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Influence of Social Media Usage, Academic Performance and Working Memory among Undergraduate Students

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Abstract: Social media has become a vital tool in ensuring productivity among Undergraduates, as studies have shown an increased number of users globally. This study assessed the impact of social media usage on undergraduates' academic performance and working memory. Participants from three different universities such as the University of Georgia (UG), Eastern European University (EEU), and Batumi State University (BSU) completed this study using online google forms. UG and EEU are in the capital city, and BSU is in Batumi City. The study questionnaires were approved by the institutional review board before the data collection. Descriptive analyses were assessed for all study populations, characteristics, frequencies, percentages, means, and standard deviations using Statistical Package for Social Science (SPSS Inc., Chicago, IL, version 25.0 for Windows) software. 41.3% were male students, as most of the participants were foreign students living and studying in Georgia. Male students had the risk of 'conflict' with families and friends because of social media. Female students are at increased risk of using social media as an 'escape' from negative feelings. 89.7% of students that perform physical activities, considering their academic workload had the risk of preoccupation complaints. 87.9% felt dissatisfied regularly because they wanted to spend more time on social media. Utilization of social media differed based on the characteristics of the participants such as age, gender, and geography. We observed the increase in prevalence of social media addiction, its effect on academic performance and working memory among undergraduate students.

Keywords: social media; academic performance; working memory; students; addiction

1.0. Background

Social media has become a vital tool in ensuring productivity among Undergraduates, as studies have shown an increased number of users globally [1,2]. It can be a website or an application that students utilize to interact with peers [3], share ideas [4], and become popular [5]. It serves different purposes that aided online studies during the Covid-19 pandemic [6], as social events were restricted. Most students have social media accounts like Facebook having, 2.9 billion monthly active users [7]. Students have considered it helpful as it can help to maintain long-distance friendships and family relationships [8].

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Meanwhile, students obtain essential benefits such as scholarships [9] and educative events [10,11] from some social media platforms. Considering benefits derived from Facebook, YouTube, WhatsApp, Instagram, Snapchat, Twitter, Google+, Pinterest, forums, etc., however, would be time-consuming. Most students tend to stay online for long hours [12,13] as some dedicate short hours to studies which could negatively affect their preparation for quizzes, exams, and academic performance [14].

Studies have observed that social media could influence memory processes [15,16]. Working memory has remained the essential tool required for academic activities among students [17]. Students utilize its availability to resolve issues and understand their study directives [18,19]. The process of how social media could influence working memory has not been well understood. Studies have shown that social media could have a positive effect [4,20,21] that can help achieve educative and scientific [14] activities to improve academic performance. Only a few students utilize social media to exploit educational purposes [22]. In as much as there could be helpful events that can boost the knowledge and skills of a student, there has not been a significant association between social media usage and student GPA [5,23,24]. Furthermore, most of these studies were not related to students working memory. Though good academic performance does not necessarily signify good memory, academic failure can be observed among students with memory issues [25].

The study objective was to examine the influence of social media on undergraduates working memory and academic performance. The students were from three Universities: two from Tbilisi (the capital city) and one from Batumi. We assessed the association between the harmful use of social media on gender differences, physical activities, academic performance, and working memory. There are limited studies on this directive, and this study has helped in finding the relationship regarding such measures. This study would help the students to have a broad understanding of the wide-growing influence of social media in their careers.

Methodology

2.1. Study Design

This cross-sectional study was designed to examine the effect of social media on the working memory of undergraduate students from three different Universities in Georgia.

2.2. Data Collection

722 participants from three different universities completed this study. The collection survey form was distributed among Undergraduate students from the University of Georgia (UG), Eastern European University (EEU), and Batumi State University (BSU) through google forms. UG and EEU are in the capital city, and BSU is in Batumi City. Students from these universities were represented as they engaged each participant from 14th June to 2nd July 2023.

2.3. Participants

The study involved males and females above 18 years, Georgian and International students living and studying in Georgia. There was no reward to the participants as the responses were anonymous.

