



## Associations between Social Media Usage and Disordered Eating: Mediated By Body Image Concerns and Moderated By Impulsivity

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### ABSTRACT

The contemporary research was executed to explore the association amidst use of social media and disordered eating behaviours mediated by concerns about body image and moderated by impulsivity. The sample taken for our research was students of AJK University. Through our research investigation, we attempted to find out the difference of usage of social media, disordered eating behaviours, concerns about body image and impulsivity in proportion to the demographic variables (gender, age, psychological illness). Our research sample was consisted of 300 university students from various departments of university. Social media usage scale (SMUS), body image concerns (BICS), Barrat impulsivity scale revised\_21 and eating attitude test (EAT) were implemented on sample students. Our research questionnaire contained 100 items and each questionnaire was administered to sample of 300 students. We used the software of SPSS for analysis of our data. We conducted the analysis of correlation to explore the association between use of social media and disordered eating behaviours and our research findings indicated that there is a positive significant correlation between use of social media and disordered eating behaviours and BICS significantly mediates the association of usage of social media and disordered eating behaviours and BISR significantly moderates association of usage of social media and disordered eating behaviours. The results of SPSS indicated males have higher scores on SMUS, BICS and females have higher scores on impulsivity and eating attitudes. Moreover; younger adults perform higher scores on SMUS, BICS while adolescents perform higher scores on impulsivity and eating attitudes and individuals suffering from psychological illness tend to perform higher on SMUS, BICS, BISR with low eating attitudes than individuals with psychological illness.



## **Introduction**

Social media is an online platform that is based on computer based technology that helps in online communication. Human beings are communal creatures and for maintaining their social connections they use different social networks like messenger, twitter, Instagram, Facebook, Snapchat and other popular online applications. Social platforms have become significant part of today's modern world. According to a recent estimate of 2019, there are approximately 3.484 billion online users worldwide (Newman et al., 2020).

## **Disordered Eating**

Disordered eating is a serious and recurrent mental health disorder that usually emerges in teen age (Balasundram & Santhanam, 2023). Disordered eating is a serious mental health disorder that is associated with unhealthy diet, accompanied by having trouble thinking regarding body image. Some categories of disordered eating attitudes are Anorexia nervosa: a person who suffers from anorexia nervosa has a terrible anxiety regarding weight gain and a distorted body image. These individuals seriously restrain themselves from eating that results in weight loss and malnutrition., Bulimia nervosa: Individuals suffering from bulimia nervosa suffers from vomiting, excessive exercise and fasting to prevent from weight gain. Binge eating disorder: Individuals suffering from binge eating disorder experience recurrent episodes of uncontrollable over-eating (Wang, 2023).

According to a study conducted by Silen & Keski-Rahkonen (2022), it was estimated that approximate number of women suffering from disordered eating is 5.5-17.9% and approximate number of men suffering from disordered eating is 0.6-2.4%. According to a recent research conducted in 2023, it was found that 13% of young people suffer from disordered eating by the age of 20 and about 15-47% people suffer from disordered eating behaviours worldwide and body image concerns is one of the top reasons for this. Findings of recent study indicate that use of social media is the main cause for this (Dane & Bhatia ,2023).

## **Body Image Concerns**

Body image concern is condition that is correlated with being captivated and disappointed with one's body appearance and different aspects of body like its shape, weight and other characteristics. Body image concerns pose a serious issue worldwide due to strong pressure to obtain and maintain ideal body shape. Body image concerns being so much complicated involves the thinking pattern of a person that how a person thinks, feels and behaves regarding his own appearance (Rodgers et al., 2023). According to an online survey conducted in 2022, adults of age group 18-24 years' experience negative impact on well-being due to body image concerns and their estimated percentage was 46% while 41% of respondents of age 25-34 years' experience negative impact on well-being due to body image concerns while 35% of respondents of age 35-44 experience negative impact on well-being due to body image concerns and 28% respondents of age 45-54 experience negative impact on well-being due to body image concerns while 21% respondents of age 55-64 suffer from negative well-being and only 16% respondents of age 65 and older experience negative well-being due to body image concerns.

## **Impulsivity**

Impulsivity is concerned with acting quickly without any consideration regarding outcomes. Impulsivity is characterized by performing actions without any forethought. Impulsivity is simply acting without thinking. Impulsivity is just concerned with here and now without any thought of how that unplanned action could affect others. Examples of impulsive behaviour are following:

bingeing (excessive shopping, gambling and eating), destruction of property (to destroy own or someone else's possessions in anger), frequent outbursts (showing tantrums more often), physical violence (scratching, kicking), self-harm (hurting one's own self in extreme anger or outbursts), getting vocal (screaming or shouting in anger or frustration). Impulsivity is also an important symptom of borderline personality disorder, bipolar disorder and attention deficit hyperactive disorder (Pietrangolo, 2020). Impulsivity acts as a moderator between research variables of use of social media and disordered eating behaviours. Higher and lower levels of impulsivity are used for assessing its moderating effect. When people are less impulsive, they tend to think more about what they see on social media. If they spend a lot of time on social media, especially viewing images related to body image and diets, they might internalize those ideals more deeply. This can lead to increased comparison with others and a higher likelihood of developing eating disorders. So, having low impulsivity can make someone more at risk to the negative effects of online platforms on their eating behaviours as compared to those who are more impulsive. Thus high impulsivity acts as a defensive factor for the adverse effects of social media on disordered eating (He & Yang, 2022).

