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Original Article

Evaluating the Role of Suicidal Behaviour, Screen Use, and Sleep In Subjects with Depression

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ABSTRACT

Background: Suicidal tendencies and sleep disturbances are seen commonly in subjects with depression. The existing and latest literature data reports that there is a role of sleep disruption and screen use in these subjects. However, evidence in Indian context is scarce.
Aim: The present study was aimed to evaluate the role of suicidal behaviour, screen use, and sleep in subjects with depression.
Methods: The present study assessed 100 subjects with the depressive disorder with 38 subjects in two groups as with suicidal behaviour and 50 subjects without suicidal behaviour. Screen Time Questionnaire, Pittsburgh Sleep Quality Index, Columbia-Suicide Severity Rating Scale, and Hamilton depression rating scale were used to assess screen use, sleep quality, suicidal behaviour, and depression severity respectively.
Results: The study results showed that among 76 subjects, there were 57% females. In these subjects, suicidal behaviour was seen linked with using higher screen time, poor quality of sleep, higher severity of depression, earlier age of onset, longer illness duration, employment, and being unmarried.
Conclusion: The present study concludes that suicidal tendency in subjects with depression has been associated with the poor quality of sleep and an increase in the use of screen time which warrants the need of using the preventive strategies that target various interventions and improve quality of sleep to decrease the screen time.

Keywords*: depression, quality of sleep, screen time, suicidal tendencies.*

INTRODUCTION

The most prevalent mental illness seen across the globe is depression or depressive disorder which is also considered as a significant risk factor associated with the suicidal behaviour in the affected subjects. The WHO (World Health Organisation) has predicted that by the end of year 2030, severe depression will become a significant factor contributing to the disability in affected population. In India alone, there was a 4.2% increase reported in the suicidal rate from year 2021 to 2022 with the present suicide rate being 12.4 per 100,000 population.[1]

Previous existing literature data has reported that among subjects with depression disorder, family history of suicide, suicidal thoughts, low mood, guilt or inadequacy, hopelessness, and history of intentional self-harm have been significantly linked to the in-patient suicide. In addition, with these, various other factors as sleep and screen time have been associated with suicidal behaviours.[2]

Also, with the invention of internet, there has been a rise in the screen time across the globe including in India. It can also provide the accessibility to information concerning the lethal measures of self-harm. It will be useful to consider if

subjects with depression and associated suicidal behaviour use the screen for attaining information on self-harm measures or just to seek help for their disorder. Also, sleep disturbance has been commonly seen in subjects that have depression along with the suicidal behaviour.[3]

Some of the studies from Indian background have assessed any coexisting link in suicidal behaviour in depression and sleep disturbances, with scarce literature data on the use of screen time in adults with depression. Identification of these links can improve screening and management in subjects with depression to further prevent the risk of suicide particularly in Indian context.[4] Hence, the present study was aimed to evaluate the role of suicidal behaviour, screen use, and sleep in subjects with depression.

MATERIALS AND METHODS

The present observational study was aimed to evaluate the role of suicidal behaviour, screen use, and sleep in subjects with depression. The study subjects were from Department of Psychiatry of the Institute. Verbal and written informed consent were taken from all the subjects before study participation.

The present study assessed 100 subjects with the depressive disorder with 50 subjects in two groups as with suicidal behaviour and 50 subjects without suicidal behaviour. In both the groups, there were subjects aged 18-60 years and from both the genders that were diagnosed with current depressive episode following ICD-11[5] (International Classification of Diseases-11) with recurrent depressive disorder or single episode depressive disorder, had HAM-D[6] score ≥14 (moderate to severe depression).

Group I comprised of subjects that had suicidal plans/ideas and made attempts to suicide within the current episode of depression and Group II had subjects with no suicidal attempts, plans, or ideas in the current episode. The exclusion criteria for the study were subjects with chronic medical illness, any other co-morbid psychiatric illness (except tobacco dependence), or subjects with bipolar affective disorders.

Among total 100 subject, 50 were allotted in each group and all included subjects were assessed for screen use, sleep quality, suicidality, and depression severity. The data gathered included social profile sheet and demographic data. The tools used for the study were Screen time questionnaire[7] that includes screen use on an average weekday, screen use on an average weeknight, screen use on an average weekend day, and background activity, Pittsburgh sleep quality index (PSQI)[8] which is a self-assessment tool that differentiates between “poor” and “good” sleep quality by assessing seven aspects: subjective sleep quality, the time taken to fall asleep, duration, habitual efficiency, sleep disturbances, use of sleeping medications, and daytime impairment over the past month. Columbia suicide severity rating scale (C-SSRS)[9] is a clinician-administered tool measuring past and current suicidal ideation and behaviour. It assesses the dimensions of suicidality: severity, intensity, behaviour and lethality. Hamilton depression rating scale (HAM-D)[10] which is a 21-item clinician-reporting questionnaire for evaluating the severity of depression. Scoring is based on the first 17 items only.

