Research Paper

Predicting Body Image Concerns, Social Isolation, and Mood by the Amount of Social Media Addiction

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ABSTRACT

Objective: Internet usage is widely increasing among the new generation, shaping a crucial aspect of people's lives. Social media use can influence body image concerns, social isolation, and social mood. This study aims to assess body image concerns, social isolation, and mood based on the amount of social media use.

Methods: This study was conducted using a descriptive and correlational method. The study population included all people aged between 20 and 40 years in Shiraz City, Iran, among which 311 people (191 women and 119 men) were selected by the convenience sampling method. The tools used in this study were the body image concerns inventory (BICI, 2005), the social isolation assessment standard questionnaire (SIASI, 2013), the positive and negative affect schedule (PANAS, 1988), and the social media addiction scale (SMAS_AF, 2017). Correlation coefficients (using the SPSS software) and structural equation modeling analysis (using AMOS statistical software) were employed to investigate the variables of the social isolation prediction model.

Results: The results of the study showed that mood (β=0.15, P=0.007) and use of social media (β=0.19, P=0.0001) can predict social isolation with the mediating role of body image concerns (β=0.18, P=0.001). The results showed that the mood and use of social media can predict social isolation both directly and with the mediation of body image concerns.

Conclusion: Based on the results of this study, mood, and use of social media can predict social isolation with the mediating role of body image concerns. Negative moods can make people sensitive to their body image. People have a distorted perception of their body image and this concern leads to social isolation.

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Highlights

• People with higher social isolation use social media more.

• Negative mood is associated with social isolation, which is probably because people with negative moods have fewer social skills.

• Continuous use of social media can increase body image concerns because it makes people more exposed to ideal and unrealistic images.

• Negative moods can make people sensitive to their body image.

Plain Language Summary

This study aims to investigate the relationship of social media with the variables of social isolation, mood, and physical image to make us more aware of its effects. The study showed that people with higher social isolation prefer to use social media instead of face-to-face interaction; therefore they use social media more than others. The results also suggested that people with negative moods try to be isolated more than others because they are likely to have lower social skills. Ultimately, people's anxiety about their body and appearance (concern about body image) reduces the tendency to communicate with others and increases the use of social media. These results lead to the fact that the use of social media is not considered a solution or cover anxiety or lack of skills and awareness of the effects of continuing the issues.

1. Introduction

Internet usage is increasing rapidly among society's individuals. The current era called the digital era has changed the world. Digital media has a strong influence on our lives. We often use digital media for communication, information, entertainment, and education. Our lifestyle has changed due to digital media (Safdar et al., 2020). Social media have also become popular with Iranian users over the past decade, and millions of Iranians have subscribed to these networks (Barat Dastjerdi & Sayyadi, 2012). Heidemann believes that virtual social media are a type of dial pattern in which interactions and communication between network nodes are supported by a technical base and the internet infrastructure. In such networks, a common purpose, interest, or need can act as a linking element causing the relevant nodes to feel that they are in a real society and group even without physical presence (Bergman, 2005). Given the rising popularity of social media within the last decade, researchers have started to investigate how social media use may or may not be related to different psychological variables (Saiphoo & Vahedi, 2019).

In particular, mass media are thought to transmit sociocultural symbols that are unrealistic and unachievable for most individuals (e.g. images of excessive thinness in women), as well as the notion that the body is inherently malleable and that bodywork is both normal and required (Jung et al., 2022). Spending too much time on social media creates unrealistic mental images of beauty in people's minds. The internalization of these distorted images is worrying because it can lead to body dissatisfaction (Smolak & Thompson, 2009). Consistent with the tripartite influence model, studies have found that when social media users are exposed to this type of content, they internalize the ideals being presented (Feltman & Szymanski, 2018) and engage in upward social comparisons (Brown & Tiggemann, 2016; Fardouly et al., 2017; Hogue & Mills, 2019). The body image is a mental image that each person has of body size and shape, as well as how they feel about all of their organs. The individual's perception of their body leads to underestimation/overestimation of some parts of the body, and the resulting emotional and cognitive changes are associated with a sense of dissatisfaction and worry about the individual's shape and body (Grogan, 2006). The term includes but is not limited to weight satisfaction-dissatisfaction structures, body satisfaction-dissatisfaction, body shame, appearance satisfaction-dissatisfaction, appearance evaluation, body appreciation, body dysmorphia, and physical schema (Varnes et al., 2013). One of the crucial aspects of an individual's identity and self-esteem is physical appearance and body image. People who feel good about their body image will feel good about life. The mental

