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Use of social media and its impact on postural stress and self-esteem among adolescents

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Abstract

Social media is part and parcel of adolescents' lives. The major concern is the duration of usage of social media on adolescents' self-esteem and posture. Experts are of the opinion that adolescents are more anxious and have lower self-esteem because of social media usage and texting and are engaged on the internet. While doing this the adolescents miss out on things like body language and facial expressions causing misunderstandings and being hurt. The mechanical stresses caused by mobile devices lead to incrementally increased stresses about the spine. These stresses can lead to neck pain, shoulder problems, headaches and early wear and tear to the spinal joints (i.e., spinal degeneration) causing postural stress among the individuals. Hence, the present study was undertaken to assess the use of social media and its impact on postural stress and self-esteem among adolescents. A self-structured tool was developed to elicit the required information based on the objectives of the study through random sampling technique. A total of 200 (100 boys & 100 girls) adolescents aged between 14-19 years were selected. The data collected was analysed using student test and chi square and correlation statistical analysis. The findings about the use of social media and its impact on the posture and self-esteem among the male and female respondents revealed that both the genders spent an equal amount of 30-60 minutes of their time on social media. The results indicated that respondents would not give up social media even if they experienced postural stress. The findings further revealed that social media influences the postural stress and self-esteem among adolescents. Results also revealed that there is a relationship between social media, postural stress, and self-esteem among adolescents. The study highlights the need for adolescents' active participation in co-curricular activities to prevent the impact of social media on postural stress and adolescents must control their use of social media to manage their self-esteem.

Keywords: Social media, self-esteem, adolescents, postural stress

Introduction

Social media is internet-based and gives users quick electronic communication of content, such as personal information, documents, videos, and photos. Users engage with social media via a computer, tablet, or smartphone via web-based software or applications. According to Global Social Media Stats (2021) [2], social media users tend to be younger. Nearly 90% of people between the ages of 18 and 29 use at least one form of social media. Further, these users tend to be better educated and relatively wealthy. The figures for the most popular social media websites as of January 2021 are as follows:

- Facebook (2.74 billion users)
- YouTube (2.29 billion users)
- Whatsapp (2 billion users)
- Facebook Messenger (1.3 billion users)
- Instagram (1.22 billion users)
- TikTok (689 million users)
- QQ (617 million users)
- Douyon (600 million users)
- Sino Weibo (511 million users)

Impact of social media on posture

Postural dysfunction or "Poor" posture is defined as when the spine is positioned in unnatural positions, in which the curves are emphasized, and this results in the joints, muscles and vertebrae being in stressful positions.

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Smartphones are the most common means of accessing social media sites. 70% of adults and 30% of children and teens reported that their use of electronic devices had caused them neck, shoulder, wrist or finger pain.

Adolescents spend an average of 2-4 hours a day with their heads tilted over reading and texting on their smart phones and devices. Cumulatively, this is 700-1400 hours a year of excess stresses seen about the cervical spine. It is possible that a high school student may spend an extra 5000 hours in poor posture. It can clearly be understood how usage of social media can affect the posture among the adolescents.

Impact of social media on self-esteem

Self-esteem is an individual's subjective evaluation of their own worth. Self-esteem encompasses beliefs about oneself as well as emotional states, such as triumph, despair, pride, and shame. Synonyms or near-synonyms of self-esteem includes: self-worth, self-regard, self-respect, and self-integrity. The three types of self-esteem are:

1. Inflated self-esteem- Individuals with inflated self-esteem tend to think of themselves as better than other people and are always ready to underestimate others. This is actually a very negative type of self-esteem because it prevents people who have it from forming meaningful and healthy relationships.
2. Low self-esteem- Individuals who have low self-esteem, think of themselves as below average. They do not believe in themselves; they do not trust in their abilities, and they do not place value on themselves.
3. High self-esteem- Individuals who have high self-esteem tend to love and accept themselves. They believe in themselves and their abilities. They have the confidence that whatever challenges might come, they will be able to surpass it.

During adolescence (i.e., ages 11-19 years old), adolescents are undergoing the process of identity development, and self-esteem is an important part of this development. During this developmental period, adolescents' self-esteem is likely to be affected by the feedback they receive online through social media sites (Burrows, 2017) [1]. Clearly, in these ways, social media usage can be a positive experience; however, adolescents are also exposed to the negative aspects of social media use, such as drama and bullying or feeling pressure to present themselves in a certain way (Anderson, 2018) [7]. Furthermore, adolescents tend to over interpret or misjudge the extent to which others are evaluating them, which can lead to a preoccupation with how they look in the eyes of others (Valkenburg, 2016) [16].

