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Can Cognitive distortion influence the relationship between social media use and gratification and well-being?

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Abstract

Social media usage has become entrenched in the lives of today's young people. The use of social media has a significant negative influence on mental health. However, there is limited research conducted on loneliness and life satisfaction. Even so, there is still no evidence found of a separate role of cognitive distortion in social media gratification and well-being (loneliness and life satisfaction).The purpose of the study is to explore the combination of crucial factors responsible for well-being. The theoretical framework created to determine the impact of motives of social media usage (MSMU) on well-being through cognitive distortion, the current study has incorporated the uses and gratification theory (U&G). Based on data received from 660 Indian participants, a mediation model was created to investigate the relationship.The findings demonstrated that different MSMU and cognitive distortions have different effects on wellbeing. Furthermore, cognitive distortion was an important factor to mediate the association between specific MSMU usage and well-being. The current study offers a model to explain well-being from loneliness and satisfaction with life perspectives based on the uses and gratification theory (U&G). The findings of this study are compelling enough to persuade parents, educators, and health experts to counsel children about cognitive bias and social media use.

Keywords: social media; well-being; uses and gratification theory; cognitive distortion, loneliness; satisfaction with life

1.1 Introduction

Smartphones and internet use have become essential components of daily life.According to a prior survey, social media forums are used by more than two-thirds of internet users and around one-third of the world's population (Kemp, 2017). When we look at platform penetration rates among qualified audiences, we observed that social media is used by 93.33 percent of the world's 4.8 billion internet users and 85 percent of the world's 5.27 billion mobile phone users (Dean, 2021).Social media forums are a web-based platform that enables users to build social networks or partnerships with those who have similar personal or professional interests, hobbies, backgrounds, or in-person contacts (Obar, 2015). Individuals utilize social media platforms for a myriad of purposes (Alhabash and Ma 2017; Khan 2017; Whiting and Williams 2013), the most notable of which is to form and maintain online and offline relationships (Kuss and Griffiths 2011, 2017).

The consequences of social media on well-being become a major issue among young adults. The majority of studies on social media usage and well-being focused onthe frequency, duration of social media use (Yan et al., 2017), and usage of various types of social media platforms (Shukla & Chouhan, 2020). Considering the social media usage by young adults, the frequency and duration of social media usage may not be enough to identify the underlying reason for diminishing well-being. Therefore, to understand comprehensively the consequences of social media usage, more studies are required from different perspectives such as uses and gratification and psychological factors.

The Uses and Gratifications Theory (U> Katz et al. 1973) explains the gratifications desired and achieved through social media use, as well as how these gratifications vary depending on individual traits. Whiting and Williams (2013) described social media's different applications and pleasures as social contact, information searching, pass time, entertainment, relaxation, communicatory utility, convenience utility, exchange of views, information exchange, and monitoring of others.Despite the benefits and uses of the social media, multiple studies have found that usage is associated with a variety of psychological issues such as depression (Banjanin et al., 2015), anxiety (Shukla & Chouhan, 2020) loneliness (Bonsaksen et al., 2021) even suicidal tendencies (Duncan & Luce, 2020).There is only a limited body of research on the use of social media based on U&GT (Floros and Siomos, 2013; Wan, 2009).

The origins of the U & G theory can be found in the study of mass communication (Gan and Li, 2018). According to U and G theory, all types of media have social and psychological incentives that justify the usage of one media above others to suit a specific individual need (Katz and Blumler, 1974). Different rewards influence user behavior patterns, according to the U & G hypothesis. The reason to utilize specific media and the desire to use common social media is reflected in U & G's theory (Gan, 2017). The present study utilizes the U&GT to examine the social media usage effect on individual well-being from a use and gratification perspective.

However, as the basic purpose of social media is to connect with their network cannot be completely achieved. When someone is unable to express his/her thoughts among their friends on social media or others are not taking them seriously, will feel dissatisfied and consequently may experience loneliness (Leung, 2002). This might happen when youth experienceembarrassment to post a status or comment on social media, and as a result, they don't receive any response from their friends on social media.Loneliness is defined as an unpleasant emotion that occurs when there is a discrepancy between actual and expected interpersonal warmth and companionship (Al Khatib, 2012).As a result, loneliness is nearly always associated with a negative emotional state (Young, 1982).It also implies that the perceived quality of individual relationships is a subjective view mediated by an individual's cognitive judgment of the fit between the current relationship quality and the expected relationship standard (Gierveld et al., 2006).Several studies found that excessive social mediausage leads to loneliness (Pittman & Reich, 2016; Thomas et al.,2020). Furthermore, studies are required to understand the relationship between social media usage and loneliness in other demographic groups (Pittman & Reich, 2016).

