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Prevalence of Menstrual Disorders and its Academic Impact amongst Tshivenda Speaking Teenagers in Rural South Africa

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ABSTRACT This paper investigated the prevalence of menstrual disorders and its impact amongst Tshivenda speaking teenagers in rural South Africa. The paper adopted a quantitative approach using a descriptive survey design. Data were collected from a total of 173 randomly selected females, age 14-18 years from 10 secondary schools that makes up a rural Vhumbedzi circuit in the Limpopo province using a self-administered questionnaire. Validity and reliability of the instrument was ensured. Permission to enter the schools was obtained from the circuit manager. Parents/learners informed consent was obtained prior to data collection. Statistical package for Social Sciences was used to analyse data in terms of frequency and percentages. This study revealed high prevalence of undiagnosed menstrual disorders such as dysmenorrhea, heavy flow periods, irregular period and premenstrual syndrome, which are under-treated. The paper recommends screening for and school health education about menstrual problems to minimise the academic impact amongst teenagers.

INTRODUCTION

Teenage stage in girls is marked as a special period that needs attention in the whole process of female puberty (Olowokere at al. 2014; Kusmar et al. 2015). It is a stage characterized by the onset of menstruation (Tegegne and Sisay 2014). Menstruation is a physiological process, which involves monthly shedding of endometrium accompanied by flow of blood from the uterus through the vagina as a result of the effects of hormones released from the hypothalamus-pituitary and ovaries (Begum et al. 2014). The normal age of onset of menstruation is less than sixteen years (Olowokere et al. 2014). In 75 percent of teenagers at the first year of menstruation (one year after the onset of menstruation), the average menstrual cycle length is 21-45days. By the third gynaecological year, 60-80 percent of girls have menstrual cycles of 21-35 days long (De Santis and Bernasconi 2014). According to Rigon et al. (2012), menstrual flow lasts from 3-7 days with a mean blood loss of 35ml-80ml.

As important as menstruation is to human reproduction, it is often accompanied by varying disorders such as abnormalities of frequency and intensity; or a combination of both, which may affect the quality of life of teenagers and young adults; and which may be indicators of serious underlying problems. Menstrual disorders of intensity include poly or oligomenorrhea and hyper or hypomenorrhea; disorders of frequency include polymenorrhea, oligomenohrea; disorders of duration include amenorrhea, menorrhagia; and disorders of pain include dysmenorrhea and premenstrual syndrome. These menstrual disorders are common causes of morbidity among teenagers and a source of anxiety and psychological stress (Amu and Bamidele 2014). The medial consequences of menstrual disorder influence not only the individual but also the family and society. Teenagers may lose school days leading to poor progress in education (Dambhare et al. 2012). Thus, it is of paramount importance for health care providers to timely detect and treat conditions suggestive of significant pathologies, such as endometriosis, polycystic ovary syndrome, hypogonadism, cancer, coagulation disorders, , and eating disorders, which can have a major impact on women's future reproductive or general health (De Santis and Bernasconi 2014). The initiative to detect pathologies depends on menstrual disorder reporting.

Though menstruation is one of the issues to be covered from Grade 7 – 12 through Life Orientation and supplemented through co-curricular activities according to the South African Integrated School Health Policy (South Africa 2013), activities covered by life orientation teachers and nurses are not more than educating teenagers about menstrual management at school. No screening is done to keep record and refer teenagers for menstrual disorders at Vhembe

district. Thus, the prevalence of these disorders is not known. This paper investigated the prevalence of menstrual disorders and its impact amongst Tshivenda speaking teenagers in rural South Africa.

Objectives of the Study

Assess the prevalence of menstrual disorders amongst rural teenagers.

Describe the academic impact of menstruation to teenagers.

Describe the health seeking behaviour of teenagers suffering from menstrual disorders.

METHODOLOGY

Study Design

Based on the purpose of the study, a quantitative cross-sectional descriptive survey design was adopted. A descriptive research design is deemed suitable by the researchers because it describes and interprets phenomena that are in existence, while at the same time using a cross-sectional survey method to collect data from subjects at one point in time to describe a phenomenon (Brink et al. 2006).

The Study Setting

The study was conducted at Vhumbedzi educational circuit which is situated in the east of Sibasa in the Vhembe District and north of Kruger National Park. The circuit consists of 10 secondary schools, 24 primary schools and one independent primary school. The target population of this project is all secondary school learners from grade 8- grade 12 in Vhumbedzi circuit.

