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INFLUENCE OF SLEEP QUALITY AND AGE ON PRIMIGRAVIDA HEALTH-RELATED QUALITY OF LIFE IN IBADAN, NIGERIA

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ABSTRACT
The first pregnancy may be associated with mixed feelings of happiness and negative expectations. Primigravida may expect their first child-bearing experience to be frightening, extremely difficult and painful which can affect their health-related quality of life (HRQoL). The study investigated the influence of sleep quality and age on health- related quality of life among primigravida in Ibadan. The study adopted a descriptive survey research design. Seven hundred and sixty-eight (768) primigravida attending ante-natal care were purposively selected in nine government hospitals in Ibadan. These selected participants fulfilled the inclusion criteria and consented to participate in the study. The participants' ages ranged from 18 to 41 with a mean age of 93.6. A questionnaire consisting of demographic information of primigravida, World Health Organization Quality of life (WHOQOL-BREF) and Pittsburgh Sleep Quality Index (PSQI) was used to collect data. The hypotheses raised were tested using stepwise linear regression and analysis of variance (ANOVA). The result revealed that out of seven sleep quality components (subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbance, use of medication and daytime dysfunction), only sleep disturbance has a statistically significant independent influence on HRQoL of primigravida but sleep quality components jointly influence HRQoL of primigravida in Ibadan. Primigravida within 22-37 ages reported a higher level of HRQoL than their younger (18-21) and older counterparts (38-41). The study concluded that sleep quality components if enhanced could improve health-related quality of life among primigravida.

Keywords: *Sleep quality, Age, Quality of life, Health-related quality of life, Primigravida*

INTRODUCTION
Pregnancy is considered as a critical and unique period in women's life. Pregnancy is the most important, sensitive, interesting and enjoyable part of a woman's life. Pregnancy and childbirth are periods of great joy and delicate, interesting, and exciting aspects of women's life (Olutola & Adejuwon, 2020). It reflects a normal process in the female life cycle. Pregnancy can occur through sexual intercourse or assisted reproductive technology (ART) (Nierenberg, 2015). Ahmadi, Montazeri, Mozafari, Azari, Nateghi & Ashrafi (2014) noted that childbearing for the first time is a unique experience and major event in women's life. Childbearing is one of the most painful procedures that a female is likely to experience in her lifetime. Changes in physical appearance, feeling related to motherhood and family expectations are among challenges that many primigravida experience more often. Pregnancy also known as gravidity or gestation is the time during which one or more offspring develops in the womb of a woman. A multiple pregnancy involves a pregnancy with more than one fetus, such as with twins (Wylie, 2005). Primigravida refers to a woman who is pregnant for the first time or who has been pregnant once. In other words, from the time a woman gets pregnant the first time until she gets pregnant the second time, she can be referred to as a primigravida (or gravida 1).

Primigravida expect her first child bearing experience to be frightening extremely difficult long and painful (Oweis & Abushaikha, 2004)**.** Pregnancy, particularly first pregnancy, is a major transition in every woman's life (Hofberg & Ward, 2003). Pregnancy, like any other crisis involves two groups of major physical and psychological changes, and any help to mothers' health depends on the understanding of these changes and their interactions, which can create varying clinical pictures in different people (Davis-Floyd, 2004; Gottlieb, 2017). The physiological changes that occur during pregnancy affecting the biochemistry, anatomy of organs and systems should be

considered. It may aggravate pre-existing morbidities or produce symptoms that affect the quality of life (Lopes, Prochnow & Piccinini, 2010).

Every year, half a million women face untimely death due to complications during pregnancy childbirth or after six weeks following delivery. To prevent undesirable events during and after pregnancy, antenatal care (ANC) is considered to be the most essential component of maternal and child health services to identify pregnancy related problems in the early period (WHO, 2010). Symptoms of early pregnancy may include missed periods, tender breasts, nausea and vomiting, hunger and frequent urination. In addition, factors such as culture, age, social support, knowledge and healthcare provision may contribute to the overall expectations of the primigravida. Therefore, the health-related quality of life of primigravida needs to be examined.

