Use of Digital Social Media at Night, Awareness of the Associated Risks, Beliefs and Driving Factors

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Abstract

Studies have reported the effects of using digital social media (DSM) platforms at night on sleep and health. However, there is a paucity of studies on awareness of the risks and determinants of this behaviour. This study examined awareness about the risks associated with the nocturnal use of DSM and the factors driving its use at night.

Twenty in-depth interviews were conducted in Ibadan North Local Government Area of Oyo State to assess awareness of DSM users about the risks associated with nocturnal use of DSM, beliefs about nocturnal use of DSM, activities driving the use of the platform at night and quality of sleep of DSM users. Data analysis involved verbatim transcription, content analysis, and thematic organization of responses.

Users are aware of the risks associated with the nocturnal use of DSM, but there is a lack of willingness to take them seriously among some users. Participants believe that the use of DSM at night is a form of leisure. Networking, social obligations, engagements in the daytime, and free and affordable internet data were the identified factors driving the nocturnal use of DSM.

The study concluded that users are aware of the risks associated with the nocturnal use of DSM, but the willingness to take them seriously differs among them. Social activities are the drivers of the nocturnal use of DSM, predisposing users to poor sleep and its effects. These findings suggest the need for more sensitization about the benefits of adequate sleep at night on health to reduce risky behaviours that may affect sleep such as the nocturnal use of DSM.

Keywords: awareness, insomnia, digital social media.

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1. Introduction

The use of digital social media (DSM) has become a major part of everyday life for most individuals. In fact, digital social media is a new society which almost everyone belongs. Digital social media has become very popular with many social networking applications that have highly boosted and transformed interaction of individuals (Scott et al., 2019). Social media has evolved over the years and has been reshaped by advances in technology. They are now portable as they are pre-installed on digital devices which afford users the opportunity to interact seamlessly regardless of time and place once there is an internet connection.

Digital social media has over 4 billion users worldwide (Hootsuite and we are social, 2022). In Nigeria, over 33 million people use digital social media across the country (Hootsuite and we are social, 2022). Digital social media are virtual spaces for social interaction and sharing of information within and beyond local boundaries through texts, audio, videos, or images (Nasirudeen et al., 2017). Such platforms are, WhatsApp, Facebook, Twitter, Instagram, etc. A growing number of DSM users use these platforms at night (Adams et al., 2017).

Studies have disclosed that nocturnal use of DSM may affect sleep quality with a negative impact on health (Bhat et al., 2018). The percentage of men and women who have reported inadequate sleep has increased over the years. (United States Centre for Disease Control, 2011; Sunter, 2021). Garett et al. (2018) made known that the increasing dependence on and use of tech-based applications such as DSM contributes to the situation.

Xlan-Longxu et al. (2015) in their study found that respondents who used DSM platforms 30 minutes before going to bed reported poor sleep. A study carried out by Alonzo et al. (2019) also concluded that poor sleep is one of the consequences associated with using DSM platforms at night. Nowell and Thompson (2020) also observed poor sleep among individuals who use DSM platforms excessively at night. Whipps et al. (2018) documented that DSM use at night is associated with increased sleep disturbances. Scholars have explained that light emissions otherwise called blue light that emanates from digital devices in the process of using DSM at night affects the secretion of sleep hormone (Eddiong et al., 2016; Bhat et al., 2018). Della et al. (2018) observed that cognitive arousal at night may also affect sleep. This has implications for users of DSM at night as some studies have reported that the contents of DSM may cause cognitive or emotional arousal which may disrupt sleep (Bodas et al., 2015).

Sleep has a significant systemic effect on humans as it contributes to biological, mental, and social well-being (Medic et al., 2017). Individuals need between 7 and 9 hours of sleep per night for the body to function effectively

(Sleep Foundation, 2021). However, poor sleep has become a global epidemic that threatens the health and social well-being of over 37% of the world's population (Philips Global Sleep Survey, 2019).

Studies have reported the health and social implications of poor sleep. According to Bhat et al. (2018), poor sleep could trigger hypertension, diabetes, and obesity. Some other studies have also documented that poor sleep can predispose individuals to cardiovascular and cerebrovascular diseases (Kochanek et al. 2014; Javaheri and Redline, 2017). Markt et al. (2015) posited that insufficient sleep may increase the risk of cancer. Poor sleep also causes a deficiency in reasoning (Medic et al., 2017). Morin and Denise (2013) found that nocturnal use of DSM platforms causes sleepiness and mental fatigue in the daytime which may result in work errors or accidents.