There were various factors responsible for influencing well-being among social media users for example self-esteem (Kircaburun, 2016), social comparison (Vogel et al., 2014), sleep quality (Woods& Scott, 2016), etc. To examine the well-being of social media users, more studiesare required to investigate from various other perspectives. Many researchers focus on this topic because mental health is commonly described as a general outcome of social media studies, with effects on psychological indicators such as pleasure and life satisfaction. (Chou and Edge, 2012), anxiety, and life quality (Bevan et al., 2014), and depression (Tandoc et al., 2015). Despite an increasing number

of studies, the link between social media use and well-being remains a matter of debate (Pantic, 2014).

Social media use leads to not just loneliness but also a cognitive distortion.One of the studies found that social media users are characterized by distorted thinking as compared to a random sample (Bathina et al., 2021). Hence, cognitive distortion can be one of the important factors which are still missing to understand the well-being of social media users.In problematic Internet use, cognitive distortion plays a key role (HuanHuan, &Su, 2013). Excessive irrational, illogical, and destructive ideas are referred to as cognitive distortion (Nyarko, & Amissah, 2014). A cognitive distortion is the tendency to perceive or distort the meaning of events in ways that are consistent with negative self-perceptions, the environment, and the future.

Aaron T. Beck developed the cognitive perspective in the early 1960s as a result of his research with depressive patients at the University of Pennsylvania.Many psychological problems have distorted thinking patterns, according to the cognitive approach (Ağır, 2007). The cognitive approach includes these flawed and inefficient methods of thinking that occur during information processing. Individuals with cognitive distortions have dysfunctional behaviors and emotions, as well as negative views about themselves and others (Ahmet, 2010; Rnic et al., 2016). A cognitive distortion is defined as automatic thoughts that develop are often untrue, and they are created by cognitive distortions, which are systemic logic errors inherent in people's views.Excessive social media use can cause thinking errors relating to the use of social media and other events, which can induce cognitive distortion in teenage social media users. Specific cognitive errors will be linked to internet usage interpretations (HuanHuan&Su, 2013). A rumination is a form of cognitive error that arises when children are concerned with social media rather than other aspects of their lives. When teenagers have unfavorable self-assessments, they are motivated to use social media to gain positive responses from others, whereas all-or-nothing thinking is a form of thinking error that makes them feel useless without social media or that no one likes them when they are not online.

People who have low self-esteem, life satisfaction, and few offline interactions compensate by utlizing social media to get more friends and popularity (Barker, 2009; Mehdizadeh, 2010), according to the "social compensation" theory (Kraut et al., 2001). The evaluation of one's own life as a whole using cognitive processes is known as life satisfaction (Diener, 2006). Subjective well-being and happiness have long been recognized as important aspects of life (Dost, 2010). Individuals compare their desired life with their existing existence to arrive at the concept of life satisfaction (Özer, 2004). Life happiness is directly tied to how people judge their lives [65] because it is most people's primary aim in life.Over the years, an amount of research has been gathered on the association between life satisfaction and social media use (Bachnio&Przepiorka, 2018; Marino et al., 2018).However, university students' satisfaction with life and their use of social media received less attention.

As in prior studies, U & G is employed to explain the underlying motivations for social media forum usage (Katz et al. 1973). The association between social media forum usage and mental health is investigated because aperson'sinspiration to use social media forumscan be a factor in

becoming troublesome (Kuss and Griffiths 2011, 2017). Indeed, because there is so little research in this field, and evaluation of the most regularly used social media forumswill make a substantial contribution. However, because the majority of the research so far has focused on Facebook use, it is noted that the motivations underpinning the use of each platform may be different (Ryan et al. 2014).It's crucial to understand social media use in the perspective of U&GT and to identify which use motives and gratifications lead to detrimental well-being.The overall quality of life and emotional well-being are linked to factors like friendship and healthy communication (Khaleque, 2004).

Individuals with cognitive distortions may approach interactions with negative expectations, and this attitude may lead to failure in building intimate friendships, which can eventually lead to loneliness (Morahan-Martin, 1999) and decreased satisfaction with life.

The association between cognitive distortions and loneliness is demonstrated by the elucidation of loneliness as unsatisfying rather than the regularity of social relationships (Goswick& Jones, 1982).

As a result, several researchers have felt compelled to concentrate on cognitive factors to explain loneliness (Nasir et al., 2016). Hamamc and Duy(2007) discovered that cognitive distortions connected to evadingintimacyhave a negative impact onsolitude feeling (Nasir et al., 2016). This indicates that people who avoid forming intimate bonds in their social contacts will live a more solitary lifestyle and are more likely to be lonely. It is common knowledge that lonely people have substantial cognitive distortions (Halamandaris& Power, 1997). Because they approach partnerships with negative expectations, lonely people fail to form close relationships (Morahan-Marti, 1997).On the basis aforementioned findings; the present studyhypothesized;

H1: MSMUeffect the loneliness of an individual.