Population and Sample Size and Sampling Procedure

Ten secondary schools in the Vhumbedzi educational circuit had a total female population of 2515, which included grades 8 to 12 learners. Thus, the population of 2515 learners was targeted for this study. Based on the population frame of 2515, sample size of n=205 was calculated using Slovin's formula [$n=N/\{1+Ne^2\}$] where n and N denote the sample and population sizes respectively thus allowing a margin error of e= 0.05. Thus, learners were randomly selected within based on population proportional to size procedure which ensured proportional representativeness of grade in the final sample.

Data Collection Instrument

A semi-structured self-administered questionnaire comprising of ranking scale questions was adapted from the 2011 high school Youth Risk Behaviour Survey (YRBS) of the Centres for Disease Control and Prevention (2011). The instrument was written in English and required approximately 60 minutes to complete. Caution was taken to ensure that it was user-friendly and understandable. The questionnaire was divided into 3 sections namely demographic profile of the respondents and the prevalence of menstrual disorders; impact of menstrual disorders amongst respondents.

Instrument Validity

To ensure validity, the instrument was adapted from the YRBS questionnaire of the Centres for Disease Control and Prevention (2011) to suit the local conditions. A wide range of literature was also consulted on the variables of interests. Also, the instrument was pre-tested on some volunteer learners in one school similar to the target population next to the university. Pre-testing results were used to rephrase and modify some aspects of the questionnaire thus making it suitable and comprehensible to the participants.

Instrument Reliability

The reliability of the instrument was bolstered by adapting a questionnaire based largely upon the Centers for Disease Control and Prevention (2011) national high school *Youth Risk Behaviours Survey (*YRBS). The YRBS is a standardized instrument developed by the CDC to measure risk behaviours of high school students with generally high reliability rating [Kappa=61 – 100%] (Brener et al. 2002; CDC 2011).

Ethical Considerations

The Research and Innovation Directorate of the University of Venda issued an ethical clearance certificate (SHS/12/PH/03/0812) for the project titled "Community health diagnosis of secondary school learners in Vhumbedzi circuit,

South Africa" in August 2012. Permissions to conduct this research project and to enter schools were obtained from the Limpopo provincial Department of Health and the Vhumbedzi circuit office respectively. Final access to the participating schools was negotiated with the school authorities. Written informed consent was obtained from learners and their parents before the administration of the instrument. In addition, participants' names and identities were not required and at the same time, no staff member was allowed at the survey venue during the time the questionnaires were administered to ensure learners anonymity, confidentiality and voluntary participation.

Data Collection Procedure

The study was conducted over a three-week period between October and November 2012. All 10 schools were visited by the research team to identify the learners who were to participate in the study. Questionnaires were distributed to 205 female learners proportionally. Dates for data collection were pre-arranged by circuit office and school authorities; and within each participating school, a special class was organized where the research team briefed the participants and assisted in facilitating the administration of the instrument and addressing issues arising thereof. The administration of the questionnaires lasted approximately 60 minutes and the response rate was 85 percent (n=173 female learners).

Data Analysis

Survey responses were coded and analysed the Statistical Package for the Social Sciences (SPSS) version 21.0 software. Descriptive statistics (frequencies and percentages) were used to summarize the data.

RESULTS

Demographic Characteristics of the Respondents

Though self-administered questionnaires were distributed to 205 female learners proportionally according to grades, the response rate was 85 percent (n=173) females learners. The results are presented according to the objectives of the study:

The Prevalence of Menstrual Disorders

Table 1 gives a summary of the top five common menstrual disorders experienced by the ru-

