

## Beyond connection: Social media, isolation, and sociability among Saudi university students

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**Abstract:** This study investigates whether social media use enhances or weakens sociability among Saudi university students. Using a web-based cross-sectional design, data were collected from 250 students enrolled in the College of Computer Science and Information Technology at Imam Abdulrahman bin Faisal University. The findings reveal a mixed relationship between social media use and social behavior. Moderate use appears to support communication, connectedness, and self-expression, while heavier use is associated with reduced face-to-face interaction, loneliness, and exposure to harmful online experiences such as cyberbullying. The results suggest that social media does not exert a uniformly positive or negative influence on sociability; rather, its effects depend on the intensity and purpose of use and on whether online interaction complements or displaces offline relationships. This study provides context-specific evidence from Saudi Arabia and contributes to the broader discussion on the social consequences of digital communication among university students. The findings also have practical implications for educators and policymakers by highlighting the need to encourage balanced, responsible, and intentional social media use to support students' social well-being.

**Keywords:** Digital communication, Saudi Arabia, Sociability, Social media, University students.

### 1. Introduction

*Social media* has become a central aspect of contemporary life, reshaping patterns of communication, interaction, and identity expression. Its rapid diffusion has altered how individuals initiate, maintain, and interpret social relationships, making it an important subject of research.

This issue is particularly significant in culturally specific contexts such as Saudi Arabia, where social norms, family structures, and community expectations may shape both the use and meaning of digital interaction. Examining social media within such contexts can move the discussion beyond universal claims and toward a more grounded understanding of how online engagement intersects with local social practices [1].

Accordingly, this study investigates social media use among Saudi university students in the College of Computer Science and Information Technology (CCSIT) at Imam Abdulrahman bin Faisal University (IAU). More specifically, it examines students' perceptions of whether these platforms enhance social connectedness, weaken face-to-face communication, or produce both effects simultaneously. Framing the issue in this way allows the study to treat social media not merely as a communication tool, but as a social environment that may reconfigure interactional norms and perceived belonging [2, 3].

The study is also relevant to educators and policymakers who seek to understand how digital practices influence students' communication habits and social development [4].

The paper explores two competing possibilities: social media may extend opportunities for support, interaction, and network building [5], yet it may also displace embodied interaction and contribute to isolation, dependency, or superficial forms of connection [6].

The study seeks to contribute to the ongoing debate on whether social media makes individuals “more social” by emphasizing that the answer is unlikely to be binary. Instead, the effects of social media are better understood as contingent, context-dependent, and shaped by patterns of use, social expectations, and the relationship between online and offline interaction.

More broadly, digital communication takes place within a wider technological environment that extends beyond social networking platforms alone. This includes automated language tools, secure communication architectures, and mobile-networked systems that shape how online interaction is produced, transmitted, and experienced. Although these areas are not the direct focus of the present study, they provide useful background for understanding the broader digital context in which social media interaction occurs [7-9].

## 2. Literature Review

### 2.1. Conceptual Perspectives on Social Media and Sociability

#### 2.1.1. Social Support and Perceived Connectedness

Research on social support provides one useful perspective for understanding why social media may increase perceived sociability [10]. Social support has been conceptualized as comprising emotional, informational, and tangible dimensions [11]. Within digital environments, these forms of support may be reproduced through encouragement, advice exchange, and practical assistance made possible by platform features and continuous connectivity. From this perspective, social media can function as an extension of social capital by expanding access to interpersonal resources beyond immediate physical settings. At the same time, the presence of support online does not necessarily imply deeper relational quality. Instead, it may produce a perception of connectedness that varies in strength and durability across contexts [12].

#### 2.1.2. Loneliness, Anxiety, and Compensatory Use

Loneliness offers a contrasting theoretical perspective. Loneliness is a common human experience. However, its intensity and frequency vary across groups and social circumstances [13]. In the context of social media, loneliness is particularly important because digital communication may either compensate for limited offline interaction or intensify feelings of disconnection when online engagement substitutes for meaningful social contact.

Evidence from the COVID-19 period illustrates this dual possibility. Under conditions of social distancing, digital platforms often served as compensatory spaces through which individuals maintained contact and reduced the immediate effects of isolation. However, the same conditions also increased the likelihood of excessive use, suggesting that the benefits of digital connection may be offset when platform engagement becomes prolonged, emotionally dependent, or stress-driven [14].

This tension is reflected in prior findings showing that loneliness can trigger excessive social media use, which in turn may elevate anxiety [15]. The theoretical implication is that social media should not be understood simply as a neutral communication medium. Instead, it can operate both as a coping resource and as a reinforcing mechanism within cycles of distress. This perspective is important for interpreting the results obtained from the present research, particularly where respondents report both increased connectedness and increased isolation.

