Gender Difference in Self-Disclosure on Facebook

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Summary

Social media has gained a lot of popularity over the past decade. Posting on social networking sites has become an increasingly common practice nowadays, particularly among teenagers. Users on Social Network Sites use the networks to share content and information about themselves. With the increase in the number of users on social networking sites, their self-disclosure also increases. The purpose of this research was to explore the gender difference in online self-disclosure of adolescents on Facebook. It examines which relation is predominant in adolescent self-disclosure, the one with developmental variable, Imaginary Audience or with personality characteristic, Narcissism. Data consisted of 381 participants between the ages of 12 and 22 years. The sample consisted of adolescents from two high schools and college students in the Netherlands. The relationship between all the dependent and independent variables were tested using linear regression analysis. Results indicated a positive association of self-disclosure on Facebook with both, Imaginary Audience ideation and also with Narcissism. Although both displayed a positive association with self-disclosure, Imaginary audience had higher score than Narcissism. However, the relation between self-disclosure and narcissism became weaker when Imaginary Audience was added as control variable to the model. Gender difference was measured for the association of self-disclosure and Imaginary audience with number of friends and age as control variables in the linear regression model, for which males self-disclosed more as compared to females. Data was also categorised into different age groups to have a better understanding of the relation. Although males self-disclosed more than females collectively, when the data was further categorised in age groups, females of the youngest age group (12-13 years) indicated more self-disclosure as compared to other categories. Thus, Imaginary Audience, which originated from the concept of egocentrism was a better predictor of adolescent self-disclosure on Facebook than that of the personality characteristic, Narcissism.

Introduction

The 'Science of Networks' has progressed significantly over the last decade, driven by the rise of online communication through social media (Best et al., 2014). Social Networking Sites have become a regular aspect of our daily life and studies in recent years and have started to explore the way people communicate on social media (Singh et al., 2018).

This paper is focuses on the way individuals present themselves on social networking sites. This paper is a replication with a few additional changes of the "Development as an Explanation for and Predictor of Online Self-Disclosure Among Dutch Adolescents" by Krcmar, Meer and Cingel. Data of 381 students (between the age 12 - 22 years) from two high schools and college in Netherlands was collected through a survey. The focus of this paper was to examine whether adolescent online self-disclosure is specifically linked to the developmental variable of egocentrism or linked to personality trait of narcissism. (Elkind, 1967) created two terms to describe the egocentric behaviour of adolescents – Imaginary Audience and Personal Fable. Imaginary audience is the idea that an audience is constantly present and is intrigued to the point of being excessively concerned about the egocentric person. Personal Fable is the thought of considering oneself unique and deserving ("Imaginary audience", 2019). As imaginary audience was positively associated to self-disclosure and personal fable was not, imaginary audience was used for further analysis. Narcissism was also positively associated to online self-disclosure, although Imaginary audience had stronger association. Imaginary Audience was linked to Facebook self-disclosure across all age groups with the exception of age group of 19–22 (Krcmar et al., 2015).

Although this paper is based on the concepts examined and derived by Krcmar et. al. (2015), an additional aspect is explored in this paper. This paper focuses on the gender difference in self-disclosure on Facebook. It also examines gender difference according to each age group. Analysing gender differences offers updated empirical knowledge about practices and norms for each gender categories. It offers systematic analysis of gender-based discussions in the past and present societies, and produces notions, methodologies, and theories explaining how gender plays a role in these practices. It shows the trends and patterns in the society that differ for each gender. It is one of the essential areas of research as it shows that even when it comes to analysing literature, we create conclusions that are focused on our beliefs regarding gender.

Social media has its own benefits and drawbacks. Considering that adolescents these days have the urge to post more frequently on social media (Hawi and Samaha, 2017; Su et al., 2020) and the additional enhancement of social media gives rise to a question – "does social media promote narcissism?" It can be noticed that youngsters post almost everything on social media like – food pictures , where there are going to, any check-ins, posts which exhibit grandiosity like expensive cars and electronic devices and so on. This question paved way for exploring the relation of self-disclosure on social media and narcissistic personality. However, generalizing adolescents as narcissistic just on the basis of the posts or the number of friends on social media is not accurate; there can be another factor, not as extreme as 'narcissism', that encourages adolescents to post more often. Imaginary Audience is an ideology that explains this behaviour better than narcissism, where the adolescents are motivated to present themselves better on social media because of the thought of being at the centre of the stage, with friends on social media as audience, from whom they seek validation. This paper focuses on exploring the relation between self-disclosure and imaginary audience based on age and gender differences.

There are seven core chapters of this dissertation. The first chapter is the **Theoretical Considerations**, it gives a detailed explanation of the theories, assumptions and terminologies considered in this paper. The second is the **Literature Review**, which gives the facts and proofs for the hypothesis considered in this paper. It presents the previous work related to the paper to provide a base for the deliberations of this paper. The third chapter, **Hypotheses** lists all the hypothesis considered based on the literature review and theoretical considerations, along with the explanation why it is considered. The fourth chapter, **Methodology** explains the procedure in which the data was collected, it specifies the factors involved in executing the analysis. Its gives details about how the data is measured and compared. The fifth chapter is the **Results**, which explains in detail the results obtained from analysis. It presents the figures and summary tables obtained from the analysis. The sixth chapter is **Discussion**, it is a presentation of my insights and observation from the results based on the theoretical findings of previous work. The last chapter, **Conclusion** presents the issues raised in the work throughout and it is a comparison and final thoughts on the completion of the complete paper, it also mentions what future work can done.

Theoretical Considerations

Self-disclosure:

Self-disclosure can be defined as disclosing intimate information about oneself (Huling, 2011a). (Pearce and Sharp, 1973) defined self-disclosure as "a deliberate act for making it known to another person". The word "deliberate" was used because it is voluntary information shared about themselves that the other person is unlikely to know or discover from other sources (Huling, 2011a). Self-disclosure has been related to a variety of favourable relationship qualities and traits, including relationship negotiation abilities, social closeness, social encouragement, friendship fulfilment, and friendship consistency. More precisely, teenagers also describe the common sharing of personal issues as a critical aspect of high-quality connections, just as probably the most noteworthy prize (Valkenburg et al., 2011). The basic parameters of self-disclosure are (a) the breadth or amount of information disclosed, (b) the depth or intimacy of information disclosed and (c) the duration or time spent describing each item of information (Huling, 2011a). Many relationships begin with the sharing of trivial knowledge, which slowly becomes more substantive, making interactions more meaningful and enjoyable. People are inclined to shift the interaction to a profound level by increasing both the breadth and depth of the discussion as they appreciate the talk they are having ("Self-Disclosure - IResearchNet," 2016). This study focuses on the self-disclosure of individuals, specifically adolescents on social media.

Offline Self-disclosure:

Self-disclosure can be defined as the sharing of emotions, feelings, and interactions with close friends in face-to-face situations (Valkenburg et al., 2011). Adolescence is an age where individuals detach from their parents and goes onto become another grown-up individual through cooperation with their peers (Steinberg and Morris, 2001). As children grow, their environment changes from the protective shelter of parents and guardians to being around with people of the same age group trying to discover their identity. During this phase of identity development, people get influenced by those around them. Individuals start expressing to people of the same age, who are more likely to share same interests. Self-disclosure is an approach that helps to establish and develop relationships. Social validation is an important factor of self-disclosure: by self-disclosure to their friends, teenagers gain feedback that helps them to assess their behaviour, attitude and choices and thereby, to validate their identity. Another important factor is intimacy development: by expressing their worries and anxieties with friends, teenagers may not only get rid of the

bottled-up emotions but may also indirectly encourage their friends to be their emotional support (Valkenburg et al., 2011).

Social networking sites:

With billions of users, social networking platforms, such as Facebook, play an important role in daily life. Social networking sites help users create or sustain social connections, exchange knowledge, or deliver entertainment (Hawi and Samaha, 2017). Social media has completely transformed the way we conduct our lives, which includes how we receive news and how we communicate with friends and family. Social networking sites have been emerging since 2004 and it is not just a medium for connecting with friends, but also a source of news and information from around the world, where everyone can express their opinions and views freely ("10 Social Media Statistics You Need to Know in 2020 [Infographic]," 2020). About 3 billion users are regularly using Facebook , Instagram, WhatsApp or Messenger every month. Facebook is one of the most widely used social networking platforms that started in the year 2004 and had around 1 million active users by the end of the year ("Number of active users at Facebook over the years," 2020), whereas as of July 2020 there are 2.7 billion people monthly active on Facebook itself, with more than 2.3 billion individuals use at least one of their apps every day ("Top 20 Facebook Statistics - Updated June 2020," 2020). Scholars from various backgrounds scarcely keep pace with such exponential development trends, seeking to grasp the diverse facets of social networking platforms, including consumer conceptual research, motives, behavioural addiction, mutual connections, consequences, and privacy (Hawi and Samaha, 2017).

Online-Self Disclosure:

Self-disclosure is a key element for people using social media as it is an outward expression of the oneself online (Huling, 2011a). One of the major reasons why teenagers self-disclose online is because they might have a desire for self-exposure and self-introduction. At the same time, they can still be nervous and reluctant to share personal information (Elkind and Bowen, 1979). The internet can be a more 'secure' atmosphere in which teenagers might feel less anxious to express their thoughts, fears, and weaknesses. Internet correspondence is usually distinguished by decreased visible (e.g. appearance) and auditory (e.g. voice) signals (Walther, 1996). A significant effect of these decreased signals is that online networking friends may be less anxious with how others view them and therefore experience less hesitation in their disclosure (Valkenburg et al., 2011).