2.4. Informed Consent

Instructions and information on data privacy were available in the consent form and questionnaire to allow each participant to read through them before completing the study. The ethics approval for this study was provided by the Bioethics council of the University of Georgia.

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2.5. Evaluation Tools and Techniques

The questionnaire consisted of sociodemographic characteristics (e.g., age, gender, and institution) and three sections; social media disorder scale (SMD), academic performance scale (APS), and working memory (WM).

SMD scale was developed based on nine DSM-5 criteria for internet gaming disorder which had a binary variable of yes/no responses with nine questions regarding the social media experience (e.g., Facebook, Twitter, Instagram, WhatsApp, Snap Chat, Pinterest, TikTok, Google+, weblogs, and forums) over the past year [26]. Questions on preoccupation, tolerance, withdrawal, persistence, displacement, problems, deception, escape, and conflict were included in the measure which are elements of behavioral addictions [27–31]. Based on DSM-5, an individual with five or more of the nine criteria for 12 months qualifies for internet addiction. [26,27].

APS comprises 8- questions with a 5-point Likert scale covering questions relating to students' academic performance. Students were scored based as follows; strongly agree (5), agree (4), neutral (3), disagree (2), and strongly disagree (1). The criteria for rating the performance were excellent (33-40), good (25-32), moderate (17-24), poor (9-16), and failing (0-8).

WM has 30 questions divided into storage domain questions, attention domain, and executive domain [32]. Each subcategory involved 10- questions presented randomly as storage domain questions representing the short-term storage ability of the participants, text comprehension, and mental articulation. The attention domain included questions on distractions and multitasking. The executive domain involved questions on the ability to make plans and decisions. Each question was rated on a 5-point Likert scale, from 4 (severe problems in daily life) to 0 (no problem). The maximal score for each domain was 40, and the total score was out of 120, as higher scores indicate more complaints [33].

2.6. Statistical Analysis

The data was analyzed using Statistical Package for Social Science (SPSS Inc., Chicago, IL, version 25.0 for Windows) software. Descriptive analyses were assessed for all study populations, characteristics, frequencies, percentages, means, and standard deviations. We analyzed the comparison between gender difference, nationality, and Universities, and statistically significant at $p<0.05$. Before assessing the association between variables and multivariate analysis, APS and WM scores were grouped into dichotomous responses (Good/Needs improvement). The students that had cutoff < 24 were in ALS performance and > 25 WM subcategories, ''needs improvement''. The odds ratio (OR) and prevalence evaluation at 95% confidence intervals (95% Cl) were presented.

3.0. Results

3.1. Students' Demographic Distribution

58.7% were female students (Figure 1), the mean age was 21.94 (SD ± 2.8), and most of the participants were international students (Figure 2) from all three universities (BSU, UG, and EEU, Figure 3). In Table 1, the distribution of social media usage disorder among the students was observed higher in certain categories such as preoccupation (41.6%), persistence (60.9%), displacement (44.3%), and escape (67.6%). In the Supplementary Table S1, 16.2% of students needed an improvement in their academic performance. The students that had higher scores (>25) in the storage domain (4.4%), attention domain (6.2%), and executive domain (4.4%) had complaints (Table S1).

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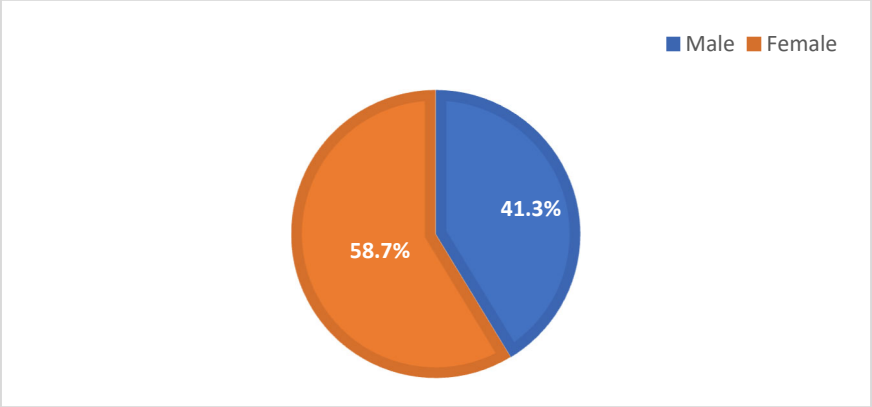

Figure 1. Pie chart representation for gender difference among the students.