World Health Organization (WHO) defined quality of life as an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards, and concerns (WHO, 1998). Quality of life means living a good life while a good life is the same as living a life with high quality (Ventegodt, 2003). When the quality of life is considered in the context of health, it is referred to as health-related quality of life (HRQoL) to differentiate it from other aspects of quality of life. Various viewpoints regarding HRQoL has been expressed in literature. Some scholars viewed the health-related quality of life (HRQoL) as a multidimensional construct, which encompasses social, mental, and physical health dimensions (Fryback, 2010; O'Connor, 2004).

Others maintained that HRQoL is specific to health and it refers to patients' assessments of their current level of health-related functioning and well-being (Mousavi, Mortazari, Chaman & Khosravi, 2013). HRQoL focuses on the impact health status has on quality of life (Healthy People 2020, 2014). However, HRQoL in this study was viewed from the perspective of being subjective evaluations of the influences of primigravida current health status, health care, and health promoting activities on their ability to achieve and maintain a level of overall functioning.
Waters and Lee (1996) examined the differences between primigravida and multigravida mothers in sleep disturbances, fatigue, and functional status. The result indicated that primigravida experienced significantly more disturbed sleep and fatigue than multigravida mothers. This may be as a result of primigravida inexperience regarding handling pregnancy challenges (Waters & Lee, 1996).

In addition, Ahmadi et al. (2014) assessed health-related quality of life and primigravid: a comparative study of natural conception and conception by assisted reproduction technologies (ARTs). The findings from this study suggest that health-related quality of life was improved in women who became a mother for the first time by either method. They also reported that women who received ARTs showed better quality of life from this first successful experience when compared with women who became mothers by natural conception**.** Empirical studies have shown that primigravida are a high-risk group (Danish, Fawad & Abbasi, 2010). Accordingly, an important factor that impacts the daily life of pregnant women is sleep quality yet few studies were found that identified sleep quality in pregnancy and their relationships to the well-being of pregnant women (Yucel, Yucel, Gulhan & Ozeren, 2012). Sleep is one of the psychological factors identified as relevant to HRQoL. Sleep is one of the basic and inevitable daily activities with physiological, psychological and social dimensions which affects life quality and health of individuals. Sleep quality is an important factor for health. Furthermore, sleep as an essential and unique behaviour, is affected by many physiological or pathological changes in the pregnancy period (Yucel et al., 2012). In this study, sleep quality refers to how well one sleep (National Sleep Foundation, 2020) while the components of sleep that were examined include subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbance, use of medication and daytime dysfunction.

Previous studies pointed out that 79% of pregnant women suffer from sleep disorders (National Sleep Foundation, 2007). In addition, Neau, Texier and Ingrand (2009) reported that more than 72% of pregnant women experience frequent waking up during the night. This may result in deterioration in sleep quality and thus reducing their HRQoL (Neau et al., 2009). According to Rezaei, Moghadam and Saraylu (2013) change in sleep patterns lead to dysfunction, maternal fatigue, loss of family welfare and increasing of car accident. Their study pointed to the fact that there was a significant relationship between the sleep quality score and quality of life score. Literature revealed that good sleep quality is associated with a wide range of positive outcomes such as better health, less daytime sleepiness, greater well-being and better psychological functioning (Harvery, Stinson, Kathleen, Whitaker, Moskovitz & Harvinder, 2008).

