

■ ORIGINAL ARTICLE

## Menarche in Transkei Region South Africa

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### ABSTRACT

#### INTRODUCTION:

**BACKGROUND:** The age of menarche is an important milestone in a life of a woman. It is a sign of maturity of a girl to undergo sexual life. Some studies have shown that there is significant decline in the mean age of menarche in developed countries. Menarche is primarily important because of its timing within puberty and its sensitivity to environmental changes. Mean age of Menarche is an indicator of population health, well-being, and socio-economic status, and declines under improved environmental conditions.

**OBJECTIVE:** To study the age at menarche in the Mthatha area of South Africa.

**METHOD:** This is a descriptive study from the records of Sinawe center between 1st January and 31st December 2008. The Sinawe Center is the only center who deals with all the cases of sexual assaults in the area. The retrospective method is applied to recall their age at menarche at the time of examination of victim of sexual assault from all the rape survivals who has presented to Sinawe Center.

**RESULT:** There were 636 subjects of rape recorded in Sinawe Center. Of this, the age of menarche was found recorded in 464 cases. The youngest age group (11-15 years) were 86 (18.5%) of subjects in this study. Of this, among 8 (1.7%) were having age at menarche under 12 years of age, 50 (10.7%) were between 12 and 13 years, 28(6%) were 14 and 15 years of age group. The mean age of menarche is 13.94 years. The maximum age at menarche was 15.64 years amongst 46 to 50 years old women, and the minimum was 12.56 years amongst 11- and 15-years old girls ( $p < 0.05$ ,  $2 = 216$ ). There were 32 (6.9%) women who were above the age group of 50 years. Among them, the age at menarche was ranged from 14.67 to 14.85.

**CONCLUSION:** There is a decreasing trend in the age of menarche in the Transkei region of South Africa. It is a matter of concern.

**KEYWORDS** | Menarche; Women health; Puberty.

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## INTRODUCTION

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**M**enarche, the first menstrual period in females, signals the beginning of the capacity to reproduce and is associated with secondary sexual characteristics. Menarche is a significant milestone in a women's life.<sup>1</sup> Adverse effects of an earlier age at menarche include risk of premature death, endometrial cancer, and breast cancers.<sup>2</sup> Early menarche is associated with increased risk of depression, cardiovascular disease and metabolic syndrome, insulin resistance, polycystic ovarian syndrome, and teenage pregnancy.<sup>3</sup> Studies from high-income countries suggested that early onset of menarche may be linked to early sexual initiation, the uptake of alcohol and other substances, and early dropouts from school.<sup>4,5</sup> Early age of menarche is also associated with familial conflict, alteration in family structure, and stressful home circumstances.<sup>6,7</sup>

The mean age of menarche is considered an indicator of population health, well-being, and socio-economic status and declines under improved environmental conditions.<sup>8</sup> Mean age at menarche varies between women across different countries and ethnic groups.<sup>9</sup> There is a decline in the age of menarche in developed countries. The mean age of menarche was 14 years in the early 1900s and declined to 12.8 years by the 1940s.<sup>10</sup> Various studies on the age of menarche in South Africa demonstrated a decline in the mean age of menarche among urban girls.<sup>11,12</sup> Association between childhood sexual abuse and early age of menarche was established by a few studies.<sup>13,14</sup> The risk of early menarche increased with increasing frequency of sexual abuse incidents was also found.<sup>17</sup> Mean age of menarche was studied in the literature for both developed and developing countries, but it was not studied among victims of rape. The study aimed to assess the mean age at menarche and its trend among victims of rape in the Mthatha area of South Africa.

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## METHODS

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This study is a descriptive study from the records of Sinawe center in 2008. The Sinawe Center is the only center that deals with all

the cases of sexual assaults in the area. The retrospective method is applied to recall their age at menarche of the victim of sexual assault from all the rape survivors who have examined the victim of sexual assault from all the rape survivors who have presented to Sinawe Center.

Sinawe Centre is the only unit in this area, which deals with cases of sexual assaults. It renders services to about 400000 population. It has staff of 15, which includes medical consultants, professional nurses, social workers, and police officers on duty. The victims were from different age groups and eight districts around Mthatha, such as Mquanduli, Elliodale, Ugie, Ngcobo, Tsolo, Qumbu, Maclear areas. Therefore, it can be fairly presumed that this is a generalizable 'sample' representing the general population. The data were analyzed with the help of the SPSS program and presented in the form of tables and figure.

