Indian Vet. J., September 2024, 101 (9): 41 - 45

Internet Addiction and its Effect on Sleepiness among Veterinary Professionals in Tamil Nadu

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(Received: August 2024 167/24 Accepted: August 2024)

Abstract

Internet addiction (IA) is a spectrum of disorder affecting the daily life of people and its impact is reflected in day time work efficiency. The present study was conducted among working veterinarians collected by employing online questionnaire to assess the degree of internet addiction using Internet Addiction Test (IAT). Daytime feeling of sleepiness in work place due to excess use of social media was assessed using The Epp worth Sleepiness Scale (ESS) in the same questionnaire. Out of 348 Veterinarians responded to the survey, 47.7 and 52.3 percent were females and males respectively. The age group 25-40 years responded in large numbers (65.5%). IAT score revealed that 46% of Veterinarians had mild to moderate internet addiction while 52.3% were normal users of internet. There was no severe addiction to internet among veterinarians. Further, there were positive association (P<0.01) of internet addiction with all age groups with higher percentage in the younger age group 25-40 years. At the same time, no difference existed between males and females for using internet. Regarding ESS score, about 36.2% of veterinarians participated in this survey had feeling of sleepiness in the workplace while 47.1% had lower score. It could be inferred from the scores of two scales used in our study that more internet addiction score would have more ESS score. It can be surmised that internet addiction and daytime sleepiness is present in working veterinary professionals.

Keywords: Internet addiction, daytime sleepiness, working veterinary professionals

Internet addiction (IA) is one of the modern day digital media addiction and widely prevalent in all sections of people and all age groups with varying degree of addiction. Recent studies have revealed that professionals are getting addicted to the internet including veterinary profession. As the technology advances, veterinarians have to report online about their services both in private and government sectors. In the due course of time and use of various online apps for reporting and data uploading, they tend to become prolonged internet users. The tight daily programme lead to impairment in their work- life balance results in search for events that recharge them to routine.

Heavy work load and pressure from the stakeholders pressurize the veterinarians to a state of burnout (Zeng *et al.*, 2018) which leads them to look into outlet like smartphone and social media which ultimately moves them to prolonged internet users.

Robert Pohl (2022) in the recent review pointed out that higher prevalence of psychological stress, risks of burnout and depressive disorders in the veterinary profession was compared to general population and related occupations.

Hilton *et al*. (2023) have analysed various factors that contribute to mental health issues in veterinary profession such as burnout, poor

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job satisfaction and high suicide rate citing previous studies. Nowhere in his work Hilton *et al*. (2023) found or stated about the social media and internet addition.

IA has been categorized as spectrum of disorder and numerous studies have linked this internet prolonged use leads to stress, poor work performance, anxiety etc. (Prakash, 2017; David Bickham, 2021; Krishan Kumar *et al*, 2023; Tadpatrikar,2024).

Sleepiness during daytime in workplace is an important impairment for all employees and this is also holds good for veterinarians. Excessive sleepiness state of mind would not only reduce performance and also leads to poor quality work (Singh *et al*., 2019).

After reviewing journals and online resources, a little information could be obtained about IA and its role in feeling sleepiness among veterinarians. Based on the importance of the issue and the lack of adequate research works on IA the present study was carried out to understand various facets of IA.

Materials and Methods

The study was conducted among working veterinarians of Tamil Nadu state. A cross-sectional study was conducted through online questionnaire (google form) circulated totheveterinarians working in the Animal Husbandry Department of the state. The total number of veterinarians at the time of study was around 2500.Sample size of the study was determined as 348 respondents. Survey instruments were circulated to more than 600 participants after a brief introduction to the participants and concurrence was also sought for acceptance. Thestudy wasapproved by the Human Ethics Committee of the Government Medical College, Namakkal, Tamil Nadu India. Consent was accepted before answering questionnaire. The questionnaire consisted of demographic details, Young's Internet Addiction Test (IAT), which was anaccepted scale used in earlier studies, and The Epworth Sleepiness Scale (ESS).