Lack of sleep is an issue for a large number of people including pregnant women. Sleep deprivation is not without risk and is associated with poor health, however, adequate sleep is critical for optimal daytime functioning (Kryger, Roth & Dement, 2005; Banks & Dinges, 2007). Poor sleep quality has a direct effect on the quality of human life including pregnant women. Most of pregnant women's complaints during this period indicated poor sleep quality and reduced sleep duration (Okun, Tolge & Hall, 2014), that is mostly due to the impacts of hormonal changes (Mehta, Shafi, & Bhat, 2015), back pain, frequent urination, and other factors during pregnancy (Chih-Kuang, Yu-Cheng, Ning-Hung, Li-Ting, Shih-Wei & Wu Katie, et al, 2014; Shobeiri, Khaledi, Masoumi & Roshanei, 2016). It has been revealed that hormones are partially responsible for sleep-wake pattern. Changes in estrogen and progesterone level during pregnancy can affect sleep (Teran-Perez, Arana-Lechuga, Esqueda-Leon, Santana-Miranda, Rojas-Zamorano & Velazquez, 2012). Majority of women (97%) have reported sleep disturbances by the third trimester of pregnancy (Sharma & Franco, 2004) and sleep problems are at the highest level in the first postpartum month, especially for first-time mothers (Lee, Zaffke & McEnany, 2000).

In a cross-sectional study, Nicholson, Setse, Hill-Briggs, Cooper, Strobino and Powe (2006) examined health-related quality of life among early pregnant women receiving prenatal care using the SF-36 scale. They reported poor health-related quality of life during early pregnancy in women with depressive symptoms. In a prospective observational study, Lacasse, Rey, Ferreira, Morin and Berard (2008) examined the effect of nausea and vomiting on health-related quality of life during pregnancy. They reported that the presence and severity of nausea and vomiting decrease health-related quality of life. In addition, more than half of pregnant women report back pain during pregnancy, and back pain reduces health-related quality of life in pregnancy, especially in the third trimester (Olsson & Nilsson-Wikmar, 2004).

The subjective perception of poor sleep quality is the most commonly assessed sleep disturbance during pregnancy, with sleep quality typically declining as pregnancy progresses. Disturbances in sleep pattern and quality during pregnancy are typically classified as disturbed sleep quality, poor sleep continuity (fragmentation), short/long sleep duration, sleep latency, sleep efficiency and lack of sleep as daytime dysfunction. Sleep quality declines as pregnancy progresses, particularly as characterized by poor sleep continuity (Ayrim, Keskin, Ozol, Onaran, Yildirim & Kafali, 2011; Chang, Pien, Stephen & George, 2010). Sleep disruption affects quality of life in a significant way. Due to systematic changes caused by hormonal, mental, psychological, emotional, and physical factors, pregnancy period can disturb the normal sleep pattern, creating sleep disorders (Darvish & Zarbakhsh, 2016).

Studies have investigated the association between sleep quality and the subjective perception of sleep parameters. The results suggested that sleep quality is associated with subjective estimates of the ease of sleep onset (Kecklund, Akerstedt & Axelson, 2003). Facco, Kramer, Ho, Zee and Grobman (2010) carried out a study with 202 healthy pregnant women and found a significant

correlation between ages and sleep quality. Also, they found that sleep quality decreased with an increasing gestational week. Rezaei et al. (2013) study on quality of life in pregnant women with sleep disorder showed that the mean sleep quality is 8.62 ± 2.81 in pregnant women with sleep disorders or poor sleep quality in the second trimester. Quality of life ($P \leq 0.03$) and one domain, including psychological health ($P \leq 0.02$) related to quality of sleep. They concluded that a large percentage of women suffer from sleep disorders in pregnancy.

Moreover, the hormonal and physical changes that occur during pregnancy increases respiratory problems as a result of pressure that growing fetus makes to the diaphragm and some diseases like nocturia, back pain, leg cramps, and restless, leg syndrome, affect sleep habits and sleep quality (Pien & Schwab, 2004)**.** Yucel et al. (2012) study on sleep quality and related factors in pregnant women reported that a positive weak correlation was found between gestational week and mean PSQ1. The total score, indicates that the quality of sleep decreased with an increase in gestational week ($r = 0.389$, $P < 0.00\ 1$). Also, no statistically significant difference was found between the exercise status of pregnant women and mean PSQI total score ($P = 0.229$). No statistically significant relation was found between age and mean PSQI total score ($P = 0.059$). They concluded that sleep quality is poor in pregnant women. In view of this, this study investigated the influence of sleep quality and age on health-related quality of life among primigravida in Ibadan.