Since nocturnal use of digital social media has been identified to have a negative effect on sleep, the implication of this is that using DSM at night may predispose individuals to the health, psychological, and social risks associated with poor sleep. However, there is a paucity of studies on the awareness of DSM users about the risks associated with the use of DSM platforms at night in Nigeria considering the growing use of these platforms in the country. Some studies such as that of Oche et al. (2019) reported the preference for nocturnal use of DSM platforms among Nigerians. However, the beliefs underlying this behaviour are not known. Some studies have also reported networking and maintaining social bonds as the factors driving the use of DSM at night (Scott et al., 2019; Ellison and Boyd, 2013). However, few studies exist on drivers of digital social media use at night in Nigeria.

It is important to investigate the awareness of DSM users about the risks associated with DSM use at night as well as the beliefs and other factors driving this behaviour which can help to develop interventions to prevent the health and social risks associated with the use of the platform. Therefore, this study examined the awareness of DSM users about the risks associated with the nocturnal use of DSM, beliefs that facilitate its use at night, and factors driving the behaviour and sleep quality of DSM users.

2. Theory

2.1 Methodological Individualism

Methodological individualism is an epistemological orientation firstly introduced by Max Weber in his book chapter titled "Economy and Society" (Bulle and Morin, 2015). Weber argued against the philosophical position of holist who proposed that structures are responsible for individuals' action.

Weber theorized that social phenomena must be explained by showing how they result from individuals' action and the motivations that underlines such action.

Bourdon was one of the modern theorists in this perspective who theorized that individuals' social action and their unintended consequences can only be understood through the methodological principle of understanding the rationality of social actors (Bulle and Morin, 2015). Boudon believed that social actors' behaviour can only be explained in the context in which they think and make decisions. He considered understanding the rationality that underlines behavior, whether rational or illogical at first view as the most reliable way in which Sociology can conduct its scientific inquiry of understanding social action.

This study hinged on Boudon's proposition. To explain the reasons for the nocturnal use of digital social media and the unintended outcome of this behavior which is "poor sleep" the rationality that underlines the nocturnal use of digital social media must be understood from each user perspective which this study sought to achieve.

3. Material and methods

3.1 Study design

The study adopted a phenomenological study design. This design was considered appropriate for this study because the aim was to gain insights into the mind of DSM users to understand why they engage in the nocturnal use of DSM and their sleep experiences.

3.2 Study area

The study was carried out in Ibadan North Local Government Area of Oyo State, Nigeria. The rationale for the choice of this study location is because of the availability of internet service providers and a critical mass of digital social media users in the area. Ibadan is the capital of Oyo state, Southwest Nigeria with a population of over 3 million people. It is the third most populous city in Nigeria after Lagos and Kano. Ibadan is one of the major centers of socio-economic activities in Nigeria that contributes significantly to the economic growth of Oyo State and Nigeria. The principal inhabitants of this city are the Yoruba ethnic group with a number of other ethnic groups and citizens of other countries constituting a substantial minority.

3.3 Data collection

Data were elicited from 20 DSM users through in-depth interviews. This study was a follow-up to a quantitative study on Digital Social Media Use and the Experience of Insomnia which involved 494 respondents. There was a space provided for respondents on the questionnaire to indicate if they will be willing to participate in an in-depth interview.

Twenty respondents indicated interest and they were the ones included in this study. Data were collected on awareness of the risks associated with the use of DSM platforms, beliefs about using DSM platforms at night, activities driving the use of DSM platforms at night, and sleep quality of DSM users. In the interview guide, we asked questions like can you tell me some of the risks associated with using digital social media at night? Why do you enjoy using DSM at night? What are the reasons for using DSM at night? can you tell me your experience with the quality of your sleep after staying late on digital social media? Further questions were also asked based on the responses that the study participants gave.

Each interview lasted for about 38 minutes. The interviews were recorded on a smartphone and then transferred to a computer. Notes were also taken during the interviews. The researcher ensured that respondents provided comprehensive information for this study by avoiding leading questions and also provided clarity in questions that were not well understood by the respondents. At the end of interviews daily, all information elicited from respondents was saved on an external drive for backup. The interviews were conducted after the federal government of Nigeria eased the COVID-19 containment measures in the year 2021. Face-to-face interviews were conducted with the use of face mask and the social distancing recommendation was adhered to.