The influence of social media use on disordered eating is so much prominent. For establishing the positive impact of use of social media on disordered eating behaviours, an observational study was administered on Arab women in 2019. The administration of that observational study was done using a probability sample of 1418 university undergraduate female students in Qatar (Middle east). For that study, Instagram, Snapchat, Facebook, twitter were used for assessment. The results made confirmation that those women who over-used social media apps especially Instagram reported higher risk of disordered eating behaviours. Instagram seemed to be more positively associated with disordered eating than facebook, snapchat and twitter because they are indulged in posting pictures on instagram and they idealize specific celebrities on these social media apps and to obtain the ideal image of their idealized celebrities, they get indulged in disordered eating behaviours like restricted diet, vomiting etc (Qutteina et al; 2019).

A recent study conducted in 2018 indicated a positive correlation between social media use and body image concerns. 21<sup>st</sup> century is the century of social media. A teenager opens his phone and is bombarded by posts of pretty people with a well-postured body image. They spend most of their time standing in front of mirror and make plans to join gym to get muscular body or to start a new healthy diet in order to obtain the ideal image of their desired aesthetic. Different studies showed that girls are more concerned to get a thin ideal body and boys are more concerned to get a muscular body (Franchina & Coco, 2018).

In a study conducted by Franchina & Coco, (2018), it was determined that body image concerns act as mediator between use of social media and disordered eating behaviours. A positive correlation is found between use of social media and concerns about body image. 21<sup>st</sup> century is the century of social media. A teenager opens his phone and is bombarded by posts of pretty people with a well-postured body image. They spend most of their time standing in front of mirror and make plans to join gym to get muscular body or to start a new healthy diet in order to obtain the ideal image of their desired aesthetic. Different studies showed that girls are more concerned to get a thin ideal body and boys are more concerned to get a muscular body. Their concerns about having ideal muscular body make them indulged in disordered eating behaviours like vomiting, restricted diet with gym etc. Thus over use of social media increases concerns about body image and these body image concerns thus directly affect disordered eating.

In a modern study conducted in 2022, impulsivity was proved as a prominent moderator between use of social media and disordered eating behaviours. That research assessed how the relationship

between social media dependence and disordered eating may change depending on the levels (high vs. low) of impulsiveness in a sample of college students. The sample consisted of 767 undergraduate's with 552 female students and 215 male students. Those students were taken as sample who used to be frequent users of social media platforms. Participants answered the questions in questionnaire regarding their social media dependence, disordered eating, impulsiveness and demographic information. And it was also found that participants with low impulsivity are more at risk to the negative effects of social media on disordered eating because when people are less impulsive, they tend to think more about what they see on social media. If they spend a lot of time on social media, especially viewing images related to body image and diets, they might internalize those ideals more deeply. This can lead to increased comparison with others and a higher likelihood of developing eating disorders. So, having low impulsivity can make someone more at risk to the adverse effects of social media on their eating behaviours as compared to those who are more impulsive (He & Yang , 2022).

The application of online platforms has become omnipresent in progressive generations. According to Sanzari et al., 2023, a survey was conducted in 2021 on U.S adults and results showed that 72% of U.S. adults proclaimed using at least one social media platform that shows approximately 60% increase from 2014. The social media use has profound positive impacts as it helps in developing social interactions but over use of these social media platforms adversely affect the quality of life and mental health of that person inclusive of poor body image and disordered eating.

According to a cross sectional study conducted by Neilson in 2016, Conventional media movies, TV shows, and magazines are flopping in front of social media in terms of popularity. Online media and social networking sites in particular are different from conventional media in that they allow people to communicate with their friends and companions. Additionally, digital media is easily approachable on devices like tablets or cell phones. Thus, the length of time individuals are spending on social media is soaring particularly for teenagers, watching movies and TV shows online in addition to interacting on social media. It is easier than ever to use social media. An individual currently spends more than ten hours each day through social media use (Nielsen, 2016).

A recent study has been conducted in Pakistan to establish the association between social media use and disordered eating. The sample taken was university students. And mediator of appearance based rejection sensitivity was used as a mediator. The process of data selection was done through non probability convenience sampling and sample size of 300 university students was taken with age range of 18-30 years. The findings of study showed that there was a significant positive relationship between social media use and disordered eating and it was also assessed that frequency of disordered eating is prevalent more in women than men (Imtiaz & Malik, 2024).

The present study was conducted on social media and digital platforms like instagram, snapchat, facebook etc rather than traditional media sources like television, newspaper because now is the time of digital media and people especially youth are more indulged in use of digital media than traditional media that's why we emphasized on digital social media in our research because it is a new hot topic on which least work is done. That's why we took an initiative to make people aware about minimizing their screening time and to make them familiar with term disordered eating.

### **Objectives**

1. To investigate the relationship between social media usage and disordered eating behaviours amidst university students.

2. To investigate the mediating role of body image concerns amidst university students.
3. To investigate the moderating role of impulsivity amidst university students.
4. To find out the role of demographic variables in study variables amidst university students.

