

A Review on the Causes of Poor Sleep Quality in African Young Adults and Recommendations

Bianca Chinembiri¹, Jeremiah Machuki¹, Dominic Mogere², Hong Sun³, Deqin Geng^{4*},

¹Department of Rehabilitation Medicine, Xuzhou Medical University, 209 Tongshan road, Xuzhou, 221004, Jiangsu, China; ²Department of Epidemiology and Biostatistics, School of Public Health at Mount Kenya University, General Kago Rd PO BOX 342-01000, Thika, Kenya; ³Department of Neurology, Affiliated Hospital of Xuzhou Medical University, 99 Huaihai West Road, 221004, Xuzhou, China; ⁴Department of Physiology, Xuzhou Medical University, 209 Tongshan Road, Xuzhou, 221004, Jiangsu, China

ABSTRACT

Sleep has been known for centuries to be part of the key physiological processes that promote normal physical and mental functions in human beings. Having repeatedly inadequate sleep for a long time can result in sleep disorders. The sleep disorders not only cause development of chronic diseases at young ages but can further deteriorate the person's quality of life. They can limit the person's functional independence levels, reduce participation in meaningful daily life activities and may have a negative impact on the financial status of the affected person. Sleep disorders are increasingly becoming a concern especially in young adults across developed nations because of the advanced technologies in the fields of telecommunications, internet, entertainment, etc. In Africa, there is limited literature information concerning sleep disorders in young adults. Therefore, it is important to investigate the nature and cause of these sleep disorders because they can consequently limit the future workforce needed for successful industrialization resulting in dilapidated economies. This can help health policy makers to strategize seamless ways that promote good sleep hygiene practices in young African people. However, in this review, we will discuss the several factors that could precipitate sleep disorders in young African adults such as poor sleep habits, economic challenges, climate changes, psychological issues and culture in order to have a clear view of the status quo.

Keywords: Sleep disorders; Young adults; Africa; Sleep habits; Economy

INTRODUCTION

Africa is a continent bordered to the North by the Mediterranean Sea, to the East by the Indian Ocean, to the West by the Atlantic Ocean and the South is the blending of the Indian and Atlantic Oceans [1]. Africa consists of 54 recognized sovereign countries, 8 territories and 2 disputed or not yet recognized states [1]. The majority of African countries have been generally known to have struggling economies especially when it comes to providing adequate health services for all [2]. Communicable diseases such as the recent COVID-19 pandemic, Malaria, HIV/AIDS, etc., have dismantled the already successfully existing African public health facilities resulting in devastating effects especially on devolving the

services to the people of low socioeconomic status [3]. Amongst the affected population are young adults. Recent studies have revealed that not only communicable diseases are still a burden to healthcare facilities in Africa but cases of Non-Communicable Diseases (NCDs) are proliferating at a distressing rate [4]. The NCDs account for more than 25 percent of deaths in 80 percent of the African countries [5]. By 2030, NCDs will be the leading cause of death even in sub-Saharan Africa [5]. In low- and middle income countries, a greater share of NCD deaths occur prematurely among people ages 30-70 who are often at the peak of their economic productivity [6].

The NCDs such as cardiovascular diseases, cancers, respiratory diseases and diabetes, have received prodigious attention and

Correspondence to: Deqin Geng, Department of Neurology, Affiliated Hospital of Xuzhou Medical University, 99 Huaihai West Road, 221004, Xuzhou, China, E-mail: gengdeqin@126.com

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most African public health facilities have managed to effectively setup awareness campaigns in the community, free testing booths and consultation with the specialist doctors [6]. Africa has the world's youngest population, with more than one-third, or about 360 million Africans, between the ages of 10 and 24 [7]. It is estimated that by 2050, these young people will have aged to create a population ages 45 and above, meaning those are the years they can experience NCDs and it will be three times the size it is today [7]. The World Health Organization estimates that 70% of the premature deaths in adults are the result of behaviors begun in adolescence [7]. There are four key risk behaviors that initiate the development of NCD which are tobacco and alcohol use, physical inactivity, and unhealthy diet [5]. NCDs are on the rise among young Africans due to globalization, urbanization, and socioeconomic development [7]. Addressing these risk factors among young people today can significantly shift the projected trajectory of NCDs in Africa. In the absence of urgent action, NCDs will add tremendous pressure to already overstretched health systems. Shockingly, the statistics on deaths caused by NCDs in Africa are still distressingly high regardless of the established medical interventions [4]. Some risk factors for NCDs like sleeping disorders have slowly crept into the arena without many health professionals noticing [8]. Although most NCDs are believed to be triggered by risk factors such as smoking, physical inactivity, unhealthy diets, etc., some recent studies are speculating that continuous repetitive bouts of inadequate sleep during young adulthood could be the primary cause of most NCDs in middle and late adulthood [9]. From this information mentioned above, we believed it could be necessary to investigate the nature or causes of poor sleep quality in African young adults because little is known about it. However, in this review, we shall examine certain factors that put young African adults at risk of developing sleep disorders.