image that is not accepted by the individual leads to changes in the feeling of being appreciated. Numerous factors, such as sociocultural values, social comparisons, society's emphasis on appearance, and negative experiences in interacting with peers exacerbate such concerns and lead to their continuation (Jomeen & Martin, 2005). When the cultural context of societies emphasizes the appreciation of appearance, especially for women, the concern about body image is gradually more critical (Kamysheva et al., 2008). This concern and emphasis on certain criteria, including being skinny as a cosmetic indicator, can lead to some problems, such as eating disorders, physical dysmorphia, or excessive exercise to achieve those criteria. Numerous research has shown the impact of social media on thin-related thoughts and body image dissatisfaction (Safdar et al., 2020; Bell & Dittmar, 2011; Homan et al., 2012; Tiggemann et al., 2009; Botta, 1999; Jung et al., 2022; Harrison & Hefner, 2006; Levine & Harrison, 2009; Scharrer, 2013), which may indicate the importance of the role of social media in body image worry.

Another examined structure in this study of social media is positive and negative affects. Despite some evidence for the potential therapeutic benefits of social media use, social media engagement may also be harmful to an individual's mental health and well-being (Berry et al., 2018). According to the Tellegen pattern, negative affection is the non-subcutaneous and common agent of depression and anxiety and low positive affection is the specific cause of depression (Tellegen, 1985), on the other hand, over-time spending on social media can be associated with negative moods (Harper & Tiggemann, 2008; Tiggemann & McGill, 2004), it is essential to investigate the relationship between structures of the use of social media and the mood of the individuals. Positive affect shows how much a person is passionate about life and to what extent they feel aged and conscious. High positive affect implies high energy, full concentration, and pleasant occupation, while low positive affect implies sadness and laziness. The negative affect shows an aspect of internal discomfort and unpleasant occupation and includes unpleasant moods, such as anger, hatred, aversion, sin, fear, and nervousness (Bakhshipour & Dezhkam, 2005). Some studies suggest that more use of social media is significantly related to low mood and depression (Pantic et al., 2012; Primack et al., 2017; Shensa et al., 2017), while some other research has reported no evidence of the relationship between the use of social media and mood (Benjanin et al., 2015; Jelenchick et al., 2013). Therefore, it is necessary to conduct more research in this field.

Social isolation is another structure that may be associated with social media usage. Although the structure of social isolation has been widely used, it is rarely defined. Social isolation is the lack of a meaningful and sustainable interaction or relationship with friends, family, and the widespread society (Wenger et al., 1996), which causes people to experience a sense of deprivation and encounter people with a sense of void, sadness, and being inappropriate. Therefore, if a person feels isolated, it affects the quality of interactions, lifestyle, and physical and mental health because they cannot interact with others (Heinrich & Gullone, 2006). According to conducted research, some physical problems resulting from social isolation can be increased mortality (Holt-Lunstad et al., 2015), reduced immune system, sleep problems, and weak cognitive function, and also increased stress and reduced mental health (Cacioppo & Hawkley, 2009; Cacioppo et al., 2011; Stuller et al., 2012; Dang et al., 2015). Therefore, given the importance of social isolation and its impact on physical and mental health, the need for widespread research is felt to identify the variables affecting it. In recent years, social media have been proposed to increase people's communication, and the use of these networks was expected to reduce social isolation and increase emotional and social support. The goal, especially for those who do not have a rich communication environment, was to increase communications through social media and get more support from the online environment (Primack et al., 2017). However, research has not been supportive, and some research showed a reverse relationship between the use of social media and emotional support (Shesna et al., 2016).

As mentioned, the increasing use of social media in the present age can affect concerns about body image, social isolation, and social mood. Despite the importance of this issue, so far little research has examined the role of social network usage on the above-mentioned structures. Therefore, this study seeks to examine concerns about body image, social isolation, and mood based on people's social media usage.

2. Materials and Methods

This descriptive correlation study was conducted periodically in 2019. The population included all people aged 20-40 years in Shiraz City, Iran. In correlational research, 20-30 samples can be selected (Delavar, 2013), and accordingly, at least 300 people are needed. Therefore, 311 participants in the age range of 20-40 years (191 women and 119 men) were selected by convenience sampling method. The inclusion criteria included age from 20 to 40 years and a willingness to participate in the

study. The exclusion criteria included having a psychotic illness, substance abuse (as reported by the individual), and failing to complete the questionnaire. The study was shared on social media. Participants were asked whether they would like to participate in the present study and, if desired, were asked to answer the questionnaires carefully. Also, they were told to ask their questions about the items, if any, and then answer them. The duration of filling out the questionnaires was different depending on the conditions of the participants. Some of them completed and sent questionnaires just thirty minutes after receiving the questionnaires, and some submitted the complete questionnaires after a maximum of two days.

