

Association Between Social Media Addiction and Narcissistic Behaviour Among Undergraduate Medical Students: A Cross-Sectional Study

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Abstract

Social media has become a popular leisure activity in many countries around the globe over the last few years. Social media enables users to share things about themselves, which might contribute to the increase in narcissism in the population. The objective of the present study was to study the association between social media addiction and narcissistic behaviour among students of Melaka Manipal Medical College in Muar and Melaka campuses. A cross-sectional study was conducted from September 2018 to October 2018 among undergraduate students of Melaka Manipal Medical College in Muar and Melaka campuses, which included students of batch 34, 35, 36 and batch 37. Social demographical data were collected using a short-structured questionnaire. ANOVA, unpaired T-test, simple linear regression, multiple linear regression was conducted using the Epi info™7 software. There were total of 150 of people who participated in this study. In multiple linear regression analysis, Mental Well-being score was $b = -0.17$, ($p = 0.006$), Social media addiction score was $b = 0.25$, ($p = 0.003$) and Self-esteem score $b = -0.28$ ($p = 0.013$) were associated significantly with narcissistic behaviour. The findings of the present study suggest that mental well-being, social media addiction and self-esteem may have been associated with narcissistic behaviour. To help avoid unhealthy narcissistic behaviour, we should eliminate social media addiction by participating in more healthy activities like sports, playing musical instruments, joining a book club, and more.

Keywords

Medical Students, Narcissistic Behaviour, Questionnaire

1. Introduction

The use of social media has become a very popular leisure activity in many countries around the globe over the last few years [1]. Social media is defined as the collection of online communication channels that are dedicated to the community in the form of interaction, content sharing and collaboration. Examples of social media sites include Facebook, Instagram, Snapchat, YouTube, WeChat, Line and Twitter [2]. In these current years, the use of Internet has been increasing immensely with an estimated number

of users exceeding 500 million [3]. Along with the benefits, the Internet is also bringing problems of excessive use, involving poor academic performances, relationship issues, and social isolation, which are identified as consequences of Internet addiction [4-6].

Research have identified that the personality of a person does play an important part in the addictive usage of social media [7]. A few studies have shown individual differences in terms of narcissistic behaviour, which is positively associated with social media addiction [8-9]. Narcissistic behaviour is a personality trait reflecting grandiosity and inflated self-concept. Narcissism is specifically associated

with positive and inflated self-views like power, intelligence and physical attractiveness [10]. Narcissism trait exists among normal population and is associated with both positive [11] and negative outcomes [12].

Narcissism has two forms, which has been discovered and studied in a literature, which are grandiose and vulnerable narcissism [13]. Grandiose narcissism is the extraverted, callous and grandiose form of narcissism while vulnerable narcissism is the more introverted, neurotic form that is actually less well studied [14].

Narcissism is considered as a feature of modern society [15] and is becoming more common in younger generation [16]. The scores for narcissism have been elevating over time [17-18]. Social media sites like Facebook, Instagram, and Snapchat may serve as an ideal social arena for individuals who are attracted to engaging in ego-enhancing activities [19]. It could therefore be postulated that people with narcissistic traits use social media excessively because these online platforms are said to be able to fulfill the need for affiliation and also help the user to confirm the sense of 'idealized self' [20].

Those with narcissistic behaviour tend to have lack of empathy and few close relationships but yet they usually have strong desire for social contact, which is the main source of admiration and attention for them because they are unable to control their own self-esteem and requires social media as a platform for affirmation. [21]

Research on narcissism and social media addiction in the United States focuses on people of different generations. People of Generation X, who are narcissistic, are associated with the use of Facebook while those of Generation Y have been living in an Internet saturated existence in their lives [22-23]. It is reasonable to say that that self-idolizing on social media is more of a social norm among the younger generation group.

Apart from birth cohort, culture differences also affect narcissism's inconsistent relationship to social media usage. Individualistic countries such as the United States and Australia show a higher level of narcissism than collectivistic countries such as Asia [24].

Besides that, a study about how social network sites affect the scholars of Asia Pacific University in Malaysia was done. The study concluded that social media sites negatively affect students' academic performance.