Statistical analysis for the collected data was performed with chi-square test, Fisher’s exact test, Mann Whitney U test, and SPSS (Statistical Package for the Social Sciences) software version 24.0 (IBM Corp., Armonk. NY, USA) using ANOVA, chi-square test, and student's t-test. The significance level was considered at a p-value of <0.05.

RESULTS

The present observational study was aimed to evaluate the role of suicidal behaviour, screen use, and sleep in subjects with depression. Among 100 subjects assessed, there were 57% females in the study and 35 subjects had education till graduation. In subjects with no suicidal tendency, there were 80% married subjects and 505 were housewives. No significant difference was seen in two groups concerning family type or gender. However, suicidal behaviour was significantly higher in employed and single subjects with $p=0.02$. Subjects with suicidal behaviour had significantly earlier disease onset and longer action duration compared to Group I with $p=0.01$. No significant difference was seen for duration of treatment, duration of current episode, and number of episodes. Majority of subjects had single-episode depressive disorder and nearly 50% were given Escitalopram. Family history of psychiatric illness was seen in 12% and 4% had familial history for suicide tendency. 86% subjects had reported positively for using screen daily.

It was seen that majority of subjects had moderate to severe suicide ideation seen a few times or more. In majority of subjects as 63% had a wish to die and 16% had attempted the suicide. In 98% subjects, they reported a poor sleep quality and greater use of screen time with respective p-values of 0.003 and <0.001 compared to subjects with no suicidal behaviour. For association of suicidal behaviour and sleep, poorer sleep quality was reported in females compared to males and singles compared to married subjects with $p=0.003$ and <0.001. Other parameters as psychological intervention, diagnosis, occupation, education, family type, and residence depicted no significant association with sleep quality. The severity of depression showed a significant association to poor quality of sleep and positive correlation of PSQI and HAM-D with $p<0.001$ showing increased depression severity to higher PSQI scores.

The study results showed that for association of screen time and screen content to the suicidal behaviour, clinical profile, and demographic data, online search was significantly increased for treatment of depression during the current episode with p<0.001 along with yoga and motivational use for p-values of 0.02 and 0.01 compared to before the episode. A significantly higher device use as TV devices, tablets, laptops, and/or smartphones and total screen time was seen in suicidal behaviour group on weekends and weekdays. Higher screen time was seen in males, family history of psychiatric illness, nuclear families, urban residents, and single individuals with p<0.05. A negative correlation was seen in age of onset and age and positive to HAM-D and income (Table 1).

Table 1: Comparison of screen content in last month, during, and before the episode of depression

S. No		Before last episode	During last episode	In last month	p-value
1.	**Search for motivational quotes**	64 (21)	108 (36)	98 (32.7)	**0.01**
2.	**Search: ways of self-harm**	60 (20)	62 (20.7)	64 (21.3)	0.94
3.	**Search: methods of self-harm**	58 (19.3)	70 (23.3)	76 (25.3)	0.43
4.	**Search: Depression treatment**	40 (13.3)	86 (28.7)	96 (32)	0.43
5.	**Entertainment**	208 (69.3)	204 (68)	200 (66.6)	0.86
6.	**Communication**	242 (80.7)	242 (80.7)	242 (80.7)	1.00
7.	**Games**	48 (16)	48 (16)	48 (16)	0.97
8.	**Social media**	214 (71.3)	208 (69.3)	210 (70)	1.00
9.	**Academics**	94 (31.3)	94 (31.3)	100 (33.3)	0.93
10.	**News**	106 (35.3)	94 (31.3)	92 (30.7)	0.63
11.	**Stress-relief online**	84(28)	98 (32.7)		
12.	**Self-help online**	60 (20)	72 (24)	82 (27.3)	0.31
13.	**Online hospitals**	48 (16)	68 (23.7)	72 (24)	0.17
14.	**Psychological help online**	26 (8.7)	28 (9.3)	32 (10.7)	0.81
15.	**Meditation**	98 (32.7)	110 (36.7)	104 (34.7)	0.75
16.	**Yoga**	78 (26)	110 (36.7)	96 (32)	0.12
17.	**Others**	106 (36.3)	106 (36.3)	106 (36.3)	1.00

It was noted that concerning the predictors of screen time, sleep quality, and suicidal behaviour, a greater depression severity assessed with higher HAM-D scores were linked to the increase in the Odd's ratio for the suicidal behaviour. Three independent variables assessed and considered as significant predictors of sleep quality as measured with PSQI scores where higher scores depicted poor sleep were HAM-D, marital status, and gender with p-values of <0.001, 0.003, and 0.01 respectively (Table 2).