These findings suggest that the COVID-19 pandemic and associated social-distancing measures had significant implications for psychological well-being, particularly in relation to loneliness and anxiety. Participants reported spending more time on social media during this period, and perceived loneliness was found to predict both excessive social-media use and heightened stress. Excessive use was also associated with increased anxiety. Taken together, these findings indicate that social media may have both supportive and harmful effects during periods of crisis. It may alleviate social disconnection for some

users, yet intensify anxiety and dependency for others. This dual role underscores the need to interpret social media use during crises with caution.

## *2.2. Social Media and Social Behavior: Benefits and Risks*

### *2.2.1. Risks of Digital Interaction*

The negative effects of social media can also be interpreted through the concept of digitally mediated social harm [16]. Prior work in Saudi Arabia and elsewhere shows that although social media may facilitate support and visibility, it can also expose users to cyberbullying, cyberaggression, and impersonation [17]. These harms are not merely technical problems. They shape trust, safety, and willingness to participate in online environments [18]. In this sense, social media may simultaneously enlarge social reach while undermining the conditions necessary for healthy interaction, thereby complicating claims that greater connectivity necessarily produces greater sociability [19].

### *2.2.2. Educational and Social Opportunities*

The positive effects of social behavior in digital settings are often linked to learning, collaboration, and access to diverse perspectives. Social interaction can support cognitive development, problem-solving, and academic engagement when it encourages exchange, reflection, and collaborative participation. In this respect, social media may broaden opportunities for interaction beyond geographical or institutional limits, particularly among students who use digital platforms to sustain peer networks and learning communities.

However, these benefits depend on how platforms are used. Social networks may enhance learning by facilitating access to information, reducing barriers to communication, and supporting collaborative and self-directed learning [20]. Yet the existence of these utilities does not guarantee positive outcomes. Their effects are shaped by the intensity of use, the purpose of engagement, and whether online participation strengthens or displaces richer forms of social and educational interaction.

## *2.3. Directions for Future Research*

The study also highlights the value of further research on the nuances of social media use in Saudi Arabia. Although the present survey offers useful insights into the experiences and perceptions of Saudi university students, important questions remain regarding the differential effects of specific platforms and the relationship between online and offline social behavior.

As social media continues to evolve and new platforms emerge, it becomes increasingly important to examine how these changes influence patterns of interaction, self-presentation, and communication. Greater attention to the intersection between online and offline behavior may also clarify how individuals complement contemporary social life across digital and physical settings.

Taken together, such research could support more-informed decision-making by educators and policymakers regarding the role of social media in educational settings. It could also help individuals better understand how social media use shapes communication habits, relationships, and broader social behavior.

In summary, the study underscores the importance of continued research on the social effects of digital platforms and the need for more analyses of how different forms of social media use shape human interaction.

## *2.4. Practical Implications*

The study suggests that social media has become integral to contemporary society, reshaping how individuals communicate and influencing broader patterns of social behavior [21]. Therefore, it is important to understand how social media affects communication practices and social interaction, particularly in culturally specific contexts such as Saudi Arabia.

In this context, the survey was designed to examine social media use among Saudi university students in the CCSIT at IAU. By exploring students' experiences, patterns of use, and perceptions of

social interaction, the study offers context-specific insight into the role of social media in shaping social behavior.

One of the study's central implications is the need for policies and guidelines that encourage responsible social media use. While digital platforms can strengthen communication and social connection, they may also contribute to misinformation, cyberbullying, and social isolation. Encouraging responsible use may therefore help individuals and communities benefit from social media while reducing its potential harms [22].

The study also emphasizes the importance of promoting offline social interaction and community building as a counterbalance to excessive digital engagement. Although social media can facilitate contact and connection, it cannot fully replace face-to-face interaction. In social contexts where family and community ties are especially important, maintaining meaningful offline relationships remains essential.

More broadly, educators and policymakers may use these findings to assess both the benefits and the risks of integrating social media into educational contexts. A clearer understanding of students' perceptions and experiences can support the development of more appropriate guidance for social media use in academic and professional settings.

### 3. Methodology

#### 3.1. The Study's Scope

A web-based cross-sectional survey was distributed through social media to collect data from university students enrolled in the CCSIT at IAU.

#### 3.2. Study Participants

The final sample consisted of 250 participants who completed the questionnaire. Eligibility was limited to Saudi students enrolled in the CCSIT who were able to read English.

