

## Abstract and/or Background

**Background:** The issue of loneliness remains a big concern for many people nowadays. Loneliness appears as a predictor and an outcome of many mental issues. There is an increasing number of social media users which results in increased screen time. Whereas some articles suggest that time spent on social media has a negative impact on people and increases feelings of loneliness, other studies give evidence that it may help people maintain or even extend their social capital and decrease their feelings of isolation. The current study examines the role of visual social media content, the type of social media use, and its association with loneliness.

**Methods:** We surveyed and interviewed a sample of Liberty University students to determine their levels of loneliness, amount of time spent on social media, and motivations to use social media.

**Results:** There was a significant correlation between feelings of loneliness and the amount of screen time reported. However, we haven't found a significant association between feelings of loneliness and the type of social media use. We found that the primary reason for the use of social media. This is also considered as the biggest benefit. The most negative topic related to social media was self-comparison and addictiveness of social media.

**Conclusions:** Feelings of loneliness are significantly associated with the amount of screen time. Results from interviews suggest that visual social media is primarily used for communication purposes. Entertainment, communication, and learning are also reported as the most positive as per sentiment analysis. Self-comparison and addictiveness are two of the most concerning negative sides of social media.

## Introduction and/or Research Question

Loneliness is one of the most concerning phenomena in modern society. Being associated with a variety of mental health symptoms such as depression and anxiety loneliness attracts a significant amount of interest from the field of behavioral sciences. Social media has become an inevitable part of human life and is still emerging. People stay engaged in social media for various reasons including communication. A significant body of evidence shows that people perceive online communication and interaction the same way they perceive it in person. The evidence on how social media impacts people's mental health is mixed. Some studies reported a positive influence by increasing social capital, providing support, and maintaining relationships. Other studies, in contrast, showed an association with poorer mental health outcomes such as anxiety, depression, and feelings of isolation.

Despite the mixed evidence on the impact of social media, the scientific society is consistent with the negative impact of increased screen time. The concept of screen time includes the amount of time spent in front of each device delivering visual information including TV screens, monitors, and smartphones. Research suggests the importance of motivation in the field of social media. It leads to an important concept of the type of social media use (SMU). The two types of social media use are active and passive. The difference between these types includes the degree of engagement by social media users in the form of content creation, reaction, sharing, and communication. There is a lack of research providing clear evidence between feelings of loneliness, and social media use.

The research questions for the quantitative part of the present study are in what way screen time is associated with feelings of loneliness?; and in what way feelings of loneliness are associated with the type of social media use?

Qualitative questions we built our interviews around include "What is the main motivation for using visual social media?"; "What are the main positives of using visual social media?"; "What are the main negatives of using visual social media?"; "What are the main strategies to cope with feelings of loneliness?"

## Methods

Participants completed a survey and an interview in laboratory settings. The sample for the present study consists of both male (N= 28) and female (N= 76) students. Inclusion criteria included taking a residential class in psychology and being affiliated with the School of Behavioral Sciences.

Levels of loneliness were measured using Social Connectedness Instrument (SCI) and during semi-structured interviews.

Participants were asked to self-assess their average time spent on social media by answering specific questions and submitting a screenshot of their screen time statistics. To evaluate the type of social media use, participants were asked to submit a screenshot with the number of permanent posts made during the last 30 days.

During the interview, participants were asked a series of questions to determine their levels of social isolation, their social media use strategies and potential reasons for choosing these strategies.

Quantitative data have been analyzed. A series of correlational analyses including t-tests, analysis of variance (ANOVA), and regression analysis were performed to determine the degree to which levels of loneliness were associated with the amount of screen time, and the type of social media use. Interview responses were transcribed, coded, and thematically coded. Sentiment analysis was performed to determine the emotional tone of discussed topics.

