

Multidimensions of sleep health among in-school adolescents in rural and urban areas in southwestern Nigeria

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INTRODUCTION

Previous studies have focused on sleep inequities among disadvantaged populations in high-income countries. However, little is known about the differences in sleep health among adolescents in Africa.

In Nigeria:

- Only questionnaire-based studies
- Adolescent sleep studies only in urban population
- Sleep duration and quality: 16.4 - 60.8%
- Ofovwe et al (2008), in a school based study at Benin reported poor sleep hygiene in 48.1% of the children studied³
- Sebanjo et al (2018), in a study at LASUTH; Nigerian children had a shorter sleep duration than their peers.

In Osun State

Olorunmoteni *et al*(2017): Sleep problems exist; social class, screen use and female gender associated with poor sleep

RESEARCH QUESTIONS AND OBJECTIVES

Research Question:

What are the differences in the multi-dimensions of sleep health among adolescents living in rural vs. urban communities in Nigeria and the determinants of their sleep health?

Objectives:

- To describe and compare the dimensions of sleep health among in-school adolescents in selected rural and urban communities of Osun State, Nigeria
- To explore the determinants of sleep health among the adolescents

MATERIALS AND METHODS

Study Participants:

- 900 In-School Adolescents
- Six rural and six urban schools in Osun State, Nigeria
- 13-19 years
- 20 adolescent-parent dyad (IDI)

Study Design

- Cross-sectional, Mixed-methods:
- Quantitative
- Concurrent Qualitative

Multistage technique

Data Collection Instruments

- Sleep questionnaires
- Anthropometry & Physical exam
- Actigraphy

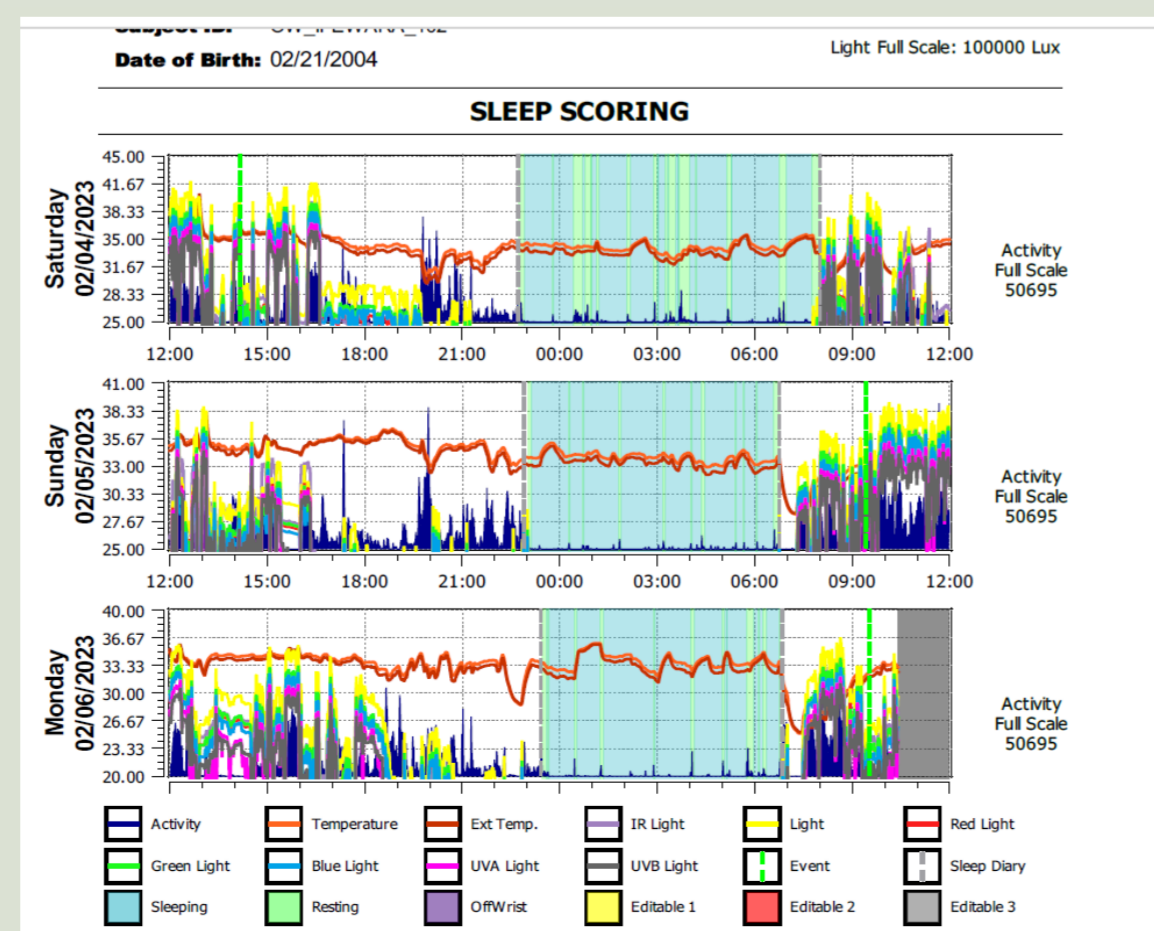
RESULTS

- Place of residence: Rural: 459 (50.9%); Urban: 441(49.1%)
- Mean age: 15.1±1.4 {Rural: 15.4±1.4 Urban: 14.8±1.4} ($p < 0.001$)
- Female: 531 (59.0%); Rural=274 (59.7%), Urban= 257(58.3%)