Gender differences in self-disclosure:

The study by (Rose and Rudolph, 2006) indicated that there are clear gender differences in offline self-revelation to peers: it is found that young girls self-disclose more as compared to boys. The gender disparity in self-disclosure is compatible with numerous other findings that have examined gender differences in trust and friendship. For example, it has been commonly acknowledged that girls are more concentrated on personal close friendships, although boys invest a lot of time in broader communities and build their friendships around social experiences (Valkenburg et al., 2011). Although work on self-revelation among teenage friends has been mostly limited to offline environments, a growing number of studies investigates self-revelation and self-disclosure online. According a study by Hawi and Samaha (2017) more females (68 per cent) use social media than males (62 per cent) and females spend an average of 46 min/day on social networking sites as compared to 31 min/day for males (Hawi and Samaha, 2017). Previous research has also shown that that while men do not stereotypically tend to be the gender that would reciprocate self-disclosure when offered the chance, "men who are attracted to an opposite-sex partner might exceed women in their self-disclosure of personal information" (Derlega et al., 1985; Huling, 2011).

Imaginary Audience:

According to Elkind, Imaginary Audience is one of the concept of egocentrism, which is an ideation that contributes to self-disclosure. Imaginary Audience Ideation relates to thoughts that others think about and evaluate a person at all times (Krcmar et al., 2015). The idea of Imaginary Audience arises from a teenager's difficulty to differentiate between self and other's concern. The imaginary audience ideation applies to adolescent's assumption that others are concerned with their actions as they are with them. This belief results in enhanced self-consciousness, care for others opinion, and a desire to predict the responses of others in actual and imaginary circumstances (Goossens et al., 2002). Because teens frequently talk of themselves, and because of self-centeredness, have trouble discriminating between their feelings and that of others, they believe that others are keen to know more about them (Elkind, 1967). In the context of the Imagined Audience: an individual feels that she/he is the centre of focus and there is an audience who are curious to know about them. Therefore, in the form of Facebook, an individual might consider his/her friends on Facebook as Imaginary Audience and because of the feeling that he/she is always at the centre of focus, he/she thinks like his/her profile is being noticed by other users all the time. The features of social networking platforms, and Facebook in particular, also establish a great combination for online self-disclosure (Krcmar et al., 2015). Imaginary audiences result in the illusion that someone, the ever-present crowd, is observing them. Such thoughts of

judgement can clarify why teenagers can be self-critical one minute and self-admiring the next (Krcmar et al., 2015)

Narcissism:

There have been multiple research (Davenport et al., 2014; Huling, 2011a; Leung, 2013; McCain and Campbell, 2018) analysing the association of narcissistic personality and the use of social media as a medium. Narcissism is the fascination with oneself, and narcissists generally think they are better than others, inflate praise of themselves, and believe that they are unique and special (Leung, 2013). There is always a thin line between having confidence in your very own personal fable and exhibiting characteristics of narcissism. Although pretentious youth can comprehend different perspectives, narcissists could be less bothered (Krcmar et al., 2015). The pattern of constant construction of boosting self-esteem might at first give the appearance of positive self-esteem, however, it is highly suspicious when a narcissist expresses positive self-views, as the disorder is characterized as a pathological form of self-love (Huling, 2011a). Certain traits and attitudes also observed in narcissism include the desire for social superiority, an overwhelming need for approval, arrogance, pride, jealousy, desire for the expectations of endless achievement, feeling of entitlement, and lack of compassion (Huling, 2011a).

Although older studies (Chelune, 1976; Derlega et al., 1985; Jourard and Lasakow, 1958) claim that females tend to self-disclose more, recent studies (Huling, 2011a; Krcmar et al., 2015; Special and Li-Barber, 2012) indicated that there had been very less differences in gender in the self-disclosure of peers, which says that males disclose more as compared to females. In terms of their relationship building actions, male users on social networking sites are more active. They are more inclined to submit invitations to peers, search at other people's profiles to locate contacts, and arrange their usage of social media through their hobby or purpose, which is indicative of the human pursuit of mutual interdependence (Valkenburg et al., 2011). Females, on the other hand, show a higher proportion of social interactions, they are more inclined to use social networking platforms to establish relations with established partners, and to participate in family interaction, thereby manifesting their interdependence (Valkenburg et al., 2011). Previous research have shown mixed results in gender difference on self-disclosure.

In addition to gender, interaction effects of age and gender on self-disclosure has been observed (Valkenburg et al., 2011). Rose and Rudolph 's analysis (2006) indicated that gender differences in offline self-disclosure are significant in adolescence, although not in

pre-adolescence. In other words, differences in offline self-disclosure between boys and girls often appear in adolescence. In comparison, the developmental increase in offline self-disclosure seems to begin earlier for girls (around 10–11 years of age) than for boys (around 13–14 years of age) (Valkenburg et al., 2011). While the individual age and number of friends on social networking sites are not the subject of this analysis, it is incorporated here as control variables into our model. In comparison, younger groups of social networking users have demonstrated symptoms of exhaustion by virtual networking, suggesting the need to monitor the age effect in the sense of social media. The number of friends on these digital platforms may often affect the number of new messages that the consumer gets on the news feed and, as a result, their exposure to social details from others (Krasnova et al., 2017).

Literature Review

Social media:

Digital technology has been an important part of the society, schooling and more generally in the life of younger generation in this day and age. As such, teenagers today are also referred to as 'digital natives' (Allen et al., 2014). Social media has allowed youngsters to instantly interact and express their lives through pictures , videos and wall posts. Young people define these outlets themselves as a central instrument to link and sustain connections, to be innovative and to know more about the world (Anderson and Jiang, 2018). Teenagers do not miss any chance to turn their eyes to the Internet. The majority of U.S. teenagers currently spends nearly nine hours a day on social media such as Instagram, Snapchat or Facebook. These hubs have become relevant places for students to communicate ("Social media," 2017). On the Internet , people participate in a number of activities, many of which could be addictive. Instead of being addicted to the platform itself, several individuals might become addicted to particular online activities (Kuss and Griffiths, 2011). Young (1999) claims, in fact, that there are five specific forms of Internet addiction, including computer addiction (i.e. digital gaming addiction), data overload (i.e. web browsing addiction), net compulsions (i.e. online gambling or online gambling addiction), cyber-sexual addiction (i.e. online pornography or online sex addiction), and cyber-relationship addiction (i.e., addiction to online relationships) (Young, 1999). Statistics suggest that the usage of social networking platforms is more common among younger people than among older people (Andreassen et al., 2014). It has a strong benefit, as such digital platforms play a key part in the recreation and social activities of teenagers and young adults (Allen et al., 2014). Young adults have rapidly become used to being "online" and tend to be adapting to the emerging technologies sooner than the older generation (Prensky, 2001). Therefore, social networking may form an environment where the younger generation will discover and grow their identity and culture without interference by parents or others in an authoritative role (Andreassen et al., 2017). Social media is a very captivating weapon for the youth with significant global implications, if not handled carefully, it may have the capability to be troublesome for impulsive teenagers and young adults (Ward, 2017).

Adolescence:

The rapid speed of technological advancement linked to scientific computing and digital innovation has led to a fundamental shift in the skills that students require to successfully

play their positions (Dhinakaran et al., 2020). The Internet and the growing use of smartphones have both had a significant influence on education and health. Population belonging to Generation Z have only grown up in a world that is always connected. The solution to every concern is a Google search away (Moore et al., 2017). Adolescence is a period of tremendous transitions in social, psychological, and behavioural aspects. Individuals begin to explore and experiment with their personalities through puberty and continue to change their social connections from predominantly within the family to non-familial associations such as those with peers of the same age (Valkenburg and Peter, 2008). With the advent of social networking platforms, teenagers are now able to display and experiment with their personalities online. The value of identity building and friendship growth for teenagers may also act as an reason for teenagers' heavy usage of social networking sites (Krcmar et al., 2015). Studies have indicated that involvement in online identity experiments is significantly correlated to the online interaction between adolescents and a wide range of people, and to their offline antisocial behaviour through this path (Valkenburg and Peter, 2008). Simple access to smartphones can lead to a high percentage of everyday usage. We may presume that most of these teens typically spend their time on social media (Wang and Gu, 2019).

Facebook and Social Networking Sites:

According to (boyd and Ellison, 2007), a social networking site is describe as an interconnected communication channel where users have personally recognizable accounts consisting of user-generated information, content provided by other members, and/or system-provided data; can publicly express contacts that can be accessed and crossed by others; and can ingest, create, and/or communicate with customer-generated streams provided by their contacts on the site(Krcmar et al., 2015). Of the current social networking platforms, Facebook is one of the most widely used social networking sites by most adolescents (NW et al., 2018). With over 2.7 billion daily active users as of the first quarter of 2020, Facebook is the largest social network worldwide. Within the last reported quarter of the year, the company confirmed that almost 3 billion users were utilizing at least one of the company's major products (Facebook, WhatsApp , Instagram, or Messenger) per month ("Facebook," 2020). Just like a variety of other social networking sites, Facebook offers people the ability to construct an online profile, browse and connect with friends, share status updates, and comment on a friend's wall, which also will help in both, building relationships outside family and in identity creation. In addition, some Facebook functions, such as status updates and comments, offer an incentive for such outcomes; nevertheless, both of these activities are linked to the interactional act of self-disclosure. These actions

are linked to the interactive process of self-disclosure. Taking into account the significance of self-disclosure for adolescence identification and formation of relationships, it is important to consider the predictors of such disclosure. (Krcmar et al., 2015).