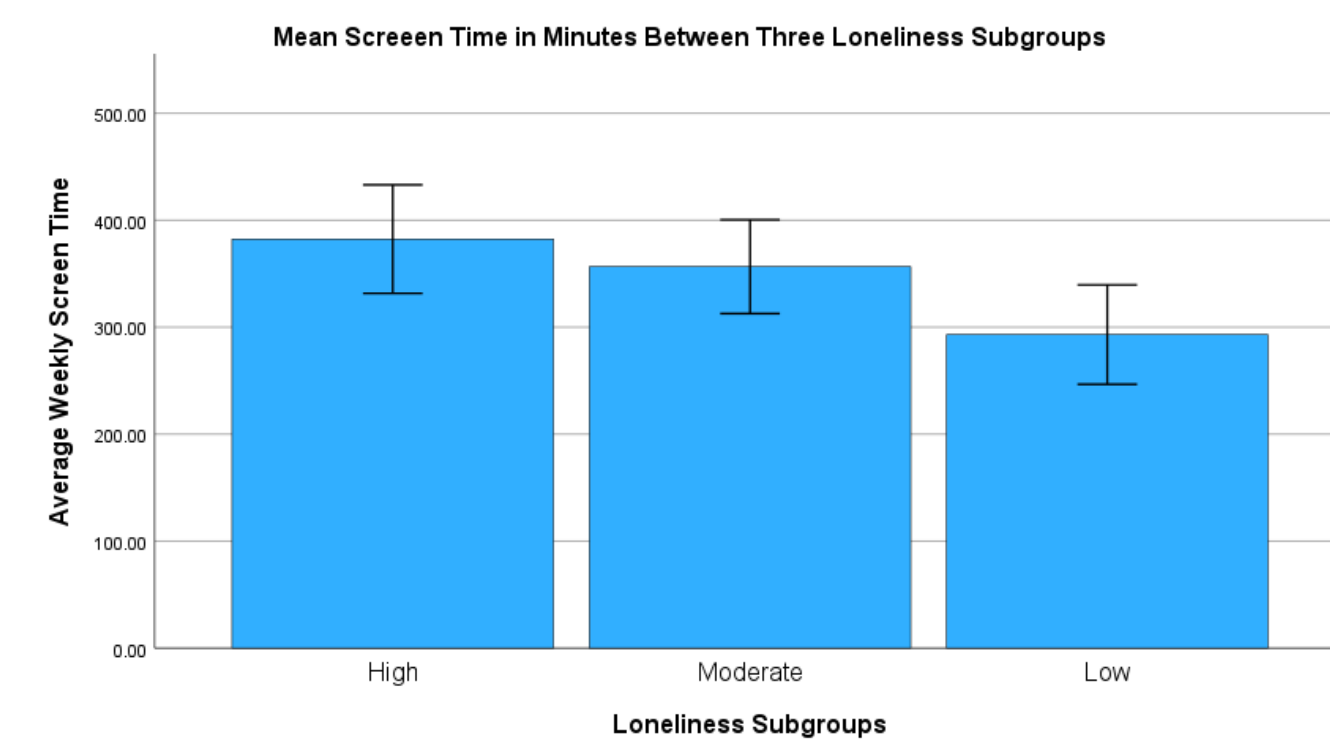


Fig. 1 Mean screen time between loneliness subgroups

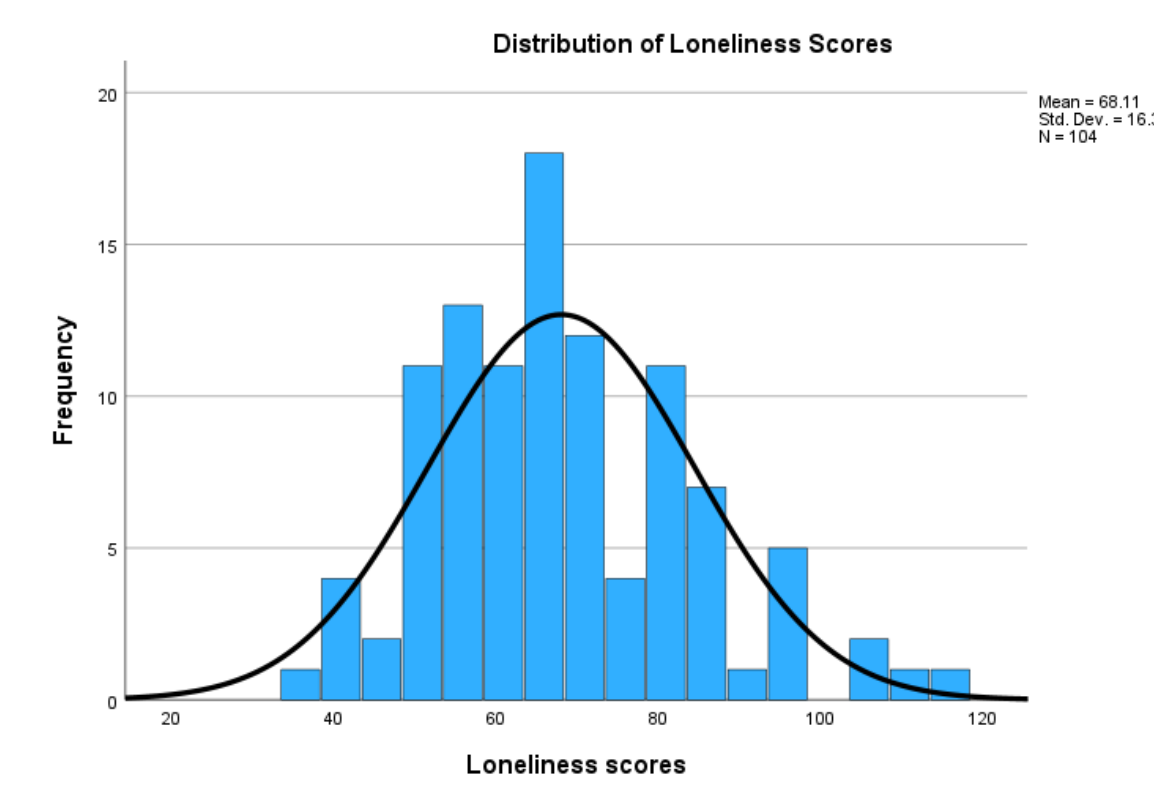


Fig. 2 Loneliness score distribution