LITERATURE REVIEW

Sleeping habits

Sleep disorders in young adults around the world, are often caused by poor sleeping habits [10]. A sleeping habit is defined as that behavior pertaining to the time people go to sleep, the time they awaken, the duration of night sleep, whether they take sleeping pills and any other behaviors which have a positive or negative effect on a person's sleep [11]. Recent statistics by the Sleep Foundation society have highlighted that over 45% of black people sleep less than 7 hours per night which means there are more cases of sleep disorders and poor sleep habits in blacks than in other races or ethnicities [12]. Young people across the world including Africa, experience transitional life changes from teenager hood to adulthood according to Erikson's psychosocial development stages [13]. This is the stage where most of them are experiencing issues to do with intimacy or isolation as well as generativity or stagnation which may affect their daily sleeping habits [13]. These psychosocial stages of their life can have a negative impact on their sleep habits [14]. Young African adults who manage to engage in intimate relationships can end up spending much of their night time on the mobile phone social media platforms such as WhatsApp, Facebook,

Snapchat, TikTok or Instagram communicating with their partners and eventually sleep in the early hours of the following day [15]. Some of them can spend much of their night sleep time engaging in sexual activities, going to clubs or indulging in drug and alcohol activities with multiple partners [16]. Those who fail to engage in intimate relationships can spend much of their night time binge eating or drinking, binge watching movies or series for example Netflix, YouTube or other movie platforms and may have anxiety or depression from the fear of loneliness [15]. There are physiological changes in the circadian rhythm and homeostatic sleep patterns of young people from late teenagerhood to middle adulthood [17]. Subsequently, majority of young adults can experience sleep deprivation and severe daytime drowsiness as their bodies try to harmonize their natural delayed schedule with their daily social timetables and plans either in school or at their workplaces [18]. Young adults who stay in university dormitories or hostels can experience events that can interfere with their sleeping habits [19]. These events may include their roommates' negative behaviors and noise either in their rooms or surrounding environment [20]. Other factors which may affect their sleep patterns are the stresses of needing to belong to a community, having lots of assignments and chronic anxiety connected to starting an autonomous adult life, and the unfamiliarity of good sleep habits [21].

Economy and financial status

Nearly 1 billion individuals live on the African continent and it is estimated that by 2050, almost half of that population will be under the age of 25 [22]. The continent has highly diversified natural and human assets that can probably contribute to the economic growth and eradication of poverty [22]. Africa has the largest free trade zone in the world and its market is very expansive housing over 1 billion individuals [22]. According to the economic perspective, Africa consists of low, middle and high-income status countries [23]. The constant war between Ukraine and Russia, climate changes, COVID-19 pandemic and accumulated unpaid debts have slowed down the economic growth of Sub-Saharan Africa (SSA) and caused it to plunge from 4.1% in 2021 to 3.3% in 2022 [24]. These situations have installed impediments to the efforts which Africans had placed in order to reduce poverty [24]. The World Bank report published in July 2022 highlighted that approximately 63% of the African countries had inflation rates which surpasses 5% whereas 31% of the African countries had inflation rates with double-digits [25]. Some studies had highlighted that there could be a link between gradual development of chronic insomnia and lower Socio Economic Status (SES) in African communities [25]. Additionally, another study which was comparing SES factors such as marital status, presence/absence of meaningful employment, education level, etc., revealed that those SES factors had a direct strong negative influence on the sleep qualities of African individuals [26]. Another study highlighted that having lower educational qualifications had a strong association with development of insomnia [27]. These findings are of immense importance especially when it comes to African young people who are currently experiencing the negative economic effects such as poverty which then affects

their ability to secure higher levels of education which can directly or indirectly cause poverty and poor sleep.