### **Hypothesis**

1. There is a positive correlation between social media usage and disordered eating behaviours amidst university students.
2. Body image concerns mediate the relationship between social media usage and disordered eating behaviours amidst university students.
3. Impulsivity moderates the relationship between social media usage and disordered eating behaviours amidst university students.
4. Demographic variables ( age, gender, psychological illness ) significantly affect social media usage, disordered eating, body image concerns and impulsivity amidst university students.

### **Method**

#### **Participants**

A sample (N = 300) of university students from university of Azad Jammu & Kashmir was included in this study. 150 male and 150 female students were taken from university. 50% male and 50% female students were taken in each cadre who were enrolled in BS and MS programs in various departments. Both nuclear and joint family student were included in the sample. Both married and unmarried Students were included in the sample. Student without any physical illness were included. School and college students were excluded. Transgender were also excluded from the study. Student with any physical illness were also excluded from the study.

**Table 1: Frequency Distribution of the sample in terms of Demographic Variables (N=300)**

<b>Variables</b>	<i>f</i>	%
Gender		
Male	95	31.7
Female	205	68.3
Age		
18-24	268	89.3
25-30	32	10.7
Have you ever suffered from any psychological disorder?		
Yes		
No	60	20.0
	240	80.0

## **Measures**

### **Demographic Form**

We developed the demographic sheet on the basis of previous researches. The following three demographics were being added by organizing detailed literature: age, gender and have you ever suffered from any psychological illness.

### **Eating Attitude Test (EAT\_26)**

The eating attitude test was invented by Garner and Garfinkel in 1979. There are total 26-items in EAT. These items are used to assess several eating attitudes. There are three sub scales in EAT-26. The name of these sub scales are following: dieting, bulimia and food preoccupation, oral control. The items in each sub scale are summed up by computing all items assigned to that particular scale. The items being involved in dieting scale are 1, 6, 7, 10, 11, 12, 14, 16, 17, 22, 23, 24, 26 and items being involves in bulimia and food preoccupation scale are 3, 4, and 9, 18, 21, 25 and items being involved in sub scale of oral control of are 2, 5, 8, 13, 15, 19, 20. If the score of EAT-26 is equal to 20 or above than 20 then it shows that there is presence of higher risk about maladaptive eating behaviours. An additional assessment was also being done by adding five behaviour related question for assessing the maladaptive eating behaviours since past six months by using following options: never, once a month or less, 2-3 times a month, once a week, 2\_6 times a week, once a day or more.

### **Body image concerns scale**

The scale of body image concern scale was developed by Wei Wang and others in 2017. There are total 34 items in body image concern scale. There are six aspects being covered in body image concerns scale. These aspects involved following: (a) nine items are associated with assessment of negative evaluation preoccupation with appearance; (b) four items are associated with assessment of distress caused by the appearance defect; (c) six items are associated with assessment of embarrassment in public, and feeling of being monitored by others; (d) seven items are associated with assessment of the repetitive behaviours related to appearance; (e) seven items for the assessment of social activities avoidance; (f) one item being associated with the prohibition of other mental disorders. EAT is a five Likert scale: 1 – very unlike me, 2 –moderately unlike me, 3 – somewhat like and unlike me, 4 – moderately like me, and 5 – very like me.

### **Social media usage scale (SMUS)**

The Social Media Use Scale (SMUS) is a questionnaire used to measure individuals' social media use. The SMUS was developed by Lin, Wang and Chen in 2016. The SMUS includes 17 items. SMUS is a 9 point Likert scale that ranges from 1 (never) to 9 (hourly or more). 5 items are social media based (1,2,3,4,5) and 3 items are comparison based (6,7,8) and 4 items are belief based (9,10,11,12) and 5 items are consumption based (13,14,15,16,17).

### **Barratt impulsiveness scale (BIS)**

The Barratt Impulsiveness Scale was originally developed by Ernest Barratt in 1959. The Revised version (BIS-R) was later developed by Robert D. Patton, David J. Stanford, and Ernest Barratt. It is a 21 item scale that is designed to measure impulsivity as a personality trait. It assesses the tendency of impulsive behaviours and related disorders. 21 is divided into three factors, each reflecting different dimensions of impulsivity: Attention Impulsivity (7 items): Measures the

inability to focus or concentrate, characterized by distractibility and difficulty in maintaining attention, Motor Impulsivity (7 items): Assesses the tendency to act on impulse without adequate deliberation, often leading to hasty actions or behaviours.

### **Procedure**

Sample of 300 undergraduate students (male) and female) were taken from UAJK. We explained them the purpose of the study. Informed consent was taken from the participants for getting their permission that they are willing to participate in the research. Their agreement to participate was obtained. Participants were assured that their data is used only for research purposes and they were guaranteed about the secrecy of their provided information. After their consent, they were given verbal as well as written instructions and questioner were given to them. The participate were asked to read the instrument carefully and give their responses on each and every item and not to leave any item unanswered. Participants were also requested to point the words or phrases that were uncomprehending and difficult for them. The words, phrases and sentences were rephrased and made appropriate to understand the scales measuring respective constructs. Informed consent was obtained from each participant and each participant was given verbal as well as written instructions about how to respond to questionnaires and also to read all the questions carefully and answer each question with best of their knowledge and not to leave any question unattended. Participants were addressed about their right to quit at any point and also about the confidentiality of their information which they were going to provide and assured that this information will kept secret and will be used for research purpose only. There was no time restriction.