Table 2: Logistic regression analysis for suicidal behaviour in study subjects

S. No	Parameters	B	SE	df	p-value
1.	**Screen time**	0.03	0.03	1	0.22
2.	**Sleep quality**	-0.02	0.03	1	0.45
3.	**Depression severity**	0.65	0.12	1	**<0.001**
4.	**Psychological intervention**	1.00	0.61	1	0.13
5.	**Illness duration**	0.02	0.01	1	0.08
6.	**Onset age**	-0.03	0.01	1	0.27
7.	**Occupation**				
a)	Unemployed	0.02	0.97	1	0.95
b)	Employed	0.73	0.63	1	**0.23**
8.	**Single marital status**	1.06	1.01	1	0.27

DISCUSSION

The present study assessed 100 subjects with the depressive disorder with 38 subjects in two groups as with suicidal behaviour and 50 subjects without suicidal behaviour Among 100 subjects assessed, there were 57% females in the study and 35 subjects had education till graduation. In subjects with no suicidal tendency, there were 80% married subjects and 505 were housewives. No significant difference was seen in two groups concerning family type or gender. However, suicidal behaviour was significantly higher in employed and single subjects with p=0.02. Subjects with suicidal behaviour had significantly earlier disease onset and longer action duration compared to Group I with p=0.01. No significant difference was seen for duration of treatment, duration of current episode, and number of episodes. Majority of subjects had single-episode depressive disorder and nearly 50% were given Escitalopram. Family history of psychiatric illness was seen in 12% and 4% had familial history for suicide tendency. 86% subjects had reported positively for using screen daily. These results were consistent with the findings of Wu R et al[10] in 2022 and Sevda P et al[11] in 2026 where authors assessed subjects with depression and data comparable to the present study in their studies.

The study results showed that majority of subjects had moderate to severe suicide ideation seen a few times or more. In majority of subjects as 63% had a wish to die and 16% had attempted the suicide. In 98% subjects, they reported a poor sleep quality and greater use of screen time with respective p-values of 0.003 and <0.001 compared to subjects with no suicidal behaviour. For association of suicidal behaviour and sleep, poorer sleep quality was reported in females compared to males and singles compared to married subjects with p=0.003 and <0.001. Other parameters as psychological intervention, diagnosis, occupation, education, family type, and residence depicted no significant association with sleep quality. The severity of depression showed a significant association to poor quality of sleep and positive correlation of PSQI and HAM-D with p<0.001 showing increased depression severity to higher PSQI scores. These findings were in agreement with the results of Norra C et al[12] in 2011 and Pavan Kumar A et al[13] in 2023 where higher suicide tendency was seen in employed and single subjects and poor sleep quality as seen in the present study.

Concerning the association of screen time and screen content to the suicidal behaviour, clinical profile, and demographic data, online search was significantly increased for treatment of depression during the current episode with p<0.001 along with yoga and motivational use for p-values of 0.02 and 0.01 compared to before the episode. A significantly higher device use as TV devices, tablets, laptops, and/or smartphones and total screen time was seen in suicidal behaviour group on weekends and weekdays. Higher screen time was seen in males, family history of psychiatric illness, nuclear families, urban residents, and single individuals with p<0.05. A negative correlation was seen in age of onset and age and positive to HAM-D and income. These results correlated with the findings of Cui Z et al[14] inn 2022 and Bharati DR et al[15] in 2022 where results similar to the present study for association of screen time and screen content to the suicidal behaviour were also reported by the authors in their studies.

On assessing the predictors of screen time, sleep quality, and suicidal behaviour, a greater depression severity assessed with higher HAM-D scores were linked to the increase in the Odd's ratio for the suicidal behaviour. Three independent variables assessed and considered as significant predictors of sleep quality as measured with PSQI scores where higher scores depicted poor sleep were HAM-D, marital status, and gender with p-values of <0.001, 0.003, and 0.01 respectively. These findings were in line with the results of Huang Q et al[16] in 2021 and Kattimani S et al[17] in 2017 where predictors of screen time, sleep quality, and suicidal behaviour were reported by the authors as seen in the present study.

CONCLUSION

The present study, considering its limitations, concludes that suicidal tendency in subjects with depression has been associated with the poor quality of sleep and an increase in the use of screen time which warrants the need of using the preventive strategies that target various interventions and improve quality of sleep to decrease the screen time.

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