#### 3.3. Data Collection Tools and Procedures

Data were collected anonymously using a structured multiple-choice questionnaire administered through Google Forms. The survey link was shared through social media platforms, including WhatsApp, Twitter, Instagram, and Telegram. Participants were informed of the study's purpose and were free to decline participation. They were also invited to share the survey with their peers.

#### 3.4. Questionnaire

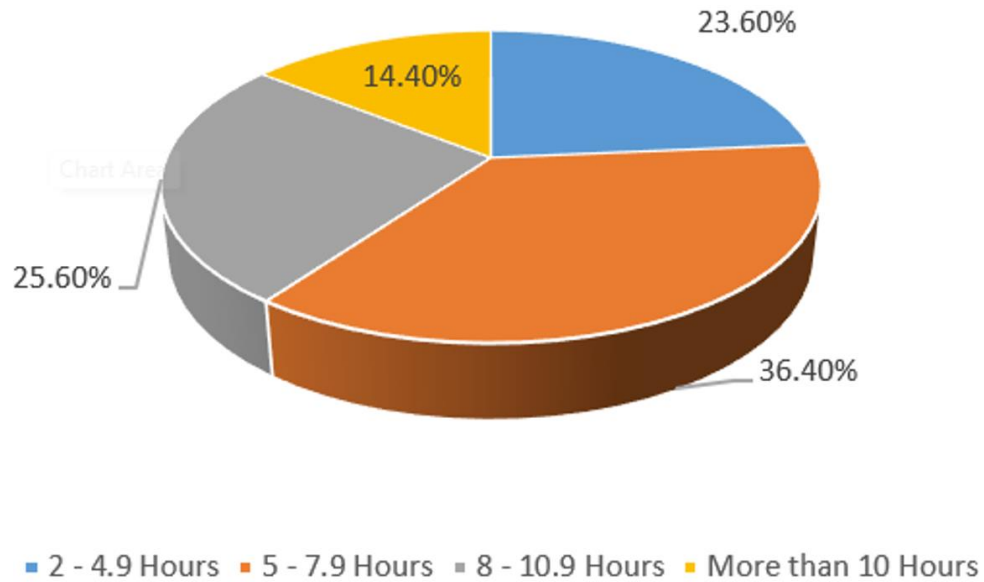
The questionnaire was developed in English. Initially, it was tested with 10 participants to assess clarity and appropriateness. Following the pilot, minor revisions were made to the final version. The instrument consisted of a single section covering gender, time spent on social media, and the platforms most frequently used. Six of the 14 questions were binary yes/no items. The central question asked, "Do you think social media has made you more or less social?" with the response options "more social," "less social," and "no change."

#### 3.5. Ethical Considerations

Participation was voluntary, and informed consent was obtained from all respondents before they completed the survey. Participants were provided with information about the purpose of the study, and no identifying personal information, such as names, contact details, or addresses, was collected. This helped preserve anonymity and confidentiality throughout the data collection process.

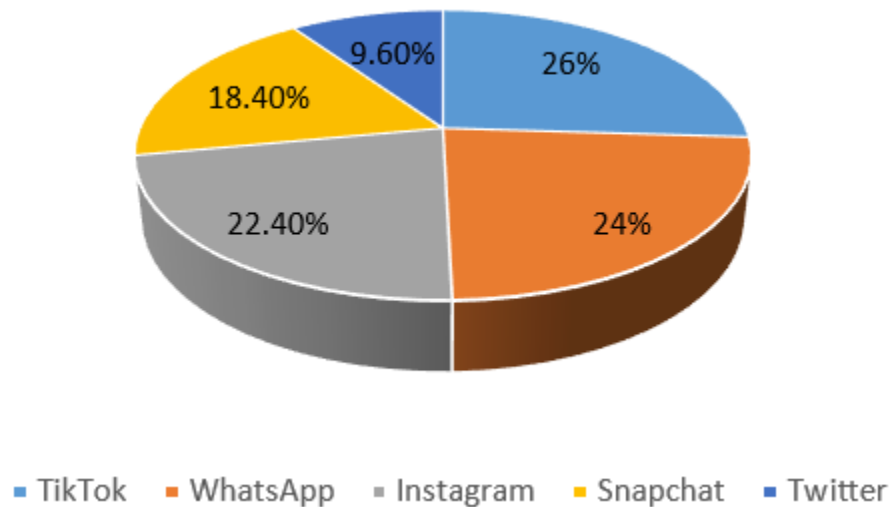
## 4. Results

The study surveyed 250 students from the CCSIT. Of the respondents, 141 (56.4%) were male, and 109 (43.6%) were female. The results were used to examine whether social media was perceived as enhancing or weakening social interaction.