In addition to descriptive statistics indicators, including mean, standard deviation, and frequency, the Pearson correlation coefficient and regression were employed for data analysis. Data were analyzed using SPSS software, version 21.

The following tools were used to collect data

Body image concerns questionnaire (BICI)

This 19-item body image concerns questionnaire was created by Littleton et al. (2005). It examines a person's dissatisfaction and concern about their appearance. The questionnaire consists of two subscales of dissatisfaction-shame due to the appearance or in other words, examining and hiding the appearance defects and weak individual performance due to the concern of appearance. In this tool, the subject is asked to grade each item on a five-point Likert scale according to the extent to which they show their emotions or behaviors to that item. Score 1 means "I have never felt or done this" and score 5 means "I always feel it or do it." The total score of the questionnaire varies from 19 to 95, in which a higher score indicates a higher rate of dissatisfaction with the person's body or appearance. The reliability of this questionnaire has been examined by the internal consistency method and the Cronbach's α coefficient was 0.93. The correlation coefficient of each of the items with the total score of the questionnaire is between 0.33 and 0.72 with an average of 0.62. Also, Cronbach's α coefficient of the first and the second agents is 0.92 and 0.76, respectively and the correlation coefficient between the two factors is 0.69 (Littleton et al., 2005). In Iran, the internal consistency of this questionnaire was reported as 0.89 using Cronbach's α method (Alavizadeh & Entezari, 2011). In this study, the reliability of the body image concerns questionnaire was investigated and the Cronbach's α was reported as 0.91.

Social isolation assessment standard questionnaire: This 18-item social isolation assessment standard questionnaire was designed by Yazdi Modarresi (2013) to measure social isolation. This questionnaire consists of four subscales, loneliness, inability, social despair, and social tolerance reduction. In this questionnaire, the subject is asked to determine the extent to which each item expresses their feelings and thoughts on a five-point Likert scale. Score 1 means the least amount of feeling or belief over each item and score 5 means the highest level of feeling or belief in the relevant item. The total score of the questionnaire is between 18 and 90, in which the higher score indicates a higher level of social isolation. The reliability of this questionnaire has been examined by the internal consistency method and the Cronbach's α coefficient was 0.72. The Cronbach's α coefficient has also been calculated for all four factors, which is 0.79 for loneliness, 0.85 for inability, 0.73 for social despair, and 0.78 for social tolerance reduction factors (Yazdi Modarresi, 2013). Also, the reliability of the social isolation questionnaire was investigated and the Cronbach's α was reported as 0.85 in the present study.

Positive and negative affect scale (PANAS)

This 20-item positive and negative affect scale was designed to measure the two aspects of mood, namely negative affect and positive affect (Watson et al., 1988). The items are rated on a five-point scale by the subject. By changing the instructions of this questionnaire both the individual's state and the characteristic dimensions can be measured; if the time frame points to "this week", then the state aspect of the affect is measured, and if the time is considered a longer time, then the characteristic aspect is measured. In the present study, participants are asked to score each item based on their recent status, i.e. this week. The overall range of scores is between 20 and 100 and the score of each subscale is 10 to 50. Getting a high or low score in any subscale means a more or less affect in the individual. In other words, getting a high score in the subscales of positive affection means high positive affection in the individual, and getting a low score means low positive affection; also, getting a high score on the negative affection subscales means high negative affection, and obtaining a low score means low negative affection. The reliability of this questionnaire was evaluated by the internal consistency method and Cronbach's α coefficient was calculated as 0.88 for the positive affection subscale and 0.87 for the negative affection subscale (Watson et al., 1988). Also, the reliability of the positive affection and negative affection scale was also investigated in this study and Cronbach's α was reported as 0.78.

Social media addiction scale questionnaire (SMAS-AF)

This 20-item social media addiction scale questionnaire was developed by Sahin and Yagaji (2017). It examines the level of social media dependence. This questionnaire consists of two subscales, virtual tolerance subscale and virtual communication. In this tool, the subject is asked to determine how much each of the items shows their states on a five-point Likert scale. Score 1 means the lowest match and score 5 means the highest match. The total score of the questionnaire is between 20 and 100, in which a higher score indicates a higher level of dependency on social media. The reliability of this questionnaire was examined by the internal consistency method and the Cronbach's α coefficient was 0.94. The internal consistency coefficient is 0.92 for the virtual tolerance agent and 0.91 for the virtual communication agent. Also, the total retest coefficient is 0.93 and this coefficient is 0.91 for the virtual tolerance agent and 0.90 for the virtual communication agent. In the present study, the reliability of the social media addiction scale questionnaire was investigated and a Cronbach's α was 0.83.