Methodology

To assess the use of social media and its impact on postural stress and self-esteem among adolescents, pre university colleges in Bengaluru City were identified. The sample for the study consisted of two hundred adolescents aged between 14-19 years identified from pre-university colleges (100 boys & 100 girls). To acquire the data from the respondents, a self-structured tool was developed which consisted of three responses: "Yes, No, Sometimes" to choose from. It was divided into two parts. Part one, comprising of basic data of respondents like name, gender, age, educational qualification, place of residence and email id. Part two comprising of specific data was further subdivided into 3 variables namely use of 'social media', 'postural stress' and 'self-esteem' with 16 items under each variable. Random sampling method was

used for the study and the statistical analysis used to interpret the data was Student 't' test for testing the significance of correlation coefficient and Chi square test. The responses obtained were tabulated and statements of the tool was categorized. Further, the responses were coded accordingly and the total score of each of the respondent was obtained.

Findings

In order to highlight the impact of social media on postural stress and self-esteem among adolescents, responses of the adolescent boys and girls was calculated separately for each table and its overall reading was calculated using Student test and Chi square.

Table 1: Use of social media among the respondents

Use of social media	Male	Female	Significance of Chi square
Less than 30 min	24	24	0.0000 ^{NS}
30 - 60 min	37	37	
1 - 2 hrs	14	14	
2 - 3 hrs	25	25	
Total	100	100	

NS not significant

Riehm KE, *et al.* (2019) [4] study on more than 6500, 12-15-year-old in the U.S found that those who spent more than 3 hours a day using social media might be at a heightened risk for mental health problems. The above table 1 emphasizes on the usage of social media among the respondents. From the above data, the frequency of social media was same among both female and male respondents. 37 of the male and female respondents used social media for 30-60 minutes. Least number (14) of both male and female respondents used social media for 1-2 hours.

Most adolescents do not have any major responsibility besides academics and extracurricular activities, this gives them a good amount of leisure time which they use to keep themselves engaged on social media. Social media provides a wide variety of entertainment and hence, adolescents are found browsing on social media for long duration of time.

Table 2: Accessibility of the respondents to social media platforms

Access social media platforms like Instagram, Snapchat or Facebook	Male	Female	Significance of Chi square
Yes	85	71	6.5546*
Sometimes	1	5	
No	14	24	
Total	100	100	

* Significant at 5% level

Internet is readily available to people from various walks of life and different age groups. It is majorly accessed by teenagers. Table 2 indicates accessibility of the respondents to social media platforms like Instagram, Snapchat, Facebook, etc. In response, 85 male respondents agreed to having access to social media platforms whereas, just respondent expressed that access to social media platforms only sometimes. Seventy-one female respondents gave a positive response to having accessibility to social media platforms like Instagram, Snapchat, Facebook.

The chi square value was found to be significant at 5% level. This was mostly because owning a mobile phone is become a necessity in present times for adolescents and having internet connectivity is become mandatory due to various reasons like online classes, assignments and the wish of over protection of parents.

Further, since adolescence is the period between childhood and adulthood, many parents feel their children have grown up and buy personal gadgets for their children. This could be a reason why most of the adolescents have access to social media platforms like Instagram, Snapchat, Facebook, TikTok, etc.

Table 3: Influence of social media on sleep cycle of the respondents

Effect of social media on sleep cycle	Male	Female	Significance of Chi square
Yes	17	24	1.9885 ^{NS}
Sometimes	38	39	
No	45	37	
Total	100	100	

NS Not significant

A study conducted by Sally Power *et al.* (2017) ^[11] was published in the Journal of Youth Studies which surveyed 900 teens between the ages of 12-15 and found that one-fifth of the teens said that they “almost always” wake up during the night and log into social media.

Table 3 infers the influence of social media on the sleep cycle of respondents.

Among a total of 100 male respondents, 45 of them agreed that social media usage irrespective of the duration did not affect their sleep cycle whereas, 38 of them said that it affects their sleep cycle but only sometimes. Among a total of 100 female respondents, 39 of them opined only sometimes the use of social media affects their sleep cycle whereas, 37 of the respondents disagreed to use of social media affecting their sleep cycle.

The findings is similar to the study conducted by Emam Sayed *et al.* (2021) ^[3] which revealed that more than half of the adolescents were addicted to social media, majority of them had unsatisfactory sleep quality and more than three-quarters of them had low-satisfaction level towards their life.

Table 4: Strain on the eyes of the respondents due to use of social media

Social media usage strains the eyes	Male	Female	Significance of Chi square
Yes	60	67	1.3388 ^{NS}
Sometimes	17	12	
No	23	21	
Total	100	100	

NS Not significant

Table 4 examines the data on strain on the eyes of the respondents due to use of social media. According to a study reviewed by University of Pittsburgh Medical Center (UPMC) Health Beat (2019) “spending too many hours staring at a screen can cause eye strain especially in children and adolescents”. In contrast to the above study, 60 of the male respondents agreed that social media can strain the eye whereas, 23 of them denied the same.

