



Social Media Use; Cause of Narcissistic Tendencies in Indian Adolescents

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ABSTRACT

Narcissistic Personality Disorder is a mental condition in which people have an exaggerated view of their self-importance. Its prevalence has been exacerbated by the rise of social media as social media is a tool through which narcissists build an exaggerated self-image. This study aims to examine the extent to which an increase in social media use causes narcissistic tendencies in Indian adolescents aged 13-18. It hypothesises that as social media use increases, narcissistic tendencies amongst Indian adolescents aged 13-18 increases as well. Narcissistic tendencies are studied in terms of self-obsession, hyper-aggression, loud vibes, arrogant confidence, insensitive use of language, lack of empathy and spotlight traits. A questionnaire with 11 closed questions regarding social media use and different narcissistic behaviours is sent to 100 Indian adolescents between ages 13-18 (Mean age= 15.67) whose mean social media usage was 6.57 hours/day. Opportunity sampling was used as the questionnaire was distributed amongst known adolescents in the age group via social media platforms. A T-test is conducted to compare the narcissistic behaviour of people who use social media for <6 and >6 hours respectively; $p = 2.289 \times 10^{-6}$, $p < 0.05$ delineates how people who use social media for more than 6 hours have a higher narcissism score on average. Thus, accentuating how an increase in social media use is positively correlated with narcissistic tendencies. A logarithmic equation models the positive relationship between social media use and overall narcissism score: $y = 3.3023 \ln(x) + 1.9108$. Some reasons for social media as a catalyst of narcissistic tendencies include anonymity as a way to project insecurities, and creating a 'highlight reel' to exaggerate one's achievements, among many others. This research can inform the introduction of certain therapies, awareness programs, and self-help groups for adolescents.

Keywords; Social Media Use, Narcissism, Arrogance, Insensitivity, Self-image, Personality.

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INTRODUCTION

According to Mayo Clinic [10], "Narcissistic Personality Disorder", more commonly known as *Narcissism*, is a mental condition in which people have an exaggerated view of their self-importance, along with a deep necessity to seek external validation and attention.

Individuals suffering from Narcissistic Personality Disorder may face challenges in their interpersonal relationships as they often have a lack of empathy for others. When they don't receive the particular treatment or adoration they feel they deserve, people with narcissistic personality disorder may typically feel dissatisfied and disappointed. Hence, it is safe to say that this disorder is called one rightly so, due to the innumerable drawbacks it has on one's life.

The liaison between social media use and narcissistic tendencies is quite conspicuous. Social media is a tool that narcissists use to build their self-image. They frequently take advantage of relationships to demonstrate their superiority, validate their narcissistic self-worth, and improve their positive self-images. Given that photos are an effective way to showcase oneself, different narcissists have different perspectives on publishing [13].

Hence, this exploratory study aims to study the extent to which an increase in social media use causes narcissistic tendencies in Indian adolescents aged 13-18.

LITERATURE REVIEW

There exists considerable literature exploring the relationship between an increase in social media use and narcissistic tendencies. In the branches of Personality Psychology, this topic has been one of great debate for years.

Such investigations have researched narcissism as being causers of systemic violence or nastiness in society, while others have solely examined the liaison between self-esteem, and other indicators of self-efficacy, which are negatively impacted due to social media; thus, resulting in narcissism.

Andreassen et al., [2] explored the relationship between the “addictive use of social media, narcissism, and self-esteem.” The study examined addictive social media use in 23,000+ participants to conclude how addictive social media use is related to higher narcissism and lower self-esteem. The findings were consistent with the idea that addictive social media use reflects a need to feed one’s ego, demonstrating narcissistic personality traits. Moreso, they showcased how this use is an attempt to inhibit a negative self-evaluation or “self-esteem.”

Not only this, but this idea was further expanded by Barry et al., [3] as they studied whether social media acts as a catalyst for narcissism. Social media platforms by their very nature include self-exposure to a following audience and the opportunity for response from that following. Barry et al. looked at whether social media reflects narcissism or facilitates it. They examined the data supporting the link between narcissistic behaviour on social media and two prevailing theories: using social media as a platform to flaunt opulence and attract desired attention and social media as a driving force behind rising narcissism. Their study discovered links between narcissism and outward signs of attention-seeking behaviour, as well as adverse reactions from bystanders.