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## RESULTS

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There were 636 victims of rape examined in the center. Of this, the age of menarche was found recorded in 464 cases. The youngest age group (11-15 years) were 86 (18.5%) of subjects in this study. Of this, among 8 (1.7%) were having age at menarche under 12 years of age, 50 (10.7%) were between 12 and 13 years, 28 (6%) were 14 and 15 years of age group. The elderly (>60 years) rape victims who presented to Sinawe center were 18 (3.9%).

The highest number 180 (38.8%) of victims of rape who were presented to Sinawe center between the age group of 16 and 20 years of age followed by 11 to 15 years of age (18.5%). The age at menarche was reported <12-year by 15 (3.2%), 12 to 13 years by 113 (24.3%), 14 to 15 by 243 (52.3%) 16 to 17 by 76 (16.4%) 18 to 19 by 14 (3.0%) and 20 years and above by 3 (0.6%) of rape victims. (Table 1)

There were only two (0.4%) women (above 36 years of age) who had menarche at the age of 12 and 13 years. There were women (0.6%) between the age of 41 and 50 years who were started menstruating (menarche) at the age

of above 20 years and above. There was no significant difference in age of menarche between each consecutive age group and the youngest age group. There was a slight increase in mean age at menarche as age got older (Fig. 1).

The mean age of menarche was 13.94 years. The age of menarche, was 15.64 years amongst 46 to 50 years old women, and it was 12.56 years amongst 11 to 15 years old girls (Table 2). The thresholds for the age of menarche were continuously 3.08 years decrease from

last three decades. Last 35 years, the age of menarche among rape victims has decreased by 3.08 years. It indicated that thresholds for the age of menarche decrease one year in a decade. P-value= 0.000 and chi-square value  $\chi^2=216.67$  Pearson correlation coefficient = 0.349 and two-tailed significant (2-tailed) = 0.000. There were 32 (6.9%) women who were above the age group of 50 years. Among them, the age at menarche was ranged from 14.67 to 14.85

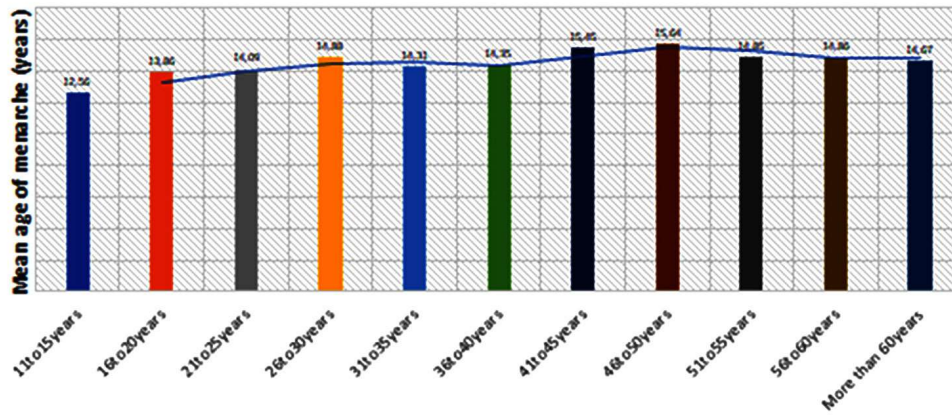
**Table 1:** Age of menarche in different age groups in Mithatha area of South Africa in 2008.

Age (Yrs.) Group	<12(%)	12-13 (%)	14-15 (%)	16-17 (%)	18-19 (%)	>20 (%)	Total (%)
11-15	8 (53.3)	50 (44.2)	28 (11.5)	0 (0.0)	0 (0.0)	0 (0.0)	86 (18.5)
16-20	4 (26.7)	36 (31.9)	112 (46.1)	27 (35.5)	1 (7.1)	0 (0.0)	180 (38.8)
21-25	1 (6.7)	20 (17.7)	37 (15.2)	15 (19.7)	5 (35.7)	0 (0.0)	78 (16.8)
16-30	1 (6.7)	4 (3.5)	12 (4.9)	12 (15.8)	4 (28.6)	0 (0.0)	33 (7.1)
31-35	1 (6.7)	1 (0.9)	10 (4.1)	3 (3.9)	1 (7.1)	0 (0.0)	16 (3.4)
36-40	0 (0.0)	1 (0.9)	12 (4.9)	4 (5.3)	0 (0.0)	0 (0.0)	17 (3.7)
41-45	0 (0.0)	0 (0.0)	8 (3.3)	0 (0.0)	1 (7.1)	2 (66.7)	11 (2.4)
46-50	0 (0.0)	0 (0.0)	5 (2.1)	4 (5.3)	1 (7.1)	1 (33.3)	11 (2.4)
51-55	0 (0.0)	1 (0.9)	3 (1.2)	2 (2.6)	1 (7.1)	0 (0.0)	7 (1.5)
56-60	0 (0.0)	0 (0.0)	4 (1.6)	3 (3.9)	0 (0.0)	0 (0.0)	7 (1.5)
> 60	0 (0.0)	0 (0.0)	12 (4.9)	6 (7.9)	0 (0.0)	0 (0.0)	18 (3.9)
Total	15 (100)	113 (100)	243 (100)	76 (100)	14 (100)	3 (100)	464 (100)