Similarly, 67 of the female respondents agreed that use of social media causes a strain on the eye whereas, 21 of them denied the same. The above data clearly shows how harmful social media can be to the eye. Holding a phone very close to the eyes can make the eye muscles tired. Adolescents should be sensitized on the effects of social media on the body like strain on the eyes, neck pain, loss of appetite, lack of sleep, low academic grades, etc.

Most families cannot and don’t want to completely remove screened devices from their adolescent’s lives. They are part

of living in the modern world. The smaller and closer a screen is, the harder the adolescent’s eyes must work to focus on it. They must be encouraged to work on a larger screen, such as a laptop or desktop computer, rather than a small phone screen. Besides that, adolescents must be encouraged outdoor play and healthy activity, to foster healthy sleep habits and to promote in-person social relationships.

Table 5: Experience of neck pain while using social media for a long time

Neck pain while sitting and using social media for long time	Male	Female	Significance of Chi square
Yes	45	43	0.0821 ^{NS}
Sometimes	23	24	
No	32	33	
Total	100	100	

NS Not significant

Majority of the respondents both male and female have opined that they experience neck pain while sitting and using social media for long hours. Table 5 analyses experience of neck pain while using social media for a long time. Forty-five among the male respondents and 43 among the female respondent’s experience neck pain as shown in the above table.

Whereas 32 of the male respondents and 33 of the female respondents opined that their neck does not pain while sitting and using social media for long hours. Rest of the respondents i.e 23 male respondents and 24 female respondents opined that they sometimes experience neck pain while sitting and using social media for long.

According to a study published in 2015 showed that 79% of the population between the ages 18 and 44 have their cell phones with them almost all the time-with only 2 hours of their waking day spent without their cell phone on hand.

Bending the neck too far backwards or forwards can lead to pain or strain, it can be clearly understood that majority of the adolescents maintain a poor posture while using social media which leads to neck pain in majority of them.

The findings is in line with the study conducted by Sohail Ahmed *et al.* (2019) ^[12] which stated that 46.9% of the college going students reported having pain in their neck, 42.5% reported having mild to severe disability in their neck and 29.2% reported having pain in their thumb due to prolonged smartphone use.

Table 6: Response to giving up social media if respondents experienced postural stress

Give up social media when postural stress is experienced	Male	Female	Significance of Chi square
Yes	39	37	0.7995 ^{NS}
Sometimes	17	22	
No	44	41	
Total	100	100	

NS Not significant

The above table 6 depicts respondents giving up on social media if respondents experienced postural stress. Forty-four of the male respondents denied giving up social media even if they experienced postural stress whereas, just 39 of them agreed to give up social media completely if their posture would be affected due to social media and only 17 of them agreed that they would sometimes give up social media if they experienced postural stress. Forty-one female respondents denied giving up social media if they experienced postural

stress whereas, 37 of them agreed they would give up social media and just 22 of them agreed that they would sometimes give up social media if they experienced postural stress. Although the number varies by a narrow margin, from the above data it can be concluded that adolescents value social media more than their posture. Giving up social media for their own good, for a healthy posture seems to be a task for them. Modern times have proved how essential social media has become in one's lives. Adolescents are unaware of the chronic conditions that social media can cause to their posture which makes it difficult for them to think about giving up social media even if they would face problems in their posture. Adolescents do not wish to compromise on social media.

Table 7: Positive attitude about themselves

Positive attitude about themselves	Male	Female	Significance of Chi square
Yes	73	77	1.2306 ^{NS}
Sometimes	13	14	
No	14	9	
Total	100	100	

NS Not significant

For teens, in addition to making them feel better, positive thinking can improve their memory, decision making and problem-solving skills. Positive thinking also gives them a better outlook on life and keeps them moving in a constructive direction (Harter, 1993) ^[17].

Table 7 emphasizes respondents have a positive attitude about themselves. Seventy-three of the male respondents had a positive attitude about themselves whereas, 14 of the did not have a positive attitude about themselves.

Seventy-seven of the female respondents had a positive attitude about themselves whereas, only 9 of them did not have a positive attitude about themselves. In comparison from the above data, it is understood that a greater number of female respondents had a positive attitude about themselves than male respondent.

Adolescents can be helped to increase their positive thinking by teaching them the skills to think more positively - interpersonal skills, problem solving skills, critical reasoning, and planning skills.

This is parallel to the study conducted by M. Minev *et al.* (2018) ^[6] which showed that girls have significantly more negative attitude towards themselves compared with boys.