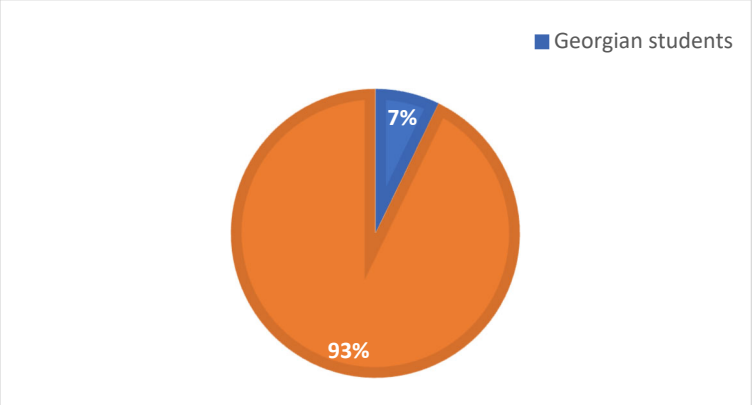

Figure 2. Pie chart illustration of the subjects based on nationality.

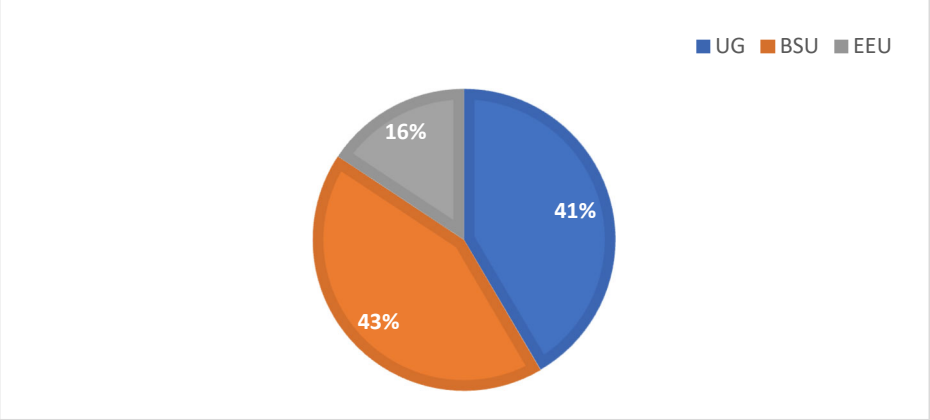

Figure 3. Pie chart illustration of the subjects based on universities.

Table 1. Frequency distribution of students' response on SMD.

Social Media Usage Disorder		
Preoccupation	**Frequency (N)**	**Percent (%)**
Yes	300	41.6
No	422	58.4
Tolerance		
Yes	206	28.5
No	516	71.5
Withdrawal		

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Yes	217	30.1
No	505	69.9
Persistence		
Yes	440	60.9
No	282	39.1
Displacement		
Yes	320	44.3
No	402	55.7
Problems		
Yes	150	20.8
No	572	79.2
Deception		
Yes	207	28.7
No	515	71.3
Escape		
Yes	488	67.6
No	234	32.4
Conflict		
Yes	122	16.9
No	600	83.1

From Table 2, the student's demographic analysis based on cities (Tbilisi and Batumi) showed that more students from Tbilisi had persistence (59.8%), escape (69%) complaints, and students from Batumi had more preoccupation (43%), persistence (62.5%) and escape (65.7%). Table S2, showed that 14.5% and 18.4% of students in Tbilisi and Batumi needed an improvement in their academic performance. Few students from WM subcategories had complaints. From Table S2, 4.1% and 4.9% of students from Tbilisi and Batumi respectively, had short term storage domain, as 6.1% (Batumi) and 6.3% (Tbilisi) required more action in the short-term.