The IAT total score is the sum of the ratings given by the examinee for the 20 item responses. Each item wasrated on a 5-point scale ranging from 0 to 5. The maximum score was 100 points. High level of scoresindicate-higher the severity of the respondents' problem. The total scores that ranged from 0 to 30 points wereconsidered to reflect a normal level of Internet usage; scores of 31 to 49 indicated the presence of a mild level of Internet addiction; 50 to 79 reflect the presence of a moderate level; and scores of 80 to 100 indicate a severe addiction to the Internet.

The ESS, a scale used to assess subjective measure of patient's sleepiness was used in this study.The total score for the scale is 0-24. The scale determines the excessive sleepiness that may require medical attention. No chance of dozing =0, Slight chance of dozing =1, Moderate chance of dozing =2 and High chance of dozing =3. Interpretation of 0-7: It is unlikely that you are abnormally sleepy. 8-9- You have an average amount of daytime sleepiness. 10-15- You may be excessively sleepy depending on the situation. You may want to consider seeking medical attention. 16-24- You are excessively sleepy and should consider seeking medical attention. Re-write the para indicating number of items in the scale, scoring pattern, range of scores, etc.

The data was collectedfrom the respondents duringNovember 2023 to May 2024, to providesufficient time to send the questionnaire to the participants and to explain them about the study, if contacted. The collected data was analyzed and presented as frequencies and percentage by using SPSS software (IBM SPSS Statistics, 29).

Results

Out of 348 of respondents, the sociodemographic characteristics showedthat males and females were 52 and 47.7 percent, respectively. Almost equal participation of males and females in this studywasnoted. The age groupbetween 25-40 years occupied highest proportion (two-third) (Table I) of respondents. The respondents belonged to age group of more than 50 years were morecompared to 41-50 years' group. This implies that irrespective of age most of them are using internet.

Table I. Socio demographic characteristics of respondents of internet users

Variables	Frequency (N=348)	Percentage
Gender		
Female	166	47.7
Male	182	52.3
Age (years)		
25 - 40	228	65.5
41 - 50	58	16.7
> 50	62	17.8

From the analysis of internet addiction score (Table II), 53.2% respondents scored less than 30 points in the IAT score, andthey couldbe considered as normal user of internet. However, there were 33.9 and 12.1 percent had mild and moderate level ofIA, respectively. It is important to note here, 46% are in the category of (mild plus moderate) internet addiction when compared to 53.2% normal user. Nevertheless, there wasa negligible proportion of respondents were belonged tosevere IA category in the present study.

Table II. Internet Addiction Test and The Epworth Sleepiness Scale score of the respondents

Scale	Score	Frequency	Percentage
	0 to 30 points	185	53.2
	31 to 49 points	118	33.9
IAT	50 to 79 points	42	12.1
	80 to 100 points	3	00.9
	Total	348	100.0
	0 to 7	164	47.1
	8 to 9	58	16.7
ESS	10 to 15	88	25.3
	16 to 24	38	10.9
	Total	348	100.0

Surprisingly more than half of the veterinarians (53.2%) studied did not show IA and remaining had mild to moderate internet addiction (46.8 %). This observation concurs with the findings of Mariavinifa *et al*. (2021) who recorded an IA of 61.2 % prevalent in various group of professionals and Krishan Kumar *et al*. (2023) observed an IA of 53.6% in working medical professionals in his study. No difference between the male and females was observed for IA in our study concurred with Holdas (2017) but in contrast with some reports that more males (Anand *et al*., 2018; Hassan *et al*., 2020)addicted to internet than females. In another study of Asia region found the internet addiction prevalence was 0-47% including all Asian countries (Balhara *et al*., 2018). Recent studies had shown that internet surfing and getting addicted to it is on the rise. According to a meta-analysis in Asian countries, the IA prevalence was 20% in the year 2020 (Chia *et al*., 2020) and it was 6% (worldwide pooled prevalence) during the year 2014 (Cheng and Li., 2014).

Further, IA score was analyzed using chi-square test to find out any association between gender and addiction level and it was found to be non-significant ($p<0.08$). However, there was a significant association observed among different age groups (Table III) of the study. It means that age of the individual did not influence the internet usage and all age groups are equally or likely to get addicted. In all age groups of veterinary practitioners' severe IA was found to be the low.