### **Results**

**Table 2: Descriptive Statistics for the Scales Used in the Study(N=300)**

<b>Scale</b>	<b>M</b>	<b>SD</b>	<b>Range</b>	<b>Cronbach's <math>\alpha</math></b>	<b>skewness</b>	<b>kurtosis</b>
SMUS	62.52	19.86	16.38-115.9	.87	-0.14	-.366
BICS	56.98	17.69	17.64-104.9	.91	0.088	-1.60
BISR	49.33	7.63	30.23-66.96	.67		
EAT	103.3	21.83	46.0-153.9	.86	0.010	-.289
					.059	-.277

Note: *SUMS*=social media usage scale, *BICS*= body image concern scale, *BISR*= Barrat impulsiveness scale revised, *EAT*= eating attitude test and Cronbach's alpha coefficients are reported for each scale. *M*= Mean, *SD*= Standard Deviation,  $\alpha$ = Reliability Coefficient

Table 2 presents the psychometric properties of various scales, including their means (M), standard deviations (SD), ranges, and Cronbach's alpha coefficients. The Social Media Usage Scale (SMUS) has a mean of 62.52 and a standard deviation of 28.07, with a range of 16.38 to 115.9 and a high reliability coefficient (Cronbach's  $\alpha$  = .87). The Body Image Concern Scale has a mean of 56.98 and a standard deviation of 17.69, with a range of 17.64 to 104.9, achieving a reliability of .91. The Barratt Impulsiveness Scale Revised shows a mean of 49.33, a standard deviation of 7.63, and a range from 30.23 to 66.96, with a reliability coefficient of .67. Finally, the Eating Attitude Test has a mean of 103.3, a standard deviation of 21.83, and a range of 46.0 to 153.9, demonstrating good reliability at .86. Overall, the scales exhibit satisfactory reliability, with Cronbach's alpha values indicating good to excellent internal consistency.

**Table 1: Pearson correlation analysis among Social media usage scale, body image concern scale, Barrat impulsiveness scale revised And Eating attitude test**

Variable	SMUS	BICS	BISR	EAT
SMUS	--			
BICS	0.543**	--		
BISR	0.265**	0.314**	--	
EAT	0.214**	-0.313**	0.143**	--

NOTE: SUMS=social media usage scale, BICS= body image concern scale, BISR= Barrat impulsiveness scale revised, EAT= eating attitude test. \*\* $p < 0.01$

Table 3 displays the Pearson correlation coefficients among several psychological scales: the Social Media Usage Scale (SMUS), the Body Image Concern Scale (BICS), the Barratt Impulsiveness Scale Revised (BISR), and the Eating Attitude Test (EAT). Significant positive correlations are observed between SMUS and BICS ( $r = 0.543$ ,  $p < 0.01$ ), indicating that higher social media usage is associated with greater body image concerns. Additionally, significant correlations are noted between BISR and the other scales, particularly with BICS ( $r = 0.314$ ,  $p < 0.01$ ), indicating a relationship between impulsivity and body image concerns. Lastly, the EAT correlates positively with SMUS ( $r = 0.214$ ,  $p < 0.01$ ), indicating that higher eating concerns may be associated with increased social media usage.

**Table 4: Regression Analysis for Mediation Of Body Image Concerns Between Social Media Use And Disordered Eating**

Variable	B	95%CI	Se $\beta$	B	R <sup>2</sup>	$\Delta R^2$
<b>Step 1</b>					0.05	0.05
Constant	117.94	(109.77-126.12)	4.154			
Social media use(SMUS)	-0.241	(-.366_-0.116)	0.063	-0.220		
<b>Step 2</b>					0.10	0.05
Constant	127.04	(117.97-136.11)	4.610			
Social media use(SMUS)	-0.078	(-.223-.66)	0.073	-0.071		
Body image concern(BICS)	-0.337	(-.499_- .176)	0.082	-0.28		

Note: CI=Confidence Interval,  $p < 0.01$

Results of table 4 interprets that body image concerns significantly mediates the association between social media and disordered eating because its value is 0.00 that shows perfect mediation role of BICS..

Simple Linear Regression: Predicting variable: Outcome variable, Predictor: Social Media Use (SMUS),  $R^2 = 0.05$  (5% variance explained), Constant: 117.94 (95% CI: 109.77-126.12) and results of Multiple Linear Regression implies that Predicting variable: Outcome variable, Predictors: Social Media Use (SMUS), Body Image Concern (BICS) and  $R^2 = 0.10$  (10% variance explained),  $\Delta R^2 = 0.05$  (additional 5% variance explained by BICS), Constant: 127.04 (95% CI: 117.97-136.11), SMUS:  $B = -0.078$ , 95% CI: -0.223 to 0.066,  $SE\beta = 0.073$ ,  $\beta = -0.071$  (standardized coefficient). BICS:  $B = -0.337$ , 95% CI: -0.499 to -0.176,  $SE\beta = 0.082$ ,  $\beta = -0.280$