Similarly, Boursier et al., [4] studied “pathological narcissism, positive expectation, and body objectification” to conclude how social media use results in body surveillance in young men and women; thereby, predicting signs of narcissistic attitudes. Moreover, they reasoned how body-objectification on social media further fuels the rise of narcissistic tendencies by regulating “selfie-engagement.”

Therefore, the effects of social media on narcissistic tendencies have been researched by various academics. However, this study aims to further this scope by contextualising it for Indian individuals of ages 13-18 specifically, in an attempt to decode how social media in India has exacerbated narcissistic tendencies in youngsters.

Objective of Study

- To understand if there is a rise in narcissistic tendencies in modern society - and is it reflected in the surge of instant stars/junk celebrities that we see on social media platforms, such as *Instagram*, *TikTok*, and *YouTube*.
- To explore the role of personality traits namely *self-obsession*, *hyper-aggression*, *loud vibes*, *arrogant confidence*, *insensitive use of language*, *lack of empathy* and *spotlight traits*, for social media stars.
- *To what extent does an increase in social media use causes narcissistic tendencies in Indian adolescents.*

MATERIAL AND METHODS

Sample:

A questionnaire with various open-ended and closed questions about narcissistic behaviours was sent to 100 adolescents aged 13-18 via chats of social media platforms such as Instagram and WhatsApp.

Respondents used:

Instagram (40%)

YouTube (5%)

TikTok (10%)

Instagram and TikTok (5%)

Instagram and YouTube (7%)

TikTok and YouTube (23%)

Instagram, YouTube, and TikTok (10%)

Statistics as represented in *Fig.1*

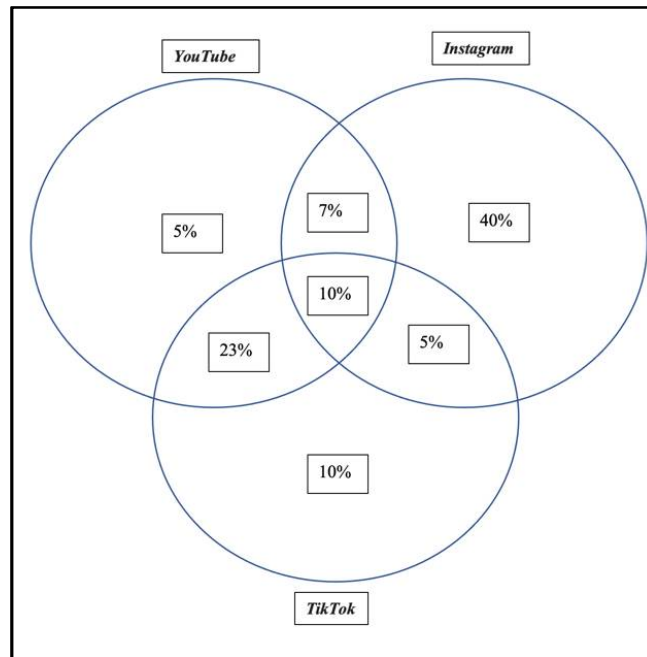


Figure SEQ Figure \ * ARABIC 1

50% of respondents used social media platforms for an average of <6 hours/day, while the other 50% of respondents used social media platforms for an average of >6 hours/day.

The mean age of the respondents was 15.67 (*Mean Age=15.67*) and mean social media usage in hours was 6.57 (*Mean social media usage= 6.57*).

100% of the participants lived in India.

Questionnaire details

- i. Age: *What is your age?*
- ii. Social media usage in hours: *How many hours on average do you use social media per day?*
- iii. Social media use by platform: *Which social media platforms do you use?*

Symptoms/indications of narcissistic traits for 'Brief clarification' derived from Glover et al. [7].