Our research is mainly about the association between social media addiction and narcissistic behaviour. Along with it, we are also studying the association of gender, age, ethnicity, relationship status, self-satisfaction and self-esteem with narcissistic behaviour. Our main aim in this study is to find out how social media addiction, along with self-esteem, mental well-being and self-satisfaction, will affect an undergraduate medical student. The association between social media addiction and narcissistic behaviour is not unheard of in Malaysia. Yet, it has not received enough attention from the public media and medical fraternity.

2. Methodology

2.1. Study Design, Setting and Population

The study design used in this research is a cross-sectional study, using self-administered questionnaires. Our aim is to study the association between social media addiction and narcissistic behaviour among medical students. This research was carried out particularly among undergraduate students of Melaka Manipal Medical College, in Muar and Melaka campuses between September 2018 and October 2018. Our total study population was estimated to be 600 people, which includes MBBS students of Semesters 6, 7, 8, 9 and 10.

2.2. Sample Size

The sample size for this research was calculated using the infinite population proportion formula as shown below:

$$n = \frac{z^2 \frac{1-\alpha}{2} \sigma^2}{d^2} \quad (1)$$

Standard deviation (σ) = 5.4

Error (d) = 1.17

Alpha (α) = 0.05

$$\begin{aligned} n &= \frac{1.96^2 \times 5.4^2}{1.17^2} \\ &= 81.8 \approx 82 \end{aligned} \quad (2)$$

The formula used for adjustment for non-response was as follows:

$$n_{final} = \frac{n_{calculated}}{1 - nonresponse\%} \quad (3)$$

Non-response = 40%

$$\begin{aligned} n_{final} &= \frac{82}{1 - 0.4} \\ &= 136.7 \approx 137 \end{aligned}$$

The previous study stated that the standard deviation was 5.4. The A level of error was 1.17 and the Alpha was 0.05. The values were then inserted and calculated through infinite population proportion formula. The minimum sample size was 82 and then was calculated with a non-response rate of 40%. Hence, the final sample size selected for this study including the non-responding was 137. However, 150 sets of self-administered questionnaires were circulated among medical students of Semesters 6, 7, 8, 9 and 10 in MMMC, Melaka and Muar campuses, to ensure good response. [25]

2.3. Sampling

The sampling process used was purposive sampling, which was a non-probability sampling method. 150 MBBS students from Melaka Manipal Medical College (MMMC) took part in this study. The questionnaires were distributed to the students of Semesters 6, 7, 8, 9 and 10. All ethnic groups and both sexes were included. Students who were present on the

day of data collection and then agreed to provide written consent were included as well. On the other hand, students who were absent on the day of data collection, or students who did not complete the questionnaire, or those who were not willing to provide written consent were excluded from this study.

2.4. Data Collection

The validated questionnaire was composed of six parts. The first part is with regards to demographic profile of the participant. Age, gender, semester, ethnicity and relationship status were included in the questionnaire.

Part two of the questionnaire is the Satisfaction With Life Scale (SWLS), which measures the participants' satisfaction with self and life. There are five statements (1-5) for each of which one response is selected by the participant, ranging from: 7 (strongly agree), 6 (agree), 5 (slightly agree), 4 (neither agree nor disagree), 3 (slightly disagree), 2 (disagree), 1 (strongly disagree). The overall score is the sum of the total scores of the statements. Higher total scores indicate higher levels of satisfaction. Total scores which are less than 20 are considered as 'unsatisfied'; total scores that are equal to 20 are considered as 'neutral'; total scores that are more than 20 are considered as 'satisfied'. [26].

Part three is the Warwick-Edinburgh Mental Well-being Scale (WEMWBS), which is an item comprising of 14 statements (1-14), each of which one response from five categories are chosen: 1 (None of the time), 2 (Rarely), 3 (Sometimes), 4 (Often), 5 (All of the time). The sum score from all statements will range from a minimum score of 14 to a maximum score of 70. [27].

Part four is the Bergen Social Networking Addiction Scale. It is a test for the level of social media addiction, it has six statements (1-6) and for each statement, a response is chosen by the participant from five categories: 1 (very rarely), 2 (rarely), 3 (sometimes), 4 (often), and 5 (very often). Minimum total score is 6 and maximum total score is 30. [28].