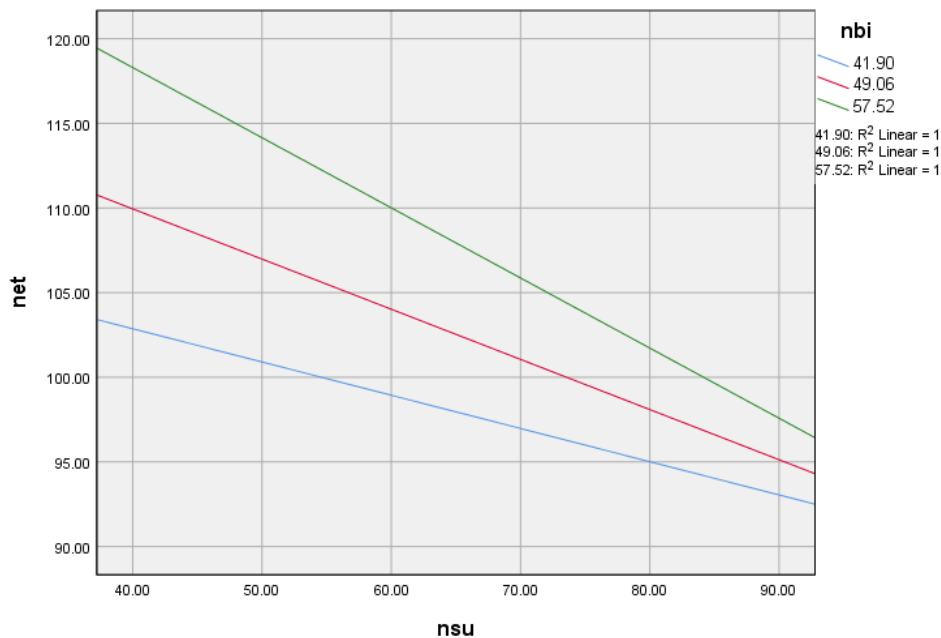
(standardized coefficient SMUS:  $B = -0.241$ , 95% CI:  $-0.366$  to  $-0.116$ ,  $SE\beta = 0.063$ ,  $\beta = -0.220$  (standardized coefficient), 95% CI:  $-0.499$  to  $-0.176$ ,  $SE\beta = 0.082$ ,  $\beta = -0.280$ . Social media use negatively impacts outcome variable but the effect is reduced when controlling for body image concerns. Similarly body image concern significantly negatively impacts outcome variable. The addition of BICS explains an additional 5% of variance.

**Table 5: Moderating role of impulsivity between social media and disordered eating (N=300)**

Variable	Model 1			Model 2		
	B	Beta	SE	B	Beta	SE
Constant	115.711		8.278	111.756		8.671
SUMS	-.352	-.315	.066	-.357	-.320	.066
BISR	.197	.068	.171	.293	.102	.182
SUMS*BISR				-1.602	-.090	1.068

*NOTE: SUMS=social media usage scale, BISR= Barrat impulsiveness scale revised and SUMS\*BISR= interaction*

The analysis of table 5 investigates the moderating role of impulsivity (BISR) on the relationship between social media usage (SUMS) and disordered eating in a sample of 300 participants. In Model 1, higher social media usage correlates with lower disordered eating ( $B = -0.352$ ), while impulsivity shows a positive association with disordered eating ( $B = 0.197$ ). Model 2 reinforces the negative effect of social media and highlights a stronger positive effect of impulsivity ( $B = 0.293$ ). Notably, the interaction term (SUMS\*BISR) is significant ( $B = -1.602$ ), indicating that higher levels of impulsivity may diminish the protective effect of social platforms on disordered eating behaviours, suggesting that individuals with greater impulsivity are more at risk to adverse effects of online platforms on their eating behaviours.



Note: nsu= normal social media use, net=normal eating attitudes "The graph illustrates the relationship between Nsums (independent variable) and Neat (dependent variable), with Nbisr acting as a moderator. The overall trend shows a positive relationship

between Nsums and Neat, indicating that as Nsums increase, Neat also tends to increase. However, this relationship is moderated by Nbisr. When Nbisr is high, the slope of the line is steeper, suggesting a stronger positive relationship between Nsums and Neat. In contrast, when Nbisr is low, the slope is less steep, indicating a weaker positive relationship. This interaction effect highlights the importance of considering Nbisr when analyzing the impact of Nsums on Neat.

**Table 6: Results of t-test and descriptive statistics for social media usage scale, body image concerns scale, impulsivity and eating attitudes by age (n=300)**

Variable	18-24		25-30		t (298)	p	Cohen d
	M	S. D	M	S. D			
SMUS	62.83	21.23	60.84	14.67	.514	.105	.109
BICS	58.12	16.29	48.37	24.7	2.99	.00	.466
BISR	49.04	7.9	52.14	6.1	-2.09	.034	.439
EAT	101.7	21.0	110.7	25.1	-2.2	.31	.380

NOTE: SUMS=social media usage scale, BICS= body image concern scale, BISR= Barrat impulsiveness scale revised, EAT= eating attitude test with 95% C.I.