3. Results

In this section, first, the descriptive results about the subjects are presented, then, according to the statistical analysis, the statistical results of the research variables, and finally, the results of the analysis are reported to review the research questions.

The participation in this study included 310, including 191 women and 119 men.

To provide a clearer image of the relationship between the variables of the research, Table 1 presents the simple correlation between the variables.

As mentioned earlier, this study aims to investigate the extent of predictability of social isolation through the mood and use of social media, considering the intermediary role of concern about body image. To answer the research questions, the path analysis method utilizing multiple regression is conducted in a concurrent way based on the steps proposed by Baron and Kenny (1986).

In the first stage, the mood and use of social media are considered as the predictor variables and t loneliness as the criterion variable and simultaneously entered the regression equation in two separate analyzes, the results of which is summarized in Table 2.

The results of this table indicate that mood and social media usage positively and significantly predict social isolation. Moreover, both of these variables predict social isolation to the same extent.

In the second stage, mood and social media usage are entered the regression equation as the prediction variables and the concern of body image as the criterion variable and the results are shown in Table 3.

Table 1. Correlation between the research variables

Variables	1	2	3	4
Social isolation	•	•	•	•
Body image concerns	0.26***	•	•	•
Mood	0.22***	0.14***	•	•
Social media usage	0.22***	0.33***	0.04***	•

***P<0.01.

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Table 2. Social isolation prediction based on mood and social media usage

Criterion	Predictor	F	P	R	R^2	β	t	P
Social isolation	Mood	16.59	0.0001	0.22	0.048	0.226	4.07	0.0001
	Social Media Usage	16.10	0.0001	0.22	0.046	0.221	4.01	0.0001

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Table 3. Body image concerns prediction based on mood and social media usage

Criterion	Predictor	F	P	R	R^2	β	t	P
Body Image concern	Mood	6.54	0.01	0.14	0.021	0.144	2.55	0.01
Body Image concern	Social media usage	39.65	0.0001	0.33	0.11	0.33	6.29	0.0001

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Table 4. Investigating the body image concerns intermediary

Criterion	Predictor	F	P	R	R^2	β	t	P
	Mood					0.19	3.58	0.0001
Social isolation	Social media usage	14.77	0.0001	0.35	0.12	0.15	2.69	0.007
	Body image concern					0.18	3.21	0.001

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According to these results, both predictor variables of mood and social media usage can positively and significantly predict body image concerns. In the third stage, the variables of mood and social media usage and body image concerns are entered into the regression equation as the predictor variable and social isolation as the criterion variable, the results of which are reported in Table 4.

These results showed that based on the logic of Baron and Kenny (1986), compared to Tables 2 and 3, in the social isolation variable, beta reduction is observed in the field of mood (β=19.0). This reduction has also occurred in the area of social media usage (β=15.0). This shows that the body image concerns variable plays the mediating role between mood and social media usage, and social isolation.

Before the main analysis, data related to variables to determine the pre-assumptions of structural equation modeling, after removing the research outliers, the skewness and kurtosis statistics for all research variables showed that the distribution scores of these variables have skewness and kurtosis <2. This indicates that the data distribution is normal.

In addition, path analysis is used to determine the relationship between mood and social network usage in social isolation by examining the mediating role of body image concern. AMOS software, version 23 is used for this purpose. As the variables, only each question of the questionnaire was analyzed as the explicit variables. To examine the model, one-sided paths from social network usage and mood to body image concerns and social isolation are considered. Figure 1 shows the final model. The coefficients shown in the drawing model are the route coefficients. Several indicators are investigated for model fitting, including comparative fitness index (CFI) and root mean square error of approximation (RMSEA). For the CFI, the value more than 0.95 and for the RMSEA, the value less than 0.5 are considered a good fit (Browne & Cudeck, 1993). The results showed that some of the indices of absolute and parsimonious fit are acceptable, while the comparative fit indicators do not show an acceptable number. Table 5 presents the amount of these indicators.

In summary, the research model with the direct and indirect effects of each of the variables is shown below.

