

## Prevalence of Menstrual Disorders among Adolescents in Vhembe District of Limpopo Province, South Africa

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**Abstract:** Menarche is an important developmental milestone indicating a fully developed reproductive ability, however, varying proportions of different menstrual associated disorders have been reported in both developed and developing countries. The purpose of the study was to investigate the prevalence of menstrual disorders and treatment practices among adolescents in Vhembe District of Limpopo Province, South Africa. The study used a quantitative cross-sectional design using a questionnaire. Two hundred and seventy three respondents from selected secondary-schools, doing grades 10-12 were randomly sampled. Data was analysed using Statistical Package for Social Sciences (SPSS) Version 23. The findings revealed that a high percentages of menstrual problems with 65% having experienced dysmenorrhea, 42% premenstrual dysphoric disorder as well as irregular menstrual cycle which affected their social life and lead to 68% of school absenteeism and minority 25% sought professional assistance. Menstrual problems are significant source of morbidity and affect the quality of life and need prior mental preparation and menstrual education so as to timely exclude other pathological problems.

**Key words:** Adolescence, culture, menstrual disorders, prevalence and quality of life, SPSS, pathological problems

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### INTRODUCTION

Adolescence signifies the process of development to womanhood by young girls, characterized by mature gonads. It is a developmental milestone that all cultures and races regard as reproductive capability. Azurah *et al.* (2013) indicate that the majority of participant in their study experienced primary dysmenorrhoea, cyclic problems such as 21 days cycle resulting in frequent menstrual bleeding as well as menorrhagia and dysmenorrhoea. Menstrual disorders are common cause of reproductive morbid rate and the socio cultural factors within communities affect the attitudes and practices of menstrual problems. Among black communities menstrual problems are often overlooked and menstrual pain regarded as normal physiologic process that women need to endure pain and even young women are socialized in such a way that it is nothing to complain about which may result in future detrimental reproductive impact on the adolescent. Menstrual disorders include premenstrual syndrome or premenstrual dysphoric disorders, dysmenorrhea, prolonged menstrual bleeding and emotional disturbances (Nwankwo *et al.*, 2010). Menstrual disorders differs according to patterns

indicating variations in cycle and duration of flow such as primary amenorrhea, secondary amenorrhea, hypoamenorrhoea, oligomenorrhea, menorrhagia and irregular cycles (Nwankwo *et al.*, 2010). Research suggest a correlation between society's socio-economic status and age of menarche as well as nutrition as having an influence early menarche, factors such as underweight, obesity and high calorie diet have a negative impact on menstrual cycle (Agarwal and Venkat). Ramathuba (2015) also reiterated that a delay in menarche is common among poor families and the low socio-economic populations. Agarwal and Venkat (2004) suggest that menstrual disorders are usually associated with other underlying systemic conditions that can cause detrimental effect on the women's health if not clinically assessed and treated. Nwankwo *et al.* (2010) and Agarwal and Venkat (2009) indicated that the most common causes of menstrual disorders during adolescence are linked to fluctuations in the levels of estrogens and progesterone and local prostaglandins. Most adolescent do not consult health practitioners they tend to underestimate the menstrual conditions they experience and delay in seeking appropriate medical treatment, health education is the key to positive attitude to menstrual practices. Appropriate

health education measures need to be put into place to prevent this trend. Sexual and reproductive issues are less likely to be an issue under discussion for most rural ethnic group, normative values and cultural aspect surrounding, menstruation, conception and contraception are limiting the adolescent to be able to embrace this developmental stage with confidence and appreciation of femininity.

## MATERIALS AND METHODS

**Research design and methods:** A quantitative descriptive design assisted in sourcing information on the prevalence of menstrual disorders among adolescent girls in grades 10-12 in the selected secondary schools in Vhembe District of Limpopo Province. The study was approved by the Provincial Department of Education in Limpopo. Participants were randomly selected and provided with information about the study. The participation was voluntarily and verbal as well as with written consent were taken before initiating the data collection. Principles of ethics in research were considered, the questionnaires were self-administered in the classrooms during free time. The researcher was present to aid the adolescents in completing the questionnaire which took 30-45 min. Adolescents were requested to answer questions on the socio-demographic characteristics, menstrual disorders, impact on social life and treatment practices. Data was descriptively analysed using SPSS Version 23. Descriptive statistics assisted in calculating all variables. Visual Analogue Scale was used to measure the intensity of pain on a 10 cm line depicting a range from no pain to severe pain.