Given the general economic status of Africa, it brings uncertainties to the future of the African young people [23]. So some of them struggle to begin or complete their tertiary education because of the lack of school fees which indirectly affects their sleep quality because they would be finding ways to alleviate poverty from where they come from [28]. The other issue is some of these young adults were orphaned at a young age, so they do not have elderly people to look up to so they have to find some jobs to do to fend for their younger siblings or their children from unwanted pregnancies [29]. Those who manage to go to college or university may end up looking for some petty jobs to fend for their food and transport needs so after their school time, they rush to that job and stay up to late hours which affect their normal sleep time [30]. In the African capital cities, some young people are forced to engage in burglary or criminal activities during the night to get some money to survive so they end up not having enough time to sleep [30]. The biggest problem facing Africa's youth is unemployment [31]. The youth constitute the highest population in Africa, and they are the most vulnerable, less privileged, and unattended to in society. Many young people have become victims of negativity and unproductiveness because they are neither schooling nor engaging in economic activities [31]. For those who come from financially stable backgrounds, could still have problems with sleep because of the pressure of materialism and social media [32]. Those who manage to be productive by getting some part time employment during their college or university studies, end up working during the time they finish lectures typically at the end of the day into the night for example others work as bartenders, waiters, security guards, shop attendants, online writers, etc [31,33]. Most young adults enjoy taking alcoholic beverages or caffeinated beverages like coffee at night which may cause them to sleep late. Majority of African young adults, sleep with their mobile phones in bed which makes it difficult for them to concentrate on sleep [34,35]. A major portion of them, enjoy listening to loud music for long periods of time so this may affect the time they sleep as well as others who share the room with them or surrounding neighbors [36,37]. Limited affordable housing in Africa, causes some young adults to rent a bedsitter or a single room which can be used for many purposes for example that single room can be the bedroom, kitchen, lounge, and study room at the same time so it would be challenging for them to sleep earlier peacefully [38,39]. Synchronously, some of them will not turn off their lights at night since that room is multipurposed and for security reasons because most of these affordable homes are found in areas where there is insecurity [40]. Some of the young people in those single room houses, can rarely afford comfortable beds and nice cozy bedcovers so they struggle to get good sleep because either they sleep on the mattress on the floor, direct floor or on some thrifted fabrics [41]. Since most African economies are still struggling, it is discovered that young adults have a difficult time navigating through their life [31]. They can have stressful moments where they must deal with face to face or mobile phone conversations with their parents, churchmates,

siblings, friends, partners, teachers, or other people resulting in sleeping late or failing to sleep [42,43].

Environment and climate

Thermoregulation is an essential factor for both initiating and maintaining sleep [44]. A recent study has highlighted that people will lose sleep time which is approximately 44 hours annually because of global climate changes [45]. It was also predicted that through these weather changes, global temperatures will progressively elevate and consequently result in loss of approximately 50-60 hours of sleep time by 2099 [46]. Another study revealed that there is a mounting concern of climate/environment induced sleep disorders especially in African countries surrounded by the Sahara, Namib and Somali deserts as well as coastal areas bordering the Indian Ocean to the East, Mediterranean Sea to the North and Atlantic Ocean to the West where the highest diurnal temperatures are recorded. It becomes a cause of concern especially to the young people in those areas whose risk of developing sleep disorders or future chronic diseases might double when combined with other factors. Another study collected data concerning sleep and weather parameters from 2015 to 2017 from 47,000 adults who had been given accelerometer-based sleep tracking wristbands in 68 countries across all continents except Antarctica. Some of the climatic weather parameters they collected included humidity, temperature, cloud coverage, wind speed and rainfall. Their study revealed that the sleep quality was reduced by 14 minutes on average when nocturnal temperatures surpassed 30 degrees Celsius. This means people from lower- and middle-income countries such as from Africa, will experience approximately three times as much interrupted sleep time than those from high-income countries because of lack of accessible and affordable air conditioning equipment.