Self-presentation:

Early studies on self-presentation concentrated on how an individual would adjust their conduct to the inclinations and desires of a group of people (Baumeister and Tice, 1986). Self-presentation relates to the act of presenting one's own appearance to everyone and serves as a central function throughout the creation of identity. For teens today, social networking sites offer a comfortable and efficient platform for self-presentation (Yang et al., 2017). Adolescents' participation with networking sites may be driven by their specific psychological requirements for peer-to-peer ties in the context of self-exploration (Underwood and Ehrenreich, 2017). In order to effectively affect the observations created by the viewer, individuals need to carefully monitor the details they exhibit. With the advent of online forums, self-presentation typically occurs past the face-to-face interactions. Young adults use social networking platforms to express different facets of their identity by posting images, sharing friends' comments, or detailed description of oneself in their profiles (Yang and Bradford Brown, 2016). They may like the incentives for peer-to-peer communication that social networking provides: to engage privately with individuals or openly with a wider community, and to gain approval through sharing photographs or messages, and to accept feedback or messages (Underwood and Ehrenreich, 2017). The portrayal of oneself online keeps on being a typical phenomenon among growing teens, who regularly exhibit their personal and social personalities via social networking sites (Yang et al., 2017). An analysis of the multi-faceted online self-presentation paradigm stated that the quality of self-presentation differs in four aspects - the breadth relates to the volume of self-data revealed; the depth denotes the complexity of the details displayed (e.g., personal feelings, attitudes, shortcomings, etc.); the positivity represents the optimistic or pessimistic essence of the picture provided; the authenticity indicates the honesty of the information presented (Yang and Bradford Brown, 2016). Self-presentation is a vital component of self-construction (Baumeister and Tice, 1986). Engaging in online social media can be an essential component for personality development or expressing oneself, because it helps them to discover their own identity (Shelley L. Craig PhD and Lauren McInroy MSW, 2014). The opportunity to communicate yourself to a friend's community may be helpful so that large amount of people in one's friend circle will affirm self-conceptions and enable the person to develop and visualize the ideal image (Manago, 2014). Self-presentation can be viewed as a means

of making the ideal effect on others, which might be deliberately generated by presenting selective data of oneself (Bij de Vaate et al., 2018).

Self-disclosure:

Self-disclosure or the exchange of personal details with someone else is a core aspect of several connections, particularly for teenagers. This is aligned with the key problem that emerges at this phase of growth, specifically self-investigation and the formation of identity (Asher and McDonald, 2010). Social media is perceived to be the least demanding and quickest approach to gather data (Pineiro, 2016). On the online social networking platform, users share details and disclose knowledge regarding themselves, and these web networks are designed to promote the sharing of information relevant to several beneficial things, such as the ability to retain relationships with missing peers, develop new connections, and gain help and resources (Taddei and Contena, 2013). A study claimed that social networking platforms provide users with chances to fulfil the urge to socially bond with those who seem to look and think as they do, who have common preferences and values, and who sometimes sacrifice their nearest circle of friends / peers (Pineiro, 2016). Digital self-disclosure relates to exchanging personal emotions, opinions, and interactions with someone digital. Digital self-disclosure can help to sustain relationships, as the exchange of ideas, emotions, and interactions is always mutual and thus helps to reinforce the bonds that connect people in relationships (Krcmar et al., 2015). Further research also indicated that participating in social media can enhance positive experiences of friendship for people who experience the ill effects of social tension (Pineiro, 2016).

Egocentrism:

The teenager, owing to the hormonal transition he is experiencing, is essentially focused with himself. Therefore, because he struggles to distinguish between others' thought process and his own psychological distractions, he believes that other individuals are concerned with his own actions and image as he himself is (Elkind, 1967). This demonstrates that the young adults are displaying egocentrism, by failing to recognize whether, in fact, others are as partial to them as they would suspect in light of the fact that their own musings are so pervasive. Young people view themselves as "novel, unique, and considerably more socially noteworthy than they really are" ("Egocentrism," 2020). Egocentrism is a term which was first introduced in Piaget 's ideology of Cognitive development relates to a child's failure to distinguish between other forms of subject-object connection, consequently which is expressed through their beliefs and actions at various levels of development (Popovac and Hadlington, 2020). When young people progress from childhood to adolescence, their

judging and reasoning skills become all the more tweaked with the goal that they grasp and interpret their own considerations, as well as are perceptive of the contemplation of others. And, as this interpretation is influenced by singular discernment — centred upon the self, even more now — adolescents believe that everyone else is similarly as fixated on their own conduct and appearance as they seem to be (Hanna, 2017). Egocentrism incorporates two discrete but associated ideas, the Imaginary Audience and the Personal Fable (Elkind, 1967). Imaginary Audience is an illusion that people are actively watching and assessing one's behaviour or appearance, culminating in teenagers thinking like they have to continue interacting with this crowd, which is a concept which has been associated with self-consciousness (Popovac and Hadlington, 2020). Personal Fable ideation is a similar impression that, because others are thinking about a person consistently, the person must be significant and extraordinary (Krcmar et al., 2015). According to Elkind, Personal Fable is a by-product of imaginary audience (Krcmar et al., 2015). Complementing the imaginary audience is the manner in which their desire to succeed may inflate a sense of significance to the extent that it transforms into a personal fable (Hanna, 2017).

Adolescent egocentrism and online self-disclosure:

Young people are frequently portrayed as egocentric, but the key cause of this external conduct is the inner anxiety of teens becoming unnoticed and becoming special (Hanna, 2017). While previous work has indicated that teenagers might be less inclined to participate in self-disclosure owing to concern of peer scrutiny and judgement, this study has been undertaken in offline settings. Later exploration work has followed a common line of argument, suggesting that teens track their Facebook accounts, take feedback, ensure that they are not evaluated negatively and should make improvements appropriately (Krcmar et al., 2015). Identities are believed to be by communicating with others and are formed by implications connected to self by one's self as well as other people (Bij de Vaate et al., 2018). Different conditions enable people to trigger those identities, which ensures that people may also trigger various identities not only in face-to-face encounters, such as with families, peers and employers, but also online. With the emergence of social media, personal photos have rapidly become a tool for creating an identity online (van Dijck, 2008). This notion of an imaginary audience applies to the management of perceptions, where people control how the viewer will perceive them and what experiences they choose to make (Cingel and Krcmar, 2014). The large reach on Social media platforms often ensures that the experiences that people create online can be quickly transmitted to others, can be viewed again, can easily gain a lot more views than an offline file, and can be quite difficult to erase. This can also therefore have more enduring impact than offline images. Built online

self-presentation is indeed essential for strategically establishing an identity (Bij de Vaate et al., 2018).

Narcissism and Online self-disclosure:

Narcissism is the acquisition of the pleasure of vanity or prideful profound appreciation of one's idealized appearance and qualities ("Narcissism," 2020). Narcissism is a concept in psychoanalytic theory, where narcissistic personality disorder, one of the forms of personality disorders — is a psychiatric illness under which individuals develop an exaggerated perception of their own value, a strong desire for undue affection and praise, strained relationships, and a lack of compassion towards others. Yet under this mask of utter confidence lies a delicate self-esteem that is prone to the smallest critique ("The History of Narcissistic Personality Disorder," 2020). The concept emerged from Greek mythology, where the young Narcissus who was known for his beauty, was also cursed, if he looked at himself for too long, he might die ("Narcissus | Definition & Myth," 2019). In most of the versions he dies, but in one of the version after he dies, the goddess of the forest finds out that the lake which was full of water, where Narcissus used to look at himself, has now turned into a lake of tears. The lake says to the goddess though it cries for Narcissus, but it misses its own beauty which was visible in the eyes of Narcissus when he looked at it (Coelho, 2015). This story makes us wonder if people use one another as a medium to admire themselves. Could the desperation to have more "friends" on Facebook seem to reflect narcissistic personality? As one of the research says, narcissists acquired greater numbers of friends, which may boost their sense of value and success (Bauer and Schiffinger, 2015). The mirror in past hundreds of years was a tool that allowed the person to understand oneself by its own reflection, personality and resemblance of one's self and existence. Time Magazine, in December 2006, showed an image of a reflexive computer screen with a metallic mirror and told the nation, "You". It appears that the digital computer, and more precisely the usage of social media has become the new technological glass that an adult looks at, while asking who they are and what they appear like to others (Huling, 2011a). According to a meta-analysis on self-disclosure, narcissists shared far more images and status updates than anyone, there were more number of photographs than for status updates, presumably because images draw interest and elicit more favourable comments and responses from others, thereby fulfilling the narcissistic need to be praised (Bauer and Schiffinger, 2015).