Part five is a measure of participants' self-esteem via Rosenberg's Self-Esteem Scale. There are 10 statements (1-10), and for each statement, one response is selected by the participant from four categories: 3 (strongly agree), 2 (agree), 1 (disagree), and 0 (strongly disagree), which are the scoring categories for items 1, 2, 4, 6, and 7. On the other hand, 0 (strongly agree), 1 (agree), 2 (disagree), and 3 (strongly disagree) are the scoring categories for items 3, 5, 8, 9 and 10. The scale ranges from 0-30. The total scores which are below 15 suggest low self-esteem; total scores which are ranging from 15 to 25 suggest normal self-esteem; total scores which are more than 25 suggest high self-esteem. [29]

The final part (part six) of the questionnaire is the Hypersensitive Narcissism Scale (HSNS) which has a composition of 10 items (1-10), for each of which one response is selected, ranging from: 1 (very uncharacteristic or untrue, strongly disagree), 2 (uncharacteristic), 3 (neutral), 4 (characteristic) and 5 (very characteristic or true, strongly agree). Minimum total score is 10 and maximum total score

is 50. This is a validated tool for the measurement of narcissistic behaviour. [30].

2.5. Data Processing and Analysis

The data was tabulated by using Microsoft Excel and analysed using Epi Info™, 7th version from the Centres for Disease Control and Prevention (CDC) website. Frequency and percentage were used to represent qualitative variables such as ethnicity, gender, academic year, relationship status, self-satisfaction and self-esteem. Measure of central tendency (mean) and measure of dispersion (standard deviation) were applied on quantitative variables like age, mental well-being, social media addiction and narcissistic behaviour. Appropriate statistical tests were used to determine the relationship between the various variables. This includes regression test, unpaired t-test and ANOVA. Unpaired t-test was used to study the association of age, gender and relationship status with narcissistic behaviour. For variables like ethnicity and academic year, ANOVA test was used. Simple linear regression and multiple linear regression test was also used to study the association of self-satisfaction, mental well-being, social media addiction and self-esteem with narcissistic behaviour. The level of statistical significance was set as 0.050 and any value more than this was considered as not significant.

2.6. Ethical Consideration

After the study was approved by the Research Ethics Committee, Faculty of Medicine, MMMC, Malaysia Campus, the questionnaires were handed to the participants. The questionnaire was accompanied by a concise explanation of important and relevant details regarding the study, and also a written informed consent form was provided.

No participant was forced and all participants were given the option of electing to take part in the study or not. They also had the right to withdraw from participation at any given time throughout the course of the study. It was also stated in the form that participants will not have any academic or extra-curricular advantage over non-participants by involvement in the study.

Finally, all participants were duly informed in the form that all data and information pertaining to the study will be completely private and confidential.

3. Results

Table 1. Socio-demographic characteristics of undergraduate medical students (n=150).

Variables	n (%)
Age	
>22	73 (48.67)
≤22	77 (51.33)
Mean (SD)	22.75 (1.24)
Range	20.0 - 29.0
Gender	
Female	83 (55.33)
Male	67 (44.67)

Variables	n (%)
Academic Year	
Year 3	102 (68.00)
Year 4	32 (21.30)
Year 5	16 (10.67)
Ethnicity	
Chinese	47 (31.33)
Indian	65 (43.33)
Malay	21 (14.00)
Others	17 (11.33)
Relationship Status	
Single	106 (70.67)
In A Relationship	44 (29.33)

There were total of 150 people who participated in this study. Table 1 shows the sociodemographic characteristics of the participants. Among the 150 participants, 73 people were of more than 22 years of age, which is 48.67%. The remaining 77 people were 22 years old or below, which was 51.33%. The mean score for age was 22.75 ± 1.24 . In this study, 83 (55.33%) of them were female participants while 67 (44.67%) were male participants.

The questionnaires were distributed evenly among students of year 3, 4 and 5 and the response from year 3 were the most, which was 102 (68.0%) followed by year 4, 32 (21.3%) and year 5, 16 (10.67%).

For ethnicity, the largest number of participants were Indian, which was 65 (43.33%), then followed by Chinese students, 47 (31.33%), Malay students, 21 (14.00%) and lastly, students of other ethnicities were 17 (11.33%). In terms of relationship status, most of the participants were found to be single which was 106 (70.67%) and 44 (29.33%) of them were found to be in a relationship. Respond rate of this study was 88.24%.

Table 2. Self-satisfaction (SRSS) and mental well-being (WEMWBS) of undergraduate medical students ($n=150$).