In Table 3, students from UG had more complaints about persistence (58.7%), displacement (48.7%), and escape (67.9%), students from EEU had more complaints about preoccupation (44.2%), persistence (62.8%) and escape (73.5%), and students from BSU had more complaints on preoccupation (43%), persistence (62.5%), displacement (41.4), and escape (65.7). In Table S3, 16% (UG students), 18.4% (BSU students) and 10.6% (EEU students) complained of moderate to poor academic performance. As 7.3% (UG students), and 6.1 (BSU students) had more complaints with attention domain, 3.5% (EEU) had the same complaints in all WM subcategories.

Table 2. Frequency distribution of students SMD based on Cities.

Social Media Usage Disorder				
	Tbilisi		**Batumi**	
Preoccupation	N	%	N	%
Yes	167	40.4	133	43
No	246	59.6	176	57
Tolerance				
Yes	119	28.8	87	28.2
No	294	71.2	222	71.8
Withdrawal				
Yes	123	29.8	94	30.4
No	290	70.2	215	69.6
Persistence				
Yes	247	59.8	193	62.5
No	166	40.2	116	37.5

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Displacement				
Yes	192	46.5	128	41.4
No	221	53.5	181	58.6
Problems				
Yes	77	18.6	73	23.6
No	336	81.4	236	76.4
Deception				
Yes	111	26.9	96	31.1
No	302	73.1	213	68.9
Escape				
Yes	285	69	203	65.7
No	128	31	106	34.3
Conflict				
Yes	59	14.3	63	20.4
No	354	85.7	246	79.6

Table 3. Frequency distribution of students SMD based on based on universities.

	UG students		BSU students		EEU students	
Preoccupation	N=300	Percent (%)	N=309	Percent (%)	N=119	Percent (%)
Yes	117	39	133	43	50	44.2
No	183	61	176	57	63	55.8
Tolerance						
Yes	90	30	87	28.2	29	25.7
No	210	70	222	71.8	84	74.3
Withdrawal						
Yes	85	28.3	94	30.4	38	33.6
No	215	71.7	215	69.6	75	66.4
Persistence						
Yes	176	58.7	193	62.5	71	62.8
No	124	41.3	116	37.5	42	37.2
Displacement						
Yes	149	49.7	128	41.4	43	38.1
No	151	50.3	181	58.6	70	61.9
Problems						
Yes	51	17	73	23.6	26	23
No	249	83	236	76.4	87	77
Deception						
Yes	77	25.7	96	31.1	34	30.1
No	223	74.3	213	68.9	79	69.9
Escape						
Yes	202	67.3	203	65.7	83	73.5
No	98	32.7	106	34.3	30	26.5
Conflict						
Yes	43	14.3	63	20.4	16	14.2
No	257	85.7	246	79.6	97	85.8

3.2. Association between Social Media Usage Disorder, Gender Differences, and Physical Activities

From Table 4, 35.9% of male students and 64.1% of female students are at increased risk of using social media as an escape from negative feelings (OR 0.50; $\chi 2$ (18.206), p= 0.000, 95% CI[0.368-0.692]). 51.6% of male students and 48.4% of female students had the risk of conflict with families and friends because of social media (OR 1.65; $\chi 2$ (6.507), p= 0.011, 95% CI[1.122-2.452] Table 4).

