Menstrual Cycle Effects on Consumption Desires, Product Usage, and Purchasing Behaviors

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1) Research Question

• Can a woman's food and appearance-related consumption desires, product usage, and purchasing behaviors be influenced by her menstrual cycle?
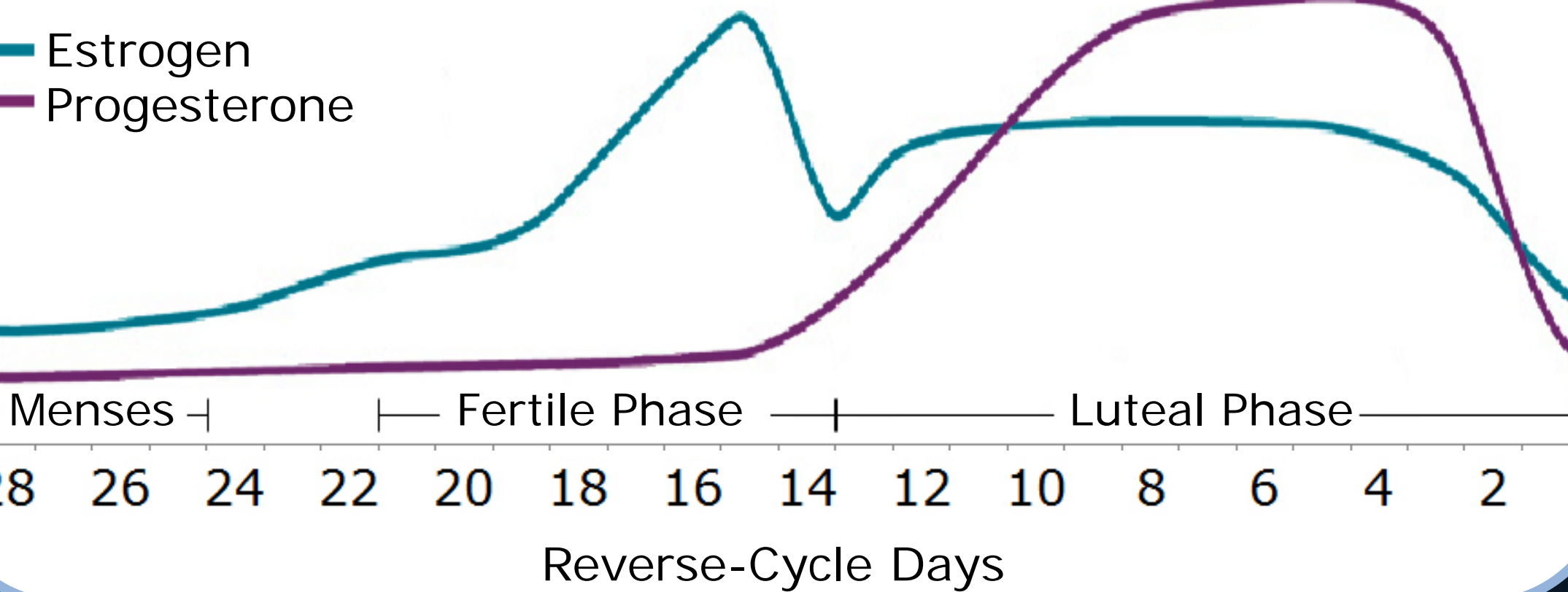
2) Theoretical Foundation

• The number of ways by which the menstrual cycle affects women's lives is staggering [1], yet its effects in the consumption setting has been minimally explored.

• During the fertile phase (21-14 Reverse-Cycle Days [RCD]; see Figure 1), women exhibit increases in mating-related desires and behaviors:
  • Sexual desires and activity [2], [3]
  • Response to sexual stimuli [4], [5]
  • Extra-pair desires [6], [7]
  • Receptivity to sexual advances [8], [9]
  • Grooming and sexiness of clothing [10]-[12]

• During the luteal phase (13-1 RCD), women exhibit increases in eating behaviors:
  • Caloric intake [13], [14]

• Hormonal effects:
  • Estrogen associated with mating drives [15]
  • Progesterone correlated with eating drives [13]

• Evolutionary perspective:
  • Women in ancestral times had to make trade-offs between spending time on mating-related activities vs. food foraging.
  • Shifts in mating and eating drives in accordance with fertility levels are indicative of adaptive psychological and hormonal mechanisms [16].

Figure 1
Hormone Levels Across a 28-Day Menstrual Cycle

— Estrogen
— Progesterone

Menses Fertile Phase Luteal Phase
28 26 24 22 20 18 16 14 12 10 8 6 4 2
Reverse-Cycle Days

3) Predictions

H1: Women's **appearance**-related consumption desires, purchases, and product usage will be greater on **fertile days** than on non-fertile days.