3.4 Data analysis

All audio recordings were transcribed verbatim. Both deductive and inductive techniques were employed in the analysis process (Gale et al., 2013). Firstly, the authors read the transcripts and categorized the excerpts according to the objectives of the study. For familiarization and to properly engage the data, the transcripts were read repeatedly by both authors to make sense of the responses which guided the coding process. Following the conclusion of the coding, themes were created.

4. Results

Table 1 shows that more than half of the respondents (55%) were males while 45% were females. Most of the participants (65%) were within the age bracket of 24-28 years while 35% were within 32-48 years.

Table 1. Socio-demographic characteristics of respondents.

Variables	N	%
Sex		
Male	11	55
Female	9	45
Age (in years)		
24-28	13	65
32-48	7	35
Education		
Secondary	7	35
Tertiary	13	65
Occupation		
Teacher	2	10
Civil servant	1	5
Self-employed	8	40
Student	9	45

All the respondents were literate as 65% had tertiary education while 35% had only secondary education. Most of the respondents were students (45%), followed by self-employed individuals who constituted 40% of the participants, 10% were teachers and 5% were civil servants.

4.1 Awareness of the risks associated with the nocturnal use of DSM

Some users are aware of the risks associated with using DSM at night but there was a lack of willingness to take the risks seriously because of the entertaining features of DSM. This is evident in the excerpts below:

> There are many risks associated with the use of Social media at night. I am aware it causes sleep disorder and it affects the eyes. Exposure to phone light at night affects the eyes. This may even affect someone socially. Someone who does not get quality sleep cannot engage in meaningful social activities. The thing is people are aware but because of the enjoyment people derive from the use of social media people ignore the risk. Even I ignore it. IDI/Self-employed/Male/25/Agbowo/2021.

Another respondent said:

There are so many risks associated with the use of social media at night. For example, I have an aunt who is above 60. She was always using her phone at night doing Facebook and Whats app. At a point, she said she does not sleep well and around that time she started having high blood pressure. It was after she stopped using her phone at night that she started sleeping well then her blood pressure went back to normal. There are times you see some information on this platform that disturb you throughout the night. Most of us are aware of this risk but because of the comfort we get from social media, we tend to ignore the risk. Social media actually makes us happy. If you are depressed and you don't want to go to bed with it, you can go on Instagram and Twitter to read funny things or watch videos that will make you happy. Student/Female/25/UI.

Some users take the risks seriously even though they use the platform at night, they avoid staying too late so that they can get the duration and quality of sleep they desire. This is evident in the excerpt below:

I don't use it till late in the night so that my sleep will not be affected. When it is 10 pm I switch my phone off and go to bed.
Female/Civil servant/48/Bodija.

4.2 Beliefs about the nocturnal use of DSM

Some users believe that people are usually in their best mood at night and therefore it is the best time to interact. One of the participants mentioned that using DSM platforms at night is usually interesting because people are usually in a good mood at night. Oche et al. (2019) in a study carried out in Sokoto Nigeria also reported that a significant number of DSM users prefer the use of these platforms at night. A respondent in this study said:

The best time to use social media is at night because that is the time people are in a good mood. So chatting at night is usually interesting. Student/Male/22/UI/2021.

Some respondents also believed that using DSM at night is a way of having leisure after daytime work. A respondent said:

The best time to use digital social media is actually at night. I prefer to chat at night because your brain is well settled this time. So the communication flows very well. The environment is also cool, there is no noise here and there. In fact interacting at night on social media is one of the ways people unwind themselves from daytime stress. It is a form of leisure.

Self-employed/Male/25/Agbowo/2021.

Another respondent corroborated:

Personally, I think the best time to use social media is at night. That hour even influences the interaction. Around that time, you are free from work and possibly you are done with your meal. You are just relaxing before you sleep. Virtually most people are busy during the day so since you are relaxing and have no work here and there so it allows you to concentrate Teacher/Female/24/Bodija/2021.