Gender difference in Self-disclosure:

Traditionally, gender differences in the way they behave have been due to cultural role expectations (Tifferet and Vilnai-Yavetz, 2014). Significant differences in likeability between male and female speakers were found as a result of their level of transparency, men were most liked when he was a low discloser, whereas the women were least liked when she was a low discloser (Huling, 2011a). Past research has revealed that women are more involved than men in actually gathering details regarding other individuals, through gossip, and a new study showed that women recorded for "Facebook stalking" (i.e. secretively monitoring someone's social networking profile to hear about another person's life) rather than men (Bauer and Schiffinger, 2015). However, the association between gender and self-disclosure is incredibly nuanced and the simplistic assumption that female self-disclosure is more prevalent is incorrect (Huling, 2011a). Past studies (Derlega et al., 1985) have also stated that while men may not stereotypically seem like the gender who will respond to self-disclosure when offered the chance, men who are attracted to opposite sex partner may self-disclose more than women (Huling, 2011a). Throughout dating conditions, men prefer to raise their display of status symbols so as to improve their desirability to women, so they appear to do more than females. Another gesture would be showing a special talent or motivation, a quality that females seem to admire in their partners (Tifferet and Vilnai-Yavetz, 2014). In one experiment conducted by Tifferet and colleagues (2012), a man's two identical Facebook profiles were made, one had the profile picture of the man smiling and holding the guitar and the second was the same without the guitar. Friend request from both the accounts were sent to 50 different women with a message accompanying, "Hey, what's up? I like your photo". Responses were categorised into two, positive (I like your too) and negative (I have a boyfriend or no response), if no response was received within a week, it was considered negative. While 14 of 50 women (28%) responded positively to the profile with guitar, only 5 out of 50 women (10%) responded to the account without guitar. The response rate of the females was significantly higher for the one with the guitar, implying that the musical interest of the man made him look more appealing (Tifferet et al., 2012). Previous research has shown that males are more likely to use Facebook for self-promotion, particularly to accentuate popularity and risk-taking behaviours (Ferenczi et al., 2017). In a research by Karl and colleagues (2010), it was found that males were more likely to post 'extreme' profile information, such as self-photos of various types or comments about drugs, sex, or alcohol, whereas females, from both countries, reported a greater likelihood to include less offensive or more 'cute' information about themselves, their family, or partner (Karl et al., 2010). Although women are largely motivated by personal needs,

such as the maintaining of strong relations and exposure to social knowledge on near and remote networks, men focus their continued interests around their desire to acquire details of a general nature (Krasnova et al., 2017). Narcissism could be a common motivation among both genders, although the impact may be reduced in women to the point that people have certain motivations, such as interest for others, or merely keep in contact (Bauer and Schiffinger, 2015).

Hypotheses

Engaging in different social media platforms is a routine activity for adolescents. Social networking sites offer the space to connect with friends, classmates and people with same interests (O'Keeffe et al., 2011).

The act of self-disclosing personal thoughts, feelings or experiences to another is often a daily occurrence for many people, thus the topic being of great research interest. Many questions arises, concerning how, why and what people self-disclose (Huling, 2011a). In recent years, the popular press has introduced the notion that social networking sites and narcissism are strongly related (Davenport et al., 2014). The constant involvement of adolescents on social media to keep updating with the posts and the developments in social media platforms accordingly ignites a question if social media promotes narcissism? However, stating that an individual as narcissist based on whether they self-disclose more is not accurate, perhaps another factor could be involved, which is drives them to self-disclose more. Imaginary audience refers to a feeling that others are thinking about them, which makes them feel important and unique (Krcmar et al., 2015). Imaginary audience ideation in the work by Krcmar et. al. (2015), showed positive connection with self-disclosure of adolescents on Facebook, which is why our first step is the replication of the first hypothesis.

> **H1: Imaginary Audience ideation will be positively associated with the amount self-disclosure on Facebook.**

When we know self-disclosure is positive among youth, one of the first questions that arises are do males or females self-disclose more on social media. Gender research is one of the basic and important approach that answers our assumptions. older studies (Chelune, 1976; Derlega et al., 1985; Jourard and Lasakow, 1958) stated that females self-disclose more than males. However, recent work (Goldner, 2008; Huling, 2011a; Krcmar et al., 2015; Special and Li-Barber, 2012) have had mixed results but majority of them stating that males tend to disclose more on social media compared to females, our second hypothesis is to explore if males or females are the more inclined to self-disclose on social media.

> **H2: Males self-disclose on Facebook more compare to females.**

Age and gender have been used as control variables in several regression analysis concerning self-disclosure, as these factors had significant correlations with the outcomes (Davenport et al., 2014). Just as we associate self-disclosure on social media to adolescents,

one might wonder if self-disclosure is more for a particular age group. Thus, the next hypotheses consist of exploring the difference of self-disclosure in age groups and gender. Previous research (Goldner, 2008) have found that younger participants self-disclose more than the older participants, here we consider the same. Also, Facebook offers a virtual stage with friends on Facebook as imaginary audience, hence we consider the youngest age group to have the highest score of self-disclosure and Imaginary audience.

H_3: **Self-disclosure on Facebook will be highest for the youngest age group of adolescents, who also have the highest score of Imaginary Audience.**

According to Valkenburg et al., (2011), the developmental increase in offline self-disclosure seems to begin earlier for girls (around 10–11 years of age) than for boys (around 13–14 years of age). Adolescent girls prefer to share more personal information, whereas boys disclose information related to careers, behaviours, and views (Denholm and Chabassol, 1987). Since this data has adolescents that are between the age 12 to 22, the youngest age-group being 12-13, here we will consider that females of age group 12-13 self-disclose more on Facebook as compared to any other age group.

H_4 : **Females of the youngest age group will self-disclose on Facebook more as compared to any other age group.**

Methodology

This paper uses the data collected by Krcmar et al. (2015) in "Development as an Explanation for and Predictor of Online Self-Disclosure Among Dutch Adolescents" to examine whether teenage online self-disclosure is specifically linked to the cognitive variable of egocentrism or linked to personality characteristic, narcissism.

Participants and procedure:

As this paper first replicates and then extends Krcmar et al. (2015), I use the same data as Krcmar et al. (2015). I obtained the data by directly contacting the authors. Krcmar et al. (2015) collected data through a survey among teenagers in the Netherlands. For younger adolescents (age 12 to 18), data was collected in April 2013 from two high schools with total number of 337 participants. The schools were selected in such a way that they represented teenagers at both educational and socio-economic levels. Two high school classes were selected for each age group. Confidentiality was ensured and students were encouraged to work around their own speed, without getting influenced by other responses. The survey took about 30 minutes to finish. It was unable to determine the response rate for this recruiting process as the students had an option to opt out of the survey and also because of absence.

For older adolescents (age 19 to 22), a total number of 44 participants were recruited using online snowball sample. A recruitment mails outlining the intent of the survey and a link to the online survey document was sent to selected participants at local and other universities. Subjects were also recruited via posts on social media platform. No response rate is possible for this recruiting process. A total of 585 students answered the questionnaire, but 151 of them were excluded because either they did not complete all the questions in the survey or they were outside the targeted age range. Further, responses of another 53 participants were excluded as their responses were unreliable (e.g. random) results in their responses. The final dataset included responses from 381 students. Participants included 186 males (49.7%) and 188 females (50.3%). The average age of individuals participating in the survey was around 16 years old (mean = 15.64, standard deviation = 2.54).

Measures:

Number of friends on Facebook was assessed by asking the students to report their total number of friends on Facebook. The average number of friends on Facebook of each individual that took part in the survey had around 154 friends.

Facebook's self-disclosure was assessed by having participants tell how often they share content regarding six subjects on Facebook. Questions used Likert scales, which are usually used in surveys to gauge respondents' opinions and feelings. These questions give the participants a range of options like, in this case, the options range from 1 = disclose nothing to 5 = disclose everything. A few of the questions included were like these - "How much do you share regarding falling in love," "How much do you disclose regarding your secrets," "How much do you reveal about your personal emotions," "How much do you reveal about stuff you 're nervous about," "How much do you reveal regarding times of your life that you're embarrassed about," and, eventually, "How much do you reveal about moments in your life that you feel guilty for?" The seven-item test was initially validated by Schouten (2007) and was focused on earlier measures that assessed intimate self-disclosure. Considering the age of a few of the respondents, the sex question was omitted owing to sensitivity concerns (Krcmar et al., 2015). As shown in the table 1, the average self-disclosure among the participants was 1.60, with the maximum being 4.

Imaginary Audience was evaluated using a smaller variant of the Imaginary Audience scale (Cingel and Krcmar, 2014). In an attempt to make sure that the research method was not too strenuous for younger participants in the samples, researchers established a 21-item index utilizing objects with the largest factor loads from the data collection obtained by Cingel and Krcmar. These data were gathered using the actual 42-item New Imaginary Audience scale developed and validated by Lapsley et al. Subjects were questioned how much they worry about a variety of issues, such as how much they worry about "being famous with peers," "being praised for the way you look," and "what others say about the way you look"(Krcmar et al., 2015). The likert scale questions had options ranging from 1 being "never" scaling all the way up to 4 being "often". An average of 2.17, with a maximum value being 4.48 was the imaginary audience ideation among the individuals that participated in the survey. It was found that Imaginary audience had the most influence on self-disclosure of adolescents on Facebook as compared to other factors.

Narcissism was assessed using a simpler version developed by Leung (2013) known as Narcissistic Personality Inventory which was initially established by Raskin and Hall (1979).

Raskin and Terry (1988) reduced the original inventory and clustered it into fewer components in which narcissism included seven dimensions: authority, self-sufficiency, superiority, exhibitionism, exploitativeness, vanity, and entitlement (Leung, 2013). This paper survey focuses on two dimensions of narcissism – authority/superiority and exhibitionism which relates to self-disclosure. These two dimensions of narcissism are similar to the concept of adolescent egocentrism. In other words, both tend to evaluate the extent to which a person sees themselves as significant, more talented, qualified and capable than others. In the case of superiority, it measures the feelings of grandiosity, where the person is imposing to be more skilled and deserving than others. In the case of exhibitionism, the individual is interested in showing and displaying these superior talents. Theoretically, self-sufficiency, exploitativeness, vanity, and entitlement dimensions of narcissism would not relate to self-disclosure (Krcmar et al., 2015). Sample items on the survey were "I am an extraordinary person" and "I would like to be complimented". The response to these question scale from 1 as "strongly agree" to 5 as "strongly disagree". Out of the 381 respondents, the average amount of narcissism measured was around 2.90 with the highest value being 5.