H2: MSMUaffects the cognitive distortion of an individual.

H3: Cognitive distortion mediates the relationship between various MSMU andloneliness

Majorly social media studies were conducted on negative perspectives (depression, anxiety, fear of missing out) of individuals' life, whereas certain studies required a positive perspective such as satisfaction with life (SwL) to understand the social media impact on well-being. Individuals' mental well-being is strongly associatedwith life satisfaction (Guney, 2009).SwL stands for "a cognitive, judging process" in life satisfaction (Diener et al., 1985, p. 71). According to Shin and Johnson (1978), life satisfactionis defined asthe "global evaluation of a person's quality of life according to his predetermined- determined criteria" (p.478). Such satisfaction judgments are compared from one's circumstances to what is considered to be a suitable norm. Subjective well-being (SWB) is characterized by a focus on the individual's judgments (Diener, 1994).Nabi et al. (2013) found that accessing social media boosted life satisfaction. Furthermore, among all of the perceived benefits of utilizing social media, perceived social support is one of the key factors driving social media use and, ultimately, an individual's well-being (Liu and Yu, 2013).Ang et al. (2015) did a study on computer-mediated communication and life satisfaction and concluded that virtual relationships assist in the

fulfillment of an individual's psychological needs, therefore increasing life satisfaction.According to the reviewed studies, some researchers found that social media improved life satisfaction (Liu and Yu, 2013), while others claimed the association between social media use and life satisfaction was detrimental (Liu and Yu, 2013). (Brooks, 2015). It has been observed that despite the widespread use of social networking sites, relatively little study has been conducted on determining the causes of SNS use and the psychological impact of SNS use on young adults.

The incidence of cognitive distortions is based on social relationships. Cognitive distortions are linked to maintaining good social connections, obtaining relationship satisfaction, and resolving conflict (Beck, 2011). Social media is a relevant platform to make a new relationships and maintain the same. Hencecognitive distortion can be one of the factors which can influence the relationship between social media usage and satisfaction with life. Therefore, based on the aforementioned findings, we hypothesized;

H4: MSMU affects the satisfaction with the life of an individual.

H5: Cognitive distortion mediates the relationship between various MSMU and satisfaction with life

Methods

Participants, design,and procedure

The respondents were recruited using the snowball sampling method in March 2021. Students aged 18 to 19 years old responded to the current survey. Except for schools and universities, restaurants, clubs, gyms, and other establishments opened with the COVID-19 protocol during the survey period. Since schools and universities were closed, the survey was conducted entirely online. The questionnaire included numerous questions that assisted the researcher in determining the participant's eligibility for the study. The screening questionnaire comprised a few factors that were used to identify students.First, individuals are required to be 18 years old. Second, all participants have access to the Internet. Finally, participants must have accounts on many social media platforms, spend substantial time on social media regularly, and use Android smartphones. The university's ethical committee approved the current study.

The snowball sampling method was used to recruit new respondents by utilizing existing respondents. It is a non-probability referral chain-forming sampling approach (Ghaljaie et al., 2017). The respondents were encouraged to refer their friends, family, and acquaintances to participate in the study using the primary data collected at the start of the study. When the population is unknown, the Snowball sampling technique is utilized. Because institutions were closed due to COVID-19, this sample approach was used in this study because participants were not physically available at the university. Recently, a few research have effectively employed this strategy to explore various mental health disorders in the community (Arafa et.al., 2021).

Students from Jaypee University of Engineering and Technology were initially approached to participate in the study. Following the students' consent, they were urged to contact as many

interested friends as possible to participate in the study; therefore, a chain was formed for the participants to take part in the study. Students were offered non-monetary incentives, such as more time to submit their projects, to encourage them to participate in the study and spread the word to their friends. Respondents were anonymous and may withdraw at any moment, keeping the participation voluntary.The ethical committee of the university expressly addressed the context, study aims, and data confidentiality on the first page of the form. The survey was hosted on Google Forms, and an anonymous link was created to distribute to the target audience. Participants signed the study's consent form and answered questions about their sociodemographic factors, COVID-19, social media usage, cognitive distortion, motivations for using social media, loneliness, and satisfaction with life.

Next, participants were requested to install an android application called "Stay Free" on their respective android devices after getting the consent form with a few eligibility questions and being selected for the study. Stay Free is a self-control and productivity app that tracks phone usage and time spent on various activities such as social media (Facebook, Instagram, Twitter, Whatsapp, etc.), entertainment (YouTube, etc.), education (Google Classroom, online class app, etc.), gaming (Ludo, etc.), utility activity, and so on (Waddilove, 2020).The respondents were advised to keep the Android app for at least seven days to track their social media usage. Participants must provide screenshots using Google Form after seven days of normal social media usage (Figure 1). The study employed two-phased approaches. Participants (N=50) were first contacted over the phone and asked to fill out a consent form as well as a few eligibility questions, and then they were asked to send the same consent form as well as other staged instructions (such as eligibility questions, android application installation, and data reporting) to their friends, family, and acquaintances.