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As illustrated in Table 5, 89.7% that perform physical activities, considering their academic workload had the risk of preoccupation complaints (OR 1.91); $\chi 2$ (5.379), p= 0.020, 95% Cl[1.097-3.329]). 87.9% felt dissatisfied regularly because they wanted to spend more time on social media (OR 2.23; $\chi 2$ (8.361), p= 0.004, 95% Cl[1.281-3.908] Table 5). As 87.8% of students intended to neglect other activities because of social media (OR 3.34; $\chi 2$ (17.054), p= 0.000, 95% Cl[1.834-6.112] Table 5).

Table 4. Comparison between gender differences and SMD.

Gender	Yes	No	chi-square	P-value	OR	95% Confidence Interval	
Preoccupation						Lower	Upper
Male	43.3%	39.8%	.898a	0.343	1.156	0.856	1.561
Female	56.7%	60.2%					
Tolerance							
Male	38.3%	42.4%	1.017a	0.313	0.844	0.606	1.174
Female	61.7%	57.6%					
Withdrawal							
Male	41.9%	41%	.056a	0.813	1.04	0.753	1.436
Female	58.1%	59%					
Persistence							
Male	38.9%	45%	2.701a	0.100	0.776	0.573	1.05
Female	61.1%	55%					
Displacement							
Male	40.3%	42%	.219a	0.640	0.931	0.691	1.255
Female	59.7%	58%					
Problems							
Male	46.7%	39.9%	2.271a	0.132	1.32	0.919	1.896
Female	53.3%	60.1%					
Deception							
Male	41.1%	41.4%	.005a	0.942	0.988	0.712	1.371
Female	58.9%	58.6%					
Escape							
Male	35.9%	52.6%	**18.206a**	**0.000**	**0.505**	**0.368**	**0.692**
Female	64.1%	47.4%					
Conflict							
Male	51.6%	39.2%	**6.507a**	**0.011**	**1.658**	**1.122**	**2.452**
Female	48.4%	60.8%					

Table 5. Comparison between physical activity and SMD.

Activity	Yes	No	chi-square	P-value	OR	95% Confidence Interval	
Preoccupation						Lower	Upper
No	10.3%	5.7%	5.379a	**0.020**	**1.911**	**1.097**	**3.329**
Yes	89.7%	94.3%					
Tolerance							
No	12.1%	5.8%	8.361a	**0.004**	**2.238**	**1.281**	**3.908**
Yes	87.9%	94.2%					
Withdrawal							
No	10.1%	6.5%	2.801a	0.094	1.614	0.917	2.838
Yes	89.9%	93.5%					
Persistence							
No	9.1%	5.3%	3.474a	0.062	1.78	0.964	3.287
Yes	90.9%	94.7%					
Displacement							

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No	12.2%	4%	17.054a	**0.000**	**3.348**	**1.834**	**6.112**
Yes	87.8%	96%					
Problems							
No	10%	7%	1.527a	0.217	1.478	0.793	2.755
Yes	90%	93%					
Deception							
No	7.2%	7.8%	.057a	0.812	0.928	0.501	1.719
Yes	92.8%	92.2%					
Escape							
No	7.4%	8.1%	.124a	0.725	0.901	0.505	1.608
Yes	92.6%	91.9%					
Conflict							
No	9%	7.3%	.408a	0.523	1.252	0.627	2.5
Yes	91%	92.7%					

3.3. Association between Social Media Usage Disorder, Academic Performance, and Working Memory

In Table 6, 80.3% of students that had good academic performance are at risk of neglecting activities such as hobbies, sports, and class assignments because of social media (OR 0.63; $\chi 2$ (5.133), p= 0.023, 95% CI[0.425-0.942]). Most of the students with good academic performance had the risk of having arguments with friends because of social media usage (90%, OR 1.13; $\chi 2$ (5.368), p= 0.021, 95% CI[1.099-3.470] Table 6).

Table 7 presented that 94% of students with good working memory had the risk of withdrawal complaints (OR 0.34; $\chi 2$ (6.865a), p= 0.009, 95% CI[0.154-0.793]). As 93.4% of having conflicts with parents, siblings, and partners as a result of social media.

Table 6. Comparison between academic performance and SMD.