Questions to analyse narcissistic traits:

Q no.	Narcissistic trait	Question	Brief clarification
iv.	self-obsession	<i>On a scale of 1-10, how frequently do you portray self-obsessive behaviour?</i>	Self-obsession could be regarding appearance, looks, and other physical features.
v.	hyper aggression	<i>On a scale of 1-10, how frequently do you portray hyper aggressive behaviour?</i>	Hyper-aggression could involve violent/emotional outbursts, impulsive behaviours, and acting out of proportion to magnitude of the situation.
vi.	loud vibes	<i>On a scale of 1-10, how frequently do you portray loud vibes?</i>	Could involve showing off/bragging, feeling vain, and overconfident.
vii.	arrogant confidence	<i>On a scale of 1-10, how frequently do you portray arrogant confidence?</i>	Could involve complacency, lack of acknowledgement of mistakes, and seeking external validation.
viii.	insensitive use of language	<i>On a scale of 1-10, how frequently do you use insensitive language?</i>	Could include cuss words/swear words
ix.	lack of empathy	<i>On a scale of 1-10, how frequently do you portray lack of empathy?</i>	Could involve criticizing others excessively, not forgiving them for mistakes, blaming them.
x.	spotlight traits.	<i>On a scale of 1-10, how frequently do you portray spotlight traits?</i>	Could involve showing off/bragging, feeling vain, seeking attention, wanting to be popular, and overconfident.
xi.	Overall narcissism score	<i>On a scale of 1-10, how narcissistic are you?</i>	Could involve an exaggerated view of self-importance, a sense of entitlement, and exaggeration of talents.

Hypotheses

- Increased social media use does not increase narcissistic tendencies in Indian adolescents.
- The respondents who use social media for an average of <6 hours/day will display less narcissistic behaviours than those who use social media for an average of >6 hours/day.
- The respondents who use social media for an average of <6 hours/day will display narcissistic behaviours to a different extent than those who use social media for an average of >6 hours/day.

Data Collection Procedure

Social media use is the independent variable and narcissistic tendencies are the dependent variable. Social media use is measured in hours (*hrs*) and each narcissistic tendency/trait is measured on a scale of 1-10, where 10 is the highest demonstration of the narcissistic trait and 1 is the lowest. Finally, there is an overall narcissism score on a scale of 1-10, where 10 is the highest demonstration of narcissism and 1 is the lowest.

The sampling technique used is *Opportunity Sampling* as a questionnaire with various closed questions about narcissistic behaviours was sent to 100 adolescents aged 13-18. To maintain objectivity and prevent researcher bias, open-ended questions were avoided. Most of the questions regarding narcissistic tendencies employed the use of a Rating Scale from 1-10.

Narcissistic tendencies are studied on the basis of the following parameters:

- i.) self-obsession
- ii.) hyper aggression
- iii.) loud vibes
- iv.) arrogant confidence
- v.) insensitive use of language
- vi.) lack of empathy
- vii.) spotlight traits.
- viii.) overall narcissism score

For each narcissistic tendency, a brief clarification regarding symptoms/behaviours associated with that tendency, along with the rating question, is provided to the respondents.

Ethics:

Ethical consent is obtained by all participants before undertaking the study, and participants were informed of their withdrawal rights (Appendix 1); thus, showcasing how the study abides by the *American Psychological Association's* code of conducting psychological research.

Data analysis

Thematic Analysis was used to identify and analyse patterns of narcissistic behaviour based on the aforementioned parameters. It was used to organise data, and helped provide a detailed description of the respondents' shifting attitudes, behaviours, and perceptions, with respect to increasing social media use.

The analysis employed a process with the following steps:

1. Deep-reading and familiarization
2. Graphical representation
3. Categorisation of themes

Along with this, appropriate statistical analysis tools and regression models were applied to help understand the statistical significance of the results.

RESULTS

Most participants in the study demonstrated higher narcissistic tendencies as their social media use increased.

The behaviour of those who used social media for under 6 hours/day indicated lower narcissistic tendencies than of those who used social media for more than 6 hours/day. Hence, delineating how, as social media use increases, narcissistic tendencies also increase; thus, indicating a direct relationship between the variables.

For the following data tables, a *random sample* from the total sample of 100 was chosen:

- 11 participants out of 100 whose social media use was <6 hours/day
- 11 participants out of 100 whose social media use was >6 hours/day

Hence, responses of 22 participants were considered randomly for comparison in terms of social media use and display of narcissistic tendencies.

The means of these two samples were then also used for conducting a t-test.