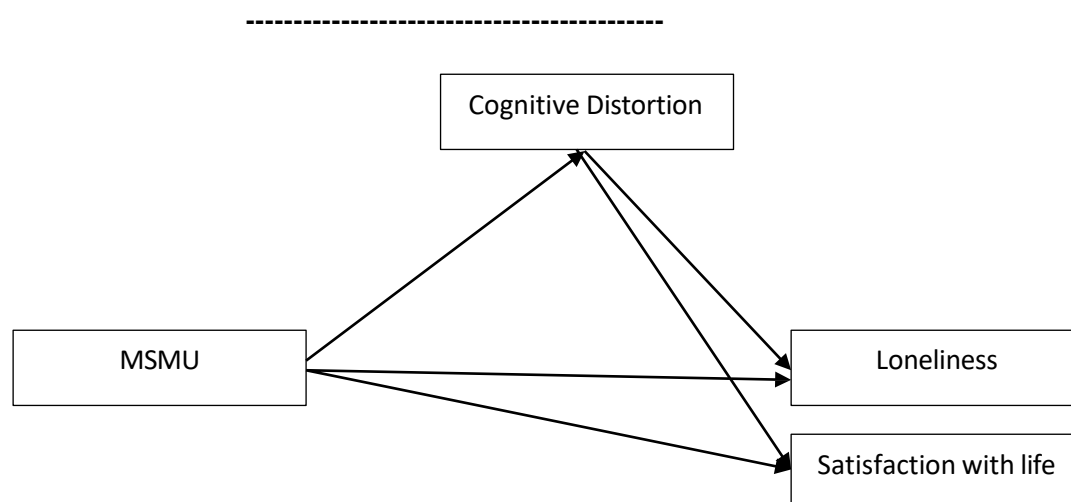

Figure 1: Proposed theoretical model

Participants

The survey included 908 people, 9 of whom tested positive for COVID-19, and 31 of whom were deemed unwell due toother chronic diseases. A total of 660 people (76%) completed the survey

and were considered for advanced statistical analysis. The sample contains 52.1 percent men (n = 344) and 47.9% women (n = 316). Participants came from 13 Indian states, with 44.8 percent (n = 296) from Uttar Pradesh and 29.1% (n = 192) from Madhya Pradesh. Furthermore, 87.3 percent of the subjects (n = 576) have never had COVID-19 symptoms before (Table 1).

Factors	N (%)	M (SD)	Min-Max	Reliability (α)
Gender		1.47 (0.50)	1-2	
Male	344 (52.1)			
Female	316 (47.9)			
Location		8.79 (2.63)	1-13	
Bihar	24 (3.6)			
Chhattisgarh	6 (0.9)			
Gujarat	6 (0.9)			
Haryana	8 (1.2)			
Jharkhand	6 (0.9)			
Maharashtra	8 (1.2)			
Madhya Pradesh	192 (29.1)			
New Delhi	36 (5.5)			
Rajasthan	64 (9.7)			
Telangana	2 (0.3)			
Uttar Pradesh	296 (44.8)			
Uttarakhand	2 (0.3)			
West Bengal	10 (1.5)			
Uses of social media	660	89.14 (16.07)	38-127	0.908
MER	660	13.71 (4.20)	4-20	
MNPS	660	8.95 (2.57)	3-15	
MEPO	660	10.94 (3.67)	4-20	
PT	660	6.85 (1.71)	2-10	
TMT	660	14.88 (4.12)	5-25	
EMT	660	12.75 (3.53)	4-20	
IAE	660	21.03 (4.66)	6-30	
Cognitive Distortion	660	83.81 (18.79)	28-139	0.934
Loneliness	660	12.47 (4.34)	3-20	0.904
Life Satisfaction	660	19.16 (6.18)	5-30	0.905

Table 1 Descriptive characteristics (N=660)

Measure

The survey included ad-hoc sections and standardized questions. There were three sections, detailed below.

Section A contains the questions related to social-demographic characteristics and health status. Participants were asked about their gender (male and female), location (State), COVID-19 symptoms or tested positive (Yes or N,o), and chronic disease (Yes or No). The purpose of asking the COVID-19 and chronic disease-related questions is to ensure the participants should not be diseased with COVID-19 or any chronic disease at the time of the survey.

