

Investigation of Prostaglandin Levels in Both Dysmenorrhea and Menorrhagia in Female Skidmore College Students

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Abstract

Introduction: Prostaglandins are known to be the cause of excessive bleeding and pain during menstruation. **Purpose:** The purpose of the current study is to examine the relationships among body composition, birth control use, cortisol levels, menstrual blood loss, menstrual pain, and prostaglandin levels. The potential effects of menorrhagia and birth control use were also investigated among the variables listed previously. **Hypothesis:** It was hypothesized that there would be strong correlations among prostaglandin levels, menstrual pain blood loss, body composition, and cortisol levels as well as significant differences in body composition, menstrual blood loss, pain, prostaglandin/cortisol levels between women with and without menorrhagia and between women using hormonal and non-hormonal birth control. **Methods:** Ten healthy women were recruited from Skidmore College. Using the *Working ability, Location, Intensity, Days of pain Dysmenorrhea screening tool*, as well as the *Identifying Women with Menorrhagia for Testing and Evaluation for Underlying bleeding disorders* screening tools, participants were categorized as either having either dysmenorrhea, menorrhagia, or normal menses. On day one of menstruation, body composition and three saliva samples were collected. Additionally, the participants were instructed to use only the menstrual pads provided and collect them in a biohazard container. The saliva samples were frozen and analyzed for cortisol, PGE₂, and PGF₂. Biohazard containers were weighed to determine total menstrual blood loss (MBL). **Results:** There was a moderate correlation between body fat percentage and MBL (-0.399), as well as a moderate correlation between menstrual pain (0.246), MBL (-0.541), cortisol levels (-0.355), and PGF₂. It was also found that MBL was significantly higher in the participants with menorrhagia (0.039) and there were no significant differences between women who used hormonal BC and women who used non-hormonal BC. **Conclusion:** As dysmenorrhea and menorrhagia are extremely prevalent, it is important that this study is replicated with more participants to better understand the underlying mechanisms of these conditions.