Academic Performance	Yes	No	chi-square	P-value	OR	95% Confidence Interval	
Preoccupation						Lower	Upper
Good Performance	85.7%	82.5%	1.324a	0.250	1.271	0.844	1.913
Needs Improvement	14.3%	17.5%					
Tolerance							
Good Performance	86.9%	83.2%	1.032a	0.310	1.341	0.76	2.365
Needs Improvement	13.1%	16.8%					
Withdrawal							
Good Performance	84.8%	83.4%	.227a	0.633	1.113	0.718	1.725
Needs Improvement	15.2%	16.6%					
Persistence							
Good Performance	81.8%	86.9%	3.242a	0.072	0.680	0.446	1.037
Needs Improvement	18.2%	13.1%					
Displacement							
Good Performance	80.3%	86.6%	5.133a	**0.023**	**0.633**	**0.425**	**0.942**
Needs Improvement	19.7%	13.4%					
Problems							
Good Performance	90%	82.2%	5.368a	**0.021**	**1.953**	**1.099**	**3.470**
Needs Improvement	10%	17.8%					
Deception							
Good Performance	85%	83.3%	.323a	0.570	1.138	0.728	1.779
Needs Improvement	15%	16.7%					
Escape							
Good Performance	84.4%	82.5%	.442a	0.506	1.152	0.759	1.747
Needs Improvement	15.6%	17.5%					

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Conflict							
Good Performance	86.9%	83.2%	1.032a	0.310	1.341	0.76	2.365
Needs Improvement	13.1%	16.8%					

Table 7. Comparison between working memory and SMD.

	Working memory						
Storage Domain	Yes	No	chi-square	P-value	OR	95% Confidence Interval	
Preoccupation						Lower	Upper
Good	95.3%	97.6%	2.879a	0.090	0.496	0.217	1.132
Needs Improvement	4.7%	2.4%					
Tolerance							
Good	94.7%	97.5%	3.644a	0.056	0.458	0.202	1.040
Needs Improvement	5.3%	3.9%					
Withdrawal							
Good	94%	97.8%	**6.865a**	**0.009**	**0.349**	**0.154**	**0.793**
Needs Improvement	6%	2.2%					
Persistence							
Good	96.1%	97.5%	1.020a	0.312	0.633	0.259	1.547
Needs Improvement	3.9%	2.5%					
Displacement							
Good	95.3%	97.8%	3.324a	0.068	0.466	0.201	1.078
Needs Improvement	4.7%	2.2%					
Problems							
Good	94.7%	97.2%	2.378a	0.123	0.511	0.214	1.217
Needs Improvement	5.3%	2.8%					
Deception							
Good	95.7%	97.1%	0.946a	0.331	0.660	0.284	1.533
Needs Improvement	4.3%	2.9%					
Escape							
Good	96.3%	97.4%	0.622a	0.430	0.687	0.269	1.754
Needs Improvement	3.7%	2.6%					
Conflict							
Good	93.4%	97.3%	**4.776a**	**0.029**	**0.390**	**0.163**	**0.934**
Needs Improvement	6.6%	2.7%					

3.4. Multivariate Analyses Predicting Academic Performance among the Students

The multicollinearity in social media addiction was evaluated following that all independent variables did not strongly correlate with the dependent. In the final model, out of the fourteen variables represented, physical activities, displacement, and problems were significant correlates of academic performance (Table 8). The strongest correlate was physical activities which had an adjusted odd ratio (aOR) of 2.18 times. Students that complained of neglecting other activities for the purpose of social media are likely to have poor academic performance (aOR1.59) which is the same with students that had arguments with others because of social media usage (aOR 0.47).

Table 8. Multiple regression analyses predicting social media disorder among the students.

Variable		**B**	**Sig.**	**aOR**	**95% Confidence Interval for Exp(B)**	
					Lower Bound	**Upper Bound**
Needs Improvement	Constant	-1.283	0.037			
Gender	Male	0.085	0.703	1.088	0.704	1.681
	Female	0b	.	.	.	.