Variables	n (%)
Self-satisfaction (SRSS)	
Extremely Satisfied	6 (4.00)
Satisfied	36 (24.00)
Slightly Satisfied	50 (33.33)
Neutral	18 (12.00)
Slightly Dissatisfied	31 (20.67)
Dissatisfied	5 (3.33)
Extremely Dissatisfied	4 (2.67)
Mean (SD)	22.23 (5.27)
Range	7 - 35
Mental Wellbeing Score	
Mean (SD)	46.21 (8.90)
Range	14.0 - 70.0

From the Self-satisfaction Scale (SRSS), it was found that 6 participants (4.00%) were extremely satisfied with themselves, 36 (24.00%) were satisfied, 50 (33.33%) were slightly satisfied, 18 (12.00%) were neutral, 31 of them (20.67%) were slightly dissatisfied with themselves, 5 (3.33%) were dissatisfied and 4 (2.67%) were extremely dissatisfied. The mean score calculated for SRSS was 22.23 ± 5.27 with range of 7 – 35.

The mean score calculated for mental well-being, using Warwick-Edinburgh Mental Well-Being Scale (WEMWBS)

was 46.21 ± 8.90 with range of 14.0 – 70.0.

Table 3. Social media addiction (BSNAS), self-esteem (RSES) and narcissism (HSNS) for undergraduate medical students ($n=150$).

Variables	n (%)
Social Media Addiction (BSNAS)	
Mean (SD)	15.87 (4.91)
Range	6.0 – 30.0
Self-esteem (RSES)	
High	10 (6.67)
Normal	116 (77.33)
Low	24 (16.00)
Mean (SD)	18.27 (4.27)
Range	7.0 – 30.0
Narcissism (HSNS)	
Mean (SD)	29 (5.47)
Range	16 – 44

Based on table 3, the mean score calculated for social media addiction, using Bergen Social Networking Addiction Scale was 15.87 ± 4.91 with range of 6.0-30.0.

From our study, it was found that 116 (77.33%) participants had normal level of self-esteem, 24 (16.00%) of them had low self-esteem and 10 of them (6.67%) had high level of self-esteem. The mean score was found to be 18.27 ± 4.27 with range of 7.0 – 30.0.

The mean score for narcissism (HSNS) was 29 ± 5.47 with range of 16 – 44.

Table 4. Association between Age, Gender, Ethnicity, Academic Year and Relationship towards narcissistic behaviour ($n=150$).

Variables	Narcissistic Behaviour Mean (SD)	t (df) / F (df ₁ , df ₂)	P-value
Age			
>22	28.71 (5.70)	- 0.63 (148)	0.532
≤22	29.27 (5.26)		
Gender			
Female	28.45 (5.43)	- 1.39 (148)	0.168
Male	29.69 (5.48)		
Ethnicity			
Chinese	30.51 (4.50)	2.44 (3, 146)	0.067
Indian	28.72 (6.03)		
Malay	26.86 (4.88)		
Others	28.53 (5.62)		
Academic Year			
Year 3	28.91 (5.40)	1.10 (2, 147)	0.334
Year 4	28.38 (4.91)		
Year 5	30.81 (6.69)		
Relationships			
In a relationship	29.39 (5.02)	0.56 (148)	0.579
Single	28.84 (5.66)		

The table above shows the association between age, gender, ethnicity, academic year and relationship status with narcissistic behaviour. The mean score for narcissistic behaviour among those who were above 22 years old, was 28.71 ± 5.70 and for those who were 22 years and below, the mean was 29.27 ± 5.26 . The p-value was 0.532, which was not significant.

The mean score for narcissistic behaviour among the male students was 29.69 ± 5.48 , as for female students, it was 28.45 ± 5.43 . It was found that males had higher mean narcissistic score compared to females, however the p-value

was 0.168, which was not significant.

The mean score for narcissistic behaviour among different ethnicities was also calculated. For Chinese, it was 30.51 ± 4.50 , for Indians it was 28.72 ± 6.03 , 26.86 ± 4.88 for Malays and for others, it was 28.53 ± 5.62 . The p-value calculated was 0.067, which was not significant.

The mean score of narcissistic behaviour was calculated among students from three different academic years as well. Firstly, for year 3 students, it was 28.91 ± 5.40 . For students of year 4, it was 28.38 ± 4.91 , and for year 5 students, it was 30.81 ± 6.79 . However, the p-value calculated was found to be 0.334, which was not significant.