**Table 7: Result of t-test and descriptive statistics for Social media usage scale, body image concern scale, Barrat impulsiveness scale revised And Eating attitude test by gender(n=300)**

Variable	Male		Female		t (298)	P	Cohen d
	M	S. D	M	S. D			
SMUS	66.2	17.7	60.9	21.6	2.097	.033	0.268
BICS	63.14	19.1	54.26	16.16	4.129	0.50	0.505
BISR	51.01	7.47	48.60	7.94	2.472	.209	0.312
EAT	101.25	23.32	103.34	20.84	-7.67	.396	0.094

NOTE: SUMS=social media usage scale, BICS= body image concern scale, BISR= Barrat impulsiveness scale revised, EAT= eating attitude test with 95% C.I.

**Table 8: Result of t-test and descriptive statistics for Social media usage scale, body image concern scale, Barrat impulsiveness scale revised And Eating attitude test by Have you ever suffered from any psychological disorder?(n=300)**

Variable	Yes		No		t (298)	P	Cohen d
	M	S. D	M	S. D			
SMUS	68.78	20.46	61.08	20.41	2.614	.879	0.376
BICS	61.66	18.82	55.96	17.18	2.206	0.545	0.316
BISR	52.62	8.21	48.54	7.57	3.67	.572	0.516
EAT	97.46	22.48	104.04	21.24	-2.112	.674	0.300

NOTE: SUMS=social media usage scale, BICS= body image concern scale, BISR= Barrat impulsiveness scale revised, EAT= eating attitude test with 95% C.I.

## Discussion

We administered this study to investigate the association between use of social media and disordered eating attitudes being mediated by concerns about body image concerns and moderated by impulsivity. The main purpose of study was to find out the correlation between social media use and disordered eating, to investigate mediating role of concerns about body image and to analyse

moderating role of impulsivity amidst use of social media and disordered eating behaviours and to find out the role of demographic variables in study variables among university students. A sample of 300 students was taken through convenient sampling technique. The scales used in our study was social media usage scale (SMUS), body image concerns scale (BICS), barrat impulsivity scale revised (BISR) and eating attitude test (EAT). All the data analysis was done through SPSS including correlation, regression, mediation, moderation, T-test and anova. In our study, the alpha reliability coefficient or internal consistency of SMUS is 0.9, BFNE has 0.8 internal consistency, BICS has 0.9 internal consistency, BISR has 0.7 internal consistency and EAT has 0.9 internal consistency. Overall, the scales exhibit satisfactory reliability, with Cronbach's alpha values indicating good to excellent internal consistency.

The first hypothesis posited a significant positive correlation amidst use of social media and disordered behaviours of eating and findings of analysis demonstrate a prominent positive relationship between use of social media and disordered behaviours of eating. Table 3 of Pearson correlation positively correlates SMUS with EAT ( $r=0.214^{**}$ ,  $p<0.01$ ), that shows having higher eating concerns may be correlated with increased social media usage. For establishing the positive impact of social media use on disordered eating, an observational study was administered on Arab women in 2019. That administration of that observational study was done through using a probability sample of 1418 university undergraduate female students in Qatar (Middle east). For that study, instagram, snapchat, facebook, twitter were used for assessment. The results made confirmation that women with over use of social media apps especially Instagram were highly reported with suffering from disordered eating. Over-use of social media apps especially instagram was positively associated with increased risk of disordered eating behaviours among these university students and instagram seemed to be more positively associated with disordered eating than facebook, snapchat and twitter because they are indulged in posting pictures on instagram snapchat and twitter because they are indulged in posting pictures on instagram and they idealize specific celebrities on these social media apps and to obtain the ideal image of their idealized celebrities, they get indulged in disordered eating behaviours like restricted diet, vomiting etc (Qutteina et al; 2019).

The second hypothesis posited that body image concerns act as a mediator amidst use of social media and disordered eating behaviours and results of our analysis showed that BICS act as a prominent mediator between use of social media and disordered eating behaviours. The value of sig. F Change in regression analysis for BICS is 0.00 that shows perfect significance. Results showed that value of  $\beta=-0.421$  that implies body image concern significantly negatively impacts the outcome variable. In a study conducted by Franchina & Coco, (2018), it was determined that body image concerns act as mediator amidst use of social media and disordered eating. Findings of our research showed that there is a positive correlation between social media use and body image concerns. 21<sup>st</sup> century is the century of social media. A teenager opens his phone and is bombarded by posts of pretty people with a well-postured body image. They spend most of their time standing in front of mirror and make plans to join gym to get muscular body or to start a new healthy diet in order to obtain the ideal image of their desired aesthetic.