## RESULTS AND DISCUSSION

About 273 participants participated in the survey (Table 1) and their ages ranged from 13-19 years with a mean age of 15 years and were in grade 10-12 of their years of schooling. Respondents belonged to a particular denomination, majority being Christians and 185(68%) were from very poor families of unemployment parents and 88(32%) had employed parents but were not professionally employed. Table 2 indicates that irregular menstrual pattern and cycle were observed with 8(3%) menstrual flow lasting for a day and 47(17%) extending more than 5 days and 68(25%) reported a shorter cycle while 35(13%) a longer cycle. Dysmenorrhea 178(65%) was the most experienced problem and 115(42%) reported premenstrual dysphoric disorders. In terms of pain, majority experienced pain 2-5 days and the intensity of pain varied from mild 29(11%), moderate 98(36%) and severe 146(53%) and it contributed to loss of

Table 1: Socio-demographic information of respondents

Age (years)	n	Percentage
13-14	2	1
15-17	146	53
18-19	98	36
>19	27	10
<b>Grade</b>		
10	64	23
11	113	41
12	96	35
<b>Religion</b>		
Catholic	9	3
ZCC	67	25
Apostolic	96	35
Protestants	28	10
Unspecified	73	27
<b>Socio-economic</b>		
Parents employed	88	32
Parents not employed	185	68
<b>Age at menarche (years)</b>		
9-10	2	2
11-12	33	12
13-14	196	73
>14	37	13
<b>Duration of menstrual flow (days)</b>		
1	8	3
1-2	33	12
1-3	185	68
>4	47	17
<b>Associated symptoms**</b>		
Fatigue	108	40
Lower abdominal cramps	165	60
Headache and dizziness	135	50
Abdominal distention and bloating	98	36

\*\*Respondents ticked more than once

Table 2: Menstrual disorder, impact on social life and treatment practices

Menstrual disorders**	n	Percentage
Dysmenorrhea	178	65
Premenstrual dysphoric disorder	115	42
Menstrual cycle less than 21 days	68	25
Normal 28 day cycle	148	54
Menstrual cycle >35 days	35	13
<b>Characteristic of pain</b>		
Mild (1-3)	29	11
Moderate (4-7)	98	36
Severe (8-10)	146	53
<b>Duration of pain (h)</b>		
<24	41	15
24-48	50	18
>48	182	67
<b>Treatment practices**</b>		
None	123	45
Relaxation and rest	150	60
Home remedies	98	36
Treatment given by doctor/clinic	65	24
<b>Impact on social life**</b>		
Participation in social event	47	17
Loss of concentration	123	45
Sickness absenteeism	187	68

\*\*More than one response

concentration 123(45%) and ultimately school absenteeism 187(68%) as in Table 3 and associated symptoms experienced were fatigue 108(40%), lower abdominal cramps 165(60%), headache and dizziness 135(50%) and abdominal distention and bloating 98(36%)

Table 3: Dysmenorrhea and school absenteeism

Variables	Menstrual pain (%)	Schoolabsenteeism(%)
Mild	29 (11)	13(5)
Moderate	98(36)	78(29)
Severe	146(53)	96(35)
Total	273(100)	187(68)

however, a minority 65(24%) of adolescent consulted a doctor or clinic. Adolescent stage signifies maturity as female gonads develops and matures and adolescents experience menarche. During adolescents the body experience physiological transformation related to menarche and it is usually accompanied by a myriad of problems (Kumar *et al.*, 2016). According to African communities when adolescents experience this stage the stage is regarded as “rupture” literally meaning that they have matured to womanhood. The different ages of rupture is also common among adolescents and is also of concern to the elders within families when there is a delay in rupture or early rupture. There will always be a saying that the “gonads are hard” literally meaning that an adolescent took long to mature/rupture. The mean age for menarche was 15 years. Studies reported that socio-economic status is mostly associated with the epidemiology of menstrual disorders (Ramathuba, 2015; Agarwal and Venkat, 2009). The religion of the adolescents were important because it influences the treatment approaches and attitudes when one experiences menstruation and menstrual disorders. The 67(25%) were from Zion Christian Church and apostolic 96(35%) with the latter not believing in treatment practices like contraceptives to manage menstrual disorders as they do not belief in contraceptives/birth control practices and make use of tea prepared by elders of the church and the Apostolic beliefs in the use of holy water that has been prayed for by the priest or elders in the congregation and other remedies. Indigenous health practices have a direct effect on management of menstrual disorders and other methods used for treatment are hot baths, heating pad and hot tea as seen in other studies (Kumar *et al.*, 2016; Wijesiri *et al.*, 2013) which is what is prevalent among rural ethnic communities.