The climate changes can affect the initiation, continuation and termination of sleep. A study highlighted that there are statistically significant effects of climatic changes on sleep patterns of most people. They revealed that during spring season, young adults wake up much earlier and sleep for a short time as opposed to the winter season [47]. They also emphasized that sleep time discreetly decreases when there are longer days especially in summer seasons [48]. Sleep initiation time has a tendency to occur later in the night as external temperatures surge [49]. Vitamin D is important for serotonin production, and serotonin is important for many functions including regulation of the sleep-wake cycles. Lower vitamin D levels have been associated with greater daytime drowsiness, and changes in light-dark cycles can also affect how the body releases melatonin [50]. Other climatic factors which disrupt sleep patterns are thunderstorms which usually occur in tropical rainforests even at night such as in the Congo Basin and countries surrounding it such as. Gentle rainfall provides a calming, white noise effect at night, but noisier storms can make it challenging to fall asleep [51]. Thunderstorms can also create plenty of anxiety as well which affect sleep [52]. Obstructive Sleep Apnea (OSA), the condition characterized by disrupted breathing during sleep, may also be affected by stormy weather to some extent. A study from the Journal of Clinical Sleep Medicine found that the

severity of OSA symptoms is increased with lower atmospheric pressure associated with changing weather systems [53]. However, there are other climatic changes which can affect the sleep quality of African young adults such as natural disasters like floods and wildfires because they destroy the area where they are supposed to use for sleep and also induce post-traumatic stress disorder which can also directly affect their sleep [54-56].

Academic performance

Most of the young adults of modern times are sleeping for less than the scientifically recommended time [57-59]. Sleep time in young adults, can be connected to poor academic or job performance [11, 60,61]. Majority of recent studies suggested that having regular intervals of good sleep and proper rest at night permits the physiological repairing processes to occur in the brain as well as allowing nerve cells to grow [62]. When these processes take place regularly, they improve the memory and the learning capacity of the person [63]. According to the American Sleep Association's recent report, people experienced poor cognitive skills when they slept less than 8 hours daily for a long period [63]. Another study discovered that inadequate sleep is significantly linked to negative academic performance [64]. Elongated periods of sleep during the night preceding an examination was linked with elevated academic scores [65]. When it comes to Africa, young adults tend to have lower academic performances especially those who stay in the rural areas because of limited educational resources [65]. Inadequate sleep is also a major factor why African young adults perform poorly in academics. Owing to the present economic situation in most African countries, many poor parents are forced to force their children who can include the young adults to do chores like hawking, clearing the house and doing other menial jobs around the house before going to school and after school hours [66]. However, when parents and guardians burden their children with work excessively, leaving little or no study time for their children, their school/university work is bound to suffer [66]. On the other hand, having lower academic scores as an African young adult could trigger sleep disorders [67,68] especially when they go out in search of employment opportunities because the grades do not meet most employment requirements set up by some companies or institutions.

Mental health

It is revealed that sleep disorders could be triggered by mental health issues such as anxiety, depression and others [69]. On the other hand, having sleep disorders could also trigger mental health issues [70]. Therefore, it means sleep disorders and mental health problems are intertwined health issues. Recent studies have highlighted that native Hawaiian people, black people, and interracial people are at greater risk of acquiring sleep disorders [71]. Recent research has indicated that there is a high incidence of mental health signs and symptoms amongst adolescents and young adults in 16 sub-Saharan African countries, compared to those in high-income countries [72]. Those who do not get successful employment, may end up getting stress and mental health issues like anxiety, depression and mood disorders which can take much of their nighttime as

they ponder on the uncertainties of their futures [73]. Africa's population growth is expected to double in the next 30 years exerting more pressure on the mental health of young people precisely on those who are currently struggling to earn a decent livelihood due to some factors such as sleep insufficiency, lack of employment, poverty, hunger, wars and conflicts, crime, early orphan hood, climate changes, etc. When all these factors are combined, it will put African young adults at a greater risk of developing mental health problems which directly affects their sleep and cause a devastating impact on the economy of that region in future.