Thematic Analysis

Narcissism includes a myriad of behaviours which may occur simultaneously, such as intense feelings of self-importance, excessive need for being dominant/powerful or requiring admiration, dwelling on one's appearance and talents, and being apathetic towards others. Moreover, narcissists often exaggerate

themselves; they may put others down as they may feel threatened by someone else's power/capabilities, as it is a sign of lowering power/dominance for them.

Many researchers have found a strong association between the loud and aggressive "grandiose narcissism" and social media behaviours such as *time spent on using it*, frequency of tweeting, and posting selfies [11].

Kircaburun et al. [8] also found that cyber bullying and cyber stalking may mediate the social media and narcissism relationship. As narcissists are inclined towards exerting power, they can do so by intimidating others through personal cybercrimes. Hence, narcissism is linked to narcissism through personal cybercrime as it allows narcissists to dominate others.

This domination, may very well include "insensitive use of language" as research has found that people use harsh words and language to feel better about themselves and maintain dominance over others.

As social media becomes a competition for likes, it simultaneously exacerbates narcissistic tendencies. Females posting sexualized selfies has become a trend which could be explained as being caused by "intimidatory" self-presentation strategies which girls with narcissism use; hence, this behaviour is reinforced as the user receives likes, making it more important for the 'vulnerable' narcissist than the grandiose narcissist. As a consequence, this reinforcement drives more of the inappropriate and self-harming behaviours. On the other hand, not receiving links can exacerbate aggression and insecurities as it is viewed as a way to gain external validation, which when stopped, can make the narcissist insecure [5].

When narcissists do not receive such reinforcement for their behaviour, it leads to increased level of activity and aggression which is a well-known phenomenon of non-reward in the animal laboratory [1].

Moreover, this can result in negative impacts on physiology and immunity as stress hormones are released, a common drawback of social media use [12, 14, 15].

When such reinforcement and social approval is not received, "narcissistic rage" occurs; hence, resulting in increased posting activity to attain validation. However, this results in distress and damages one's self-esteem, while prompting aggressive cyber-behaviours to aggrandise and protect the narcissistic self by humiliating others. This cyber-bullying can also be anonymous; hence, the anonymity gives more freedom for the narcissistic to say things they would not say when whatever they say is attached to their identity.

Parameter 1: self-obsessive behaviour

Social media use (hours)	<6	>6
Self-obsessive behaviour (scale of 1-10)	80% of respondents chose 4 10% chose 5 5.5% chose 3 4.5% chose 2	60% of respondents chose 10 20% chose 9 15% chose 8 5% chose 7

The results indicate how 60% of those who rated the frequency of self-obsessive behaviour as 10/10 were in the category of users with social media use >6 hours. Hence, showcasing how social media worsens narcissistic tendencies in the form of self-obsessive behaviour.

These individuals have an exaggerated sense of self and need constant attention from others. Although it's common for anyone to be sometimes egotistical and arrogant, real narcissists display extreme behaviours [16].

Spending hours in front of the mirror, striving to appear more attractive to their audience may be explained by the narcissist's desire to seek external validation. Appearing more attractive is one way to gain popularity on social media, which boosts the ego of the narcissistic individuals. Hence, they may engage in self-obsessive behaviour and fixate upon their looks to gain the reward of popularity which fuels their narcissistic attitudes.

Parameter 2: hyper-aggression

Social media use (hours)	<6	>6
Hyper-aggression (scale of 1-10)	67% of respondents chose 3 30% chose 1 3% chose 2	90% of respondents chose 10 10% chose 9

The results indicate how 90% of those who rated the frequency of aggressive behaviour as 10/10 were in the category of users with social media use >6 hours. Hence, showcasing how social media worsens narcissistic tendencies in the form of aggressive behaviour.

When they are provoked, insulted, humiliated, shamed, reprimanded, or intimidated by others, those who have high levels of narcissism are inclined to behave aggressively as a defence mechanism [9]. Moreover, as discussed above, a lack of likes or comments/followers may sometimes exacerbate insecurities; hence, causing narcissistic individuals to employ defence mechanisms such as anger to protect their dominance and power. This can also be accredited to the "non-reward" phenomenon, as they post selfies which may

not get attention, which is a “reward” for narcissists. Hence, the absence of the “fuel” or “reward” which feeds their ego may cause aggressive behaviour.