4.3 Factors driving nocturnal use of DSM

Participants mentioned that the need to connect and interact with social networks who are outside Nigeria with different time zone is the major reason for the use of DSM platforms at night. Scott et al. (2019) also reported that individuals use DSM platforms at night to connect with networks. A respondent in this study said:

I have a friend who stays in Canada and you know we don't have the same time zone so I have to wait till like 12 am at times 1 am before I can speak with her. Sometimes I do feel like sleeping but I have to just wait. Self-employed/Female/25/Bodija/2021.

A respondent also said:

Most times I use social media at night to interact with my people who are not in Nigeria and it is usually interesting because we do have enough time to talk. Sometimes you will even feel like sleeping but because the discussion can be so interesting at times you just have to push the sleep away. Self-employed/Female/46/Agbowo/2021.

Some participants mentioned that social obligations to significant others may influence nocturnal use of DSM, especially in relationships where partners or families are far from one another. The need to fulfill the obligations of caring and checking up on one another may influence the use of DSM platforms at night. This is evident in the excerpt below:

There are some people that you must interact with every day because they are important in your life. When you call or chat with such people at night to check up on them, it shows that you really care for them. For instance, if your

spouse is far from you, you need to interact and the only time you can do this is at night when you are both free.
Self-employed/Female/26/Agbowo.

Another respondent remarked:

I use social media to chat with my people such as family members, friends, and fiancée and it is usually interesting. It is not just interesting to me but to them also. They like us chatting or calling at night through social media platforms. There are some people I also feel inclined to interact with every day if I am unable to speak with them during the day, I have to call or chat with them at night so that I can be happy before going to bed.
Self-employed/Male/25/Agbowo.

Some individuals also go to the extent of forfeiting their sleep in order to stay online to please their social networks. A respondent mentioned:

There was a night I was chatting with a close friend. So at a point, I started feeling sleepy and I told him that I wanted to go to bed. So he requested that I wait for a little time to keep him company because he was not feeling sleepy yet. So he called me through video call and I had to wait because he was a very close friend and I didn't want him to feel displeased with me.
Teacher/Female/24/Bodija/2021.

Participants also mentioned that social engagements in the daytime are some of the factors driving the use of DSM at night. They reiterated that engagements at daytime limit interaction and also hinder participation in other social activities. Therefore, nighttime is the only opportunity available to individuals to fill the gap created by daytime engagements. One of the respondents remarked:

Basically, I think one of the reasons people use social media at night is because it is the only time people have for themselves. We are busy with work in the afternoon. Another thing is that there are many groups on social media today where a lot of topics and discussions are held. Most of these programs are fixed at night because they know this is the time people will be free such as 8 pm and 9 pm. They know everyone will be at home by then.
Self-employed/Female/26/Agbowo/2021.

Another respondent said:

One of the factors that I think is responsible for the use of social media at night is working hours and working condition. You know during the day we

are busy trying to make an income. So the only opportunity available for people to interact or have leisure is late at the night. There are many essays, comments, and video that is on social media that can make you have a pleasant night. There are also so many whats app groups that I belong to which I read political updates at night.
Self-employed/Male/27/Agbowo/2021.

Some participants deprive themselves of sleep for free and affordable internet data policies of network providers at night because internet data are expensive in the daytime. A respondent said:

You see even though I am aware of the risk some of these network providers are not helping matters. They do cheaper tariff plans at late night while it is expensive during the day. Some of us are awake at night because data is cheaper at late night. Many youths like me are also awake at this time just because of cheaper data. See the risk they expose us to.
Self-employed/Male/34/Bodija.

4.4 *Quality of sleep of DSM users*

Results from this section revealed that those who engage in excessive use of DSM at night do not have a good quality of sleep. This is similar to the findings of Whipps et al (2018) in the US. Participants in this study also indicated the hours of sleep, which varies among different categories of respondents. Hours of sleep also relate to the economic activities of respondents. For instance, a self-employed respondent said:

I sleep around 11 pm or 12 am, depending on my conversation with my friend. I usually find it difficult to sleep after the conversation. Even when I try to sleep, it is not usually like I want because I have to wake up early like 5:30 am or 6:am so that I can get ready for work. It usually affects me because I feel tired during the day.
Male/Self-employed/26/Ibadan/.