Table 8: Respondents struggle with self-esteem with regard to social media

Struggle with self-esteem with regard to social media	Male	Female	Significance of Chi square
Yes	14	12	0.8312 ^{NS}
Sometimes	18	23	
No	68	65	
Total	100	100	

NS Not significant

The process of identity development, and self-esteem is an important part of development during adolescence. Table 8 shows the data for respondents struggle with self-esteem regarding social media.

Sixty-eight of the male respondents disagreed to struggling with self-esteem with regard to social media, 18 of them disclosed that they sometimes struggle with self-esteem and 14 of the male respondents agreed that they struggle with self-

esteem with regard to social media.

Sixty-five of the female respondents disagreed to struggling with self-esteem with regard to social media, 12 of them agreed that they struggle with self-esteem and 23 of the female respondents disclosed that they sometimes struggle with self-esteem with regard to social media.

In comparison to the above data, it can be understood that female respondents struggled slightly more than the male respondents.

A study by Sannet Thomas *et al.* (2021) ^[12] indicated a non-significant difference in the level of self-esteem among college students across their gender. There is no significant difference in social media addiction among students across their gender.

Table 9: Self-esteem of the respondents affected by social media

Has social media affected your self-esteem	Male	Female	Significance of Chi square
Yes	12	6	0.8767 ^{NS}
Sometimes	17	20	
No	71	74	
Total	100	100	

NS Not significant

According to Pew Research Centre (2018) adolescents believe social media has had a negative impact on their self-esteem: 26% of adolescents say these sites make them feel worse about their own life. Still, just 4% of adolescents indicate these platforms make them feel "a lot" worse about their life. Table 9 interprets self-esteem of the respondents affected by social media.

Seventy-one of the male respondents and 74 of the female respondents opined that their self-esteem was not affected by social media while 17 of the male respondents and 20 of the female respondents opined that their self-esteem is sometimes affected by social media. The remaining 12 of the male respondents and 6 of the female respondents agreed that their self-esteem is affected by social media.

Everyone has regular ups and downs, but there are some instances in life that can have a profound impact on one's sense of self-worth. The factors that affect an adolescent's self-esteem includes appearance, possessions, age, relationships, education and family. However, from the above data, social media has not affected the adolescents' boys' and girls' self-esteem.

The above data is in contrast with a study conducted by Patti Valkenburg *et al.* (2021) ^[10] which revealed that majority of the adolescents (88%) experienced no or very small effects of social media usage on self-esteem, whereas 4% experienced positive and 8 negative effects.

Table 10: Effect of Social Media on Postural Stress and Self Esteem among Adolescents (Overall)

Social Media	Intercept	Regression coefficient	Students t value	F Value
Postural Stress	17.3215	0.3524	5.3262**	28.3692**
Self Esteem	17.6276	0.3461	5.0048**	25.0480**

** Significant at 1% level

Table 10 depicts the level of effect of social media on postural stress and self-esteem among adolescents. From the above table, it can be observed that there is a positive correlation between social media and postural stress among adolescents which is significant at 1% with the value of "t" being (5.3262**). There is also a positive correlation between social

media and self-esteem among adolescents which is significant at 1% level with the value of “t” being (5.0048**). It can be understood that although social media has advantages it can still have an impact on the postural stress and self-esteem among adolescents.

Table 11: Relationship (Correlation) between Social Media, Postural Stress and Self Esteem among Adolescents (Overall)

Correlation	Social Media	Postural Stress	Self Esteem
Social Media	1.0000		
Postural Stress	0.3540**	1.0000	
Self Esteem	0.3351**	0.2933**	1.0000

** Significant at 1% level

Table 11 signifies the correlation between social media, postural stress and self-esteem among adolescents. Data shows that there is a positive correlation between social media and postural stress which is significant at 1% level with the value being (0.3540**) followed by a positive correlation between self-esteem with the value being (0.3351**) and the correlation between self-esteem and postural stress is (0.2933**) which is significant at 1% level. The findings of the study clearly indicates that the respondents are aware of the pros and cons of social media and its impact on posture and self-esteem.

This is parallel to the findings of Muqaddas Jan *et al.* (2017)^[9] which indicated that there is a strong relationship between social media and self-esteem.

Another study conducted by Leon M. Stalker *et al.* (2007)^[18] indicated that computer use was associated with adolescent habitual postures.

Conclusion

The study on use of social media and its impact on postural stress and self-esteem among adolescents revealed that there is a relationship between social media on postural stress and self-esteem among the respondents in the age group of 14-19 years, and use of social media influences the adolescents in general. The findings further revealed that the respondents handled criticism well and did not fall victim to other people's negative comments. It showed the respondents were aware that academic knowledge is better than social media knowledge, yet they were found spending long hours on social media due to varying interests like gaming, entertainment, sports, fashion, DIY hacks and many more. The present study highlighted the need for adolescents to participate in co-curricular activities to prevent the impact of social media on the postural stress.

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