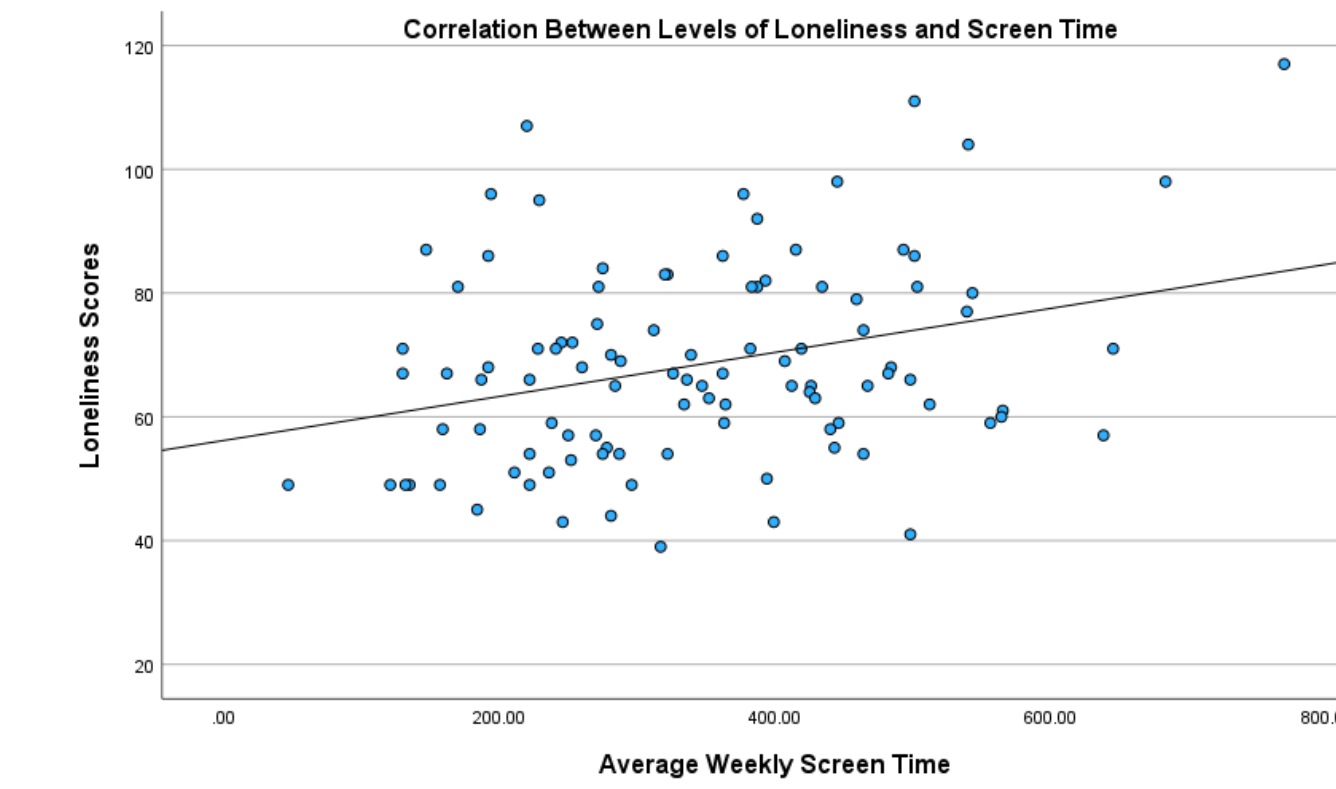


Fig. 3 Correlation between loneliness scores and screen time



Fig. 4 Sentiment word cloud of reasons to use social media

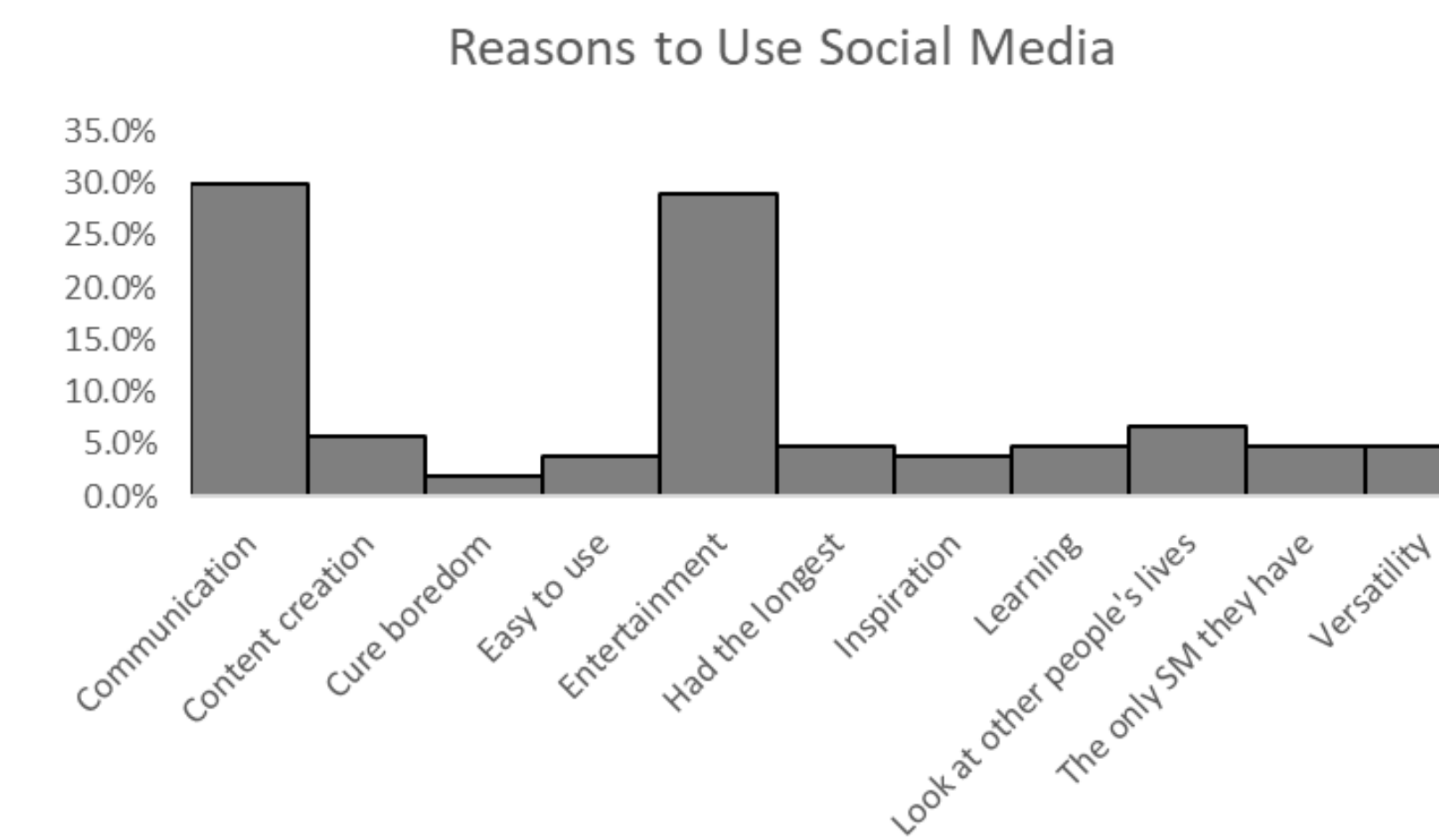