**Figure 1.**  
The Time Students Spend on Social Media per Day.

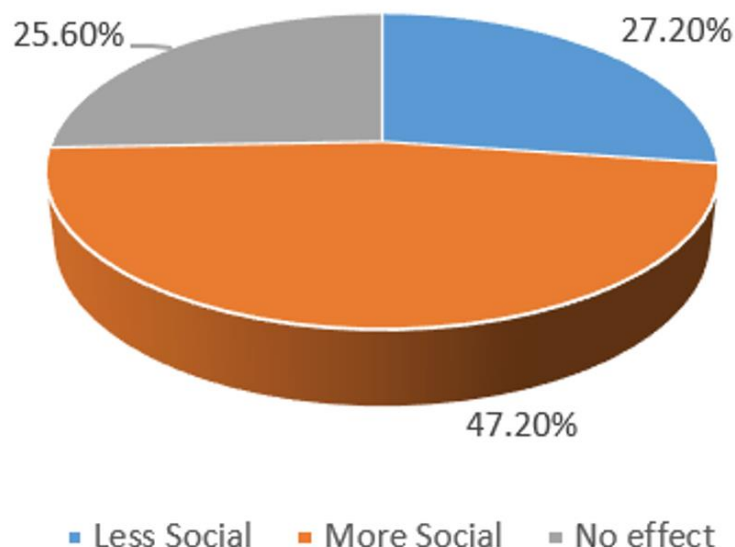
Figure 1 presents the amount of time respondents spent on social media each day. The largest group, 91 students (36.4%), reported using social media for 5 to less than 8 hours daily. This was followed by 64 students (25.6%) who reported 8 to less than 11 hours, 59 students (23.6%) who reported 2 to less than 5 hours, and 36 students (14.4%) who reported more than 10 hours per day.



**Figure 2.**  
The Social Media Platform Commonly Used by Participants.

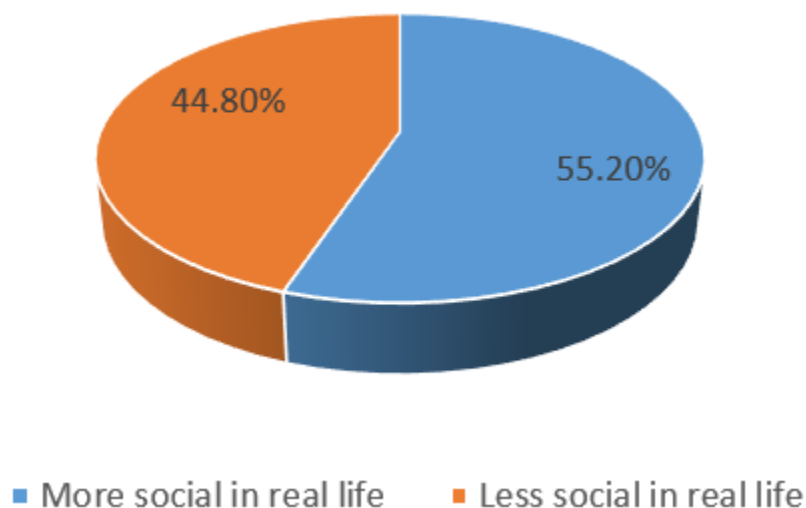
Figure 2 depicts the platforms commonly used by participants as per this survey. Among the five listed social media platforms, TikTok was the most frequently used, reported by 65 students (26%). It was followed by WhatsApp, used by 59 students (23.6%); Instagram, used by 56 students (22.4%);

Snapchat, used by 46 students (18.4%); and Twitter, used by 24 students (9.6%). It was quite surprising that none of the 250 participants selected Facebook as their preferred social platform.



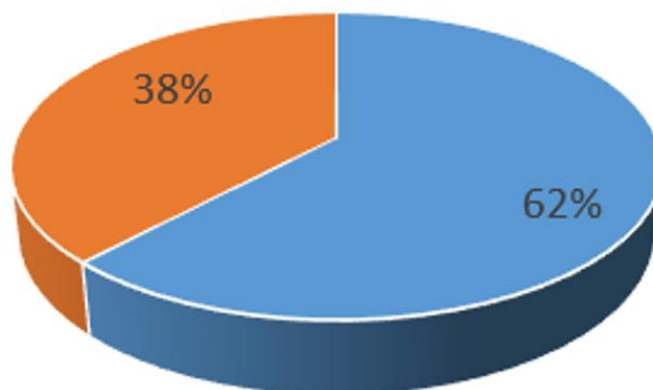
**Figure 3.**  
Perceived Impact of Social Media on Sociability.