H2: Women's **food**-related desires, purchases, and product usage will be greater on **luteal days** than on non-luteal days.

4) Methodology

• A 35-day panel was used to track food and appearance-related consumption over the course of a full menstrual cycle.

• Participants were asked to:
  • Track every dollar spent in a shopping diary
  • Complete online survey(s) every evening:
    • Survey 1: taken every day (N = 35)
    • Survey 2: taken on three specific days (N = 17)[A]

• Dependent variables:
  • Consumption desires (9-point Likert-type scale ranging from -4 to +4)
  • Product usage (-4 to +4)
  • Purchasing behaviors ($)

• Analyses: repeated-measures analysis (General Linear Model, one-tailed)[B]

6) Implications

• The obtained effects on actual purchases constitute the first direct economic evidence of a menstrual cycle effect on women's consumer behavior.

• Our research is of relevance to consumer welfare in that we are highlighting when women are most vulnerable to succumbing to cyclical temptations for high-calorie foods and appearance-enhancing products.

• From a managerial perspective, marketers could benefit from recognizing that food and clothing consumption behaviors follow distinct cyclical patterns and applying this knowledge to data mining and direct marketing strategies.

• Overall, our findings add to the growing body of work at the nexus of physiology and consumer behavior [17]-[19].

5) Results

A) Consumption Desires

• Appearance-related desires:
  • Women reported a significantly greater desire to look sexy on fertile days than on luteal days ($F_{[1,15]}=5.60$, $p=0.031$).
• Food desires:
  • Women reported significantly greater cravings for highly caloric foods on luteal days than on fertile days ($F_{[1,33]}=5.54$, $p=0.012$).[C]

Figure 2
Food and Appearance-Related Desires

Desires
Food   App.
Product Category
■ Fertile ■ Luteal
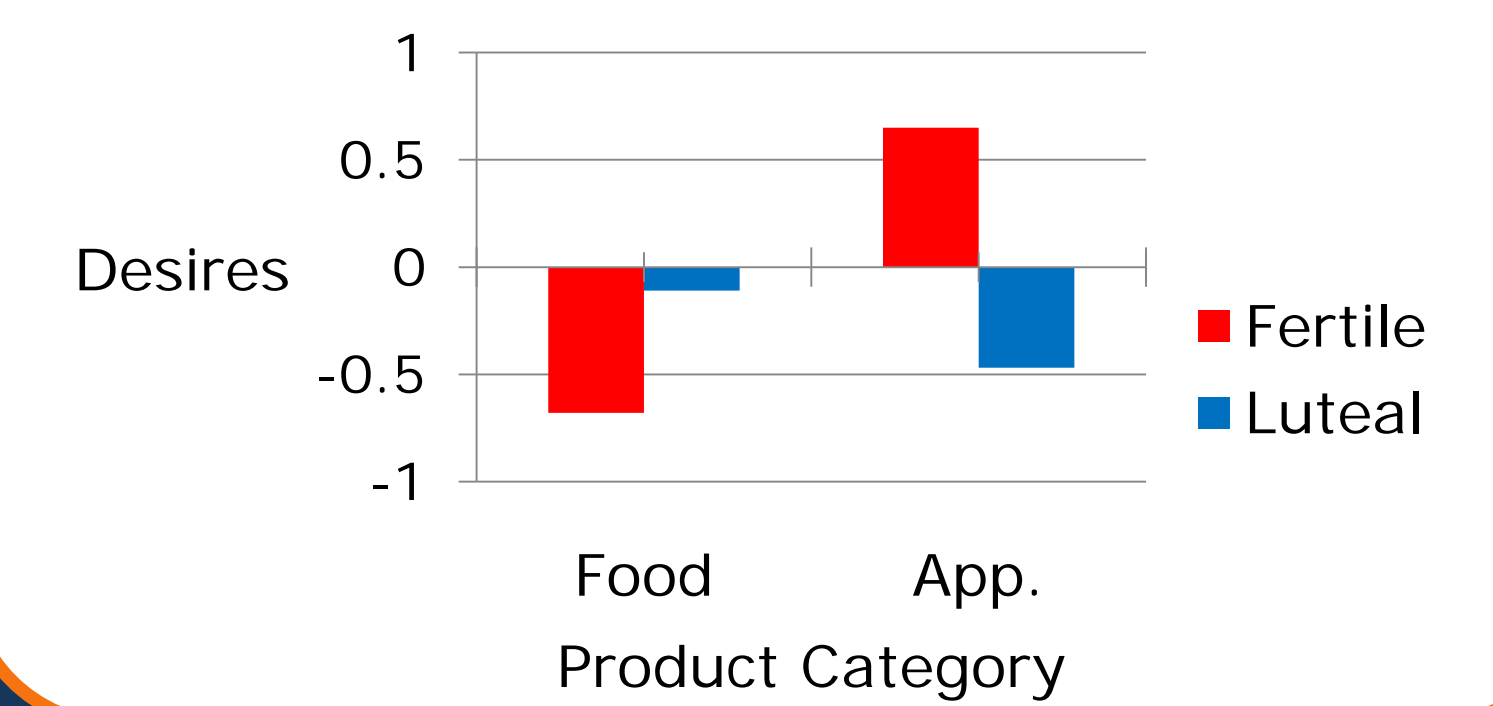
B) Product Usage