Uses and Gratification of social media

Facebook Usage Aim (FAU) (Hew, 2011) was originally designed to identify the aim of using Facebook. This scale was used to identify the user's objective to use Facebook and Instagram due to almost the same characteristics found in both social media platforms named as motives for social media use (MSMU). The scale included 30 items which were classified intoseven various subscales for example a. Maintain existing relationships [MER], b. Meet new people and socialize [MNPS], c. Make express, present, or more popular oneself [MEPO], d. Pass time [PT], e. As a task management tool [ATMT], f. Entertainment [ENT] g. informational and educational [IAE] in the form of a 5-point Likert scale. The scale has good internal consistency (0.91), test-retest reliability, and construct, discriminant, convergent, and divergent validity.

Cognitive Distortion

Next in the line, section B comprises questions from the cognitive distortion scale (CDS). Cognitive distortion (Covin et al., 2011) is a 20-item measure of self-reporting, measuring the 10 varieties of cognitive distortion (mindreading, catastrophizing, all-or-nothing thinking, emotional reasoning, labeling, mental filtering, overgeneralization, personalization, should statements, minimizing or disqualifying the positive) in both conditions – social and work-related achievement. Making use of a 7-point Likert scale, the respondents are asked to report on the type of thinking in the range of 1-7 (1 = Never, 7 = All the time) in social and achievement contexts. The respective items when added up give the total, social and achievement scores. Existing studies have highlighted that at the undergraduate level and in the clinical trials, the CDS turned out with fine psychometric properties (Covin et al., 2011; Özdel et al., 2014). The CDS has good psychometric properties concerning including internal consistency, test-retest reliability over two weeks, and construct, discriminant, convergent, and divergent validity.

Section C includes thewell-being-related questions.Well-being measured through various subscales includesloneliness and satisfaction with life.

Loneliness

Three- item social loneliness scale (TILS; Hughes et al., 2004) was developed to measure the perception of an individual's social connectedness. Participants were asked questions for example how often they felt that they: (1) lacked companionship; (2) were left out; and (3) were isolated from others, on a 3-point Likert scale ranging from 1 'hardly ever', to 3 'often'. Individuals' responses

were added, with higher scores representing greater loneliness (ranging from 3 to 9). In this study, TILS has an excellent internal consistency ($\alpha = 0.82$).

Satisfaction with life

Satisfaction with life is measured through 5-item satisfaction with life scale developed by Diener et al. (1985) to assess overall judgment of one's life. Participants were asked to report their responses to each of the seven questions on a 7-point Likert scale ranging from 1-to 7 (1-Strongly disagree, 7-strongly agree). The scores were added for total scores representing low scores for the low level of life satisfaction and high score for the high level of life satisfaction. The scale has demonstrated excellent internal consistency ($\alpha = .93$) and reliability Diener et al., 1985).

Statistical Analyses and Results

The statistical analysis was conducted using SPSS version 26and Jamovi 2.2.5based on R statistical tool (IBM, Armonk, NY, USA; Jamovi Project, 2021) to perform descriptive statistics analyses, reliability analyses, and bivariate correlation.

To avoid over-inflated indirect effects (Hayes, 2013), non-parametric bootstrapping analysis (Preacher & Hayes, 2004) was used to test the mediation model of OCD and physiological symptoms as sequential mediators of the relationship between MSMU and well-being. Using 5000 bootstrap samples, standard errors and 95% confidence intervals (CI) were obtained for the direct, indirect, and composite effects of each form of EA on quality of life. If 95% of the indirect effects of correction and acceleration of CI deviation (lower limit, LL and upper limit, UL) do not include 0, then this intermediate analysis is important (Preacher et al., 2007, Preacher & Hayes, 2004). The Mediation Model utilizes the Hayes process macro in SPSS Model 1 to investigate direct and indirect hypothesized correlations (Hayes, 2013). This method estimates indirect effects more accurately than the traditional theory-based Sobel test and does not require a normal sample distribution (Hayes, 2013).

Preliminary Analyses

Current cross-sectional studies use data from a single source, notwithstanding its limitations. The researchers examined the challenges with cross-section data in mediation analysis and quantified statistical bias by evaluating the influence of longitudinal mediation effects on this type of data (Maxwell et.al., 2011). Variance, skewness, and kurtosis were calculated and found to be within acceptable bounds, with skewness falling between -3 and +3 and kurtosis falling between -10 and +10, respectively (Brown, 2006).