The third hypothesis posited that impulsivity moderates the association amidst use of social media and disordered eating behaviours and results of our analysis also confirms our hypothesis and interpretation of results showed that impulsivity acts a significant moderator with  $p<0.01$ . The regression analysis for moderation of BISR shows that in Model 1, higher social media usage correlates with lower disordered eating ( $B = -0.352$ ), while impulsivity shows a positive association with disordered eating ( $B = 0.197$ ). Model 2 reinforces the negative effect of social

media and highlights a stronger positive effect of impulsivity ( $B = 0.293$ ). Notably, the interaction term (SUMS\*BISR) is significant ( $B = -1.602$ ), indicating that higher levels of impulsivity may diminish the protective effect of online social platforms on disordered eating behaviours, suggesting that individuals with greater impulsivity are more susceptible to negative influences from social media on their eating behaviours. In the present study conducted in 2022, it was determined that impulsivity acts as a moderator between social media use and disordered eating. That research assessed how the relationship between social media dependence and disordered eating may change depending on the levels (high vs low) of impulsiveness in a sample of college students. The sample consisted of 767 undergraduates with 552 female students and 215 male students. These students were enrolled through limited non-compulsory courses open to university. Those students were taken as sample who used to be frequent users of social media platforms. And specifically students without any physical or mental disability were included in study. Participants answered the questions in questionnaire regarding their social media dependence, disordered eating, impulsiveness and demographic information. The results showed that higher social media dependence is a major risk factor for higher disordered eating. And it was also found that participants with low impulsivity are more at risk to the negative effects of social media on disordered eating because when people are less impulsive, they tend to think more about what they see on social media. If they spend a lot of time on social media, especially viewing images related to body image and diets, they might internalize those ideals more deeply. This can lead to increased comparison with others and a higher likelihood of developing eating disorders. So, having low impulsivity can make someone more at risk to the negative effects of social media on their eating behaviours as compared to who are more impulsive. Thus that study assessed that high impulsivity act as a defensive factor for the adverse effects of social media on disordered eating (He & Yang , 2022).

The fourth hypothesis posited that difference of demographic variables (age, gender , psychological illness) significantly impact use of social media , concerns about body image, impulsivity and eating attitudes. Tables 6, 7 and 8 present the results of t-tests and descriptive statistics comparing male and female participants on the basis of age, gender and presence of psychological illness ( $n = 300$ ) on various psychological scales, including the Social Media Usage Scale (SMUS), the Body Image Concern Scale (BICS), the Barratt Impulsiveness Scale Revised (BISR), and the Eating Attitude Test (EAT).

The results of table 7 shows that for SMUS, males reported a higher mean ( $M = 66.2$ ,  $SD = 17.7$ ) compared to females ( $M = 60.9$ ,  $SD = 21.6$ ), with a significant difference ( $t(298) = 2.097$ ,  $p = 0.033$ ) and a small effect size (Cohen's  $d = 0.268$ ). For BICS, males ( $M = 63.14$ ,  $SD = 19.1$ ) scored higher than females ( $M = 54.26$ ,  $SD = 16.16$ ), with a non-significant t-test result ( $t(298) = 4.129$ ,  $p = 0.50$ ) and a medium effect size (Cohen's  $d = 0.505$ ). In contrast, the BISR results showed males ( $M = 51.01$ ,  $SD = 7.47$ ) had higher scores than females ( $M = 48.60$ ,  $SD = 7.94$ ), but this difference was not statistically significant ( $t(298) = 2.472$ ,  $p = 0.209$ ) with a small effect size (Cohen's  $d = 0.312$ ). Lastly, for the EAT, males ( $M = 101.25$ ,  $SD = 23.32$ ) scored slightly lower than females ( $M = 103.34$ ,  $SD = 20.84$ ), but this difference was not significant ( $t(298) = -0.767$ ,  $p = 0.396$ ) with a negligible effect size (Cohen's  $d = 0.094$ ). Overall, significant gender differences were observed in SMUS, BISR and BICS, indicating that males tend to have higher scores in these areas but women tend to score higher on scale of EAT. In this regard, according to Wright et al(2020), a research was conducted on Gender Differences in Social Media Use, Body image concerns and impulsivity with survey of 1000 young adults

comprising 50% male and female population. Results showed that males scored higher on SMUS with mean (M)=3.47,P<0.05, for BICS with mean(M)=2.91,P<0.05 And for UPPS-P impulsivity(M=2.94,P<0.001). In contrast, according to a study conducted by Heron et al(2019), a research was conducted on Gender Differences in Disordered Eating Among Adolescents with survey of 2500 adolescents comprising 55% females. Results showed that females score higher on disordered eating scale (DES) with mean(M)=20.4,P<0.001.