Regarding the study's central question, 118 students (47.2%) believed that social media had made them more social, 68 students (27.2%) believed that it had made them less social, and 64 students (25.6%) reported no change. Figure 3 depicts these results.



**Figure 4.**  
Comparison of Students Who Are More Social in Real Life versus on Social Media.

A total of 138 students (55.2%) reported that they were more social in real life than on social media, whereas 112 students (44.8%) reported being more social online than offline. Figure 4 depicts these results.

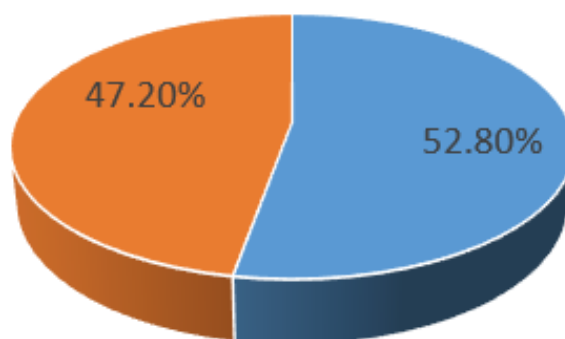


- Did not affect face-to-face interaction
- Reduced face-to-face interaction

**Figure 5.**

Effect of Social Media Use on Face-to-Face Communication.

Of the respondents, 155 students (62%) stated that their use of social media had reduced their face-to-face communication, while 95 students (38%) reported no such reduction. Figure 5 depicts these results.

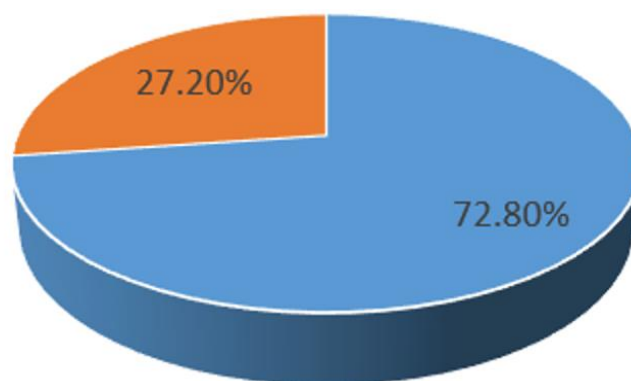


- Increased my loneliness/isolated feeling
- Decreased my loneliness/isolated feeling

**Figure 6.**

Effect of Social Media Use on Feelings of Loneliness and Social Isolation.

In addition, 132 students (52.8%) reported feeling lonely or isolated as a result of using social media, whereas 118 students (47.2%) did not report such feelings. Figure 6 depicts these results.

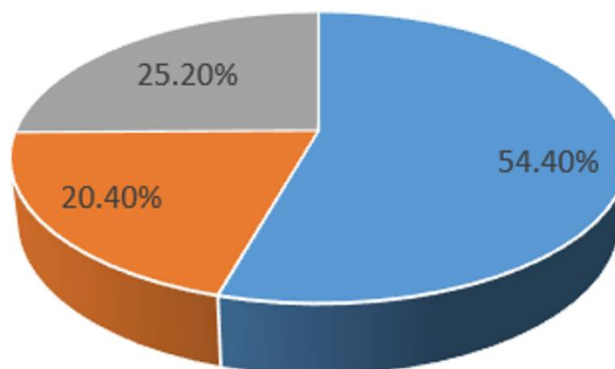


■ Connected with new people ■ Did not connect with new people

**Figure 7.**

Use of Social Media to Connect with New People.

A total of 182 students (72.8%) reported using social media to connect with people they would not otherwise have met, while 68 students (27.2%) reported that they did not use these platforms for this purpose. Figure 7 depicts these results.