The mean score of narcissistic behaviour among those who are in relationship was 29.39 ± 5.02 , and for those who are single, it was 28.84 ± 5.66 . The p-value calculated was 0.579, which was not significant.

Table 5. Simple Linear Regression Analysis of Association Between Self-Satisfaction (SRSS), Mental Well-Being (WEMWBS), Social Media Addiction (BSNAS), Self-Esteem (RSES) and Narcissistic Behaviour (HSNS Using Simple Linear Regression). (N=150).

Variables	Regression Coefficient, b	P-value
Self-satisfaction (SRSS)	-0.17	0.049
Mental Well-being (WEMWBS)	-.021	0.000
Social Media Addiction (BSNAS)	0.29	0.002
Self-esteem (RSES)	-0.43	0.000

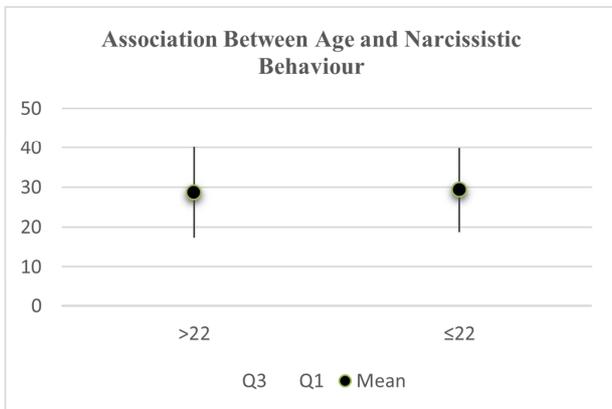


Figure 1. Association Between Age and Narcissistic Behaviour.

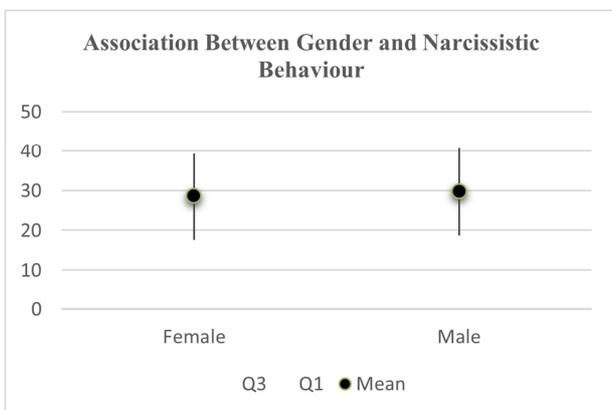


Figure 2. Association Between Gender and Narcissistic Behaviour.

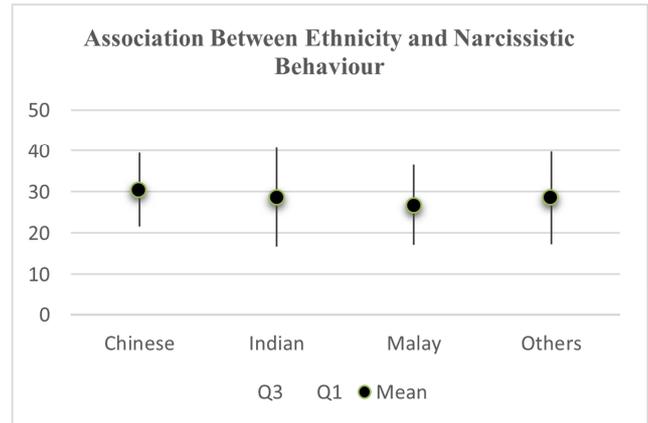


Figure 3. Association Between Ethnicity and Narcissistic Behaviour.

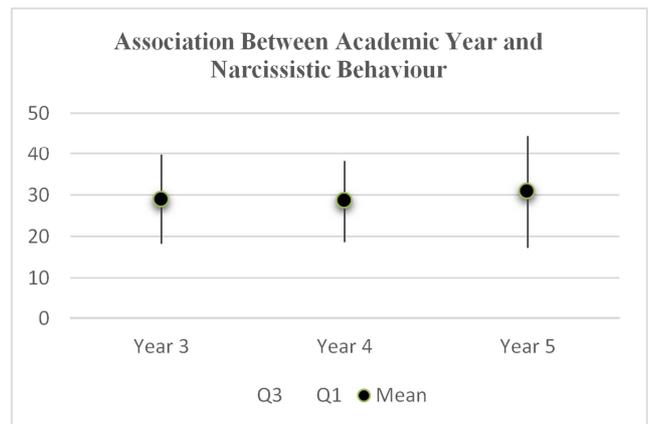


Figure 4. Association Between Academic Year and Narcissistic Behaviour.