In addition to the work done by Krcmar et al. (2015), this paper tries to explore the gender difference in self-disclosure on Facebook. The data was segregated according to males and females and self-disclosure was measured separately. Self-disclosure according to each age group was also measured. Data was divided into four categories of ages: 12-13, 14-15, 16-18 and 19-22 years and self-disclosure by males and females were measured for each age group.

Table 1: Summary of Dependent and Independent Variables

Statistic	N	Mean	St. Dev.	Min	Pctl(25)	Pctl(75)	Max
Age	373	15.64	2.54	12.00	13.00	17.00	22.00
Number of Friends	328	154.43	104.92	0.00	86.50	200.00	500.00
Imaginary Audience	381	2.17	0.62	1.00	1.71	2.57	4.48
Personal Fable	381	2.53	0.61	1.00	2.17	2.92	4.17
Narcissism	381	2.90	0.72	1	2.4	3.4	5
Self-Disclosure	347	1.60	0.79	1.00	1.00	1.83	4.00

Results

This thesis has two main purposes. First, it partly replicates findings from "Development as an Explanation for and Indicator of Online Self-Disclosure Among Dutch Adolescents" by Krcmar et al. (2015), which found relationships between adolescent self-disclosure on Facebook with gender, age, number of Facebook friends, imaginary audience and narcissism. Second, this thesis extends previous findings of Krcmar et al. (2015) and investigates the degree to which the established effects of age, number of Facebook friends, imaginary audience and narcissism on self-disclosure are different for males and females. By including such an interaction effect, this thesis provides new insights into the importance of gender for self-disclosure on Facebook.

Hypotheses H1 and H2 have been evaluated using a hierarchical regression model. Concerning the replication of Krcmar et al. (2015), hypothesis H1 stated that Imaginary Audience will be positively associated with self-disclosure on Facebook. In the first section, the age, gender, and number of Facebook friends are explanatory variables which were included, given the critical correlations found in the previous research. It is not unexpected taking into account the past study results on variations in Imaginary Audience between age and gender (Krcmar et al., 2015). The overall number of friends on Facebook has also been included as a control, provided that the real population of Facebook users will affect their view of the imaginary audience and their self-disclosing behaviour.

Table 2: A hierarchical multiple regression analysis examining the relationship between control variables, characteristic variables and developmental variables on Facebook self-disclosure

	Dependent variable:			
	Self-disclosure			
	Block 1	Block 2	Block 3	Block 4
	(1)	(2)	(3)	(4)
Age	0.11^{**}	0.08	0.11^{**}	0.08
	(0.06)	(0.06)	(0.06)	(0.05)
Gender	-0.13^{**}	-0.11^{**}	-0.11^{**}	-0.10^{*}
	(0.06)	(0.06)	(0.06)	(0.06)
Number of friends	0.07	0.08	0.05	0.07
	(0.06)	(0.06)	(0.06)	(0.06)
Imaginary Audience		0.23^{***}		0.21^{***}
		(0.06)		(0.06)
Narcissism			0.14^{**}	0.10^{*}
			(0.06)	(0.06)
R^2	0.03	0.08	0.05	0.09
F Statistic	3.33^{**} (df = 3; 321)	6.82^{***} (df = 4; 320)	3.96^{***} (df = 4; 320)	6.17^{***} (df = 5; 319)
Note:				$^{*}p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

As shown in the Table 2, the first model was significant ($R^2 = 0.03$, $F(3,321) = 3.33$, $p = 0.02$) self-disclosure on Facebook. For the first model, three variables were considered, which were age ($\beta = 0.11$, $p = 0.05$), gender and the number on friends on Facebook. Out of these three variables, two were significant, both age ($\beta = 0.11$, $p = 0.05$) and gender ($\beta = -0.13$, $p = 0.02$) appeared as the key predictors of self-disclosure on Facebook. On the other hand, the number of friends on Facebook was not a significant indicator of Facebook self-disclosure. In the second model, the imaginary audience was appended to the model. This has culminated in a major change in R^2 ($R^2 = 0.08$, $\Delta R^2 = 0.05$, $F(4,320) = 6.82$, $p < 0.001$). While age ($\beta = -0.08$, $p = n.s$) was no longer substantially linked to Facebook self-disclosure, the notion of the Imaginary audience was clearly and positively connected. Hence, we fail to reject H1 i.e. H1 is supported.

As seen in the previous study by Krcmar et al.(2015), age, gender, and number of Facebook friends were being inserted as controls in the first segment. Considering that Imaginary Audience greatly anticipated Facebook's self-disclosure, it was removed from the model for the next analysis, and Personal Fable was replaced instead of Imaginary Audience. The introduction of the Personal Fable to the next section did not result in a major improvement in R2. Imaginary Audience ($\beta = 0.23$, $p < 0.001$) stayed a big indicator of Facebook self-disclosure, while Personal Fable was not significant enough to be considered. Hence, this paper does not include personal fable for further analysis.

Similarly, in model three, along with the control variables – age, gender and number of friends, narcissism was added to the model, where again age ($\beta = 0.11$, $p = 0.05$) and gender ($\beta = -0.11$, $p = 0.04$) were significant. Narcissism was also found significant, with notable change in R^2 as compared to model one ($R^2 = 0.05$, $\Delta R^2 = 0.02$, $F(4,320) = 3.96$, $p = 0.02$). In can be seen from Table 2 that change in R^2 from model one is more for model two as compared to model three. Therefore, narcissism was not as significant as imaginary audience was in the second model.

Hence, in the fourth model, all the three control variables, imaginary audience and narcissism were added, it is that same as third model with imaginary audience appended to it, which was indeed significant as compared to third model ($R^2 = 0.09$, $\Delta R^2 = 0.04$, $F(5,319) = 6.17$, $p < 0.001$). This testing was intended to evaluate whether the impact of narcissism on online self-disclosure will be diminished when Imaginary Audience was included in the test. While age and gender were prominent in the first model and narcissism was significant in the third model, all the three factors were no longer significant with the inclusion of the Imaginary Audience to the fourth model (age : $\beta = 0.08$, $p = n.s$; gender : $\beta = -0.10$, $p = n.s$; narcissism : $\beta = 0.10$, $p = 0.07$). Furthermore, the inclusion of the Imaginary Audience

has contributed to a major shift in R^2 from the third model ($\beta = 0.21$, $p < 0.001$). Hence, it was clear that the impact of narcissism on Facebook self-disclosure not only reduced when accounting for the Imaginary Audience, but also decreased from statistical significance to minimal significance.

In order to further investigate this interaction, a mediation study was performed, examining whether Imaginary Audience actively mediated the association between narcissism and online self-disclosure for teenagers with age , gender and the amount of Facebook friends as control variables. According to Baron and Kenny (1986), there are three measures that must be taken while mediation is available. A collection of linear regressions has been used to evaluate all three levels of mediation (Krcmar et al., 2015). The summary of mediation analysis can be seen in Table 3, In the first stage, the relation between predictor – narcissism and outcome – self-disclosure is tested, this stage is the same as the analysis in Table 2 – model three, which showed significant change in R^2 ($R^2 = 0.05$, $\Delta R^2 = 0.02$, $F(4,320) = 3.96$, $p = 0.02$; $\beta = -0.14$, $p = 0.02$). In the second stage, the association between predictor – narcissism and mediator – imaginary audience is analysed. As shown in the stage 2, with age, gender and number of friends on Facebook as controlling variables and narcissism were added, and narcissism was found significant ($R^2 = 0.05$, $F(4,322) = 4.37$, $p = 0.02$; $\beta = 0.15$, $p = 0.01$) in Imaginary audience ideation. In the third stage, both narcissism and imaginary audience must be considered as predictors of self-disclosure. In this stage, imaginary audience accounts for most higher significance, due to which the narcissism becomes insignificant. Therefore, Imaginary Audience mediates the interaction between narcissism and Facebook self-disclosure by controlling the age , gender and number of friends on Facebook.

Table 3 : Mediation Analysis

|	Dependent variable:		
	Self-disclosure Stage 1 (1)	Imaginary Audience Stage 2 (2)	Self-disclosure Stage 3 (3)
Age	0.11** (0.06)	0.13** (0.05)	0.08 (0.05)
Gender	-0.11** (0.06)	-0.06 (0.05)	-0.10* (0.06)
Number of friends	0.05 (0.06)	-0.10* (0.05)	0.07 (0.06)
Narcissism	0.14** (0.06)	0.15*** (0.05)	0.10* (0.06)
Imaginary Audience			0.21*** (0.06)
R^2	0.05	0.05	0.09
F Statistic	3.96*** (df = 4; 320)	4.37*** (df = 4; 322)	6.17*** (df = 5; 319)
Note:			*p<0.1; **p<0.05; ***p<0.01

Age and gender is used as control variables in each regression analysis because of their significance with several outcomes. In order to further analyse this relationship, gender was used as a differentiating parameter. It can be seen from both the analyses that gender is significant enough in self-disclosure, hence, this paper focuses on the gender differences in self-disclosure on Facebook. Gender studies is an important research area because it highlights that even when it comes to studying literature, we make assumptions that are based on our ideas about gender. Past studies on computer-based communication has found that age and gender are significant factors that influence the manner the Internet is utilized in general and social networking platforms in particular. Similarly, age and gender variations often affect users' behaviour and expectations towards internet-based operations (Dhir et al., 2016). The persistence of posting on social media focuses on the social and psychological motivations underlying this behaviour; many reports have investigated the causal function of human personality traits in posting their own pictures. Hence, more focus should be given to the influence of posting by individuals (Zheng et al., 2019). Thus, the following table compares the self-disclosure by males and females.