Table 6 of our research analysis depicts the results of T-test for social media use, disordered eating, fear of negative evaluation, body image concerns, impulsivity and disordered eating by using demographic variable of age(n=300). The analysis presented in table 6 examines the differences in psychometric outcomes across two age groups, 18-24 and 25-30, utilizing t-tests for statistical evaluation. The Social Media Usage Scale (SMUS) indicated that younger participants (M = 62.83, SD = 21.23) scored marginally higher than older participants (M = 60.84, SD = 14.67), although this difference was not statistically significant ( $t(298) = 0.514, p = .105$ ). Notably, significant disparities emerged in the Body Image Concern Scale (BICS), where younger individuals reported higher concerns (M = 58.12, SD = 16.29) than their older counterparts (M = 48.37, SD = 24.7), yielding significant results ( $t(298) = 2.99, p < .001$ ). The Barratt Impulsiveness Scale Revised (BISR) showed a significant reduction in impulsivity among younger participants (M = 49.04, SD = 7.9) compared to older participants (M = 52.14, SD = 6.1), with results indicating significance ( $t(298) = -2.09, p = .034$ ). Lastly, the Eating Attitude Test (EAT) showed that older participants scored higher (M = 110.7, SD = 25.1) than younger ones (M = 101.7, SD = 21.0), although this difference was not statistically significant ( $t(298) = -2.2, p = .31$ ). Overall, the findings suggest that age plays a crucial role in shaping body image concerns and impulsivity, while social media usage and eating attitudes appear less influenced by age. In this regard, a recent study was conducted by Burke et al(2020) in journal of Youth and Adolescence, Study: Age and Gender Differences in Body Image Concerns and impulsivity Among Adolescents and Young Adults(2020). Survey was conducted on 1200 participants of age 13-25 years. The scales used were BICS, UPPS-P Impulsivity scale and demographic questionnaire were used. Results for impulsivity were that young adults showed higher impulsivity with mean(M)=2.83,p<0.01) and results for BICS showed that age significantly affects body image concerns in adolescents with mean(M)=3.51,P<0.001 as compared to young adults. Similarly; according to Lee et al(2022), a study was conducted exploring the Association Between Social Media Use and Eating Behaviours Across Age Groups(2022). Survey was conducted on 1500 participants of age 18-65 years. SMUS, DES and demographic questionnaire were used. Results showed no significant age difference in SMUS scores ( $F=1.42,P=0.23$ ), and there were no significant age differences for DES( $F=1.93,p=0.15$ ). Thus age did not significantly predict SMUS and DES.

Table 8 presents the results of t-test by comparing participants who have suffered from any psychological illness to those who have not and the findings revealed that individuals who suffered from any psychological illness tend to report higher on SMUS, BICS and impulsivity while showing lower eating attitudes and all the results show non-significant i.e;  $p>0.05$ . A study by Kim et al (2022) journal of clinical psychology showed that individuals suffering from any psychological disorder exhibit higher levels of SMUS, BICS, BIS and EAT thus also confirming our literature review.

## **Conclusion**

On the basis of our study, it gets concluded that there is a prominent positive correlation amidst use of social media and disordered eating behaviours that shows that higher eating concerns are

associated with increased use of social media and concerns about body image is proved as a strong mediator between SMUS and EAT i.e; increased use of social media results in more concerns about body image and to overcome these concerns, person gets indulged in disordered eating behaviours. And impulsivity acts as a moderator because our research findings were strongly significant and thus BISR played the role of strong moderator between SMUS and EAT. Finally our research findings showed how different demographic variables (age, gender and have you ever suffered from any psychological illness) are significantly related to SMUS, BICS, BISR and EAT. After analysing gender differences, it was concluded that men tend to have higher scores in SMUS, BISR and BICS and women perform higher scores on EAT. Similarly our research findings for age differences showed that age plays a crucial role for body image concerns and impulsivity among adolescents and young adults while SMUS and EAT appeared less influenced by age in our research findings and it is found that younger participants scored higher on SMUS and BICS as compared to older adults while older adults scored higher on BISR and EAT. And research findings for have you ever suffered from any psychological illness or not showed that individuals who suffered from any psychological illness tend to report higher on SMUS, BICS and impulsivity while showing lower eating attitudes.

### **Limitations and Suggestions**

Several limitations should be recognized in this study. First, the sample was restricted to a single city, Muzaffarabad, which may restrict the generalizability of the findings to other populations or cultural contexts. Additionally, the cross-sectional design of the study prevents any conclusions about causality, a longitudinal approach could offer insights into in depth study of relationship of use of social media and disordered eating behaviours along with mediating role of concerns about body image concern and moderating role of impulsivity. Self-report questionnaires are also a limitation, as they are subject to biases such as social desirability, which could lead participants to underreport their levels of anxiety. Due to 100 items in our research questionnaires, participants get fatigued or their attention decreased. As our sample was university students, that's why our focus was on adolescents and young adults and older adults were not presented to find out social media use and disordered eating in older adults. Our age range was limited. Cultural homogeneity was another limitation because we focus on only one culture which causes limited diversity in demographics of our research participants. For making this research better for the next time, its limitations should be overcome. Longitudinal design should be used rather than cross sectional in order to examine relationships over time for getting more reliable results. Sampling should be diverse like all age groups should be used in samples. We should extend our research to diverse cultures to overcome cultural biasness and individuals with various socioeconomic backgrounds should be used as samples. For better interpretation of our results, we should go for expert advice and work in collaboration with trained psychologists.

### **Implications**

Proper intervention strategies should be used to promote healthy use of social media and to mitigate its negative impact on body image concerns and eating attitudes. As body image concern is identified as a strong mediator therefore initiatives are required for focusing on body positivity and self-acceptance is key in this regard. To be satisfied with own appearance is essential to overcome inferiority complexes. It reduces the unwanted societal pressure to obey the unrealistic beauty standards internalize by social media. Impulsivity being identified as a potential moderator implies that less impulsive individuals are more at the risk to the harmful effects of social media on maladaptive eating behaviours, therefore programs directed for self-control of these impulsive

individuals can be helpful. The association between psychological illness and higher use of social media and more body image concerns strongly show the need of counselling for mental health of such people.

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