• Appearance-related product usage:
  • Women reported engaging in greater appearance-related product usage on fertile days than on luteal days ($F_{[1,15]}=8.62$, $p=0.005$).
• Food consumption:
  • Women reported consuming significantly more food on luteal days than on fertile days ($F_{[1,33]}=5.85$, $p=0.01$).
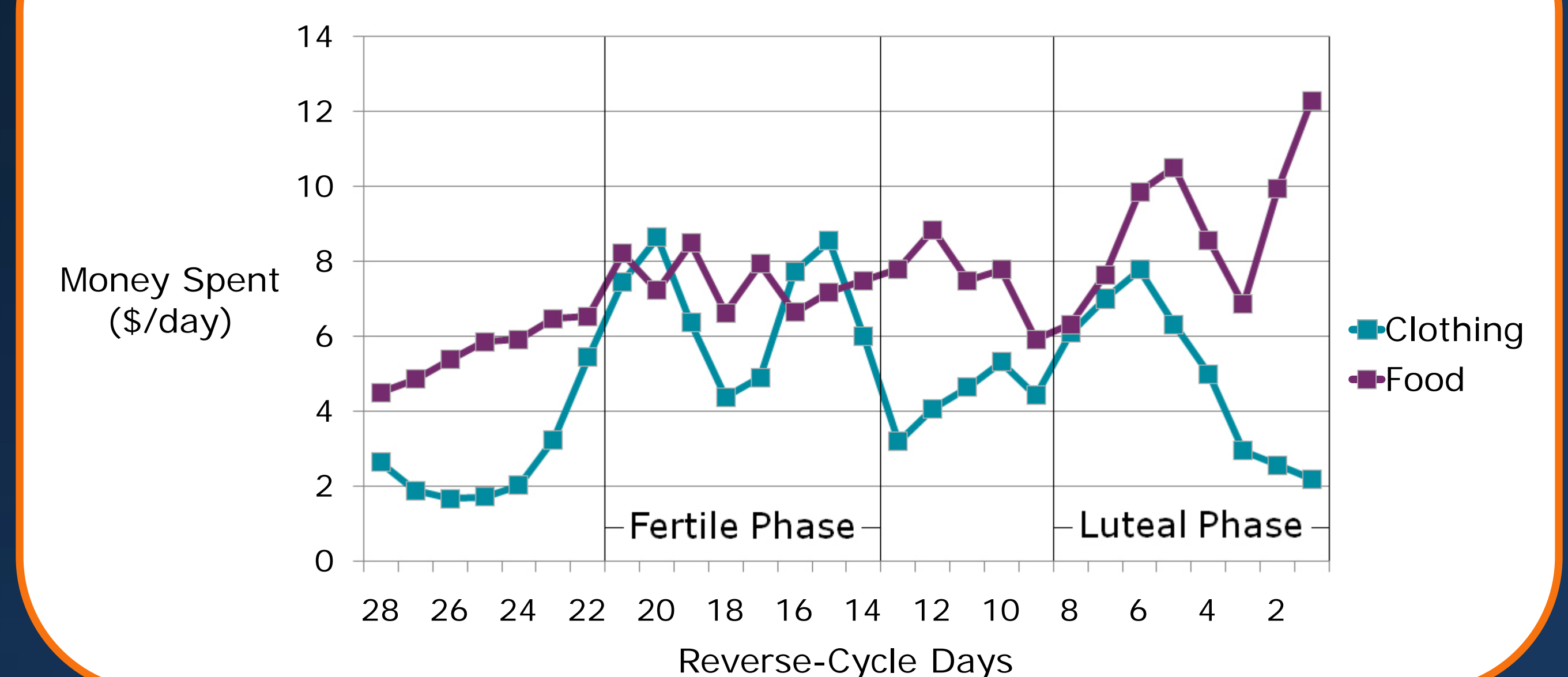
Figure 3
Food and Appearance-Related Product Usage