Statement of the Problem

Despite the abundance of health-care resources and government efforts on health-care of pregnant women, literature still reveals that the maternal death rate among pregnant women is still high in Nigeria. Specifically, Obasi (2016) reported that 40,000 Nigerian women die annually during child birth and 576 deaths were recorded out of every 100,000 daily live births. This situation could be linked to poor health-related quality of life**.** Thus, it is necessary to examine the relevance of HRQoL among primigravida. Moreover, data on HRQoL among primigravida are scanty and mainly based in western contexts. Given this, factors (such as sleep quality and age) that can influence health-related quality of life among pregnant women need to be investigated. Sleep quality is an important factor during pregnancy. Benzies et al. (2006) revealed that pregnant women were well aware of the age-related decline in their health but relied on the expectation of the assistance of reproductive technology made available when needed.

None of these researchers investigated the influence of sleep quality and age on health-related quality of life among primigravida. Therefore, the main purpose of this study is to investigate the influence of sleep quality and age on health-related quality of life among primigravida in Ibadan. The following research hypotheses were formulated and tested in this study:

1. Sleep quality components (subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbance, use of medication and daytime dysfunction) will have significant independent influence on health-related quality of life among primigravida in Ibadan.
2. Sleep quality components (subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbance, use of medication and daytime dysfunction) will have significant joint influence on health-related quality of life among primigravida in Ibadan.
3. There will be a significant influence of age on health-related quality of life among primigravida in Ibadan.

METHODOLOGY

The study adopted a descriptive survey research design. The descriptive survey research design was chosen because the data was collected through a questionnaires and no variable was manipulated. This study took place in Ibadan which is the capital of Oyo State and is known as the largest city in West Africa. Ethical approval was granted by Social Sciences and Humanities

Ethics Committee (SSHEC), Oyo State Ethical Review Committee (OSRERC) and University of Ibadan/University College Hospital Ethics Committee (UI/UCHEC). The study was conducted in nine purposively selected public (government owned) hospitals. The target population consisted of primigravida who were attending antenatal in the public (government owned) hospitals in Ibadan. Seven hundred and sixty-eight (768) purposively selected primigravida participated in the study. These selected participants fulfilled the inclusion criteria and consented to participate in the study. The participants ages ranged from 18 to 41years with mean age of 93.6.

A self-report questionnaire was used to collect relevant data for the study. The questionnaire consisted of three sections; A – C. Section A consisted of demographic information of primigravida. Section B consisted of the World Health Organization Quality of life (WHOQOL-BREF) scale used by the researchers to measure health-related quality of life of the participants' in the study. It was developed by WHOQOL Group and the instrument was a 26-item questionnaire developed to be a cross-culturally applicable tool for the subjective evaluation of health-related quality of life. The items are rated on a 5-point Likert scale in a positive direction. The scores were transformed on a scale from 0-100, with a score above 50 representing good health and below 50 representing poor health for each domain (The WHOGOL Group, 1998)**.** Researchers recorded excellent internal reliability Cronbach's alpha of 0.86 for WHOQOL – BREF (Gureje, Kola, Afolabi & Olley, 2008). Moreover, Cronbach's alpha of 0.89 was recorded during revalidation of the instrument in the course of this study.
Section C consists of Pittsburgh Sleep Quality Index (PSQI) developed by (Buysse, Reynolds, Monk, Berman & Kupfer, 1989)**.** It was used to measure sleep quality of the participants. It is a self-report measure of sleep quality using Likert and open ended response formats. The PSQI yields seven components (i.e. subscales) scores: subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of medication and day time dysfunction. Each component is rated on a scale of 0-3, thus the score range is between 0 and 21. The addition of these seven components yields a global score of subjective sleep quality. Individuals with PSQI scores < 5 were categorized as good sleepers, and those with scores > = 5 were classified as poor sleepers. The PSQ1 had strong Cronbach's alpha reliability of 0.80 (Carpenter & Andrykowski, 1998). Cronbach's alpha of 0.85 was recorded during revalidation of the instrument.