Fig.5 Reported reasons to use social media

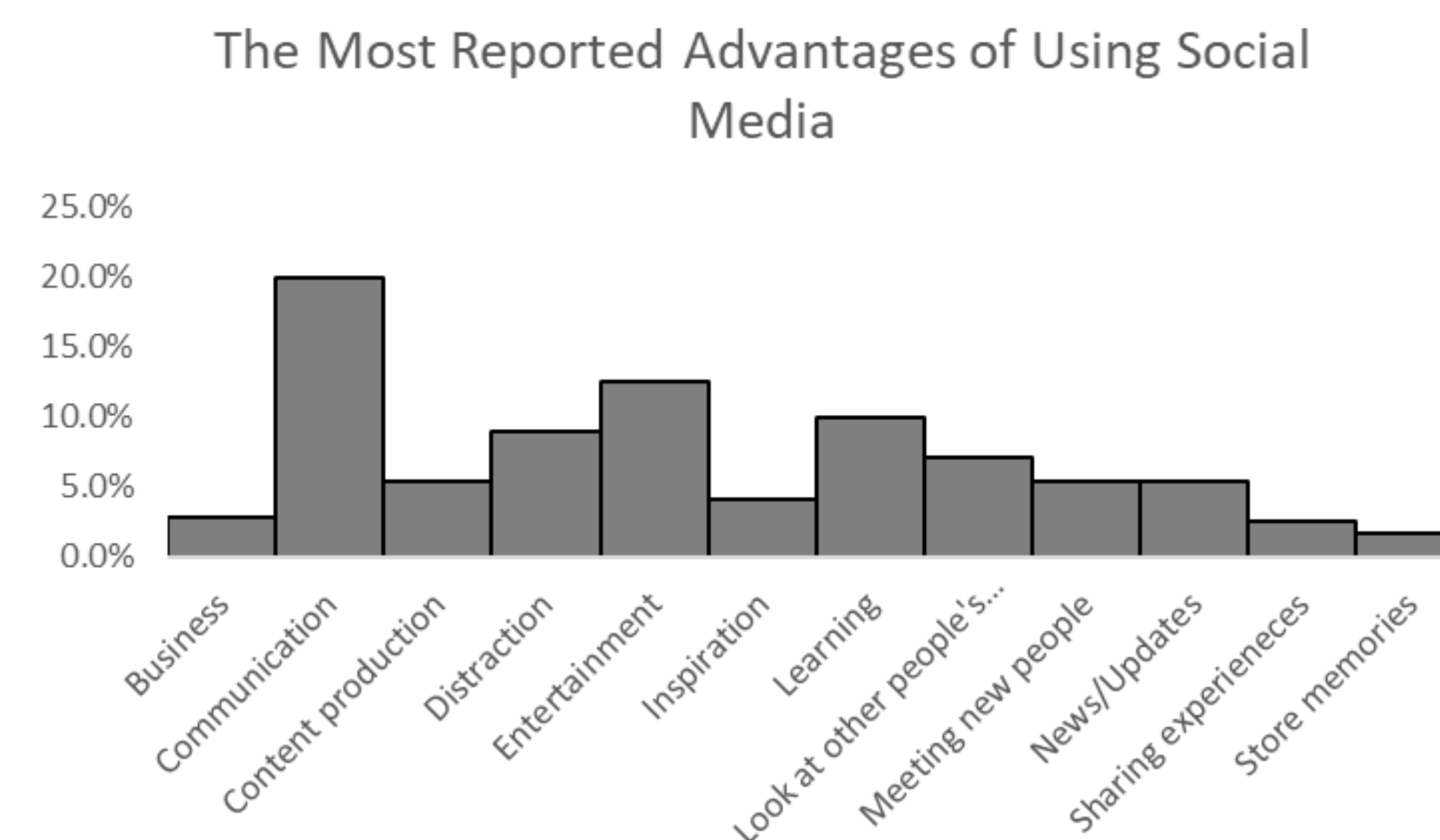


Fig.6 The most reported advantages of using social media