Table 1: Summary of common menstrual disorders

Menstruation issues	*Always*		*Sometimes*		*Never*	
	No.	*%*	*No.*	*%*	*No.*	*%*
My periods are irregular	29	16.86	77	44.77	66	38.37
During or before my periods I have headache	17	9.83	47	27.17	109	63.00
My periods last longer may take up to 5 days	24	13.87	55	31.79	94	54.34
I have light periods	39	22.41	70	40.23	65	37.36
I have heavy periods	17	10.00	55	32.35	98	57.65
I am on the pills to control menstrual problems	19	11.05	20	11.63	133	77.33
During or before my periods I have sensitive swollen breasts	17	9.83	21	12.14	135	78.03
During or before my periods I have bloated abdomen	18	10.47	24	13.93	130	75.58
During or before my periods I have abdominal pain	56	32.37	50	28.90	67	38.73
During or before my periods I have back pain	26	15.12	33	19.19	113	65.69
During or before my periods I can gain weight a bit	11	6.32	26	14.94	137	78.74
During ovulation I have a clear discharge	38	22.49	38	22.49	93	55.02
My periods are regular, not painful and last for only 3 days	53	30.64	56	32.37	64	36.99
My periods are very painful	48	27.91	49	28.49	75	43.60
I take pain killers for my period pains	31	17.82	41	23.56	102	58.62
I skip my period for one month	11	6.36	38	21.97	124	71.68
I bleed in-between periods	10	5.74	27	15.52	137	78.74
I do not come to school during my periods	15	8.62	24	13.79	135	77.59
I go to the doctor for my period pain	15	8.62	42	24.14	117	67.24
I can't study or do homework when having period pain	34	19.77	48	27.91	90	52.33
Teachers understand the period pain frustration	53	30.46	48	27.59	73	41.95
I am more easily upset before or during my period	21	12.07	48	27.59	105	60.34
My periods just start without warning	24	13.79	51	29.31	99	56.90

ral Tshivenda speaking teenagers. About 61.63 percent (n=106) of the girls reported having irregular periods (menstrual cycle); whereas 61.27 percent (n=105) suffer from abdominal pains during menstruation. About 56.4 percent (n=97) experience very painful periods, whereas 45.66 percent (n=79) experience periods that last up to 5 days. About 42.35 percent (n=72) suffer from heavy flow periods. The less troublesome menstrual problems experienced by rural Tshivenda speaking teenagers include bloated abdomen (24.4%), slight weight gain (21.26%) and sensitive swollen breasts (21.97%).

The Academic Impact of Menstrual Disorders to Teenagers

About 47.68 percent (n=82) of girls admitted that they can't study nor do homework when having period pains, whereas 22.68 percent (n=39) do not attend school during their periods.

Health Seeking Behaviour of Teenagers Suffering From Menstrual Disorders

About 64.06 percent (n=111) take un-prescribed over the counter medicines for their period pains, whereas 32.76 percent (n=57) of girls visit the doctor for their period pains.

DISCUSSION

The discussion of the study findings is arranged in accordance with the objectives of the study as follows:

Prevalence of Menstrual Disorders

This study found that the five common menstrual disorders experienced by rural Tshivenda speaking teenagers are irregular periods, which are followed by abdominal pains, and very painful periods, headache and heavy flow periods. Similar results were revealed by Rigon et al. (2012), where 95 percent of the girls experienced irregular intervals of menstruations in 16 Italian cities. A study conducted by Pitangui et al. (2013) also revealed 73 percent prevalence of dysmenorrhea among female adolescents between 12 and 17 years in the city of Petrolina, Brazil. Amu and Bamidele (2014) discovered that dysmenorrhea, menorrhagia and metrorrhagia were the top three menstrual disorders experienced by adolescent girls in Osogbo, South Western Nigeria. Gumanga and Kwame-Aryee (2012) also discovered high prevalence of dysmenorrhea (74%) in Accra Ghana. Dambhare et al. (2012) also discovered high prevalence of dysmenorrhea (56%), premenstrual syndrome (56%) and menstruation lasting more than 6 days (30%) in Central India. Olowokere et al. (2014) discovered high prevalence of dysmenorrhea (76%), prolonged menstrual period (21%), irregular periods (19%) amongst female undergraduate in Federal University of Nigeria.

Irregular length and longer bleeding of more than 6 days were discovered by De Santis and Bernasconi (2014). Dysmenorrhea and premenstrual syndrome were the most prevalent menstrual disorders in Pondicherry (Rupa and Veena 2013). Mahmoud et al. (2014) discovered a high prevalence of irregular periods (40%), heavy flow periods (13.4%), prolonged periods (9.7) amongst females between the ages of 17 and 25 years in Taibah University, Almadinah, Almunawwarah, and kingdom of Saudi Arabia. Ekpenyong and Davis (2011) discovered a prevalence of menstrual disorders amongst 16 and 35 years of 35% in Uyo, South Eastern of Nigeria. Al-Kindi and Al-Bulushi (2011) discovered high prevalence of Dysmenorrhea (94%) in Omani High school students in Zagazig Egypt. Nooh (2014) discovered a dysmenorrhea prevalence of 65 percent among female first year students. Pitangui et al. (2013) discovered a high prevalence of dysmenorrhea among adolescent girls in Brazil.