Ethical Approval

The study was conducted after ethical approvals were granted by Social Sciences and Humanities Ethics Committee (SSHEC), Oyo State Ethical Review Committee (OSRERC) and University of Ibadan/University College Hospital Ethics Committee (UI/UCHEC). Both the verbal and writing consent of the participants were obtained and they were assured of confidentiality of the information they provided. The participants were informed by the researcher of the need to follow the instruction strictly and they were encouraged to respond accurately, honestly and promptly to the instruments. All the information from the respondents was kept confidential. All the participants were given incentives.

The researchers sought the cooperation of the health workers in the antenatal section (Doctors, Nurses, and Health record officers) and questionnaire was administered on the participants that met the inclusion criteria during the antenatal clinic days. The data collected were analysed for the research hypotheses generated for the study. Hypotheses one and two were tested with the use of stepwise linear regression while hypotheses three was tested using analysis of variance (ANOVA).

RESULTS

Hypothesis one and two were tested using stepwise linear regression (forward selection) which involves starting with one component in the model and testing the addition of each component using a chosen model fit criterion. Results are presented in Table 1

Table 1: Summary of stepwise linear regression showing joint and independent influence of sleep quality components on health related quality of life

Model	Sleep Quality Components	β	T	Sig.	R^2	F	Sig
1	Subjective Sleep Quality	-.058	-1.603	.109	.002	2.569	.109
2	Subjective Sleep Quality	-.060	-1.638	.102			
	Sleep Latency	.015	.414	.679	.001	1.369	.255
3	Subjective Sleep Quality	-.062	-1.696	.090			
	Sleep Latency	.016	.433	.665	.002	1.389	.245
	Sleep Duration	-.043	-1.194	.233			
4	Subjective Sleep Quality	-.063	-1.727	.085			
	Sleep Latency	.019	.533	.594			
	Sleep Duration	-.038	-1.057	.291	.002	1.311	.264
	Sleep Efficiency	-.038	-1.038	.300			
5	Subjective Sleep Quality	-.095	-2.540	.011			
	Sleep Latency	-.013	-.348	.728			
	Sleep Duration	-.033	-.923	.356	.016	3.442	.004
	Sleep Efficiency	-.045	-1.226	.220			
	Sleep Disturbance	.133	3.448	**.001****			
6	Subjective Sleep Quality	-.082	-2.166	.031			
	Sleep Latency	-.012	-.310	.757			
	Sleep Duration	-.029	-.793	.428			
	Sleep Efficiency	-.044	-1.217	.224	.019	3.436	.**002****
	Sleep Disturbance	.138	3.567	**.000****			
	Use of Medication	-.067	-1.832	.067			
7	Subjective Sleep Quality	-.066	-1.707	.088			
	Sleep Latency	-.005	-.133	.894			
	Sleep Duration	-.026	-.724	.469			
	Sleep Efficiency	-.048	-1.314	.189	.022	3.459	**.001****
	Sleep Disturbance	.146	3.761	**.000****			
	Use of Medication	-.041	-1.053	.293			
	Daytime Dysfunction	-.077	-1.878	.061			

Hypothesis One: Sleep quality components (subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbance, use of medication and daytime dysfunction) will have significant independent influence on health-related quality of life among primigravida in Ibadan.

