

# Correlation Between Primary Dysmenorrhea And Level Of Anxiety And Depression Among Female Students In Selangor

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**Background and Objective:** Dysmenorrhea is a medical term used to describe the condition of painful menstrual periods experienced by many women without an identifiable cause during their reproductive years. Evidence that primary dysmenorrhea can be accompanied by mental health issue such as depression and anxiety has found to be increased in recent decades. However, there is lack research done to establish relationship between the severity of primary dysmenorrhea and level of anxiety and depression among female university students This study is conducted to identify the correlation between severity of primary dysmenorrhea and level of anxiety and depression among female university students in Selangor.

**Methods:** A cross sectional research design was used. The participants were recruited through convenient sampling. Google form was used, and participants were requested to fill up the consent form and the demographic data and menstruation characteristic. Subsequently, participants were asked to complete three questionnaires: the WaLidd Score, Beck's anxiety inventory, and Beck's depression inventory II. Statistical analysis were conducted using SPSS software and Microsoft excel.

**Results:** This study included 310 participants, which constitutes 80% of the anticipated participation. The main findings revealed that there is a moderately strong positive correlation ( $rs=0.514$ ,  $p<0.01$ ) between the severity of primary dysmenorrhea and anxiety levels. Similarly, we also observed a significant and moderately strong positive correlation ( $rs=0.495$ ,  $p<0.01$ ) between the severity of primary dysmenorrhea and depression levels. These results suggest that greater primary dysmenorrhea severity is associated with higher levels of anxiety and depression.

**Conclusion:** The study found a significant positive correlation between the severity of primary dysmenorrhea and levels of anxiety and depression among female university students. This highlights the importance of conducting more research on the bidirectional relationship between menstrual health and mental well-being in this demographic. Addressing menstrual health and providing mental health support could significantly improve the overall quality of life in female University students.

**Keywords:** Primary dysmenorrhea, Anxiety, Depression

## Introduction

Primary dysmenorrhea is the normal natural menstrual pain that affects young women and is not related to any underlying medical conditions. The pathophysiology of primary dysmenorrhea may contribute by increased proteinoids, particularly prostaglandins, produced by the pathway of cyclooxygenase.

Excess prostaglandins can lead to increased uterine contractions which reduced blood flow to the uterus and eventually lead to the production of anaerobic metabolites that activate pain receptors (Ferries-Rowe et al., 2020). According to previous epidemiological studies, the prevalence of PD from worldwide ranges from 41.7% to 94% (Mammo et al., 2022).

Dysmenorrhea can increase risk of developing depression and anxiety (Pakpour et al., 2020) that can also exacerbate the severity of menstrual pain. This can lead to an increased perception of pain during menstruation and a reduced response to pain medication. (Pakpour et al., 2020).

The findings of this study could also contribute to the field of physiotherapy by enabling the development of educational program and coping strategies that could help in improving menstrual and mental health. These initiatives could be designed to enhance the quality of life and mental wellbeing of female students who undergo concurrent issue of primary dysmenorrhea, anxiety and depression.

## Methods

The study is Cross section study design. The duration of study is 8 weeks conducted at Universiti Tunku Abdul Rahman. The study population is female university students from age 18-26 years old. The Scientific and Ethical Review Committee (SERC) at Universiti Tunku Abdul Rahman (UTAR) granted the ethical approval for this study before the study started, the participants' informed consent is obtained.

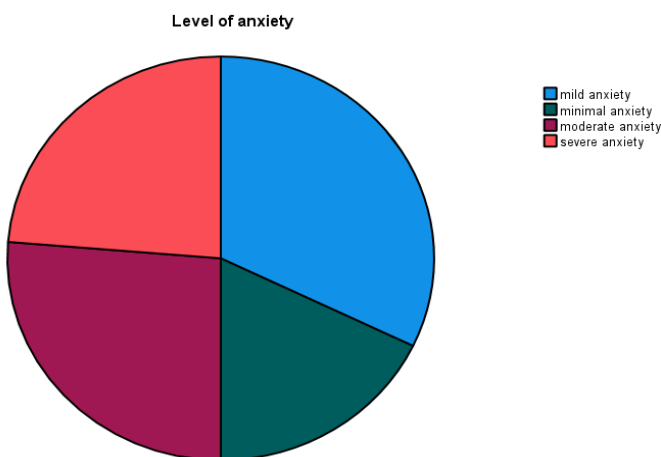
A total of 310 participants were recruited through campus announcement and social media contacts. Convenience sampling was used. Inclusion criteria used was nulliparous Female, University student, 18-26-year-old with history of dysmenorrhea. Females with any gynecological issue like PCOS, PCOD, any gynecology were excluded from the study.