**Table 2 :** The mean age at menarche in different age groups in Mathatha area of South Africa in 2008

Age-groups (yrs.)	Age at Menarche	Number of Subjects (%)	Standard Deviation	Std. Error of Mean	95% Confidence Interval for Mean	
					Lower	Upper
11 to 15	12.56	86 (18.5)	.60730	.06549	2.1024	2.3628
16 to 20	13.86	180 (38.79)	.67580	.05037	2.8178	3.0161
21 to 25	14.09	78 (16.81)	.87449	.09902	2.8413	3.2356
26 to 30	14.88	33 (7.11)	.96922	.16872	3.0806	3.7679
31 to 35	14.31	16 (3.45)	.88506	.22127	2.6534	3.5966
36 to 40	14.35	17 (3.77)	.52859	.12820	2.9047	3.4482
41 to 45	15.45	11 (2.37)	1.27208	.38355	2.8727	4.5819
46 to 50	15.64	11 (2.37)	.98165	.29598	3.1587	4.4777
51 to 55	14.85	7 (1.50)	.97590	.36886	2.5260	4.3311
56 to 60	14.86	7 (1.50)	.53452	.20203	2.9342	3.9229
> 60 Years	14.67	18 (3.88)	.48507	.11433	3.0921	3.5746
Total	13.94	464 (100)	.84432	.03920	-	-

Fig. 1 : Trend in the mean age at menarche in different age groups in Mthatha area of South Africa in 2008.



In the present study, the mean age at menarche was 13.94 years (Table 2 & Fig. 1). Padez (2003) carried out a similar study among 753 urban Mozambican schoolgirls and found mean age at menarche was 13.35 years.<sup>27</sup> This indicates that Mozambican schoolgirls have a lower age (fewer 0.59 years) at menarche than Xhosa girls in the Mthatha area. This could be a hereditary factor that can influence the age at menarche.

Although menarche is a significant event in a women’s life and their experiences also vary at a personal level, with cultural, religious, and societal environmental settings;<sup>28</sup> national-level data on the average age of menarche is not collected routinely and it represents a missed opportunity. National-level data on the average age of menarche could provide critical information for various sectors like nutritionists, sexual and reproductive health experts, and experts working on the gender gap in education.<sup>29</sup> Knowledge of the average age of menarche can help understand the pubertal trends among girls with more accuracy as it is perceived as the least subjective indicator. Other than this average age of menarche would allow for public health trend analysis, clinical applications, and socio-economic inequalities among various populations in a country.<sup>29</sup>

A study in urban South Africa (2009) has shown that the age at initiation has remained stable. Still, a statistically significant positive secular trend in the age-period at menarche

(Average decline of 0.5 years per decade) was seen for urban South African girls.<sup>30</sup> This findings show that rape victims could have different factors that could have led them to start menstruation earlier than the other South African girls.

**LIMITATION**

The recall biases of the subjects could not be rules it out. However every precaution was taken during their interview to minimize it.

**CONCLUSION**

There is a decreasing trend of one year in each decade in the age of menarche in the Mthatha area of South Africa. This decreasing trend is a matter of concern. There is a need for further research studies to find out the factors associated with early menarche among victims of rape in the Mthatha area of South Africa.

**ETHICAL ISSUE**

The author has ethical permission for a case report publication (approved project No. 4114/1999) from the Ethical Committee of the University of Transkei, South Africa.

**Conflict of Interest:**

The author has made no acknowledgment in this article.

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