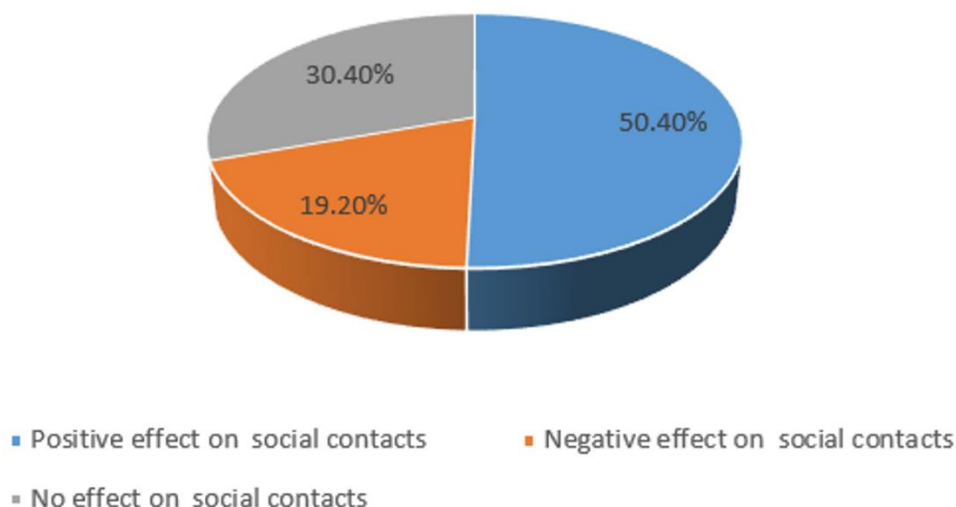


■ Positive effect on friendship ■ Negative effect on friendship ■ No effect

**Figure 8.**

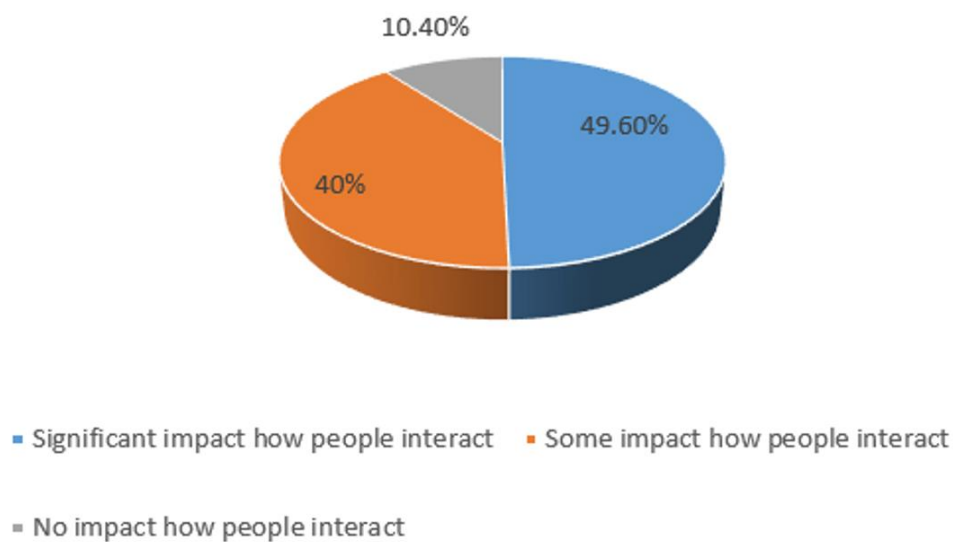
Perceived Effect of Social Media on Friendship.

Figure 8 shows respondents' views on the effect of social media on friendship. A total of 136 students (54.4%) reported a positive effect, 51 students (20.4%) reported a negative effect, and 63 students (25.2%) reported no effect.



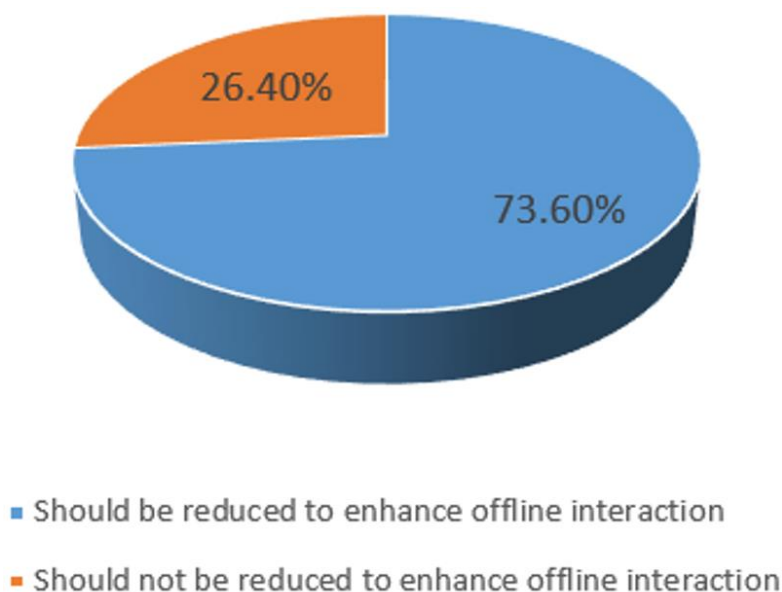
**Figure 9.**  
Perceived Effect of Social Media on the Quantity and Quality of Social Contacts.