**Table 4: Gender difference in self-disclosure on Facebook**

|	Dependent variable:	
	Self-disclosure	
	Males	Females
	(1)	(2)
Age	0.21^{***}	-0.02
	(0.08)	(0.08)
Number of friends	0.11	0.06
	(0.08)	(0.08)
Imaginary Audience	0.18^{**}	0.26^{***}
	(0.08)	(0.08)
R^2	0.10	0.06
F Statistic	6.08^{***} (df = 3; 157)	3.59^{**} (df = 3; 160)
Note:	$^{*}p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$	

Figure 1: Age as predictor of Self-Disclosure
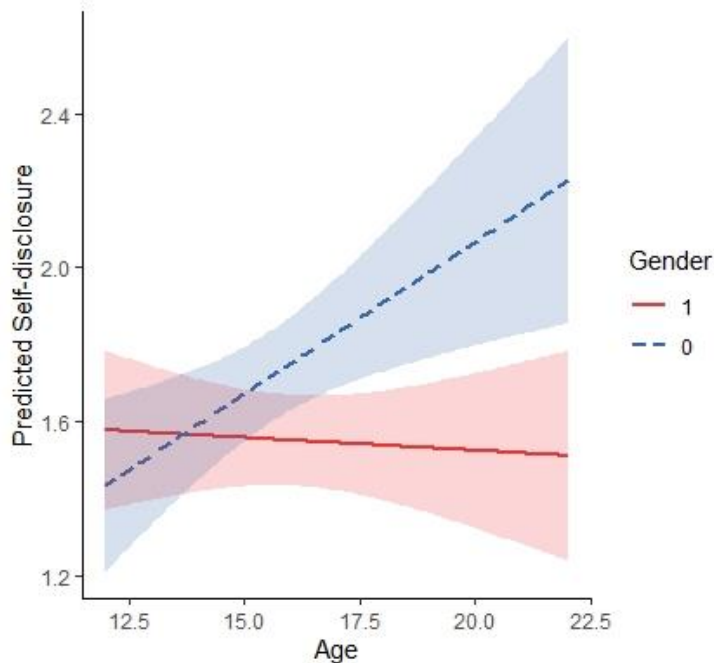
Age is significant factor in predicting self-disclosure for males ($\beta = 0.21$, $p = 0.001$), on the other hand it is not significant for females ($\beta = -0.02$, p = n.s). The estimate coefficient for males in more than that in females, suggesting that when age is considered as the predictor, males tend to self-disclose more. The following plot (Figure 1) shows the difference in gender (1 – females, 0 – males) when age is considered as the predictor, it shows that the confidence intervals overlaps initially but males self-disclose more with age.

Figure 2:Number of Friends as predictor
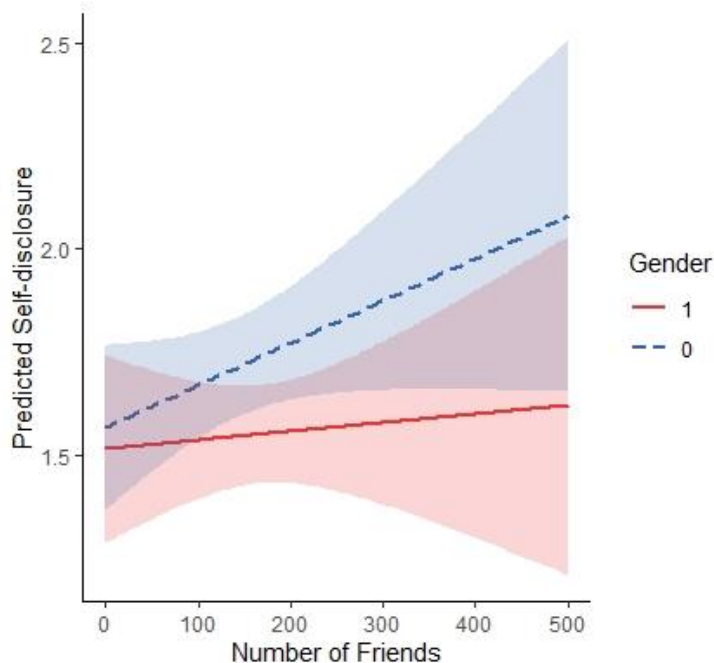
The next factor is Number of Friends on Facebook. It is not a significant variable for self-disclosure in particular, which can be said from Figure 2, even though there is a minor diversion in the graphs the confidence interval overlaps, which means the difference is insignificant. Also, when we consider the count of friends, males ($\beta = 0.11$, p = n.s) self-disclose more as compared to females ($\beta = 0.06$, p = n.s).

Figure 3: Imaginary Audience as predictor of Self-Disclosure
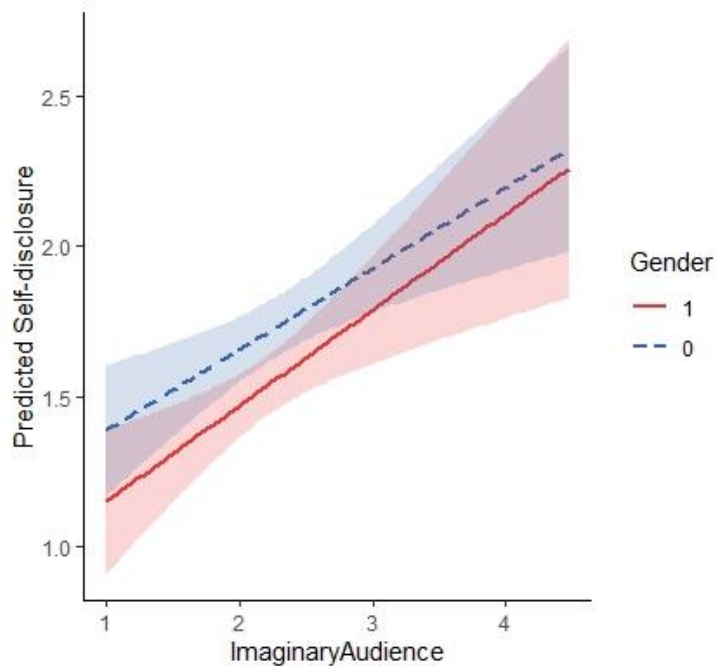
Imaginary Audience is a significant predictor with females ($\beta = 0.26$, p = 0.001) displaying for more self-disclosure than males ($\beta = 0.18$, p = 0.02) when imaginary audience is the predictor. However, as the confidence interval overlaps (Figure 3), there is difference between females and males in self disclosure, although considering imaginary audience as a predictor, females tend to self-disclose more on social media. Considering all the three variables, males have the highest score for association between imaginary audience and self-disclosure, hence H_3 does not support.

Earlier, we stated that the concept of the Imaginary Audience was strongly related to the level of self-disclosure on Facebook. If this information is merged with the assumption that Imaginary Audience ideation and age are curvilinearly linked, it is possible that online self-disclosure fits the same trend, with the greater self-disclosure among middle-aged (Krcmar et. al., 2015). It is therefore expected that the amount of online self-disclosure will be highest among middle-aged youngsters who account for maximum Imaginary Audience.

Table 5:Self-Disclosure by age and gender

	Dependent variable:							
	Self-disclosure (Age Groups)							
	12-13 Males	12-13 Females	14-15 Males	14-15 Females	16-18 Males	16-18 Females	19-22 Males	19-22 Females
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Number of friends	0.10	-0.13	0.04	0.09	0.11	0.19	0.27	0.23
	(0.17)	(0.15)	(0.14)	(0.16)	(0.13)	(0.13)	(0.35)	(0.20)
Imaginary Audience	0.41**	0.43***	0.17	0.20	0.17	0.21	0.28	0.23
	(0.16)	(0.14)	(0.13)	(0.19)	(0.13)	(0.14)	(0.35)	(0.21)
R^2	0.17	0.22	0.03	0.04	0.04	0.06	0.18	0.11
F Statistic	3.27* (df = 2; 31)	5.08** (df = 2; 37)	0.81 (df = 2; 50)	0.70 (df = 2; 37)	1.11 (df = 2; 61)	1.86 (df = 2; 56)	0.76 (df = 2; 7)	1.40 (df = 2; 22)

Note: *p<0.1; **p<0.05; ***p<0.01

H_3 stated that Facebook self-disclosure will be the strongest among teens between 12 and 13 years of age who are also strong in Imaginary Audience ideation. To examine this, the data set was split into four age groups (12–13, 14–15, 16–18, 19–22) and conducted different hierarchical regressions for each age category. On all situations, gender and number of Facebook friends were included as control variables in the first model and Imaginary Audience ideation appended in the second one.

The gender and number of Facebook friends in the 12 to 13 year old age group were not significant in the first model (R^2 = 0.10, F(2,71) = 0.47, p = n.s). The inclusion of the Imaginary Audience ideation in the second model resulted in a considerable change in R^2 (R^2 = 0.19, ΔR^2 = 0.18, F(3,70) = 5.54, p = 0.002; β = 0.42, p < 0.001). Thus, the notion of the Imaginary Audience is strongly related to self-disclosure among 12 to 13 year olds. Likewise, in the first model of the 14 to 15 year-old age group, gender and number of friends on Facebook were not relevant (R^2 = 0.01, F(2,90) = 0.25, p = n.s). Nevertheless, the inclusion of the ideation of the imaginary audience in the second model was just minimal (R^2 = 0.03, ΔR^2 = 0.02, F(3,89) = 1.06, p = 0.37; β = 0.17, p = 0.11). Gender and the number of Facebook friends in 16 to 18 years of age were not linked to self-disclosure (R^2 = 0.03, F(2,120) = 1.73, p = n.s), but instead due to the inclusion of imagination Audience became significant (R^2 = 0.06, ΔR^2 = 0.03, F(3,119) = 2.49, p = 0.002; β = 0.18, p = 0.06). For the last age group, the first model was relevant for the ages of 19 to 22 with gender appearing as a powerful indicator of self-disclosure (R^2 = 0.19, F(2,32) = 3.82, p = 0.03; gender : β = 0.18, p = 0.06). However, in the second model, the inclusion of the Imaginary Audience was not significant. (R^2 = 0.22, ΔR^2 = 0.03, F(3,31) = 2.95, p = 0.04; β = 0.20, p = 0.29). To sum up, only the age group of 12 to 13 year old were positively associated to self-disclosure. On the other hand, the age groups of 14 to 15 was not significant in relation to self-disclosure. Although 16 to 18 year old showed positive relation between imaginary audience and self-disclosure, it is almost insignificant. The oldest age

group of 19 to 22 year old showed positive and significant connection between gender and self-disclosure, it did not show positive results with imaginary audience. Hence, H3 is supported.