Parameter 3: loud vibes

Social media use (hours)	<6	>6
Loud vibes (scale of 1-10)	50% of respondents chose 2 30% chose 1 20% chose 0	59% of respondents chose 9 11% chose 10 10% chose 8 10% chose 7 5% chose 6 5% chose 5

The results indicate how 59% of those who rated the frequency of loud vibes as 9/10 were in the category of users with social media use >6 hours. Hence, showcasing how social media worsens narcissistic tendencies in the form of loud vibes.

Loud vibes are a common example of narcissistic trait as it involves showing off/bragging, feeling vain, and overconfident about oneself. Having an exaggerated view of oneself is one of the many characteristics of narcissism, which may reflect when narcissists brag about their accomplishments and talents or exaggerate them in an attempt to assert their power and desire to be the “highest” or “the best.” On social media particularly, we see individuals who show off their wealth in the form of wearing clothes from luxurious brands, living in mansions, and having an ‘ideal experience.’ Hence, making many of such individuals our role models, which puts them on a pedestal and aggravates their narcissistic perceptions.

Parameter 4: arrogant confidence

Social media use (hours)	<6	>6
arrogant confidence (scale of 1-10)	49% of respondents chose 0 30% chose 1 21% chose 2	77.5% of respondents chose 10 20% chose 9 2.5% chose 7

The results indicate how 77.5% of those who rated the frequency of arrogant confidence as 10/10 were in the category of users with social media use >6 hours. Hence, showcasing how social media worsens narcissistic tendencies in the form of arrogant confidence.

Believing that they are special and thinking they know the right way to things are very common traits of a narcissist according to WebMD [16]. Moreover, only associating with people deemed to be on “their level” is a typical example of narcissistic thinking. Such behaviours are reflective of the excessive pride and confidence that narcissists have in themselves and their abilities, which manifests in the form of them feeling superior to others. A reason for this feeling of superiority may be that narcissists feel they are more skilled than others in an area; however, their arrogance takes this to an extreme and establishes a sense of entitlement which they may have over certain things. Hence, showcasing how arrogant confidence manifests alongside many different narcissistic tendencies.

Parameter 5: insensitive use of language

Social media use (hours)	<6	>6
Insensitive use of language (scale of 1-10)	100% of respondents chose 0	89.75% of respondents chose 10 9% chose 8 1.25% chose 9

The results indicate how 89.75% of those who rated the frequency of insensitive language as 10/10 were in the category of users with social media use >6 hours. Hence, showcasing how social media worsens narcissistic tendencies in the form of insensitive use of language.

Insensitive language may often be a tool for narcissists to ridicule, condemn, or shame others, which helps them exert power and appear more dominant; thus, feeding their ego. However, often times on social media- it is very convenient to use foul or harsh language towards others. Making a fake account is all it takes for narcissists to use harsh language when commenting on other people’s posts. Hence, providing them a platform to protect their identity while putting down other people by calling them derogatory terms and labels.

Parameter 6: lack of empathy

Social media use (hours)	<6	>6
Lack of empathy (scale of 1-10)	50% of respondents chose 3 30% chose 2 10% chose 0 5.5% chose 5 4.5% chose 4	97.5% chose 10 2% chose 9 0.5% chose 6

The results indicate how 97.5% of those who rated the frequency of lack of empathy as 10/10 were in the category of users with social media use >6 hours. Hence, showcasing how social media worsens narcissistic tendencies in the form of inhibiting one’s ability to empathise with others.

While narcissistic individuals do not really lack empathy, their vulnerability and need for self-protection limits the extent to which they can empathise with others. The results show that 97.5% of the respondents with high social media use (>6 hours) rated 10/10 to feeling a lack of empathy. Hence, demonstrating how there is a strong correlation in terms of how social media inhibits their ability to understand, recognise, and feel other's emotions.

While this could be simply due to the fact that most interactions and relationships on social media have become superficial, it could also mean that individuals with narcissistic tendencies may be afraid to have an intimate relationship with others, which is built on trust. Hence, sharing struggles and emotions may be less common in their interpersonal relationships.