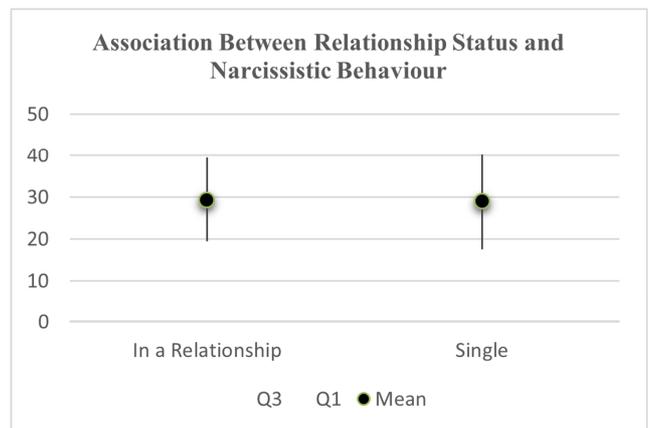


Figure 5. Association Between Relationship Status and Narcissistic Behaviour.

The table above shows the association between self-satisfaction, mental well-being, social media addiction, self-esteem and narcissistic behaviour. Simple linear regression test revealed that there was a significant negative association between self-satisfaction and narcissistic behaviour ($p=0.049$). The regression coefficient was 0.17, which meant that with increasing level of self-satisfaction, narcissistic behaviour decreases.

The regression coefficient for mental well-being was -0.21, which meant that there was a significant negative association between mental well-being and narcissistic behaviour

($p=0.000$). As mental well-being score increases, narcissistic behaviour decreases.

As for social media addiction, the regression coefficient was 0.29. This indicated that there was a statistically significant positive association between social media addiction and narcissistic behaviour ($p=0.002$). The higher the level of social media addiction, the higher the narcissistic behaviour.

The regression coefficient of -0.43 indicated that there was a negative association between self-esteem and narcissistic behaviour. As self-esteem level increases, narcissistic behaviour decreases. The p -value was 0.000, therefore it was significant.

Table 6. Multiple Linear Regression Analysis of Association Between Self-Satisfaction (SRSS), Mental Wellbeing (WEMWBS), Social Media Addiction (BSNAS), Self-Esteem (RSES) and Narcissistic Behaviour (HSNS) ($N=150$).

Variables	Regression Coefficient, b	P-value
Self-satisfaction (SRSS)	0.09	0.336
Mental Well-being (WEMWBS)	-0.17	0.006
Social Media Addiction (BSNAS)	0.25	0.003
Self-esteem (RSES)	-0.28	0.013

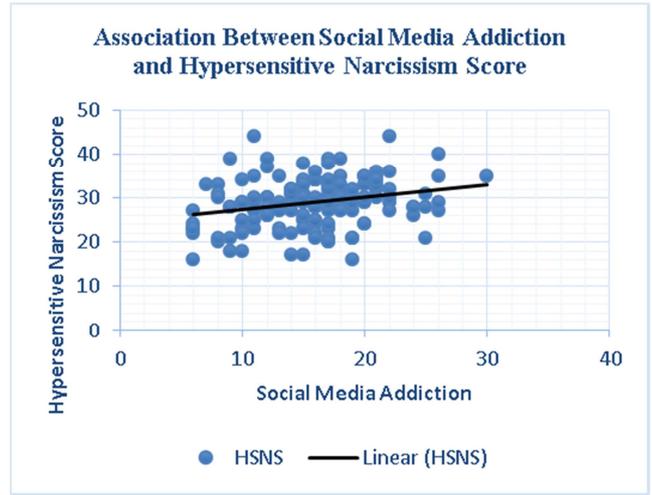


Figure 8. Association Between Social Media Addiction and Hypersensitive Narcissism Score.