Correlational Analysis

Table 2 represents correlation analysis and descriptive statistics. The correlation results indicated that cognitive distortion was negatively associated with MNPS (r = -.080, *p*< 0.05), positively associated with TMT (r = .138, *p*< 0.01) and loneliness (r = .140, *p*< 0.01). Furthermore, it was found that the most associated motive of social media was meet new people and socializing (MNPS) and task management tool (TMT) with loneliness (r = .176, *p*< 0.01; r = .213, *p*< 0.01) and satisfaction with life (r = -.347, *p*< 0.01; r = -.095, *p*< 0.05) as compared to other motives of social media. Surprisingly, if the user uses social media for information and educational purpose it decreases loneliness (r = -.139, *p*< 0.01). It was also found that cognitive distortion was positively associated with loneliness. In other words, as the cognitive bias of the user increases, the risk of loneliness (r = .140, *p*< 0.01) also increases. Gender and location were not associated with well-being except gender associated with loneliness (r = -.084, *p*< 0.05), in other words, females were more feel loneliness as compared to males.

	Gender	LOC	MER	MNPS	MEPO	PT	TMT	ENT	IAE	COG	LON	SWL
Gender	**1**											
LOC	-.069	**1**										
MER	.046	.029	**.813**									
MNPS	-.003	.079*	.545**	**.754**								
MEPO	.043	-.094*	.413**	.254**	**.715**							
PT	.101**	-.053	.351**	.260**	.479**	**.747**						
TMT	.016	-.078*	.285**	.129**	.510**	.375**	**.764**					
ENT	.100**	-.062	.308**	.146**	.458**	.447**	.492**	**.729**				
IAE	.090*	.051	.222**	.052	.228**	.242**	.352**	.351**	**.741**			
CD	-.059	-.020	-.049	-.080*	.040	.052	.138**	.038	.056	**.784**		
LON	-.084*	-.062	.151**	.176**	.336**	.055	.213**	.121**	-.139**	.140**	**.906**	
SWL	-.025	.059	-.286**	-.347**	-.306**	-.168**	-.095*	-.169**	.038	.025	-.409**	**.824**

Table 2 Person correlation between various construct

Note. ∗ p ≤ .05, ∗∗p ≤ .01, ∗∗∗p ≤ .001.

LOC: location, MER: Maintain existing relationships; MNPS: Meet new people and socializing; MEPO: Make express, present or more popular oneself; PT: Pass time; TMT: As a task management tool; ENT: Entertainment; IAE: informational and educational, LON: loneliness, SWL: satisfaction with life, CD: cognitive distortion

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Regression Analysis

Non-parametric bootstrapping was used to test the indirect effect. If the null or 0 occurs within the lower and upper bounds of the 95 percent confidence interval, the population indirect impact is assumed to be 0. If 0 falls beyond the confidence interval, it is assumed that the indirect effect is non-zero.

From Table 3, it was revealed that there was a significant direct effect ofMER
(β = .163, p < 0.01), MNPS (β = .318, p < 0.01), MEPO (β = .391, p < 0.01),TMT

(β = .208, p < 0.05), ENT(β = .319, p < 0.01)on loneliness, similarly MER (β = .-.419, p < 0.01), MNPS (β = -.833, p < 0.01), MEPO (β = -.517, p < 0.01),PT (β = -.612, p < 0.01), TMT (β = -.150, p < 0.05), ENT (β = -.743, p < 0.01)on satisfaction with life. It was also found that MNPS (β =.-.580, p < 0.05) and TMT(β =.628, p < 0.05) significantly influence the cognitive distortion of an individual.Hence H1, H2, and H4 were partially accepted. In other words, all the uses and gratification of social media were not significant.