Parameter 7: spotlight traits

Social media use (hours)	<6	>6
Spotlighttraits (scale of 1-10)	78% of respondents chose 2 20% chose 0 2% chose 4	45% chose 10 33% chose 7 15% chose 9 7% chose 6

The results indicate how 45% of those who rated the frequency of spotlighttraits as 10/10 were in the category of users with social media use >6 hours. Hence, showcasing how social media worsens narcissistic tendencies in the form of spotlight traits.

Spotlight traits which drive narcissists to strive for popularity and status may be more pronounced by social media, than we think. As social media has become a popularity contest, more and more individuals want to be the centre of attention; those who are already the centre of attention, however, feel entitled to be so. Hence, insinuating how being in the spotlight and "above others" is something important for narcissists, which social media worsens.

Statistical analysis

Linear Regression

Social media use (hours)	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10	10.5	11	11.5
Narcissism score (scale of 1-10)	3	3.5	4	4.5	5	5.6	5	5.1	5	7.6	10	10	10	10	9	9.8	10	10	8	7	10	10

Figure 2: Relationship between social media use (hours) and overall narcissism score

Sample 1 (<6 hours): Green
Sample 2 (> 6 hours): Orange

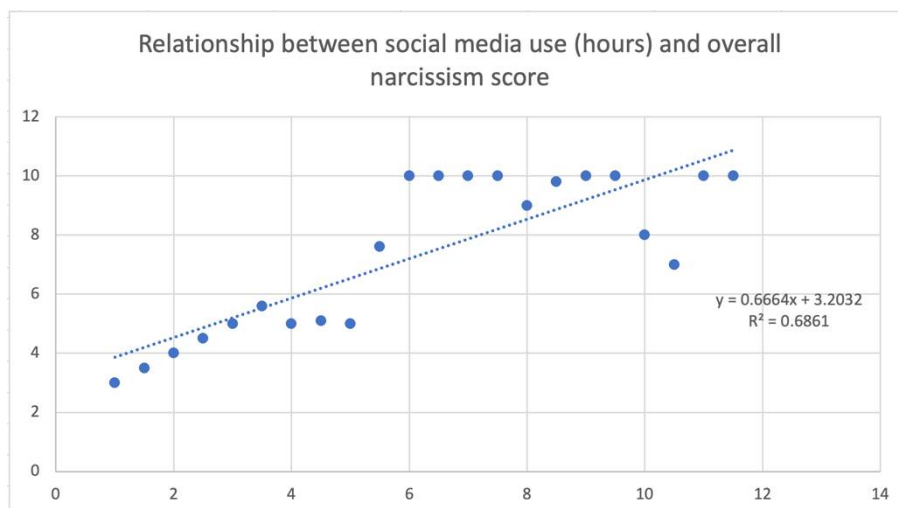
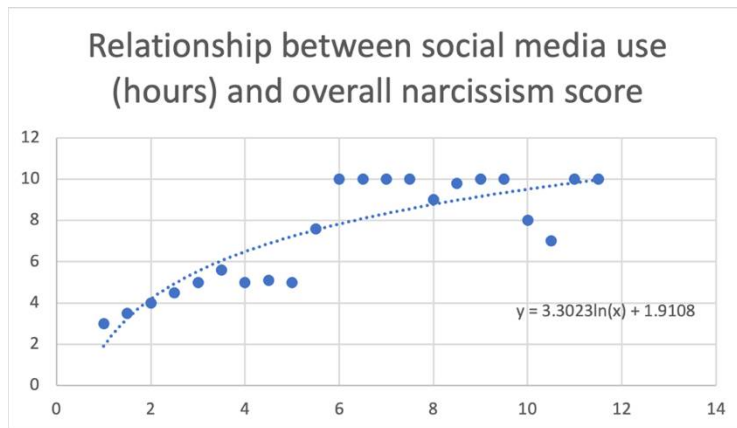


Figure SEQ Figure * ARABIC 3: Linear model

The linear model of $y=0.664x + 3.2032$ can be used to model the relationship between the social media use and overall narcissism score of respondents (Fig. 2 and 3). It can also help predict values for the future, in order to evaluate trends in narcissism amongst future generations.