The results in table 1 showed that in Models 1 – 4, there was no significant independent influence of subjective sleep quality, sleep latency, sleep duration and sleep efficiency on health- related quality of life. The values of R^2 ranged from 0.1% to 0.2% as the variance in health- related quality of life across models 1 – 4. However, addition of sleep disturbance in model 5 create a significance thereby making only sleep disturbance emerged as a significant independent predictor of health-related quality of life among primigravida (β=.133; p<.01). All other components of sleep quality did not have a significant independent influence on health-related quality of life among primigravida across the models in Table 1.

Hypothesis Two: Sleep quality components (subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbance, use of medication and daytime dysfunction) will have significant joint influence on health-related quality of life among primigravida in Ibadan.

The results in Table 1 revealed that, with an introduction of sleep disturbance in Model 5, the joint influence of subjective sleep quality, sleep latency, sleep duration, sleep efficiency and sleep disturbance on health related quality of life among primigravida in Ibadan became significant (F=3.442; p<.05) accounting for a significant variance of 1.6%. A further introduction of medication use in Model 6, increased the joint potency of subjective sleep quality, sleep latency, sleep duration, sleep efficiency, sleep disturbance and medication on health-related quality of life (F=3.436; p<.05) and accounted for an increased significant variance of 1.9%.
The inclusion of sleep disturbance in the model produced the most statistically significant improvement of the fit in model 7 in which all the components of sleep quality had a joint significant influence on health-related quality of life among primigravida (F=3.459; p<.01) and accounted for a variance of 2.2% with its highest predictive strength in model 7. Therefore, hypothesis two was accepted.

Hypothesis Three: There will be a significant influence of age on health-related quality of life among primigravida in Ibadan.
This hypothesis was tested using one-way analysis of variance (ANOVA). Results were presented in Table 2

Table 2: Summary of one-way ANOVA showing influence of age on health-related quality of life

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	1982.479	5	396.496	2.635	.023
Within Groups	114664.349	762	150.478		
Total	**116646.828**	**767**			

Results from Table 2 showed that there is a significant influence of age on health-related quality of life among primigravida ($F_{(5, 762)}$=2.635; p<.05). The result implied that health-related quality of life varied significantly across the age groups of primigravida. Thus, a post hoc analysis was conducted to ascertain the direction of influence across the various age groups of participants in the study. Results of the post hoc analysis were presented in Table 3.

Table 3: Multiple comparison showing least significant difference (LSD) of health related quality of life across age groups

	1	2	3	4	5	6	Mean
1. 18 - 21 years		-6.32*	-6.44*	-6.03*	-5.84*	1.22	89.7292
2. 22 – 25 years			-.11	.29	.47	7.55*	96.0578
3. 26 – 29 years				.40	.59	7.66*	96.1697
4. 30 – 33 years					.18	7.26*	95.7602
5. 34 – 37 years						7.07*	95.5789
6. 38 – 41 years							88.5000

*. The mean difference is significant at the 0.05 level.

Results of mean ranking from Table 3 above, showed that primigravida from ages 22 – 37 years reported higher levels of health-related quality of life than their younger and older counterparts.