Table 6: Gender Difference in Age Groups

	Dependent variable:							
	Self-disclosure (Age Groups)							
	12-13 Males	12-13 Females	14-15 Males	14-15 Females	16-18 Males	16-18 Females	19-22 Males	19-22 Females
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Number of friends	0.10	-0.13	0.04	0.09	0.11	0.19	0.27	0.23
	(0.17)	(0.15)	(0.14)	(0.16)	(0.13)	(0.13)	(0.35)	(0.20)
Imaginary Audience	0.41**	0.43***	0.17	0.20	0.17	0.21	0.28	0.23
	(0.16)	(0.14)	(0.13)	(0.19)	(0.13)	(0.14)	(0.35)	(0.21)
R^2	0.17	0.22	0.03	0.04	0.04	0.06	0.18	0.11
F Statistic	3.27* (df = 2; 31)	5.08** (df = 2; 37)	0.81 (df = 2; 50)	0.70 (df = 2; 37)	1.11 (df = 2; 61)	1.86 (df = 2; 56)	0.76 (df = 2; 7)	1.40 (df = 2; 22)

Note: $^*p<0.1;\ ^{**}p<0.05;\ ^{***}p<0.01$

As seen in the previous studies, the growth of self-disclosure seems to start for girls sooner than for boys. As the data used in this paper concerns teenagers between the ages of 12 and 22, the youngest age category being between 12 and 13 years of age, our hypothesis was considered that adolescents between the ages of 12 and 13 self-disclose more on Facebook than any other age group. As H_3 is supporting that adolescents belong to the age group 12 to 13 account for the highest self-disclosure on Facebook, for exploring the gender difference, we split the data of age group further as males and females and perform linear regression with number of friends as control variable and Imaginary audience.

Figure 4:Gender Difference in Age Group 12-13
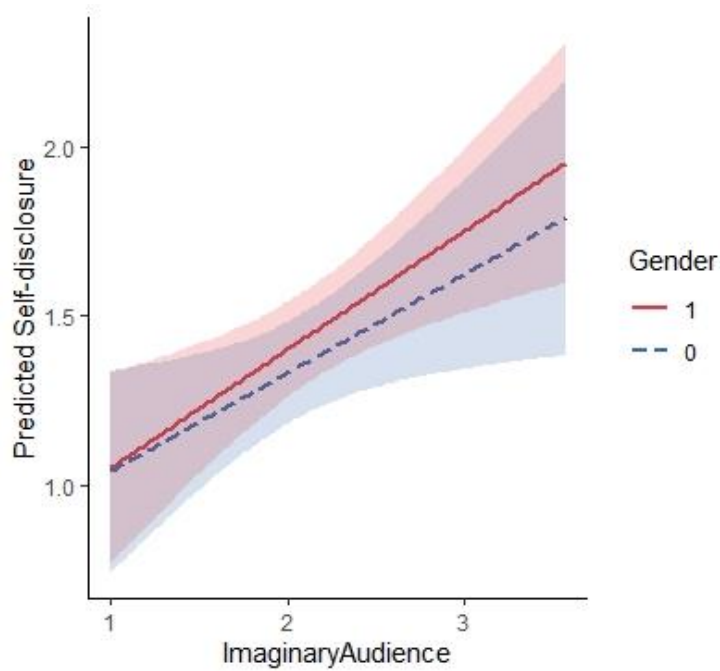
The confidence interval of males and females overlaps when Imaginary Audience is the predictor, which says that there is very less difference in the self-disclosure of males and females. However, there is marginal significance where females ($R^2 = 0.21$, $F(2,37) = 5.08$, $p = 0.01$; $\beta = 0.43$, $p = 0.005$) self-disclose more than males ($R^2 = 0.17$, $F(2,31) = 3.27$, $p = 0.05$; $\beta = 0.41$, $p = 0.02$). Hence the H_4 supports.

Discussion

This paper is an extension of the previous work, "Development as an Explanation for and Predictor of Online Self-Disclosure Among Dutch Adolescents" by Krcmar, Meer and Cingel. This research work was one of the few to analyse the association between adolescent self-disclosure and imaginary audience on Facebook, which evaluates the impact of the developmental and characteristic variables on self-disclosure. The goal of the current study was to explore whether online self-disclosure by adolescents is directly associated with the developmental variable of imaginary audience and if so, is there a difference in the way males and females present themselves on Facebook. The outcome of this analysis thus provided insights into the interaction between two the properties, self-centeredness and self-disclosure for each age category of adolescents. Further, these findings give an understanding of the relative strength of the associations in Facebook self-disclosure between developmental parameter and behavioural variable.

The results demonstrate that self-disclosure on Facebook was anticipated by the Imaginary Audience. Imaginary audience is widely examined in teenagers and young adults as they could be regarded to become a by-product of the requisite process of development, through which they cultivate not only the capacity to empathize with others but also to see themselves in their eyes (Ranzini and Hoek, 2017). Elkind and Bowen (1979) theorized that the teenage self-interest is heightened by the assumption that everyone else is obsessed over their own feelings and behaviours. Although the conceptual frameworks of (Elkind, 1967) came in about fifty years ago, well before social networking came into existence, his theory appears to still be in line with modern adolescent behaviour (Krcmar et al., 2015). When teenagers excessively care over what other people might think of them, they continuously respond to an external crowd. Thus, the way adolescents try to create impressions on the social media platforms, intentionally or inadvertently, can imply that the imaginary audience serves as a helpful tool in understanding how people portray themselves and communicate with each other on Facebook (Ranzini and Hoek, 2017). As per Lapsley, because of their belief that they might be continuously the object of someone's interest, adolescents utilize imaginary audiences to learn about themselves in various situations and analyse their own, and other people's responses (Lapsley et al., 1989). Earlier researches have demonstrated a strong association between the usage of Facebook and the concept of the Imaginary Audience, as the teenagers on the web equate their profile to that of others and try to improve their profile in a manner that aligns the presumed standards of their online peer circle (Krcmar et al., 2015). The current research is applied to the mode of

questioning with the assumption that the notion of the Imaginary Audience is linked to enhanced self-disclosure activity on Facebook. Looking at these observations combined, teenagers tend to be able to participate in self-presenting actions while behaving against and responding to the imaginary audience on Facebook. The studies emphasize on how social media could perhaps encourage this conduct by providing young users with an environment entirely for themselves where they can perceive, like and comment on all the interactions with their peers. Such findings suggest that online self-disclosure is a topic of research worth continuing to analyse, especially considering that teenagers are such active users of social media applications and they have a lot of resources for online self-disclosure. The results also indicate that the psychological factors at present can make it challenging for teenagers to understand that their virtual crowd will not necessarily react to their self-disclosures with the utmost importance of the teenager in the centre (Krcmar et al., 2015). The above analyses suggested that narcissism was favourably correlated with Facebook self-disclosure, which is aligned with earlier studies (Poon and Leung, 2011). Previous research (Blumer et al., 2017) has found that narcissistic people are more prone to share details on social networking platforms than non-narcissistic persons, whereas Poon and Leung (2011) reported that narcissism is strongly associated to content production. It appears that anyone involved in validating and paying attention is more inclined to share their posts on Facebook than someone who needs more impressive displays (Huling, 2011b). This research began with the intention to analyse the interaction and attempt to address the question 'does social media promote narcissism'. However, having a greater number of posts and being active on social networking sites more often cannot make a person narcissist, there could be other factors that come into play. That being said, the influence of narcissism on digital self-disclosure was diminished when the Imaginary Audience was added in the model, self-disclosure was no longer important with the Imaginary Audience present in the experiment. This result is significant for our conceptual model of development, personality, and usage of Facebook, as both narcissism and the Imaginary Audience were significantly associated with self-disclosure on Facebook. Thus, among teenagers, Imaginary Audience is a stronger and perhaps more potentially relevant indicator of online self-disclosure than narcissism, and thus, at least throughout puberty, developmental variables that better determine Facebook activities over more static characteristic parameters (Krcmar et al., 2015). This is a significant scientific contribution to the development since it indicates that developmental theory might be more applicable when analysing online teenage activity. It is essential to mention, that there was a strong and constructive association between narcissism and Facebook self-disclosure while the

Imaginary Audience had not been in the experiment. It seems to be possible that, when children become adults, characteristic factors will potentially influence online activity in convincing ways. Thus, developmental indicators overtake behavioural parameters with respect to their relationship with self-disclosure among young people; however, trait variables take centre stage once more with the age of people (Krcmar et al., 2015). Additionally, although the mediation analysis proved that imaginary audience was a mediator between narcissism and self-disclosure, it can also be derived that there is a significant relation between narcissism and imaginary audience. Future studies could refine the factors and check particular elements for the use of Facebook and online self-disclosure to help understand why such ties occur.