Fig. 7 Sentiment word cloud of the most reported advantages of using social media

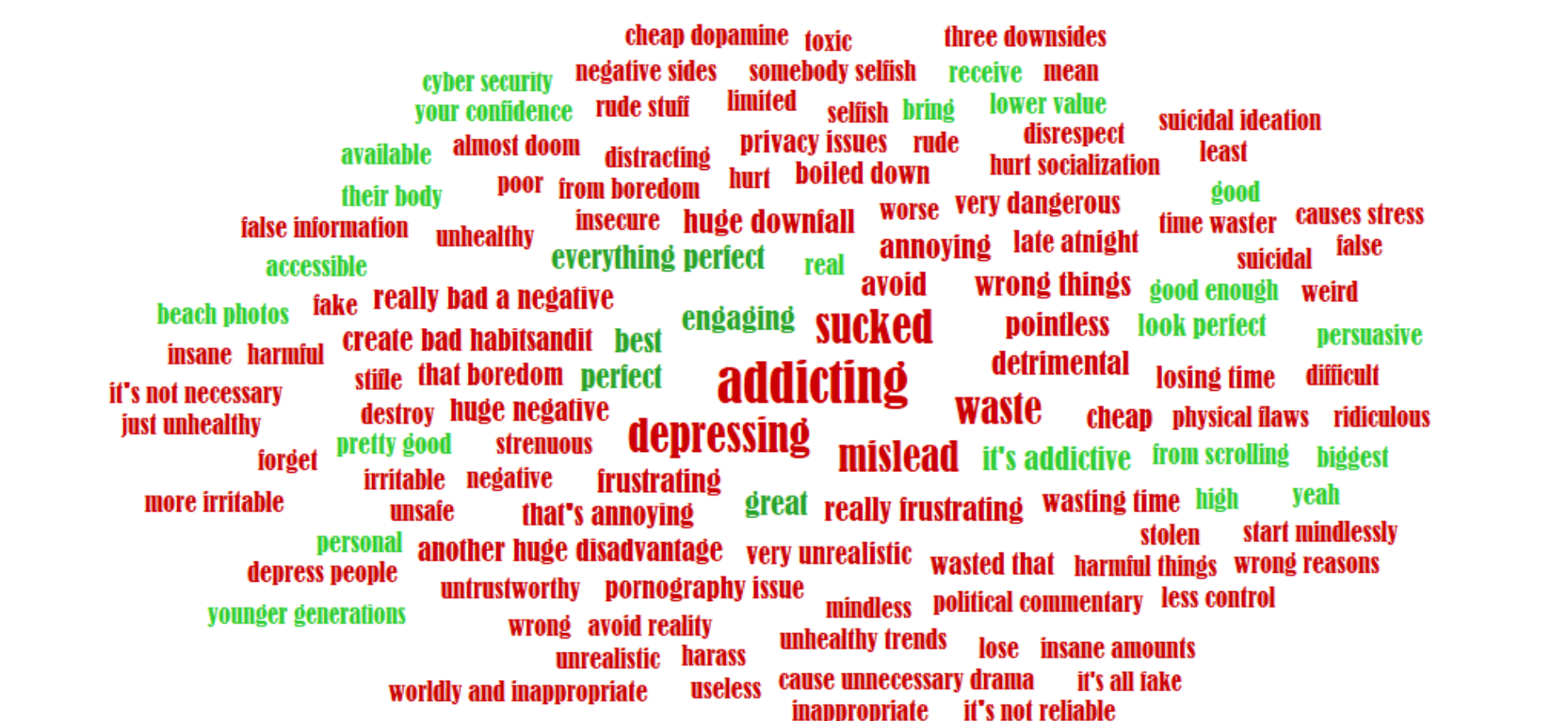


Fig. 8 Sentiment word cloud of the most reported disadvantages of using social media