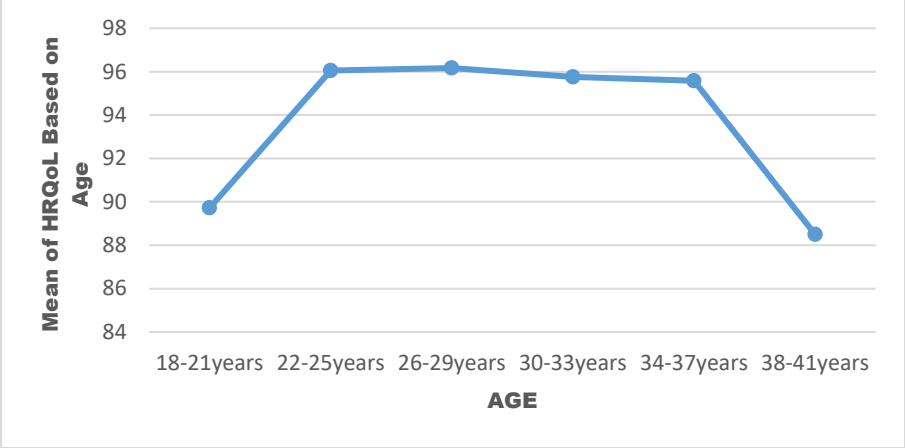

Figure 1: Line graph showing mean of HRQoL of the respondents based on age

Figure 1 revealed that, primigravida from ages 22-33 years ranked first with mean rank of 96.16 while those from ages 22-24 years ($\bar{x}$=96.05), 28-30 years ($\bar{x}$=95.76) and 31-33 years ($\bar{x}$=95.57) ranked second to fourth respectively. Furthermore, LSD results on health-related quality of life showed that mean differences that were greater than (or equal to) ±5.84 were significant at $p<.05$. The hypothesis stated was therefore supported.

DISCUSSION OF FINDINGS

The result of the study revealed that out of all the sleep components examined only sleep disturbance has a statistically significant independent influence on HRQoL of primigravida in Ibadan. This result aligned with the result of a study by Tsai, Lee, Lin and Lee (2016) which reported that of all the component of sleep quality, sleep disturbance was a prominent and persistent issue in pregnant women. The result of independent influence of sleep disturbance on HRQoL was also significant. The explanation for the current finding might not be farfetched from the fact that the normal physiological and psychological changes that come with pregnancy may impair restful sleep.

The result of stepwise regression analysis showed that sleep components jointly influence HRQoL of primigravida in Ibadan. The result inferred that individual sleep components interacted together to bring about noticeable changes in HRQoL. This finding was supported by the results of the study carried out by Sut, Asci and Tapac (2016) which used cross sectional design to select a sample 492 out of which 292 were pregnant women. The result of the study revealed a significant relationship between sleep quality and health-related quality of life among pregnant women.
This study also revealed that the age of primigravida influence their HRQoL and it varied across the age group of primigravida. Primigravida from 22 to 33 years of age reported higher level of HRQoL than their younger (18-21) and older (34-41) counterparts. Benzies et al. (2006) also confirmed this in their study which revealed that pregnant women were well aware of the age related decline in their health but they relied on the expectation of the assistance of reproductive technology being available if needed. Researchers have found that pregnant women understood that there is a higher likelihood of an older mother giving birth to a baby with Down's syndrome and of a greater risk of miscarriage, and having high blood pressure (Maheshwari, Porter, Shetty & Bhattacharya, 2008). This knowledge may affect their HRQoL. Moreover, the probabilities of needing to deliver by Caesarean section (Maheshwari et al., 2008) having a premature or low-birth-weight baby and stillbirth (Benzies, et al. 2006) may have influence on primigravida health-related quality of life.

Conclusion

Health-related quality of life deals with the health status of individual physical, mental and social well-being. From the findings, the researchers conclude that sleep quality components, sleep disturbance and age have a statistically significant influence on health-related quality of life of primigravida and age of primigravida have a great significance in preventing the adverse pregnancy outcomes and improve health-related quality of life among primigravida.

Based on the study findings, the researchers recommend that:

1. Health workers should train primigravida on how to manage their challenges with sleep disturbance, by assisting them to identify what causes it and teach them the coping strategies they can use to solve the problem.
2. During antenatal lectures emphasis should be placed on how sleep quality and primigravida age influence their HRQoL in other to maintain their wellbeing during these critical conditions of their lives.
3. Young primigravida should be encouraged to give birth to the number of children they want on time to enjoy the good health-related quality of life during pregnancy.
4. Healthcare providers should acknowledge primigravida who are over 34 years old as category of primigravida with unique challenges and deserving special attention and consideration.

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