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Nationality	Georgian	0.419	0.268	1.521	0.724	3.194
	International students	0b	.	.	.	.
Institute	UG	0.196	0.583	1.216	0.605	2.446
	BSU	0.537	0.124	1.71	0.863	3.388
	EEU	0b	.	.	.	.
Physical activities	No	**0.781**	**0.023**	**2.183**	**1.114**	**4.281**
	Yes	0b	.	.	.	.
Preoccupation	Yes	-0.368	0.130	0.692	0.43	1.114
	No	0b	.	.	.	.
Tolerance	Yes	0.289	0.252	1.335	0.815	2.186
	No	0b	.	.	.	.
Withdrawal	Yes	-0.177	0.484	0.838	0.51	1.375
	No	0b	.	.	.	.
Persistence	Yes	0.429	0.071	1.535	0.963	2.446
	No	0b	.	.	.	.
Displacement	Yes	**0.468**	**0.043**	**1.597**	**1.015**	**2.513**
	No	0b	.	.	.	.
Problems	Yes	**-0.735**	**0.025**	**0.479**	**0.252**	**0.913**
	No	0b	.	.	.	.
Deception	Yes	0.015	0.953	1.016	0.61	1.691
	No	0b	.	.	.	.
Escape	Yes	-0.286	0.222	0.751	0.475	1.189
	No	0b	.	.	.	.
Conflict	Yes	-0.244	0.473	0.784	0.402	1.526
	No	0b	.	.	.	.
Working Memory	Good	-0.907	0.067	0.404	0.153	1.065
	Needs Improvement	0b	.	.	.	.

Reference category is good performance; aOR adjusted odd ratio.

4.0. Discussion

Our studies presented the prevalence of social media addiction and its effect on academic performance and working memory among undergraduate students. Utilization of social media differed based on the characteristics of the participants such as age, gender, and geography [34]. Meng et al, [35] reported an increasing trend in global social media addiction that can be observed among the participants in this study, as most of the students were international students. The influence of social media on individuals and society has been significant; it has affected both genders, shaping their perspectives, behaviors, and interactions within society [36]. Social media has provided a platform to express emotions, encourage positivity, expose unrealistic beauty standards, and foster feelings of inadequacy, and dominant behavior [3,5,37]. These could result in feelings of comparison, low self-esteem, jealousy, and anxiety [38], suggested to have an influence on social media addiction in this study.

4.1. Gender Difference

We observed that 'escape' behavior was prevalent among female students. Considering certain societal expectations and pressures, that may lead to higher levels of stress and anxiety. Escape behaviors on social media can take many different forms, such as mindlessly browsing through feeds, playing video games online, watching YouTube videos, or attempting to attract attention and validation through likes and comments. Social media could be a coping mechanism, female students utilize to find solace [39]. Moreover, male students had more 'conflict' with families and loved ones towards social media as female students may express emotions to avoid conflict and maintain relationships [40]. Conversely, masculinity norms may discourage male students from engaging in

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activities perceived as distractions, leading to a low prevalence of escape behaviors among male participants [39,41,42]. Additionally, social media companies' algorithms that are designed to keep both genders engaged and encourage addiction could increase the level of conflicts by making people less receptive to reasoned debate and more entrenched in their positions. Conflicts might become worse by misinterpretations and aggressive exchanges brought on by the lack of face-to-face engagement on social media [43].

4.2. Physical Activities

Shimoga, et al [44] reported that students who spend less time on social media could be productive in performing physical activities as observed in this study. The students that did not perform physical activity had complaints of 'preoccupation', 'tolerance', and 'displacement'. As students tend to spend more time posting their daily activities [45], it was reported in another study [46] that 'preoccupation' strengthened the time spent. Negative online interactions might cause people to become distracted, struggle with time management, and put off tasks. The addictive nature of social media platforms, peer pressure, escapism, quick gratification, and the fear of missing out are all likely causes of students' obsession with abusing social media [47]. Due to the lack of proper offline assistance, students may use social media as their main platform for social engagement. Stress, pressure, low self-esteem, a lack of coping mechanisms, peer pressure, anonymity, escapism, and attention-seeking are all likely causes of students' displacement behavior and social media abuse [48].