Product Usage
Food   App.
Product Category
■ Fertile ■ Luteal
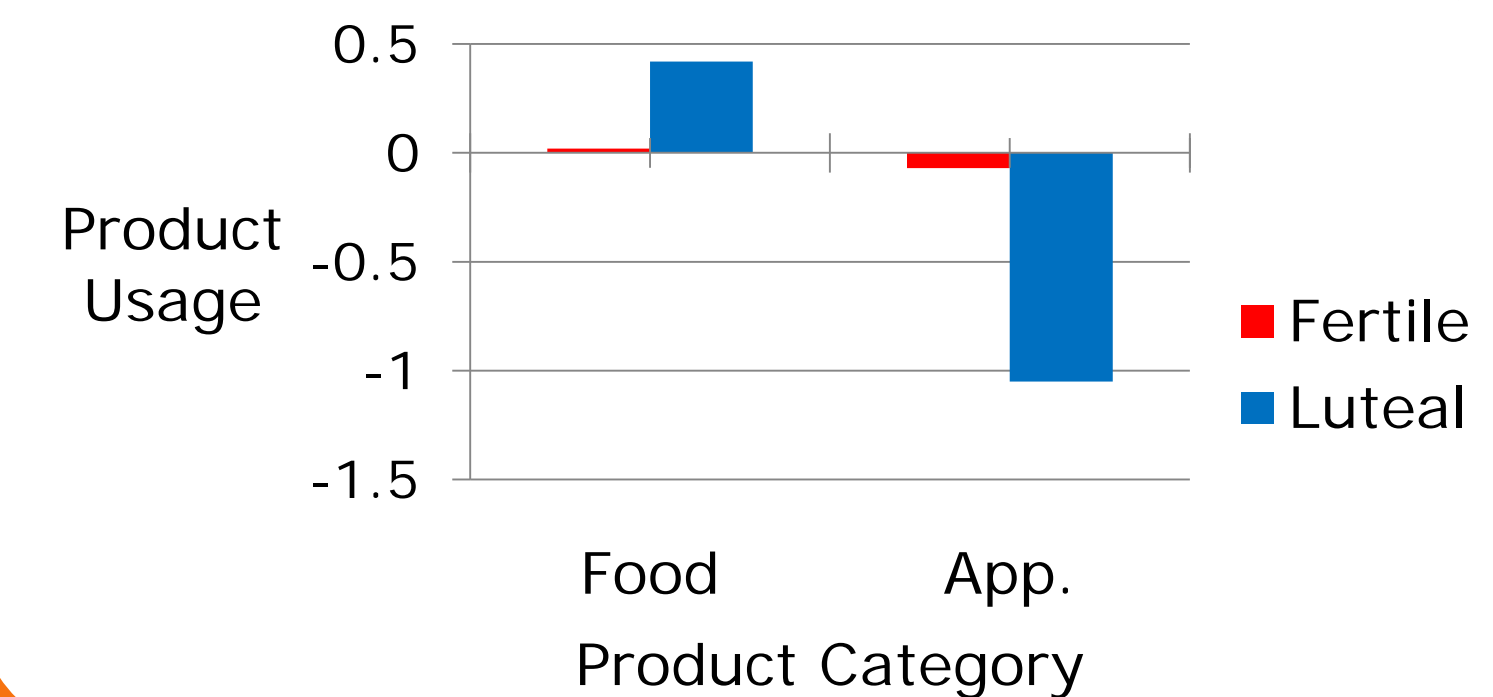
C) Purchasing Behaviors

• Clothing purchases:
  • There were no significant differences between the amount of money spent on clothing on fertile days and the amount spent on luteal days ($F_{[1,33]}=1.08$, $p=0.153$).
  • Across four 7-day sub-phases, the menstrual cycle did have a significant effect on amounts of money spent on clothing ($F_{[3, 30]}=3.39$, $p=0.03$).
• Food purchases:
  • Women reported spending significantly more money on food on luteal days than on fertile days ($F_{[1,33]}=4.02$, $p=0.027$).
  • Across four 7-day sub-phases, the menstrual cycle had a significant effect on amounts of money spent on food ($F_{[3,30]}=4.09$, $p=0.009$).

Figure 4
Daily Money Spent on Food and Clothing

Money Spent ($/day)
Fertile Phase   Luteal Phase
28 26 24 22 20 18 16 14 12 10 8 6 4 2
Reverse-Cycle Days
— Clothing — Food

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Picture Sources

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• Product usage (apple): http://collegecandy.files.wordpress.com/2009/02/07/healthy-eating.jpg [accessed Nov. 3 2009].
• Purchasing behavior (credit card): http://o.aolcdn.com/propeller/media/library/7/L7L27oP.jpg [accessed Nov. 3 2009].
• Hormone levels in Figure 1 are taken from S.F. Gilbert (2006) Developmental Biology (8th ed.), Sunderland, MA: Sinauer Associates.