The results showed that males tend to self-disclose more than females which are aligned with the previous research. Previous research has shown that while males may not stereotypically tend to be the gender who will self-disclose when offered the chance, "males who are attracted to an opposite-sex partner might exceed women in their self-disclosure of personal information" (Derlega et al., 1985, p. 27; Huling, 2011). However, it is important to note that the difference in self-disclosure of males and females is very small. Additionally, the predictor is also an important factor, when imaginary audience is the predictor, which was the most significant predictor out of all the parameters, females tend to self-disclose more and when age and number of friends are concerned, males tend to self-disclose. Additionally, the mean of self-disclosure by men was more than women. Previous researches have assessed the differences and similarities in the interaction between males and females, based on the use of social networking platforms (Huling, 2011b). Women may conform with conventional feminine norms that place women as relationship-oriented by displaying a greater level of emotional expressiveness and taking on the role of capable relational managers (Horne and Johnson, 2018). Such regular performances by women may indicate higher rates of self-disclosure and relationship potency, that is in line with observed data that women self-disclose more than men (Dindia and Allen, 1992). Jourard and Lasakow (1958) claimed that females have been socially conditioned to self-disclose far more than men. There were notable differences in the way males and females were liked based on the level of disclosure. The male speakers were more liked when they disclosed less, on the other hand, female speakers were not liked as much when they disclosed less (Chelune, 1976, p. 1000). "Males are liked more when they adhere to the 'strong silent' role than when they are personally open" (Chelune, 1976, p. 1002). "Traditional male role discourages men from revealing their feelings and inner experiences because it might indicate their weakness" (Huling, 2011b). Low male disclosure is widely recognized as more

socially acceptable than low female disclosure. Socially constructive concepts of gender state that it is assumed that while males behave in a masculine manner (e.g., tough, instrumental, non-emotional), females behave in a feminine manner (e.g., sensitive, social, expressive); this mechanism influences males and females to perform specific gender roles that are supposed to be suitable and functional for their gender (Horne and Johnson, 2018). Nevertheless, the interaction between gender and self-disclosure is very complicated and simply assuming that women self-disclose more often is incorrect (Huling, 2011b). Future works can categorize the types of posts and examine if there is any difference in the content that males and females post.

The results showed that self-disclosure on Facebook is the highest for the age group- 12 to 13 year old, who also had the highest score of Imaginary audience. It can be noticed that self-disclosure is the highest for the youngest age group, which is reduced for other older age groups. Thus, adolescents self-disclose more in the early ages of development and it only reduces when they reach college age. As adolescents experience biopsychosocial changes with the transition from childhood to adolescence, they seem to disclose more to their friends (Papini et al., 1990). This is the age when adolescents get attached to people of their age and start spending more time with them than their family, they are attracted and influenced by people that share the same thoughts and ideas. Adolescents self-disclosure to parents becomes considerably less as physical changes associated to beginning of puberty becomes more pronounced. Adolescents adapt to these changes by communicating more with those who are experiencing similar development, like their friends (Papini et al., 1990). The age of social media has made it easier for the growing adolescents as social media provides easier and faster methods to connect with their peers. According to Papini et al. (1990), 12 year old adolescents preferred to disclose more to their parents whereas 15 year old adolescents preferred to disclose more to their friends. This scenario has perhaps changed with social media coming into the picture. This shows that with changing times and technological advancements being a major part of it, further studies on the behavioural patterns of adolescents can be assessed particularly with social developments in adolescents caused by larger culture (Krcmar et al., 2015).

The results indicates that females of the youngest age group self-disclose on Facebook more than any other age group, this finding is aligned with that of Valkenburg and Peter, (2008), in which girls had the highest amount of self-disclosure both online and offline. Although for boys it was comparatively less in the early ages and it increases eventually as they grow older, stating that boys in early adolescence have difficulty in disclosing themselves (Valkenburg and Peter, 2008). Although they concluded this for offline self-disclosure, the

same trend seems to apply for online self-disclosure (Table 5). From the results, it can be observed that when analysed collectively, males tend to self-disclose more than females. When the data is further categorised into age groups, females belonging to the youngest age group tend to self-disclose the most. This is an example of Simpson's paradox, where the aggregated result (Table 4) show that males self-disclose more, whereas when the data is further divided into groups, females account for highest self-disclosure on Facebook. Gender studies is an important area which can always be explored in social and psychological aspects so as to find answers to the common gender assumption.

It can also be noted that imaginary audience was significant in almost all the analysis of self-disclosure, which means that it is not entirely narcissistic motives that encourage adolescents to self-disclose more often, it is the feeling that an individual has being at the centre of stage and the thought that others are equally obsessed, just as they are with themselves. Hence, considering all these observations together, it is obvious that it is Imaginary Audience and not Narcissism which is a greater measure of how adolescents behave on Facebook.

This study has provided an analysis of the association between social media and adolescents and how other factors affect self-disclosure on Facebook, however there are few limitations and issues to be addressed in this study. The age of adolescents surveyed are between the age 12 and 22 years. The age range considered for each age group is very small and probably with a wider range of age, the results might differ. The lack of significant difference between imaginary audience and self-disclosure by age could be because of smaller age range. This might also reflect on other observations made. Another issue is that students were asked to solve the questionnaire themselves, it could be possible that their responses were biased. Although they were informed that filling out the questionnaire would be anonymous and that their responses were confidential, it is possible that students might have answered in a socially ideal way. It is possible that the association of imaginary audience with self-disclosure might have been overestimated. However, as imaginary audience was almost similar for all the samples and considering that the analysis made were consistent throughout, this can be a minor limitation. One of the major limitation is that the data used here is quite old, the data was taken in 2013. This also reflects in other factors such as friends on Facebook, which was not significant in the analysis. The average number of friends on Facebook in this dataset is 154, however according to a digital source (Brandwatch, 2019), the average number of friends on Facebook as of June 2019 was 338. Besides there have been other additional features on Facebook which have been implemented since 2013, such as 'stories'- posts which lasts for

24 hours and 'going live'- broadcast real time videos. Further studies can explore these features for analysing the content.

Conclusion

The present study aimed to replicate the relation between adolescent self-disclosure on Facebook and Imaginary Audience performed by Krcmar et al. (2015) and explore the gender difference in this relation.

It was observed that Imaginary Audience was positively associated to self-disclosure on Facebook. Imaginary Audience ideation originates from the concept of egocentrism, which is an ideology where individuals find it difficult to differentiate between self and other's concern. Teenager's self-interest is heightened by the fact that others are concerned by their own thoughts and behaviours (Elkind, 1967). The imaginary audience ideation applies to adolescent's assumption that others are concerned with their actions as they are with themselves (Goossens et al., 2002). Imaginary Audience with respect to self-disclosure on Facebook, is the thought that adolescents consider they are at the centre stage and their 'friends' on Facebook are the audience that they look up to for validation. Facebook allows individuals to control what others view about them. The concept of an Imaginary Audience on social media refers to the management of impressions, where individuals influence how they are viewed by the audience and what experiences they want to create.

Narcissism was positively associated to adolescent self-disclosure on Facebook. It has been observed that narcissistic individuals are more inclined to post on social networking sites than non-narcissistic persons, and that narcissism is closely related to content creation (Blumer et al., 2017; Poon and Leung, 2011). Certain characteristics and behaviours often found in narcissistic individuals show a need for social superiority, an overwhelming need for acceptance, greed, vanity, jealousy, a need for constant achievement, a sense of privilege, and a lack of compassion (Huling, 2011). Narcissism included seven dimensions: authority, self-sufficiency, superiority, exhibitionism, exploitativeness, vanity, and entitlement (Leung, 2013). However, when Imaginary Audience was controlled along with narcissism, it was no longer strongly associated to self-disclosure. It was also observed that Imaginary Audience acted as a mediator between narcissism and self-disclosure on Facebook.

It was noted that males tend to self-disclose more on Facebook as compared to females, which contrasted the older claims (Chelune, 1976; Derlega et al., 1985; Jourard and Lasakow, 1958) that female self-disclose more. It was observed that males are more inclined to initiate 'friend requests' on Facebook, search other people's profiles, use social media as a purpose of promoting their hobbies. On the other hand, females established relations only with their partner and family (Valkenburg and Peter, 2008). It was noticed that while men

may not stereotypically appear to be the group who will reciprocate self-disclosure when given a chance, "men who are attracted to an opposite-sex partner might exceed women in their self-disclosure of personal information"(Huling, 2011). Women are motivated by personal needs, such as the maintaining of strong relations with near and remote networks, men focus their continued interests around the desire to acquire details of a general nature (Krasnova et al., 2017).

When data was divided into age groups, self-disclosure on Facebook was the highest for the youngest age group, who also had the highest score in Imaginary Audience. As individuals transition from childhood to adolescence, they experience biopsychosocial changes, they self-disclose more to their friends than the family. Adolescents adapt to these changes communicating with the ones who are also going through similar changes -their friends (Papini et al., 1990). With the emergence of social media this, it has become easier for adolescents to find such friends on social media, with whom they tend to disclose more than their family.

Out of all the categories of age and gender, females of the youngest age group tend to self-disclose the most. Males tend to have high self-disclosure when youngest, which then drops for the middle aged adolescents and then increases for the oldest age group. It was observed that when the data was aggregated, males tend to self-disclose more. However, upon dividing the data into age groups, the youngest females showed highest score of self-disclosure, along with the highest score of Imaginary Audience.

This study provided an analysis of the relation between Imaginary Audience and self-disclosure of adolescents on Facebook. Future research work can focus on categorizing the content displayed by each gender so as to have a better understanding of their motive.

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