Table 5. Indices table

Index	RMSEA	GFI	PCFI	CFI	SRMR	X^2/df
Amount	0.06	0.57	0.57	0.58	0.10	2.43

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Abbreviations: RMSEA: Root mean square error of approximation; CFI: Comparative fitness index; GFI: Goodness of fit index; PCFI: Parsimonious comparative fit index; SRMR: Standardized root mean square residual.

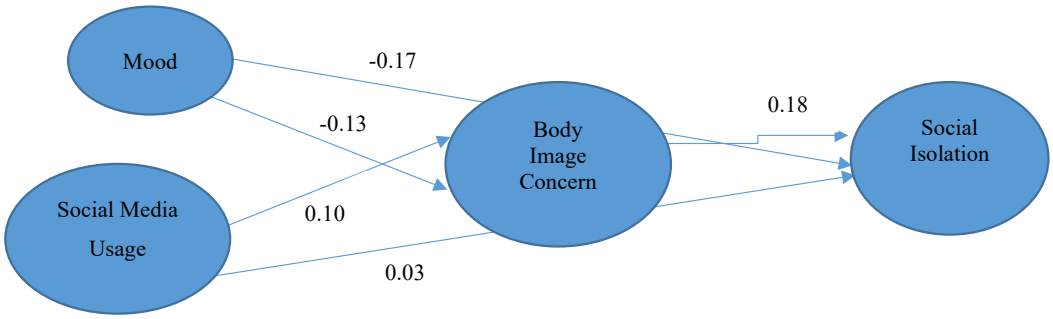

Figure 1. Final model

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4. Discussion

This study was conducted to predict social isolation based on social media usage and mood with the mediation of body image concerns. The results showed that the mood and use of social media can predict social isolation both directly and with the mediation of body image concerns.

In this study, social media usage can predict social isolation, which is consistent with the results of the study conducted by Meshi et al., 2020; Primak et al. (2017) and Primaket al., 2019 and inconsistent with Kusumota et al. (2022) and Whaite et al. (2017). People with more social isolation prefer to use social media instead of face-to-face interaction, and this can become a defective cycle, in which using social media increases social isolation and higher social isolation increases social media usage. Two major reasons strengthen this cycle. First, the more time a person spends on social media, the lower their social communication skills and thereby desire to learn these skills. Continuing this process leads to quitting social communication and increasing social isolation. The second reason is the nature of social media, which facilitates the feeling of being deprived and abandoned; for example, a person who views pictures or other evidence of not being invited to a ceremony through a social network (Primack et al., 2017).

Another result of the study was that mood can also predict social isolation, which is consistent with the results of the research conducted by Takatsu-Coleman et al. (2013) People with a negative mood have fewer social skills, which often affects the quality of people's social relationships. Negative mood, especially depression and anxiety, reduces a person's ability to cope with the relationship challenges, which in turn helps quit the relationship. In addition, people with a negative mood are less acceptable to others. These factors help the negative mood further lead to social isolation (Kee-Lee et al., 2011).

The results of this study showed that the continuous use of social media exposes the individual to unrealistic images, which can play a role in the formation of ideal standards about beauty. Comparing a person's mental image to these criteria reduces the person's sense of appreciation and satisfaction with body image. The increased concern about body image helps individuals quit the crowd over time and this social isolation increases the use of social media, a defective cycle.

5. Conclusion

The results showed that the mood and use of social media can predict social isolation both directly and with the mediation of body image concerns. Consistent with the results of the research in predicting body image concerns based on mood, negative moods can make people sensitive to their body image. For example, a person in a depressed mood has a negative bias toward their body details, or in an anxious mood, a misperception of their body image. This negative bias and distorted perceptions can raise body image concerns. Therefore, the negative mood, along with this increased body image concern, can lead to social isolation.

Suggestions and study limitations

To ensure the generalizability of results to other groups of people so that the results can be generalized, similar studies should be conducted in broader areas and with samples from different and larger communities in the future. In addition, other variables in this model may also play a mediating role. Thus, future studies may consider it. It should be noted that this study was conducted based on the correlation, which is one of its limitations. Therefore, the causal relationship should not be obtained. Besides, the sampling method was not random. Accordingly, generalizability should be considered cautiously.

Ethical Considerations

Compliance with ethical guidelines

All ethical principles are considered in this article. The participants were informed of the purpose of the research. They were also assured about the confidentiality of their information and could volunteer to fill out the questionnaires, and if desired, the research results would be available to them.

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Authors' contributions

All authors equally contributed to preparing this article.

Conflict of interest

The authors declared no conflict of interest.

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