Some of the symptoms associated with menstruation are the known clinical signs such as premenstrual pain and Pre-Menstrual Dysphoric Disorder (PMDD) which develops 1-2 weeks before the actual menstrual period characterized by physiological and emotional instability resulting from hormonal imbalances. Sharma reported that, most adolescents could not differentiate between dysmenorrhoea and PMDD as most responded more than once. Al-Kindi and Al-Bulushi (2011) also suggest similar sentiments that PMS is also known to be associated with a vast physiological clinical signs and that respondents cannot clearly differentiate between the two thus leading

to over-reporting of dysmenorrhoea. Furthermore, Nwankwo *et al.* (2010) also indicated that menstrual disorders (65-85%) has been widely reported by various studies in their study it ranged from 23-50%. Present study findings revealed 42% of PMDD and 65% of dysmenorrhoea which concurs with other studies indicating that adolescents do experience menstrual disorders.

Table 2 indicates that adolescent experienced pain from age 16-19 years and majority 146(53%) experienced menarche between 13-14 years which indicates that adolescents experience primary dysmenorrhoea immediately after menarche and pain lasted for more than 4 days in 182(67%). Gagua *et al.* (2012) and Liliwati *et al.* (2007) indicated that the majority (57%) of adolescents in their study experienced dysmenorrhoea at the age of 14 which occurred soon after the onset of menstruation. Findings of the study revealed that adolescents experienced moderate 98(36%) to severe pain 146(53%) which is similar to other studies where Aktas (2015), Aktas *et al.* (2012) reported (77%) of women and 76.2-80% of students in Turkey experienced some degree of painful menstruation. Socio-economic conditions have been alluded by various studies to influence menstrual disorders, Gagua *et al.* (2012) and Liliwati *et al.* (2007) reported that, irregular meal intake aggravates the prevalence of dysmenorrhea, poor nutritional intake is a cause of poor body vitality and can alter hormonal status which is not surprising for the participants in the present study as majority were from low socio-economic groups as majority of parents 185(68%) were unemployed and most families in rural Limpopo depends on social support from government grants. Majority of secondary schools in some rural villages of Vhembe have a school feeding programme which is inconsistent and serve staple food being porridge (carbohydrate) and sugar beans which is less balanced and lacks other nutrients in the diet. Mukattash *et al.* (2013) in the study undertaken at Jordanian University in Egypt reported association of dysmenorrhoea and rural residence. Gagua *et al.* (2012) is of the opinion that carbohydrate disturbs metabolism of other micronutrients causing nutritional imbalances, leading to muscle spasms. Menstruation is also related to other signs such as lower abdominal pains, nausea and vomiting which are related to hormonal imbalance, 165(60%) experienced lower abdominal pains, 135 (50%) experienced headache and dizziness, 108(40%) bloating and 98(36%) fatigue. Some of this symptoms can also be systemic and is important to exclude other conditions. The findings are similar with other studies that various symptoms accompany menstruation such as irritability, depression, loss of appetite, nausea and vomiting (Aktas,

2015; Gagua *et al.*, 2012) and that prostaglandins induce contractions and pain when released into the uterine muscles (Jaywant and Kiran, 2016; Habibi *et al.*, 2015).

Adolescent girls experienced irregular cycles, 68(25%) had a 21 days cycle which is shorter and 35(13%) had a cycle more than 35 days which indicate that there is some form of menstrual irregularities with 8(3%) having slight menstrual flow and 47(17%) having prolonged menstrual flow. These irregularities are often overlooked and may later impact on the future reproductive health of adolescents. Abnormal uterine bleeding are often symptomatic of the underlying systemic diseases such as anemia, metabolic disorders and obstruction of the menstrual flow as seen in cervical stenosis or vascular ischemia to the uterine muscles (Luckman and Sorenson, 1980). Moreover, for the adolescents, due to poor nutrition, conditions such as anemia due to iron deficiency in the diet (folic, iron, cobalamin) should be excluded as 108(40%) experienced headache and dizziness. The findings are similar to Argawal and Venkat (2009) that the incidence of menstrual irregularity ceased as the person age advances and that lack of consultation regarding such disorders as anemia, systemic hemostatic and other endocrine malfunctions may be overlooked, resulting in misdiagnosis and treatment failure in future. Hygienic practices of adolescents during menstruation is also important and can impact adolescent negatively as poor perineal hygiene can cause ascending pelvic infection causing secondary dysmenorrhoea. Ramathuba (2015) reported that, poor or unkept perineal care may perpetuate the risks of pelvic infections among adolescents, reiterating that good perineal hygiene and frequent changing of sanitary pads is essential.