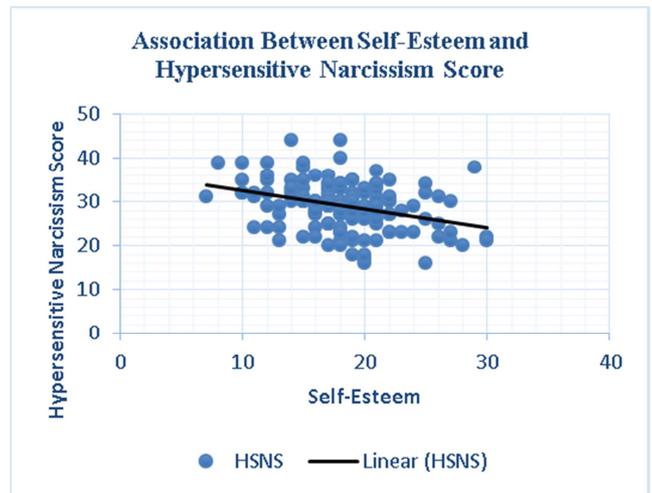


Figure 9. Association Between Self-Esteem and Hypersensitive Narcissism Score.

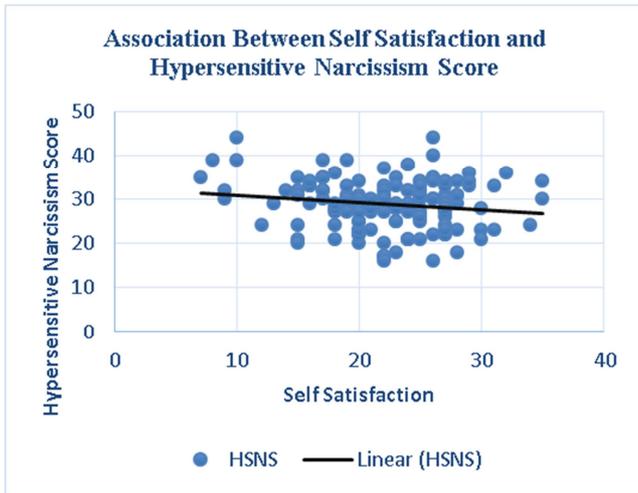


Figure 6. Association Between Self Satisfaction and Hypersensitive Narcissism Score.

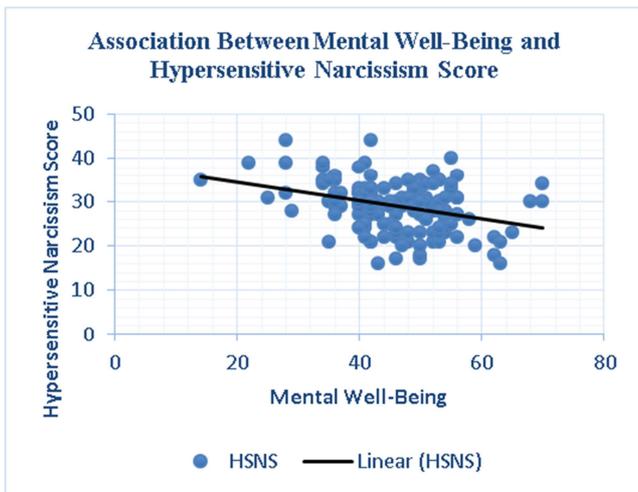


Figure 7. Association Between Mental Well-Being and Hypersensitive Narcissism Score.

Table 6 shows the multiple linear regression analysis of the association between self-satisfaction, mental well-being, social media addiction, self-esteem and narcissistic behaviour. The regression coefficient for self-satisfaction score was 0.09. This showed that there was a positive association between self-satisfaction and narcissistic behaviour. As the self-satisfaction level increases, the narcissistic behaviour also increases. However, it was not significant ($p=0.336$).

As for the mental well-being score, the regression coefficient was -0.17. This indicated that there was a negative association between mental well-being and narcissistic behaviour. As the mental well-being score increases, narcissistic behaviour decreases. The p -value calculated was 0.006, therefore it was significant.

The regression test revealed that there was a significant positive association between social media addiction and narcissistic behaviour ($p=0.003$). The regression coefficient was 0.25, which indicated that with increasing level of social media addiction, the narcissistic behaviour increases.

The regression coefficient of -0.28 indicated that there was

a negative association between self-esteem and narcissistic behaviour. As self-esteem level increases, narcissistic behaviour decreases. The p-value calculated was 0.013, therefore it was significant.