Similarly, 126 respondents (50.4%) stated that social media had a positive effect on the quantity and quality of their social contacts, 48 respondents (19.2%) reported a negative effect, and 76 respondents (30.4%) reported no effect. Figure 9 depicts these results.



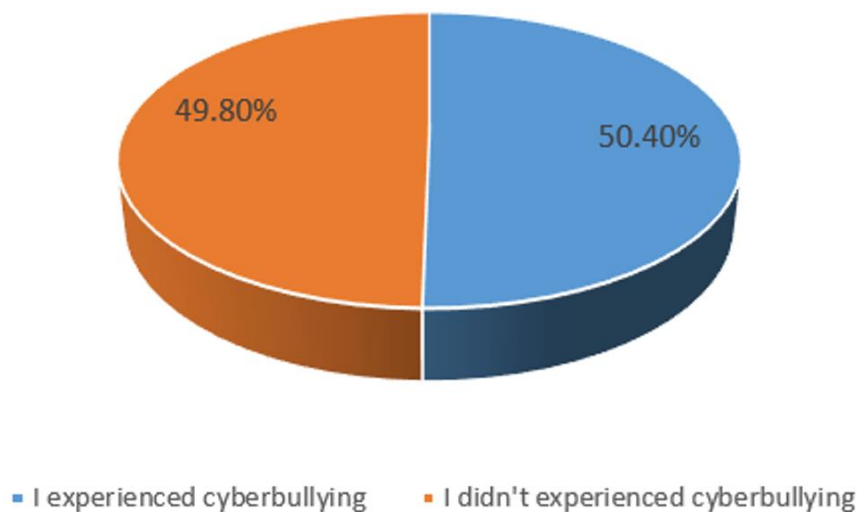
**Figure 10.**  
Perceived Impact of Social Media on the Way People Interact.

When asked whether social media had significantly changed the way people interact with one another, 124 students (49.6%) reported a significant impact, 100 students (40.0%) reported some impact, and 26 students (10.4%) reported no impact. Figure 10 depicts these results.



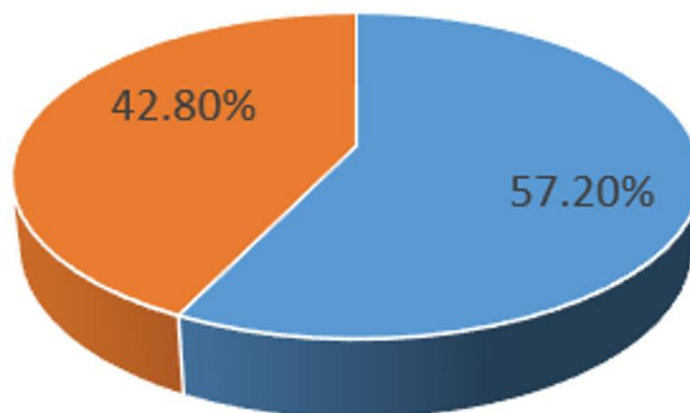
**Figure 11.**  
Students' Views on Reducing Social Media Use to Enhance Offline Social Interaction.

A majority of respondents, 184 students (73.6%), believed that social media use should be reduced to enhance social interaction outside the internet, whereas 66 students (26.4%) did not support this view. Figure 11 depicts these results.



**Figure 12.**  
Students' responses on whether they have encountered cyberbullying or other negative social behaviors.

As shown in Figure 12, 126 students (50.412%) reported having experienced cyberbullying or other negative social behaviors on social web applications, whereas 124 students (49.6%) reported no such experience.



- I am using/willing to use AI for social interaction
- I am not using/willing to use AI for social interaction

**Figure 13.**  
Willingness to Use AI Chatbots for Social Interaction.

With respect to AI chatbots, 143 students (57.2%) indicated that they would consider using AI chatbots for social interaction, whereas 107 students (42.8%) indicated that they would not. Figure 13 depicts these results.

## 5. Discussion

Taken together, the findings indicate that the relationship between social media use and sociability is neither linear nor uniformly positive. Rather than supporting a simple claim that social media makes users either more or less social, the results point to a conditional pattern in which digital platforms appear to expand opportunities for connection while also introducing risks for reduced face-to-face engagement and perceived isolation.

A substantial proportion of respondents reported intensive daily use, with the largest group spending 5 to less than 8 hours on social media. This level of engagement suggests that social media is deeply embedded in students' everyday routines and may function as a primary environment for communication, entertainment, and identity performance (i.e., how individuals present and manage their self-image online). The salience of these platforms helps explain why respondents perceive them as having a strong influence on social behavior.