	Loneliness					Satisfaction with life					
Direct effect	**Estimate**	**SE**	*t*	*LLCI*	*ULCI*	**Direct effect**	**Estimate**	**SE**	*t*	*LLCI*	*ULCI*
MER→ CD	-0.2191	0.174	-1.25	-.5610	.1228	MER→ CD	-.2191	.1741	-1.258	-.5610	.1228
MER→ LON	0.1634**	0.0395	4.137	.0859	.2410	MER→ SWL	-.4196**	.0551	-7.620	-.5277	-.3115
CD→ LON	0.0341**	.0088	3.864	.0168	.0515	CD→ SWL	.0035	.0123	.2883	-.0206	.0277
MNPS→ CD	-.5806*	.2834	-2.048	-1.137	-.0241	MNPS→ CD	-.5806*	.2834	-2.048	-1.137	-.0241
MNPS→ LON	.3180**	.0642	4.954	.1920	.4440	MNPS→ SWL	-.8339**	.0880	-9.472	-1.006	-.6610
CD→ LON	.0358**	.0088	4.069	.0185	.0531	CD→ SWL	-.0010	.0121	-.0793	-.0247	.0227
MEPO→ CD	.2047	.1991	1.028	-.1863	.5957	MEPO→ CD	.2047	.1991	1.028	-.1863	.5957
MEPO→ LON	.3912**	.0431	9.077	.3066	.4758	MEPO→ SWL	-.5173**	.0625	-8.282	-.6400	-.3947
CD→ LON	.0293*	.0084	3.473	.0127	.0458	CD→ SWL	.0122	.0122	.9985	-.0118	.0362
PT→ CD	.5664	.4274	1.3250	-.2730	1.405	PT→ CD	.5664	.4274	1.325	-.2730	1.405
PT→ LON	.1211	.0981	1.234	-.0716	.3138	PT→ SWL	-.6127**	.1390	-4.407	-.8857	-.3398
CD→ LON	.0318*	.0089	3.5553	.0142	.0493	CD→ SWL	.0110	.0127	.8708	-.0138	.0359
TMT→ CD	.6280*	.1759	3.5699	.2826	.9734	TMT→ CD	.6280*	.1759	3.569	.2826	.9734
TMT→ LON	.2080**	.0403	5.1634	.1289	.2872	TMT→ SWL	-.1509**	.0587	-2.570	-.2662	-.0356
CD→ LON	.0260**	.0088	2.9453	.0087	.0434	CD→ SWL	.0127	.0129	.9864	-.0126	.0380
ENT→ CD	-.0300	.1790	-.1675	-.3815	.3215	ENT→ CD	-.0300	.1790	-.1675	-.3815	.3215
ENT→ LON	.3196**	.0391	8.1761	.2429	.3964	ENT→ SWL	-.7439**	.0513	14.507	-.8445	-.6432
CD→ LON	.0328**	.0085	3.8526	.0161	.0495	CD→ SWL	.0071	.0112	.6349	-0148	.0290
IAE→ CD	.2373	.1758	1.3496	-.1079	.5825	IAE→ CD	.2373	.1758	1.349	-.1079	.5825
IAE→ LON	.0384	.0404	.9516	-.0409	.1177	IAE→ SWL	-.2617**	.0571	-4.580	-.3738	-.1495
CD→ LON	.0319*	.0089	3.5671	.0143	.0495	CD→ SWL	.0112	.0126	.8849	-.0136	.0360

Table 3 Bootstrapping results of direct effects
MER: Maintain existing relationships; MNPS: Meet new people and socializing; MEPO: Make express, present or more popular oneself; PT: Pass time; TMT: As a task management tool; ENT: Entertainment; IAE: informational and educational, LON: loneliness, SWL: satisfaction with life, CD: cognitive distortion

There was an indirect effect also evaluated (in figure 4) in which only MNPS and TMT were influencing loneliness through cognitive distortion. Therefore, H3 was partially accepted and H5 was rejected.

(95% bias-corrected confidence interval method)									
Loneliness						**Satisfaction with life**			
Indirect effect	**Effect**	**SE**	**LL**	**UL**		**Effect**	**SE**	**LLCI**	**ULCI**

MER → CD→LON	-0.0075	0.0059	-.0199	.0039	MER → CD→ SWL	-.0008	.0038	-.0100	.0056
MNPS → CD→ LON	**-0.0208**	**0.0111**	**-.0446**	**-.0015**	MNPS → CD→ SWL	.0006	.0085	-.0169	.0182
MEPO → CD→LON	0.0060	0.0074	-.0072	.0228	MEPO → CD→ SWL	.0025	.0047	-.0057	.0140
PT → CD→LON	0.0180	0.0157	-.0094	.0534	PT → CD→ SWL	.0062	.0112	-.0122	.0330
TMT → CD→ LON	**0.0164**	**0.0078**	**.0034**	**.0338**	TMT → CD→ SWL	.0080	.0096	-.0096	.0293
ENT → CD→LON	-.0010	.0066	-.0139	.0129	ENT → CD→ SWL	-.0002	.0027	-.0067	.0051
IAE → CD→LON	.0076	.0059	-.0027	.0208	IAE→ CD→ SWL	.0027	.0047	-.0044	.0149

Table 4 Bootstrapping results of indirect effects

Discussion

The objective of the present study was to analyze whether the usage of social media for gratification and cognitive distortion or its combination were resulting in the poor well-beingof individuals. This study not only concentrated on the direct effects of MSMU on loneliness and satisfaction with life; but also investigated the effect of MSMU on loneliness and satisfaction with life through cognitive distortionin a cross-sectional study.

In the first finding of the study, a positive correlation was determined between gender and PT, ENT, and IAE and a negative correlation with loneliness. In other words, malesused PT, ENT, and IAE more as compared to their counterparts, whereas females felt lonelier as compared to males. It may be due to females not using social media as compared to males and at the same time due to Covid-19, everybody is stuck in their homes which makes females experience loneliness. It was also found that MNPS was associated negatively and TMT related positively with cognitive distortion. When an individual makes new friends and increases socialization it decreases cognitive error which makes a significant contribution to the literature as well. To decrease the cognitive error of an individual, practitioners can recommend making new friends and talking to them for socialization.