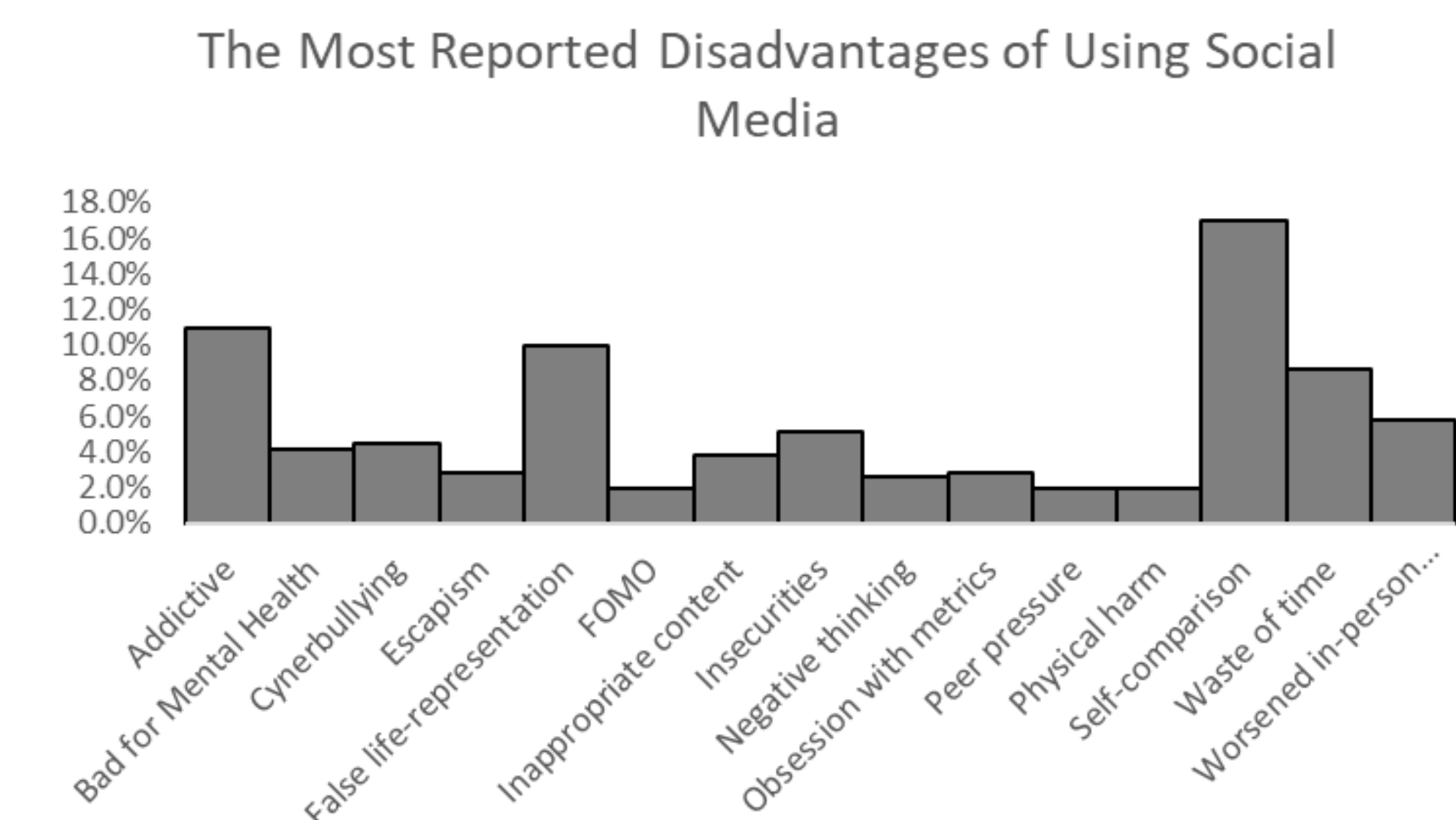


Fig. 9 The most reported disadvantages of using social media

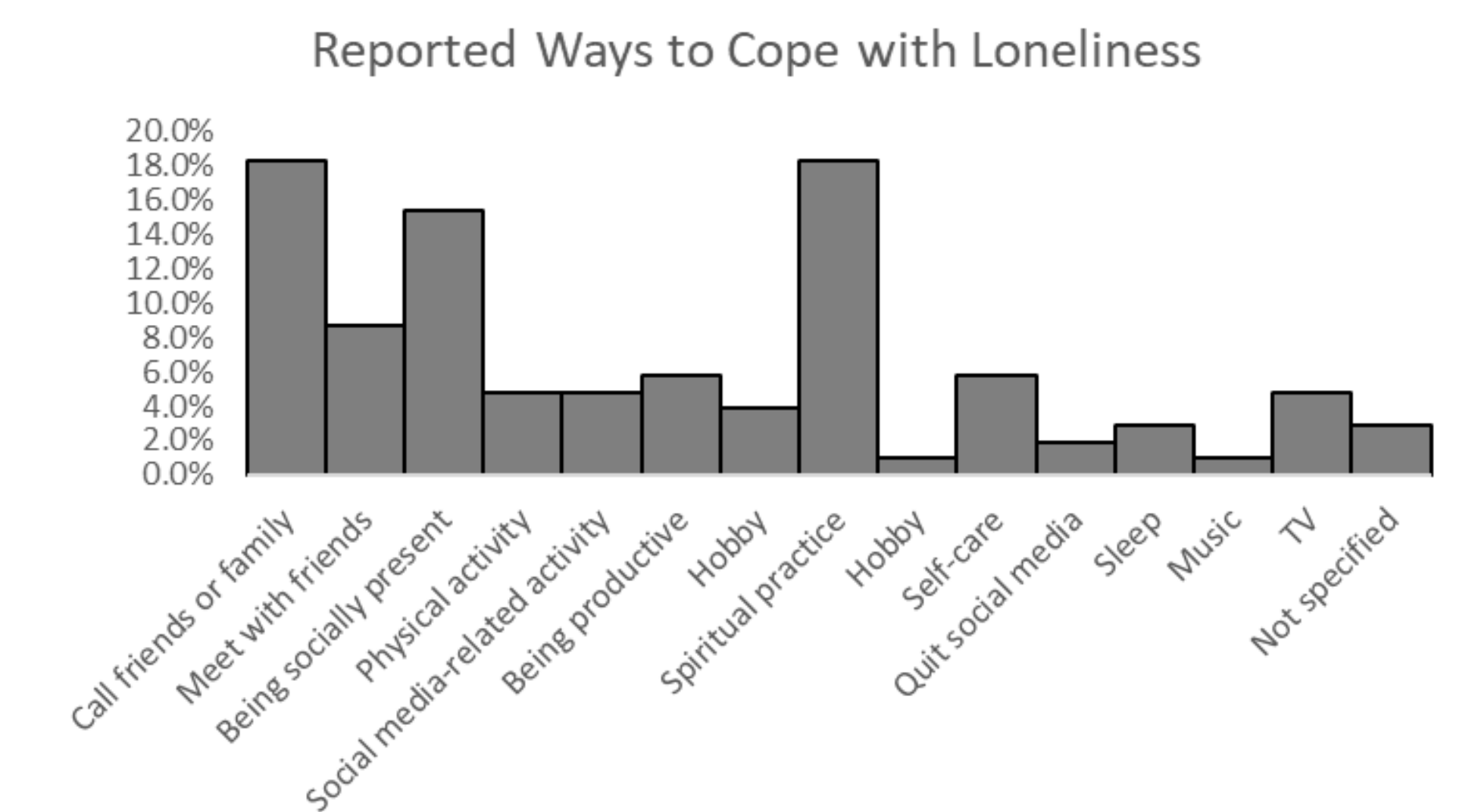


Fig. 10 Reported coping strategies

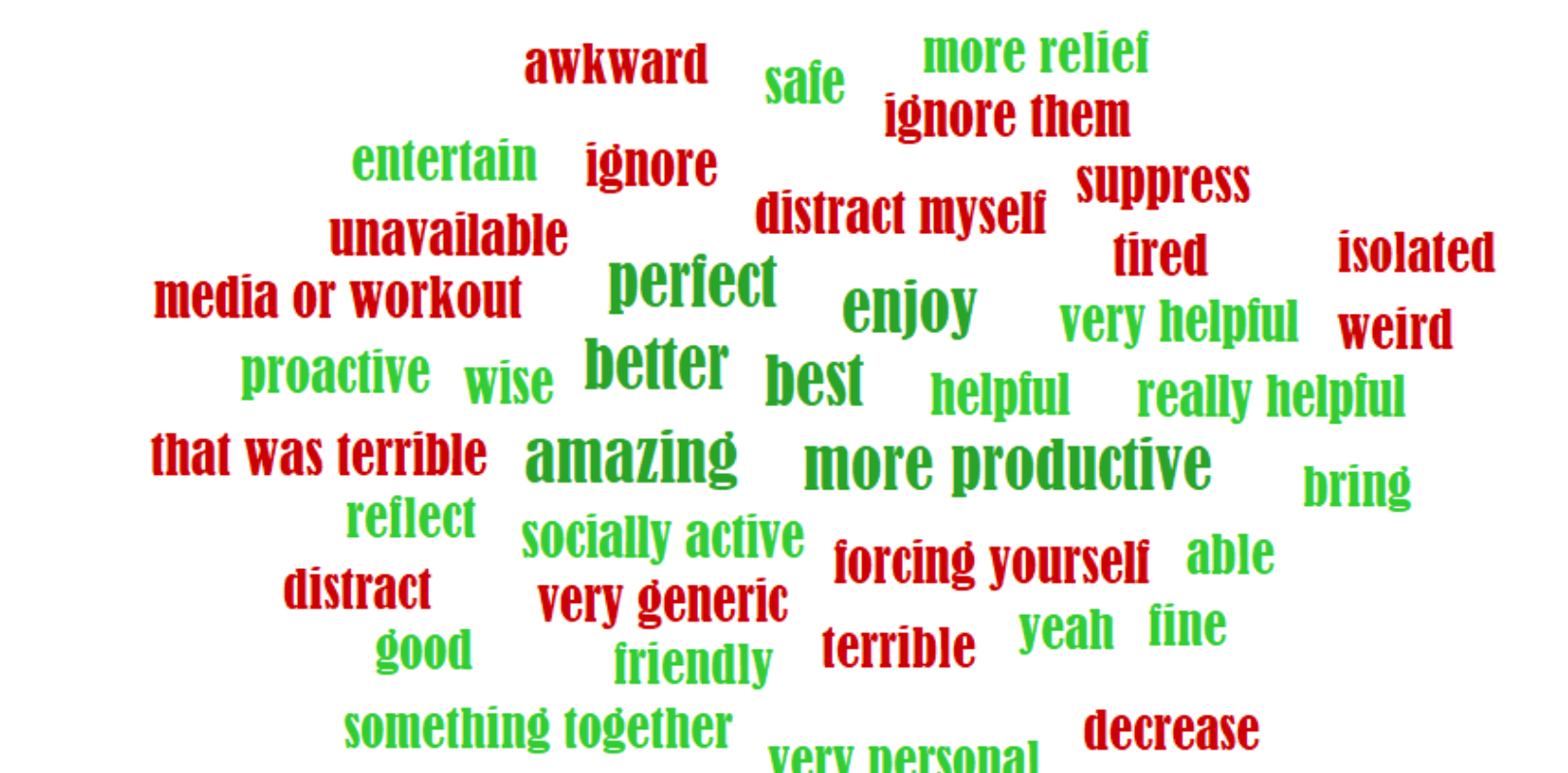


Fig. 11 Sentiment word cloud of ways to cope with loneliness

## Results and/or Conclusion

**Results**  
We attempted to run a multivariate regression model. According to our hypothesis, feelings of loneliness predict the type of social media use. To determine the way people use social media we inserted the average screen time reported, subjective estimation of time spent on social media daily, self-reported frequency of posting, and interaction between screen time and posting frequency. The regression model showed that the amount of social media activity significantly predicted levels of loneliness ( $R^2 = 0.179$ ,  $F=7.218$ ,  $p<0.001$ ). The amount of subjective time spent on social media was the only significant predictor of loneliness when controlling for other variables ( $\beta=0.334$ ,  $t=3.214$ ,  $p=0.002$ ). There was a significant negative correlation between loneliness scores and subjective time spent on social media ( $r=-0.24$ ,  $p<0.05$ ) and a positive correlation between feelings of loneliness and the amount of screen time reported ( $r=0.30$ ;  $p<0.05$ ), which is consistent with the existing literature.