Culture

Culture can be an important aspect of sleep which can be considered when investigating the source of sleep disorders in young adults [74]. Culture influences how, where, quantity, and whom they sleep with [75]. A recent study emphasized that the cultural contexts of people when they sleep and the various sleeping preparations can influence the person's sleep quality [75]. Additionally, the circumstances in which sleep occurs, combined with other factors such as beliefs of the family, can explain why cultural aspects of sleep are essential for a comprehensive understanding of sleep [76]. Much research has revealed that sleep differs significantly across diverse cultural human populations [75]. Previous studies suggest that cultures vary in numerous sleep parameters such as the environment to sleep in, the preparations, etc. Supporting such variability is the fact that human sleep is remarkably social in nature, and that sleep is not necessarily a behavior with a set of universally-applicable prescriptions and norms [75]. However, there is limited African literature on how the culture influences the sleep patterns of young adults. While young people living in high income countries are known to have a sleep culture of sleeping alone in a quiet, dark, air-conditioned space with soft linen bedding with good quality sleep, this is in contrast to the sleeping culture in low income countries or regions such as Africa. In Africa, a typical sleeping environment for a young adult will consist of a small or sub-divided incompletely plastered room, some co-sleepers that can be siblings, friends or a partner, dark, no air conditioning system, a mattress on the floor, some few used or new polycotton blankets and all other personal belongings such as clothes, cooking utensils, shoes, etc. will be surrounding them while they sleep. The young people get used to that environment not knowing that it indirectly presents factors that can put them at risk of developing sleep disorders.

DISCUSSION AND CONCLUSION

Other sleep disorders do exist in Africa but the main sleep disorder experienced by African young people is chronic Insomnia which is preventable when identified earlier. The management of these sleep disorders require a combination of biological, social, psychological and environmental interventions. It also requires public health awareness campaigns to be implemented from the African rural settings to the urban settings so that both the younger and older population could understand that sleep problems exist and that they can be treated or prevented. Additionally, there is need to establish

sleep focused clinics or dispensaries in every major town so that people can get access to sleep hygiene information, medicines and other relevant materials that can help them get good quality sleep. Research shows that there are very few sleep clinics in Africa, there are 6 sleep societies and 41 sleep laboratories located in 4 countries. This shows that there is need for more sleep clinics to cater for the approximately 1 billion population of Africa. It is also important to train all public health workers on sleep related matters for all groups of people or if possible, they can establish training for sleep health professionals as its own entity just like other health professionals such as podiatrists who are known to treat foot problems, dietitians' advice on good nutrition, etc. When the sleep professionals graduate, they can be sent to the sleep clinics so that they can start serving the community on sleep related health issues. There should be establishment of sleep networks that consist of health professionals such as nutritionist, psychologist, psychiatrist, cardiopulmonary specialists and counsellors who can share ideas on prevention and treatment of sleep disorders for the African young people as well as helping in forming collaborations with the education ministries, sports ministries, religious communities and cultural communities to spread news about sleep health.

With regards to the biological treatment of sleep disorders in African young people, there should be establishment of sleep clinics or pharmacies which could regulate and give appropriate prescriptions of sleep medicine to those who need them. This is because if the sleep medicines are not in a regulated sleep clinic or pharmacy, young people can eventually misuse sleep medicine for other harmful purposes such as overdosing, suicide, criminal activities on other people, etc. On the psychological treatment of sleep disorders in African young people, it is essential that there should be additional trainings or workshops on sleep health issues for the current or future psychiatrists or psychologists so that they can serve young people who present themselves with psychological issues affecting their sleep. With the advancement of the mobile industry in Africa, majority of young people have a mobile phone which can either be smartphone or the generic phone. It is important to establish a mobile line for psychological services related to sleep issues which is toll free and accessible to any young person from any setting in Africa. On the climatic effects on sleep in Africa, it is essential to identify areas most affected and the government of those areas should fund the distribution of air conditioner gadgets to every home so that not only benefit young people, but their families also will sleep better. If electricity is not available, some companies should invent solar powered air conditioning gadgets. On the economic situation, it is vital that governments establish more employment opportunities not only limited to white collar jobs but can include other sectors such as agriculture, mining, arts and crafts, entertainment, etc. for the young people so that when they are occupied they can have a sense of calmness, financial security and ability to have a good sleep at night. On environmental adaptations, the government or non-governmental organizations in Africa can help provide low-cost affordable housing projects for young people where the houses are properly designed, with proper roofing materials,

plastering on the walls, smooth flooring for basic comfort and provide good low-cost mattresses and soft blankets.

African young people are at greater risk of developing sleep disorders because of factors such as economic situation, sleep habits, academic performance, mental health problems, culture and climate changes. Sleep medicine as an entity in the health sector of Africa, is underdeveloped. There is a need for increasing attention and funding to these issues.

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