Almost all the uses and gratification of social media are associated with loneliness and satisfaction with life. For example, MER, MNPS, MEPO, ENT, and TMT were positively related to loneliness whereas, IAE was associated negatively with loneliness. If the usage of social media for individual purposes was less, it decreases loneliness, and when an individual increase the usage of IAE, it decreases the loneliness. This is due to the probably cultural influence dominant in the association. Indian students majorly use IAE content for academic or competitive exams and study in groups or take help from their batchmates and seniors. When students use social media for

information and educational purpose for a lesser period, he/she misses the habit of group study or misses face-to-face interaction, which increases the feeling of loneliness otherwise when an individual increases their time on social media for the same purpose it becomes habitual to study alone and decreases the feeling of loneliness whereas, other motives of social media increase the loneliness which may be due to these motives content on social media does not engage people and induction of feeling of boredom and loneliness. Eventually, MER, MNPS, MEPO, PT, ENT, and TMT were negatively associated with satisfaction with life. In other words, when these uses of social media increase it decreases the satisfaction with life. In other words, if an individual uses social media for whatever reason, it increases the psychological disturbance in terms of cognitive distortion, envy, etc. which leads to less satisfaction with life.

MSMU and cognitive distortion were found to be important factors influencing all aspects of well-being i.e. loneliness and satisfaction with life, according to the findings. Previous studies emphasized mainly the time of social media usage or active-passive involvement in it,the current study makes an important contribution that specific motives of social media usagewereresponsible for a combination of cognitive distortion to influence well-being.

As previous studies revealed that use and gratification were important factorsthat affect mental health (Muhammad, 2018). The direct effect was evaluated and found that MER, MNPS, MEPO, TMT, and ENT positively influenced loneliness whereas MER, MNPS, MEPO, PT, TMT, ENT, and IAE negatively influenced satisfaction with life. In other words, as social media usage increases, it increases the risk of loneliness for a specific purpose and ultimately decreases life satisfaction. Hence, it's important to limit social media usage for the purpose where the risk increases for well-being.

Mediation analysis revealed that MNPS and TMT werecrucial combinational factors with cognitive distortionaffecting the loneliness of an Individual.In other words, users may spend time for various purposes, but it's important to be more conscious from a cognitive bias perspective.If an individual does not overcometheir cognitive error, it diminishes their mental health. Therefore, academicians and practitioners need to emphasizedeveloping positive thought processes for an individual.

This study has significance for social media and well-beingpractice both theoretically and practically. The impact of social media time and active-passive usage on mental health has been the focus of the previous studies. This study took a step further, to identify which social media motive can influence well-being and whether the combination with cognitive distortion makes it worse? The current study looks into the link between social media motivations and cognitive distortion in predicting loneliness and life satisfaction. The result then extends the use of the U&G theory in the social media literature by examining the impacts of various social media uses and gratification on

well-being (loneliness and satisfaction with life) through cognitive distortion. Therefore, cognitive behavioral therapy (CBT) becomes important for excessive social media users as well where cognitive modification techniques can be used to further current the cognitive bias. Furthermore, our results indicated that nearly all the motives of social media users have an impact on loneliness and satisfaction with life.

The influence of social media may be felt all around the world. The current study will assist parents, educators, and health professionals. Users should limit their social media usage, according to the conclusions of the current study; it should not be excessive, since this may have a detrimental impact on well-being. Users should also modify their cognitive thinking to help them overcome the negative effects of social media usage. In this instance, counselors and health practitioners can be consulted.

Limitation and Future Research

There are a few limitations to this study that must be acknowledged at the time of result interpretation. Firstly, the current study was cross-sectional, more studies can be conducted from a time frame perspective. The selection of the participants was nonprobabilistic incidental. The participants were from India only, therefore, the findings may be limited to this country. Future studies can be conducted from various cultural perspectives as moderating or mediating variables. We don't know about the impact of Covid-19 on loneliness and satisfaction with life as a survey conducted during the pandemic. Therefore, a longitudinal study and mixed-method are required for specific results. The sample used in the current study was the young aged group, other age groups and gender studies can be conducted to generalize the result. The combination of MSMU and cognitive distortion was examined, but which kind of personality will be more cognitively distorted with other confounding factors such as social comparison and self-esteem is worth investigating. A comparative study of image-based social media and text-based social media and their association with the cognitive distortion which may affect well-being.

Conclusion

The current study applies the U&G theory to investigate the impact of social media consumption, social media gratification, and cognitive distortion on well-being. The current study's findings present empirical reasoning and information about social media by illustrating the impact of gratifying cognitive distortion and its combination of loneliness and life happiness. Previous research has looked at the influence of social media on mental health, including depression and anxiety; however, this study is important because it shows how social media affects well-being, particularly loneliness and life satisfaction. This is the first study to illustrate the impact of cognitive distortion in the relationship between social media use and loneliness and life satisfaction.

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