Sleep health characteristics

- The prevalence of poor sleep quality: 15%
- Insufficient sleep (SD < 8.5 hours) was seen in 79% of the adolescents
- Prevalence of risk of sleep apnea: 9.8%
- Urban adolescents had later bedtimes compared to their rural-dwelling counterparts

Rural difference in their wake times



Urban

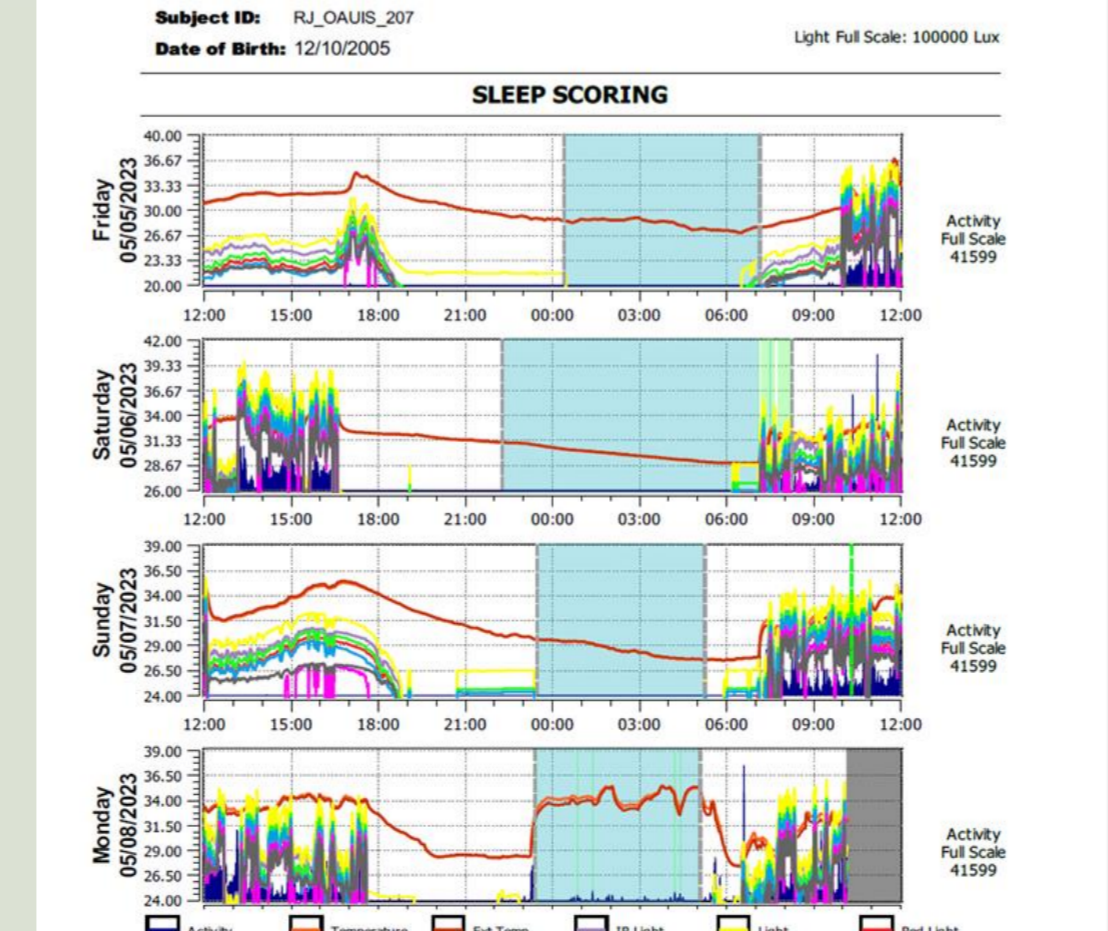


Table 1: Sleep Characteristics between rural and urban-dwelling adolescents

Characteristics	Whole Population mean± SD	Rural mean± SD	Urban mean± SD	p-value
Sleep Health Variables				
Sleep quality (PSQI)	2.7 ± 2.6	2.3 ± 2.4	3.1 ± 2.8	<0.001
Daytime Sleepiness Score (ESS)	5.3 ± 3.9	5.0 ± 3.8	5.5 ± 4.0	0.033
Risk of Sleep apnoea				
No risk	805 (90.2)	422 (92.9)	383 (87.4)	0.006*
Risk of apnoea	87 (9.8)	32 (7.1)	55 (12.6)	
Sleep Duration (h:mm)	7:1 ± 1:40	7:2 ± 1:3	6:6 ± 1:4	<0.001

Abbreviations: PSQI = Pittsburg Sleep Quality Index, ESS = Epworth Sleepiness Scale, *Pearson's Chi-square test. Other analyses were with independent t-tests.

CONCLUSION

Gender difference in sleep need perception:

Environmental determinants:

- Rural: Mosquitoes, poor sleeping conditions
- Urban: Late school closing time, homework, Electronic devices, Health conditions

Implications:

- Rural adolescents have better sleep health
- Interventions on sleep health

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"4 hours or 5 hours if you are not doing anything."
(Rural Adolescents)

"...normal sleep for children is 8hrs"
(Urban Adolescents)

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