However, a logarithmic regression also fits the curve of the data points better. Hence, we can compare the linear and logarithmic models to identify the best possible model for this scenario.



As evident, the logarithmic equation of $y=3.3023\ln(x) + 1.9108$ also models this scenario; however, its curve touches upon more data points and replicates the shape of the coordinates more precisely.

To identify the more appropriate model, we can input data values and test accuracy.

For $x=6$ and $y=10$

Whichever model gives a value of y closer to the original data point/coordinate, when x is substituted for 6, will be chosen.

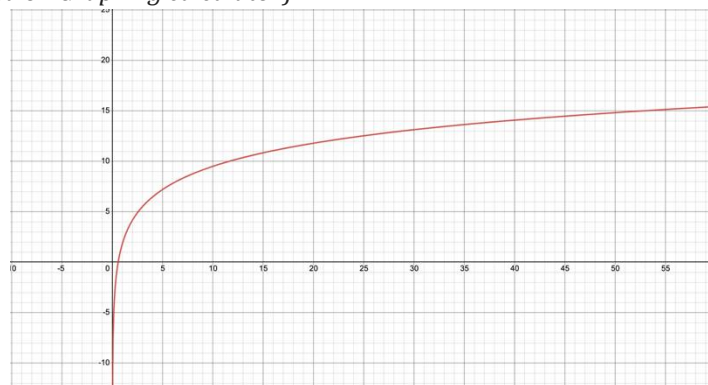
Logarithmic	Linear
$y=3.3023\ln(x) + 1.9108$	$y=0.664x + 3.2032$
$y=3.3023\ln(6) + 1.9108$	$y=0.664(6) + 3.2032$
$y= 7.8277$	$y=7.1872$

Therefore, the linear model will be rejected and logarithmic model will be accepted as it gave value of y closer to the original data value.

Our logarithmic equation modelling the relationship between social media use and overall narcissism score:

$$y=3.3023\ln(x) + 1.9108$$

Future trend (*graphed on Graphing calculator*):



According to this model, the graph is *asymptotic*.

Calculating the R^2 value:

Input Data:

Data set x = 1, 1.5, 2, 2.5, 3, 3.5, 4, 4.5, 5, 5.5, 6, 6.5, 7, 7.5, 8, 8.5, 9, 9.5, 10, 10.5, 11, 11.5

Data set y = 3, 3.5, 4, 4.5, 5, 5.6, 5, 5.1, 5, 7.6, 10, 10, 10, 9, 9.8, 10, 10, 8, 7, 10, 10

Total number of elements = 22

$$R^2 = (\text{Correlation})^2$$

$$= (0.8283)^2$$

$$R^2 = 0.6861$$

In regression analysis, an r^2 value (Coefficient of determination) of around 0.6861 demonstrates that most of our changes in the y variable (dependent variable- narcissism score) can be explained by the x variable (dependent variable- social media use in hours). Hence, accentuating how a majority of the increase in narcissism can be accredited to social media use.

A T-test will be conducted on *Microsoft Excel* to compare the narcissistic behaviour means of two groups (e.g.: average narcissism score of people who use social media for <6 and >6 hours respectively)

Variable 1 range: from X(1) -> X(11); Y(1) -> Y(11)

Variable 2 range: from X(12) -> X(22); Y(12) -> Y(22)

Hypothesised mean difference: 2

Alpha: 0.05

t-Test: Paired Two Sample for Means		
	Variable 1	Variable 2
Mean	5.3	9.43636364
Variance	3.864	1.05454545
Observations	11	11
Pearson Correlation	0.107004623	
Hypothesized Mean Differ	2	
df	10	
t Stat	-9.608407072	
P(T<=t) one-tail	1.14477E-06	
t Critical one-tail	1.812461123	
P(T<=t) two-tail	2.28955E-06	
t Critical two-tail	2.228138852	

As $p = 2.289 \times 10^{-6}$, $p < 0.05$; hence, indicating a significant difference between the means of average narcissism score of people who use social media for <6 and >6 hours respectively (*Fig.5*). This shows how people who use social media for more than 6 hours have a higher narcissism score on average. Thus, accentuating how social media use is positively correlated with narcissistic tendencies. Hence, the H_0 can also be rejected now.