Although nearly half of the respondents reported that social media made them more social, this result should be interpreted cautiously. The term "more social" may reflect increased frequency of contact, broader online networks, or greater willingness to communicate in digital spaces rather than improved depth or quality of relationships. Thus, the finding is better understood as evidence of expanded social-interaction opportunities rather than conclusive proof of stronger sociability.

This interpretation is reinforced by the apparent tension in the results: while many respondents felt more social through digital platforms, a majority also indicated reduced face-to-face communication, and more than half reported loneliness or isolation associated with social media use. Taken together, these findings suggest that online sociability may coexist with weaker offline interaction. In other words, social media may increase connectedness in a quantitative sense while not necessarily improving the relational quality of social life.

Viewed collectively, the results align with a dual-effects interpretation. Social media appears to widen access to communication and relationship maintenance, yet it may also normalize interaction patterns that are less embodied, less reciprocal, or more emotionally fragile. This helps explain why respondents simultaneously recognized benefits such as meeting new people and strengthening friendships, while also acknowledging isolation, cyberbullying, and a preference for reducing social media use.

The finding that 132 respondents (52.8%) reported loneliness or isolation suggests that social media use may undermine social well-being for a substantial portion of the sample, although this effect was not universal. This reinforces the view that digital connectedness does not necessarily protect against subjective feelings of social disconnection.

At the same time, the high proportion of respondents who used social web applications to connect with new people indicates that these platforms can broaden social reach and facilitate interaction beyond immediate offline networks. This suggests that social media may expand opportunities for contact even when it does not consistently strengthen relational depth.

The reported effect on friendship was similarly mixed. Although a majority of respondents perceived a positive effect, a notable minority reported harm or no effect. This indicates that the influence of social media on friendship is likely shaped by the quality of engagement and the social dynamics surrounding platform use.

A comparable pattern emerged with respect to the quantity and quality of social contacts. While many respondents associated social media with positive outcomes, others reported no benefit or a negative effect. This suggests that increased access to contacts does not necessarily translate into more meaningful or satisfying relationships.

Most respondents also believed that social media had altered the way people interact. This perception is important because it indicates that students do not view social media merely as an additional communication channel. Instead, they see it as reshaping social norms and patterns of interaction more broadly.

The strong support for reducing social media use and encouraging greater offline interaction further suggests that many respondents recognize the value of balance in their social lives. This preference may reflect concern that online engagement, when excessive, can weaken more direct and reciprocal forms of communication.

The near-even distribution of reported cyberbullying and other negative online behaviors indicates that harmful digital experiences are a significant concern within the sample. This finding strengthens the argument that discussions of sociability must account not only for opportunities for connection but also for the risks that undermine safety, trust, and participation in online environments.

The responses regarding AI chatbots suggest an emerging openness to technologically mediated forms of social interaction. Although this finding does not indicate that chatbot use replaces human relationships, it does point to changing perceptions of what may count as socially meaningful interaction in digitally mediated environments.

In general, the findings suggest that social media reshapes social interaction in both enabling and constraining ways. Its contribution to sociability depends less on mere access to platforms than on the mode, intensity, and purpose of use. For students, social media may serve as a valuable supplement to offline relationships. However, the findings do not support treating it as a substitute or equivalent to face-to-face interaction.

## 6. Conclusion

In conclusion, this study examined whether social media has made students more social and identified a mixed pattern of outcomes. The results indicate that social media can facilitate connection, expand networks, and support communication. However, these benefits coexist with reports of reduced face-to-face interaction, loneliness, and harmful online experiences. Accordingly, the findings suggest that social media does not simply increase or decrease sociability. Instead, its social effects are contingent on how,

why, and how intensively it is used, as well as on whether online interaction complements or displaces offline relationships.

Several limitations should be considered when interpreting these findings. First, the study relied on a cross-sectional self-report survey, which captures perceptions at a single point in time and does not permit causal inference. Second, the sample was drawn from students in one college at one university, limiting demographic and institutional diversity. Third, the use of self-reported measures may be affected by recall bias, social desirability, and variation in how respondents interpret terms such as “more social” or “less social.” These factors constrain the precision of the conclusions and suggest that the results should be interpreted as perceptual rather than behavioral evidence.

The generalizability of the study is therefore limited. Because the participants were Saudi university students from a specific discipline, the findings may not be extensible to other groups, institutions, regions, or cultural settings. Future research could strengthen external validity by using larger and more diverse samples, comparative designs across institutions or countries, and mixed-method approaches that combine survey data with interviews or behavioral indicators. Such work would help clarify whether the patterns identified here reflect broader social trends or are specific to this sample and context.

### Transparency:

The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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