4. Discussion

A study on the impact of Facebook addiction on narcissistic behaviour and self-esteem among students was conducted in University of Sargodha, Pakistan. The main aim of the study was to investigate the relationship between Facebook addiction, narcissism and self-esteem, and to see if gender played any role in this study. It was a cross-sectional study, conducted with 200 people, with equal males and females participating in the study. Bergen Facebook Addiction Scale, Hypersensitive Narcissism Scale and Rosenberg's Self-esteem Scale were used for evaluation [31-32].

The mean score for narcissism in this study was 28.06 ± 5.4 , and the mean score for self-esteem was 17.78 ± 3.84 . It was found that Facebook addiction was positively correlated with narcissism and negatively correlated with self-esteem. The relationship between narcissism and self-esteem was not significant [33]. In this present study that we conducted, the mean scores for narcissism and self-esteem were 29 ± 5.47 and 18.27 ± 4.27 respectively. It was found that there were significant negative association between self-esteem and narcissistic behaviour.

Another study was conducted in University of Georgia, with the topic of 'Narcissism and Social Networking Sites'. The objective of the study was to examine the role of narcissism in personal web pages and also on social networking sites. There were 156 owner participants, who were undergraduate Facebook page owners and also 128 rater participants. From the study conducted, it was proven that those with social media addiction and high self-esteem were positively correlated to narcissistic behaviour. The mean score for social media addiction in this study was 15.87 ± 4.91 . This study showed that there was a significant positive association between social media addiction and narcissistic behaviour.

Apart from self-esteem and social media addiction, association of other variables such as age, gender, ethnicity, academic year, relationship status, self-satisfaction and mental well-being were also studied. From this study, it was found that age, gender, ethnicity, academic year and relationship status had no significant association with narcissistic behaviour. The mean scores for self-satisfaction and mental well-being were 22.23 ± 5.27 and 46.21 ± 8.90 respectively. According to multiple linear regression, there was a significant negative association between mental well-being and narcissistic behaviour. Self-satisfaction was found to have a positive association with narcissistic behaviour. However, it was not significant.

4.1. Implication

The practical implications of this study results are of considerable significance for healthcare professionals. It is

estimated that seventy per cent of a doctor's practice now involves management of psychosocial issues and also making sure that the patient leads a healthy lifestyle. Social media addiction leads to poor academic performance, depression, anxiety due to fear of missing out (FOMO), relationship issues, and more. Doctors should be able to help patients with this addiction through counseling because patients who would never go to a counselor or a psychiatrist may trust their doctor with their personal issues. Since there is a significant positive association between social media addiction and narcissistic behaviour, which is proven by our study, doctors can then discern narcissistic patients by interacting with them and rule out possible social media addiction in the patients, especially in younger patients. This study will support doctors in convincing these patients and hopefully help them realize the harmful effects of social media addiction.

4.2. Limitations

This study was carried out among undergraduate medical students of Melaka Manipal Medical College (MMMC). Therefore, this study did not represent the general population. Furthermore, the ages of the participants were of a narrow range. Other limitations that we faced during this study were the low response rate from year 4 and year 5 students. This was due to their busy clinical schedules.

4.3. Recommendations

Narcissistic behaviour should be studied more in depth. Vulnerable and grandiose narcissism should be explored and studied as well. Furthermore, factors such as socioeconomic status, family background, peers influence and stress level were not taken into account in this present study. Therefore, future studies should include all these factors above. Moreover, the association between social media addiction and narcissism should be studied and compared between Asian countries and Western countries. This is to find out how cultural differences affect narcissistic behaviour. Lastly, future researchers should strive to use more objective measures, such as using metrics from actual social media profiles rather than relying on self-reports to measure social media addiction.

5. Conclusion

The objective of our study was to determine the association between social media addiction and narcissistic behaviour among undergraduate medical students. The study was also done to find out the association between other variables such as age, gender, ethnicity, academic year, relationship status, self-satisfaction, mental well-being, self-esteem and narcissistic behaviour. According to the multiple linear regression analysis, there was a significant positive association between social media addiction and narcissistic behaviour; there was also a significant negative association between self-esteem and narcissistic behaviour. There was a

negative association between self-satisfaction, mental well-being and narcissistic behaviour. However, it was not significant. In a nutshell, this study proved that there was a significant positive association between social media addiction and narcissistic behaviour.

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