These findings suggest that globally there is high prevalence of menstrual disorders such as dysmenorrhea, prolonged menstrual periods of more than 6 days, irregular periods, heavy flow periods and premenstrual syndrome. Heavy flow periods and prolonged menstrual periods of more than 6 days have a practical implication because it makes teenagers potentially more susceptible to iron deficiency anaemia. Irregular periods are just frustrating because they may catch learners unprepared, soil themselves and get embarrassed and end up dropping from school. The same applies to heavy periods.

The Academic Impact of Menstrual Disorders to Teenagers

The study discovered that rural teenagers can't study nor do homework when having peri-

od pains. In addition, they do not attend school. In North-eastern Ethiopia, Tegegne and Sisay (2014) discovered a fifty eight per cent school-performance declined after the onset of menstruation and <50 percent absenteeism during menstruation. In Osman High school, dysmenorrhea was the cause of limited sport activities in 81 percent, decreased class concentration in 75 percent, restricted homework in 59 percent, school absenteeism in 45 percent, limited social activities in 25 percent, and decreased academic performance in 8 percent of the affected children (Al-Kindi and Al-Bulushi 2011). According to Nooh (2014), the impact of menstrual disorders depends on the intensity of dysmenorrhea with mild pain seldom inhibiting normal activities, moderate pain affecting daily activities and severe pain clearly inhibiting activities. Bodat and Ghate (2013) discovered a high prevalence (435) of school absenteeism during menstruation, 78 percent of which were absence for only one day, whereas 47 percent were absence for 2 days. In a federal university in Nigeria, Olowokere et al. (2014) discovered that the highest academic effect of dysmenorrhea and premenstrual syndrome was absence from school (65%), followed by loss of concentration during lessons (63%). Dambhare (2012) also discovered that dysmenorrhea resulted in school absenteeism in 24% of school adolescent girls in district Wardha, Central India. According to Amu and Bamidele (2014), dysmenorrhea interfered with school girls' daily activities in Osogbo, South western Nigeria. Pitangui et al. (2013) found a significant association between the intensity of pain and variables; school absenteeism, affected activities of daily living ($P<.05$).

According to Olowokere et al. (2014), not doing homework and not attending school lead learners to missing classes, tests and sometimes exams, hence the entire education of the learner will be hindered. Losing school days lead to poor progress in education.

Health Seeking Behaviour of Teenagers Suffering From Menstrual Disorders

This paper discovered that learners take unprescribed over the counter medicines to relieve their menstrual pains with few visiting the doctor for consultation. Similarly, Dambhare (2012) discovered that 7 percent use self-medication in the form of analgesics to relieve the menstrual pain. According to Olowokere et al. (2014), teenagers used three major classes of un-prescribed drugs namely, analgesics (62%), Iron supplements (17%) and contraceptives (9%). Other treatments used were non-pharmacological treatment modalities such as applying heating pad on the abdomen (28%), whereas other took herbal medicines (5%). According to Nooh (2014), health seeking behaviour depends on the intensity of menstrual pain, with only moderate to severe pain requiring pain relieving medications. Alkindi and Al-Bulushi (2011) discovered that only 3 percent of teenagers consulted the physician for their menstrual pain, 21 percent used self- medication in the form of ibrufen, mefenamic acid and paracetamol, and 55 percent taking no action for menstrual pain. Jeon et al. (2014) discovered that 58 percent warmed their abdomen, 50 percent endured the pain, 39 percent slept, 22 percent took pain relievers, 15 percent concentrated on their work, 2 percent took herbal medicine. Using over the counter pain relievers for menstrual pains masks the symptoms and the severity of the menstrual disorders, preventing teenagers from seeking medical screening, which would uncover pathologies associated with the pain.

CONCLUSION

This paper concluded that there is high prevalence of menstrual disorders such as irregular periods, painful periods, longer periods and heavy flow periods, which are undiagnosed and undertreated amongst rural Tshivenda speaking teenagers. Rural teenagers have limited options to deal with these common menstrual disorders. Thus, menstrual disorders pose very serious academic impact to rural teenagers.

RECOMMENDATIONS

The School health teams should screen teenagers for menstrual disorders and diagnose underlying pathological causes thereof and attend to such problems accordingly. In addition, a school health education on menstruation problems and treatment options could help teenagers to adapt to menstruation successfully and minimize the academic impact.

NOTE

This paper is a portion of the bigger project titled "Community health diagnosis of secondary school learners in Vhumbedzi circuit" which was conducted in 2012.

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