Our qualitative results determined that the primary reason for using social media is communication (29.8% of citations); more than half of the sample reported using social media for more than two hours every day (54.8%); more than half of the sample use social media as the way to cope with stress (64.4%); almost half of the sample reported mindlessly scrolling through their feeds when stressed (47.7%). The most frequently reported advantages of using social media include communication (19.9% of the sample reported); entertainment (12.5%), and learning (9.9%). The most frequently reported disadvantages include self-comparison (17.0%), the addictiveness of social media (10.9%), and false life representation (9.9%). Entertainment, communication, and learning are also reported as the most positive and important topics as per sentiment analysis of advantages and primary reasons to use social media. Self-comparison and addictiveness are two of the most concerning negative sides of social media. Sentiment analysis highlighted the importance of social media addiction as a topic to consider about the negative sides of social media.

**Conclusions**  
Results showed that screen time is significantly associated with levels of loneliness which is consistent with the existing literature. It is important to note that the correlations we found showed a high level of variability. This is a sign that there are many covariables we need to consider. Sentiment analyses highlight the complexity of social media use. To our knowledge, this is the first mixed-methods study attempted to evaluate the type of social media use. The combination of qualitative and quantitative data provided details on the topic of interest and may become a baseline for future studies or interventions to reduce social media use. Despite these positives, several limitations need to be addressed in future studies. First, LU students are a specific population with strong bonding, generalization of loneliness scores is questionable. Second, self-reports may be biased. Finally, the study is underpowered and needs to be replicated with a larger sample to achieve significance in complex analyses.

## Future Work

1. Measure additional metrics such as the number of pick-ups of smartphones
2. Make the amount of time-limited posts (stories) as a primary measure of visual social media activity
3. Recruit more participants for the next year and attempt to conduct the study with a more diverse population.

## References and/or Acknowledgments

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(See attached sheet for all references)