African communities have different perceptions and myths regarding menstrual disorders, usually adolescents are socialized to belief that menstrual pain is a normal physiologic process that one needs to endure pain as a sign of womanhood. Cultural practices differs from one ethnic group to another, usually where the study was undertaken it is acknowledged that dysmenorrhoea will subside with age and when one gives birth. This is supported by Parveen *et al.* (2009) that painful menstruation is culturally considered a common and accepted phenomena that will be resolved by matrimony. Azurah *et al.* (2013) indicates that irrespective of the extensive incidences of menstrual problems, generally women never present themselves for treatment, similar to the study finding where 65(24%) sought medical intervention which indicates a cause for concern as other gynecological problems will not be identified. The 100 and 23(45%) did not use anything, 150(60%) only rested and 98(36%) used home remedies indicating that there is a

normative value among ethnic communities not to complain or talk about it because menstruation is not publicly discussed. Wijesiri and Suresh (2013), shared similar views that culturally home remedies are mostly used to relief menstrual pain.

Menstrual disorders affects the social functioning of adolescents in many ways because adolescents lacks menstrual knowledge and are ill-prepared to deal with issues surrounding menstruation because culturally some activities are forbidden if a women menstruating. The findings 47(17%) support this notion of limited activity, 150(60%) of rest and relaxations which has negative implications on menstruation to be seen as a disease, without ascertaining what the actual problem is in order to treat the real cause of menstrual disorders. Aktas (2015) also perceive similar thoughts that myths, beliefs surrounding menstruation makes it difficult to openly talk about pain and poor knowledge about menstruation as well as lack of menstrual education can affect the development of dysmenorrhea. Majority of respondents 187(68%) absented themselves from school, Table 3 suggests that school absenteeism is a trend irrespective of the intensity of pain, since, pain is subjective in nature and the social circumstances that adolescent find themselves, when they cannot afford sanitary towels or schools not having facilities for changing the napkin, it can really impact one's social life such as poor concentration 123(45%) and discomfort. Kumbhar *et al.* (2011) reported (28-48%) of sickness absenteeism and perceived quality of life losses as the most cause of time lost from employment and educational institutions among adolescent girls. In addition Kumar *et al.* (2016) reported significant relationship between school absenteeism, poor exam grades, decrease in class concentration, limited interpersonal relationships with friends and family and decrease in daily physical activities. Other studies also reported that, 75% of adolescents experienced lack of concentration due to dysmenorrhea (Aktas, 2015; Gagua *et al.*, 2012). The above findings are an indication that menstrual disorders are prevalent among adolescents and affect the social functioning, quality of life and can impact negatively on academic performance.

## CONCLUSION

Menstrual problems and menstrual cycle disorders are common among rural adolescents and there is a dire need to change the socio-cultural perceptions and attitudes surrounding menstruation. Premenstrual symptoms are a common phenomenon, however if symptoms persist or unbearable, intervention should be sought to determine underlying causes, however adolescents suffered in

silence and their quality of life was jeopardized. Mothers/guardians, teachers and primary health care nurses should be open to adolescents to educate and develop their self-care skills. School health services in Limpopo should be improved to equip adolescent with counselling and skills to cope and manage menstrual disorder's. Encourage adolescents to report and seek medical intervention where necessary. Menstrual disorders if not promptly treated can results in complications of women's reproductive health such as infertility and other systemic diseases such as anemia.

### **LIMITATION**

The study had limitations due to limited cross-sectional sample size the findings cannot be generalized for other ethnic groups within Limpopo Province.

### **RECOMMENDATIONS**

Development of a comprehensive school health education program with emphasis on menstruation and puberty education such as physiological changes of puberty. Embrace puberty positively to be able to have positive attitude towards menstrual health early detection of menstrual disorders and seeking prompt intervention.

Dissemination of appropriate information to parents through educational television programmes regarding women's health in order to increase their understanding and knowledge and dispel myths surrounding menstrual disorders.

### **ACKNOWLEDGEMENT**

The researchers acknowledges the students who participated in this study and the principals of schools for creating time.

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