4.3. Academic Performance

Our study did not predict GPA regarding academic performance although students with good performance had 'displacement' and 'problems'. It has been reported that social media could have a negative effect on academic performance because of less time spent on learning and class activities which can be observed among students that need to improve their academic performance [49]. It could be that the high prevalence of students who had complaints of neglecting other activities to entertain social media used it for educational activities [9]. Though the increased duration of social media use per day could cause a deterioration in students' academic performance [50]. The modification of social networking sites has become more and more popular among students and is a major concern with its effects on studies [51].

4.4. Working Memory

Our results showed that social media addiction regarding its effect on working memory did not widely affect the students' working memory. The withdrawal and conflict complaints were observed among the students' working memory. This result shows that no direct impact of social media addiction on working memory, but there could be an effect on academic performance because of negligence in important activities. A similar study that investigated the correlation between working memory and social media also found that working memory is less likely to be affected by social media use in healthy patients [35]. In the same study [35], it showed signs that excessive exposure to social media usage in patients with mental disorders like depression can influence working memory which is beyond the scope of this study. It was observed in another study that memory was negatively affected by social media usage which correlated to the stressors exposed to the brain [52]. Though our study had a high prevalence of students with a good memory that struggled with complaints such as 'withdrawal' and 'conflict'. We observed that some students have to work on improving their working memory.

4.5. Recommendation

To address the issue of social networking addiction, it is necessary to encourage digital empathy, inform people about the repercussions, and cultivate a safe online space with honest dialogue and encouragement for reporting abusive behavior [53]. Students may get restless, irritable, anxious, and crave being online again when trying to cut back on consumption. Students find it difficult to stop

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using social media because of this addictive cycle, which emphasizes the importance of encouraging sensible usage patterns and digital well-being [54]. There are possible effects on one's academic or professional career, concerns associated with online safety, and effects from social networking platforms. To reduce these hazards, it is important to encourage responsible behavior online, inform people of the repercussions, and put in place efficient reporting and moderation systems. It is imperative to encourage digital balance among students, teach them about responsible usage, encourage offline interactions, and increase their resilience so they can deal with challenges in real life. Students should establish boundaries, use digital moderation, and seek treatment for emotional difficulties. This will help people refocus their attention on worthwhile activities especially their studies [55].

Furthermore, it offers a virtual environment where people can divert their attention from pressing issues or momentarily disconnect from pressures. Social media is an accessible alternative for stress release or relaxation because it can be easily accessed on smartphones and other devices. Social media can be very beneficial if used carefully but can also be detrimental when mishandled.

Conclusion

Our study has identified significant predictors for academic performance which are physical activities, and complaints such as displacement, and problems. Students are expected to consider the attention directed towards social media which could have a huge impact on their study. As there could be a request for counsel from any student experiencing these complaints. This would help to build healthy memory among the students and prevent psychosocial effects which are not covered in this study.

Strength and Limitations

This study covered the significant population of students from three different universities in the two most populated cities. It involved mainly international students in these institutions in different years of study. The study extensively considered each of the nine DSM-5 criteria for behavioral addiction in comparison with factors that could be a major concern among the students. These nine DSM-5 criteria were a subjective scale in which we could not specifically note the response towards a particular social network such as Facebook or Instagram or YouTube. But we assumed that the students' response covers all social networks which remains a limitation in our study. As two or more of the criteria showed significant differences, further detailed studies are recommended. We were not able to diagnose students who had addiction considering the large number of students involved in this study, but the responses of students should attract more attention to creating awareness regarding social media addiction.

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Informed consent: Comprehensive instruction was provided in the survey including a consent form in which the participant can discontinue the study at any time.

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