Regarding the excessive day time sleepiness scale (ESS) score, only 10.9% of participants had excessive sleepiness requiring medical attention,while 25.3%of the participants were excessively sleepy and they might consider seeking medical attention. At the same time, the ESS score was lower (0-7) in 47.1% participants. This observation clearly showedthat there were36.2% (who scored from 10-24 points) of veterinarians participated in this study had feeling of sleepiness in the workplace and that could haveaffectedthe quality of their work (Table II).

The IA of 46% of the individuals has reflected in the higher ESS score of 36.2% and this observation gives an idea of positive relations that more percentage of IA would form higher score in ESS Score

Anon-significant positive association existed between gender and excessive sleepiness score but when it was analyzed for different age groups, all age groups were significantly ($p<0.001$) associated with internet addition (Table IV).

In veterinary practice the free time

Table III. Association of socio-demographic variables withIA score (N=348)

Variables		Normal level of Internet usage	Mild level of Internet addiction	Moderate level of Internet addiction	Severe dependence upon the Internet	Total	P value
Gender	Female	96 (57.8)	49 (29.5)	22 (13.3)	0 (0.0)	166 (100.0)	0.088
	Male	89 (48.9)	70 (38.5)	20 (11.0)	3 (1.6)	182 (100.0)	
Age (years)	25 - 40	107 (46.9)	78 (34.2)	40 (17.5)	3 (1.3)	228 (100.0)	<0.001
	41 - 50	35 (60.3)	23 (39.7)	0 (0.0)	0 (0.0)	58 (100.0)	
	>50	43 (69.4)	18 (29.0)	1 (1.6)	0 (0.0)	62 (100.0)	

Numbers in parenthesis are percentage

Table IV. Association of socio-demographic variables and subjective measure of sleepiness using Epworth Sleepiness Scale (N=348)

Variables		ESS score				Total	P value
0-7		8-9	10-15	16-24			
Gender	Female	67 (40.4)	34 (20.5)	45 (27.1)	20 (12.0)	166 (100.0)	0.084
	Male	97 (53.3)	24 (13.2)	43 (23.6)	18 (9.9)	182 (100.0)	
Age (years)	25 - 40	85 (37.3)	43 (18.9)	66 (28.9)	34 (14.9)	228 (100.0)	<0.001
	41 - 50	43 (74.1)	4 (6.9)	10 (17.2)	1 (1.7)	58 (100.0)	
	>50	36 (58.1)	11 (17.7)	12 (19.4)	3 (4.8)	62 (100.0)	

Numbers in parenthesis are percentage

comes especially during late evening or awake up to midnight after heavy work during the daytime. This might have been the reason for the lower score in ESS for 48% of the respondents. Singh *et al*., 2019observed that feeling of sleepiness during the daytime for those who maintain poor sleep hygiene might result in poor work quality. Similarly, Semenova *et al*. (2021) detected a significant positive association between internet addiction and excessive day time sleepiness in adolescents. In another study, a significant positive relationship was found identified between IA and ESS (Nowak *et al*., 2022). In the present study it was observed that the young age group (25-40 years) wereexperiencing severe internet addictioncompared to other groups but at the same time all age groups had shown significant amount of the internet addiction. This observation reflected the report of internet dependency is related to duration of the time spent (Krishan Kumar *et al*., 2023). However, there was no significant association existed between males and females for addiction and both were addicted. This observation in the present study agreed with the recent study conducted amongyoung adults (Nowak *et al*., 2022). Chang and Lee,2024 reported a functional connectivity changes in brain ofindividuals with

internet addiction that lead to behavioral and development changes.

Conclusion

From the findings of the present study, internet addiction is prevalent among veterinary professionals where steady workflow is present in a whole day and both the gender equally addicted to internet which warrants immediate remedial actions. As the daytime feeling sleepiness mayhinder the efficiency and work flow of veterinarians and may lead to health issues associated with internet addiction. (Conclusion not completely reflected the findings of the study. Rewriting is required)

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