Participants were fully informed about the study's objectives and methods prior to taking part in the study. They were requested to sign the informed consent form indicating that they are agreed to participate in the study on a voluntary basis. After that, participants were requested to fill up demographic data, which include the participation screening. This is to ensure their eligibility to participate in this study and the information will help in better understanding on the characteristics of the sample. The participants were asked to complete three questionnaires: the WaLidd Score, Beck's anxiety inventory, and Beck's depression inventory-II.

IBM Statistical Package for Social Science (SPSS) version 27.0 software and Microsoft excel will be used in analyzing the data collected to produce outcome of the study.

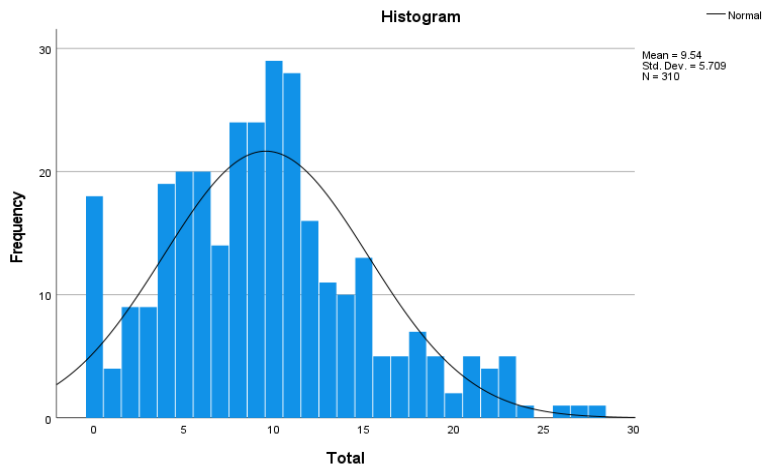
## Result

### Level of Anxiety



The majority of respondents, comprising 31.9% or 99 out of 310 participants, reported that they experience mild anxiety. About 26.1% or 81 out of 310 of participants reported the experience of moderate anxiety. About 24.2% or 75 out of 310 participants reported the experience of severe anxiety. While remaining 17.7% or 55 out of 310 participants reported the experience of minimal anxiety.

**Beck’s depression inventory II score**



The minimum value of Beck’s depression inventory II score in this study is 0 while for the maximum value of Beck’s depression inventory II score is 21. The mean Beck’s depression inventory II score among 310 participants is 9.54 with a standard deviation of 5.709.

**Spearman’s rank correlation coefficient test for severity of primary dysmenorrhea, level of anxiety and level of depression**

	WaLIDD score	Beck’s anxiety score	Beck’s depression score
WaLIDD score	1.000	0.514**	0.495**
Beck’s anxiety score	0.514**	1.000	0.609**
Beck’s depression score	0.495**	0.609**	1.000

Correlation is significant at \*\* $P < 0.01$  level (2 tailed)

Spearman's rank-order correlation were run to examine the relationship between the severity of primary dysmenorrhea, level of anxiety and level of depression. There were positive, significant and moderate strong correlation between severity of primary dysmenorrhea and level of anxiety, with  $r_s=0.514$ ,  $n=310$ ,  $p<0.01$ .

While there were also positive, significant and moderately strong correlation between severity of primary dysmenorrhea and level of depression, with  $r_s=0.495$ ,  $n=310$ ,  $p<0.01$ .

## Discussion

In this study, the main outcome shows that there is positive, significant moderate strong correlation between severity of primary dysmenorrhea and level of anxiety and depression among female university students in Selangor. The potential reasons behind the correlation between primary dysmenorrhea and the levels of anxiety and depression are closely connected with the question of causation.

Anxiety and depression increase a female susceptibility to experiencing dysmenorrhea or if the presence of dysmenorrhea itself can cause or exacerbate anxiety and depression in women. This complicated interaction could be explained by several factors. First, the intense and recurring pain associated with primary dysmenorrhea may act as a chronic stressor, potentially triggering or worsening anxiety and depression.

The chronic pain associated with dysmenorrhea acts as a chronic stressor, potentially triggering or worsening anxiety and depression. The emotional distress, isolation, and disruption of daily activities caused by the dysmenorrhea could further contribute to these mental health issues. Anxiety and depression can influence female's pain perception, pain expression, pain behaviour and their coping response.

Correlation between primary dysmenorrhea and level of anxiety and depression can be attributed to a complex interplay of physical, psychological, and hormonal factors. Hormonal fluctuations during dysmenorrhea may also influence the mood regulation, making females more susceptible to anxiety and depression

## Conclusion

This study revealed that there were positive, significant, and moderately strong correlation between severity of primary dysmenorrhea and level of anxiety and depression among female university students in Selangor. Numerous studies are needed to further investigate the relationship between menstrual health and mental well-being among female university students, particularly exploring the bidirectional relationship between these two components. Lastly, by addressing the menstrual health concerns of females and providing appropriate support for mental health issues can lead to improved overall quality of life among female university students.

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