EVALUATION

There are various concerns regarding the validity of the study, as it used a questionnaire with open-ended questions.

Firstly, the responses may not be very representative of the general population as the sample size was very small and mainly consisted of individuals from India; thus, reducing its applicability to adolescents in other countries.

Moreover, the responses may not be truthful due to demand characteristics. As the respondents were aware of the aims of the study, they may have skewed their responses in an attempt to fit their interpretation of the experimenter's purpose.

Similarly, a Social Desirability Bias (SDB) is an inherent response bias in the study as respondents may not have felt comfortable admitting their own behaviours and actions when answering the questionnaire; hence, leading them to represent their own actions in a way that society deems "appropriate" out of a fear of judgment.

Although the study used a self-report methodology to collect data, further studies exploring this relationship through interviews could also be successful, as they may provide more subjective and in-depth qualitative data about the subjects' feelings, attitudes, and perceptions, something which is limited in the scope of a questionnaire.

CONCLUSION

Overall, it is evident how the study demonstrates a high positive correlation between social media use and narcissistic tendencies in Indian adolescents. Hence, delineating the multi-faceted nature of narcissism and showcasing how it manifests differently for various social media users. While doing so however, it buttresses one perspective: social media exacerbates narcissistic tendencies.

This is because social media provides freedom of speech and anonymity; hence, people can create fake accounts to publish hateful comments in an attempt to project their own insecurities onto other people. Moreover, creating a 'highlight reel' and the 'ideal/perfect life' on social media results in an exaggerated view of one's self-importance. Hence, aggravating narcissistic tendencies.

Psychological research has consistently provided evidence which points to the strong need for thoroughly re-evaluating our relationship with technology. "Should social media really be a place which makes us worse human beings? If not, how can we make it less toxic?" is a question which further philosophical research can help us answer through the lens of ethics.

FURTHER SCOPE

The study's results can be useful for application in various everyday scenarios. Firstly, knowledge acquired from this study can better enable parents to understand the risks and issues associated with social media use, particularly those regarding the negative impacts of narcissistic tendencies.

Furthermore, this research can be helpful in therapeutic settings as the fact that the adolescents' narcissistic tendencies may be caused by social media can better assist the clinical professional in advising specific strategies to overcome mental health challenges in that sphere.

Not only this, but by understanding the state of mind of adolescents suffering from narcissism, we can launch awareness programs and campaigns aimed at spreading awareness, and counteracting negative impacts of social media on narcissistic tendencies.

It may also result in the formation of support groups for narcissistic adolescents, who can support and empower each other in overcoming their struggles.

AUTHOR CONTRIBUTIONS

Conceptualization: Manglani and Garg; Methodology: Manglani, and Garg; Data Collection: Garg; Data analysis: Garg and Manglani; Original draft preparation: Garg and , Manglani ; Writing-review and editing: Garg and,Manglani. All authors have read and agreed to the published version of the manuscript.

Conflict of interest: The Authors declare that there is no conflict of interest.

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Appendices

Appendix 1:

CONSENT FORM

Yashraj Garg supports the practice of protection of human participants in research. The following will provide you with information about the experiment that will help you in deciding whether or not you wish to participate. If you agree to participate, please be aware that you are free to withdraw at any point throughout the duration of the experiment.

In this study we will ask you questions regarding narcissistic tendencies. If you feel uncomfortable answering such questions or do not wish to participate for any specific reason, please inform the experimenter and the study will end now. All information you provide will remain confidential and will not be associated with your name. If for any reason during this study you do not feel comfortable, you may leave the laboratory and receive credit for the time you participated and your information will be discarded. Your participation in this study will require responding to a questionnaire. When this study is complete you will be provided with the results of the experiment if you request them, and you will be free to ask any questions.

If you have any further questions concerning this study please feel free to contact us through phone or email: YASHRAJ GARG at yashrajgarg110@gmail.com

Please indicate with your signature on the space below that you understand your rights and agree to participate in the experiment.

Your participation is solicited, yet strictly voluntary. All information will be kept confidential and your name/personal identity will not be associated with any research findings.

Signature of Participant

NAME, Researcher

Date

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