Some respondents also complained that they were not sleeping well as revealed by a respondent who said:

See I have not been sleeping well since Tuesday and today is Thursday and it is because of this social media. Sometimes I will be sleeping, I will wake up again and find it difficult to sleep back.
Female/Self-employed/32/Ibadan/.

Another respondent mentioned:

There is someone I talk with every night usually between 10 pm and 12 am
because the network is good around this time and we are not busy. So I
usually sleep around 12 except if my battery is low. It has actually become a
way of life that I have become accustomed to although it affects my sleep
because I sleep late and wake up early.
Female/Self-employed/27/Ibadan/.

The situation is different among students as they revealed that they sleep
much later than others. For instance, a respondent said:

I always find it difficult to sleep especially when I use social media too late in
the night. I wake up unrefreshed. Sometimes with little migraine
Female/Student/24/Ibadan/.

Another student said:

The truth is that social media usually affect my sleep. At times when I wake
up in the morning, it is like I did not sleep at all.
Male/Student/26/Ibadan/.

Professionals also use DSM platforms at night but sleep much earlier as
compared to self-employed/artisans and students. A respondent said:

Actually, I use social media at night because I rarely have time during the day.
I check for news and sometimes do voice or video call with relatives or friend
but I don't stay online beyond 10 pm or 11 pm. I know the importance of
sleep so to feel refreshed the next day, I don't stay late online. So I can say I
get the duration of sleep needed to feel refreshed the next day.
Male/Teacher/28/Ibadan/.

5. Discussion

Our interest in this study was to examine the awareness of DSM users
about the risks associated with the use of DSM platforms at night, beliefs, and
other factors driving the behavior due to its effect on sleep and health. One of
our interesting findings in this study was that users of DSM demonstrated the
knowledge and awareness of the risks associated with the use of DSM at night,
especially its effects on sleep, health, and daytime performance. However, some
users reported that they often neglect these risks for social reasons.

Respondents attributed glowing terms to the use of DSM at night. This behavior was described as a form of leisure and relaxation. The participants also believe that nocturnal hours are the best time to use these platforms. As mentioned by one of the respondents, the use of DSM at night is one of the ways people can relax after dinner before sleep. This finding implies that some individuals see the use of DSM at night as one of the ways through which they can unwind themselves from the stress they had gone through during the daytime. We can also infer that the desire for leisure is part of the rationalities for the nocturnal use of DSM in Nigeria especially since these platforms usually have entertaining features.

Furthermore, we found that social engagements of individuals in day time, the need to network and maintain bonds, obligations to significant others, accessing information, and cheap and free data policies of network providers are the activities facilitating the use of DSM at night. Respondents mentioned social engagements in day time which limit interaction with networks as the reason for using DSM at night. Some of the respondents mentioned depriving themselves of sleep to connect and interact with significant others and friends who are outside their geographical boundary with different time zone. Some respondents also identified relationship obligations, especially with partners or spouses who are far away as the reasons for engaging in the use of DSM at night. Respondents discussed the importance of social relationships which they sacrifice their sleep for. This finding is similar to that of Scott et al. (2019) and Alonzo et al. (2019) as they also reported connecting and maintaining bonds with networks as the main driver of the nocturnal use of DSM platforms. These findings also show how the process of social interaction or social relationships may affect health. The impact of social interaction is clear on the sleep quality of the respondents as most of them who use DSM platforms for interactions at night reported poor quality of sleep and not getting the sufficient duration of sleep needed for body restoration except for a few.

Another interesting factor that we came across in this study facilitating the nocturnal use of DSM is the free and affordable data policies of network providers at night. Respondents mentioned that they often stay awake at night using free or cheap internet data from network providers to download or watch videos on DSM platforms because internet data are expensive in the day time.

In line with the theoretical argument of Boudon who proposed that actions and their unintended consequences are motivated by underlying rationalities, we can therefore see in this study that nocturnal use of digital social media and its associated consequence which as poor sleep is driven by factors such as leisure and relaxation, networking, social obligations, accessing information free and affordable data at night.

6. Conclusion

The study concluded that users are aware of the risks associated with the nocturnal use of DSM, but the willingness to take them seriously differs among them. Social activities are the drivers of the nocturnal use of DSM, predisposing users to poor sleep and its effects. These findings suggest the need for more sensitization about the impact of adequate sleep at night on health to reduce risky behaviors that may affect sleep such as the nocturnal use of DSM.

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