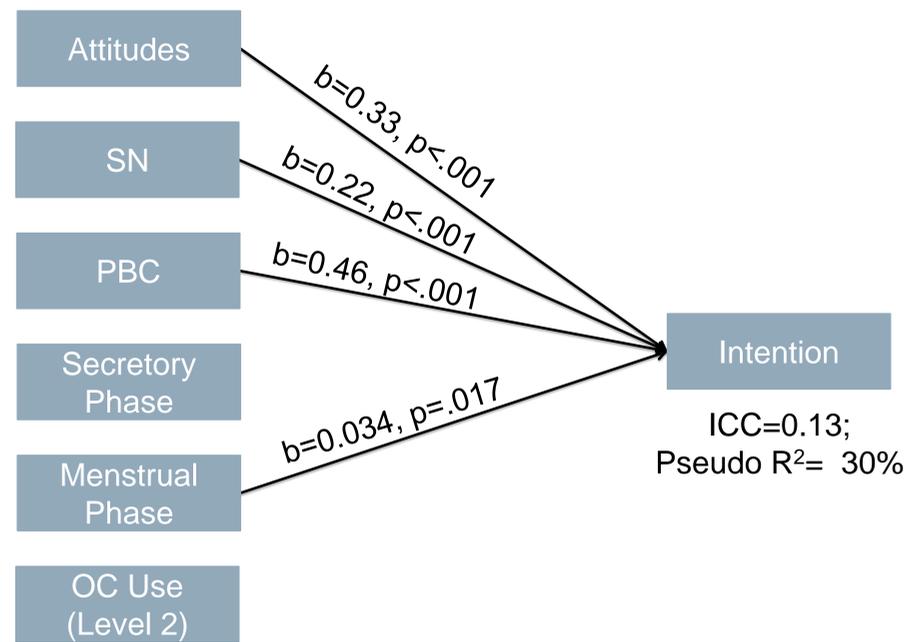
### Measures:

Background questionnaire: age, OC use, menstruation information  
 Each daily text answered 8 questions:

- *Basal body temperature tracking (BBT)*: What is your temperature? (temp 1) (temp 2)
- *Intention*: Do you intend to exercise today? No(1) to Yes (5)
- *PA*: How many minutes of exercise did you complete yesterday?
- *Mood*: What is your *general mood* today? Bad (1) to Good (5)
- *Attitude*: For me to exercise today, I would consider to be an *unpleasant/pleasant* experience? Unpleasant (1) to Pleasant (5)
- *SN*: People important to me think I *should/should not* exercise today. Should not (1) to Should (5)
- *PBC*: For me to exercise today, I perceive to be *difficult/easy*. Difficult (1) to Easy (5)
- *Comments*: (illness; soreness; general/alcohol dehydration; menstruation)

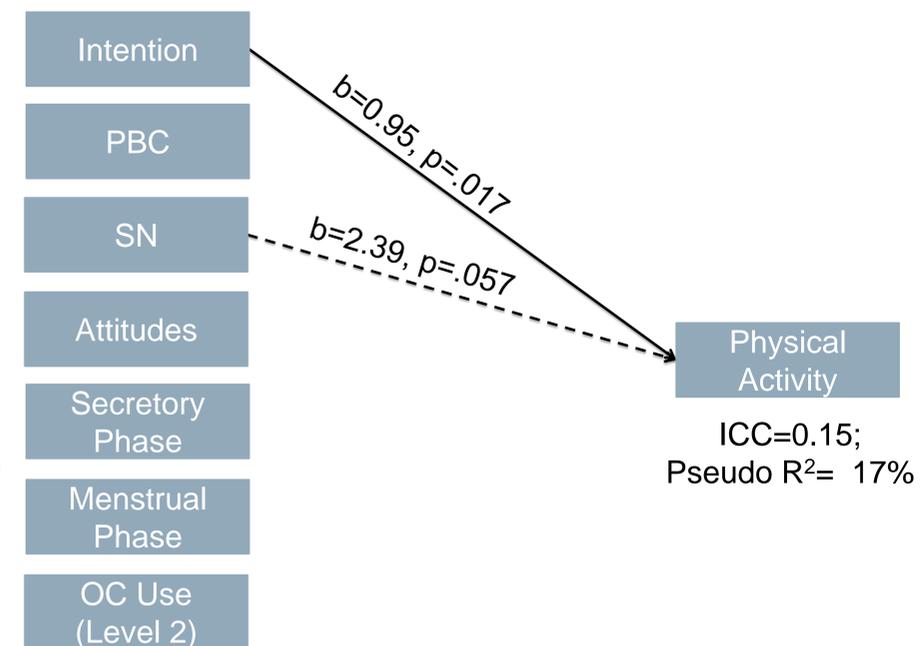
## Participants

Of the 22 females who participated ( $M_{age}=24.6$  years,  $SD_{age}=4.0$ ), 4 were OC users  
 The average length of the menstrual cycle was 26.6 days ( $SD=3.8$ ); with a mean length of menstruation phase of 4.6 days ( $SD=1.6$ )



## Analysis

- Multilevel modeling was used to predict daily intention and PA
- Predictors included: TPB constructs (Level 1), Menstrual phase (Level 1), Oral contraceptive (OC) use (Level 2), phase by OC Use interactions



## Discussion

- This expanded on previous research (Croteau & Wilson, 2016) looking at correlates of PA during the menstrual cycle
- Supports the utility of the TPB model in predicting intention and behavior (Norman & Conner, 2005)
- In contrast to the theory, PBC did not add to the prediction of PA behavior (Armitage & Conner, 2001)
  - Limited research has used a diary approach with the TPB constructs
  - Perceptions asked in morning, which may have been before some of the challenges for the day were perceived
- Another finding inconsistent with the theory is the positive relationship between SN and PA that approached significance ( $p=.057$ )
  - Perhaps looking at a day to day variation in social pressures have a stronger effect on behavior
- Although menstrual phase did not predict PA, it was associated with intention
  - Supports previous findings where PA did not significantly vary across the menstrual cycle (Chrisler & McCool, 1991)
  - Participants reported HIGHER intentions on the days in the menstrual cycle than the proliferative phase
  - As PA has been associated with reduced menstrual symptoms (Daley, 2008), one might speculate individuals may have been motivated to relieve such symptoms

## Strengths

- The ease to which the temperature reading and text diary facilitated completion (2 participants ended early)
- Daily diary approach allowed day to day fluctuations to be examined

## Limitations

- Lack of objective measures for PA (Freedson & Miller, 2000) and menstrual cycle (urinary, blood samples; Prior et al., 1990; Miller & Soules, 1996)
- Limited to mainly college-aged females

## Future Directions

- Future research should consider objective measures of PA and menstrual cycle
- Replicate with a larger, less active sample
- Consider type of physical activity with varying intensity levels and/or level of initial commitment (sport vs. exercise)

## Conclusions

- The menstrual and secretory phases and OC use did not seem to predict PA participation
- TPB model was beneficial in predicting daily fluctuations in intention and PA behavior