

Meme-Aided Desensitization: Violent Meme Culture and the Decline of Adolescent Empathy

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ABSTRACT

As memes become an integral part of adolescent communication, an important question arises: what impact do these memes have on the average adolescent? Although prior literature has intensively analyzed the relationship between the consumption of violent media and the development of aggression and desensitization, there remains a lack of research on the potential effects of memes.

Memes differ from other forms of content researched in that they inherently require active engagement and sharing between users. In addition, memes have become a staple of daily life, especially as a primary means of communication among the youth.

The purpose of this study is to investigate whether a correlation exists between desensitization and interaction with dark-humor-based memes among adolescents in the Western United States. The study was conducted through a comprehensive survey disseminated through Google Forms that utilized the Likert Scale for various questions to measure levels of desensitization and discomfort of the participants when viewing a dataset of 10 memes, composed of dark humor and non-dark humor memes.

Analysis of responses from the 26 participants found a slight correlation between the two factors, though a potential relationship between desensitization and non-dark-humor memes was also identified, alongside a link between peer influence and one's willingness to pursue dark humor. Limitations of this study include its findings being focused solely on reflecting short-term impacts, limited diversity of participants, and self-reporter bias. However, the findings of this study present significant ramifications for the future of education, parenting practices, and current understandings of pediatric psychology.

INTRODUCTION

In the past decade, the prevalence of the internet as a mode of communication and interaction among adolescents has significantly increased (Peng & Jin Cheng, 2025). Defined by Sanchez (2020) as “a visual form of online rhetoric since the early 2000s,” memes serve not only as humorous relief but also as a means for youth to cope with stress and participate in discourse about social issues. As implied by the

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descriptor “rhetoric,” memes often utilize current topics of gravity. They are presented in a humorous manner that distances the user from the emotions tied to the subject matter, through methods such as a static image with text superimposed on the visual or images distorted to the point of surrealism. The public perception of memes is that they are digital images, videos, or text that are meant to elicit humor, shaping culture and trends. However, a growing body of research suggests that frequent consumption of modern-day dark or violent humor may result in emotional desensitization; humor that memes commonly serve as a vehicle for adolescents. For the intent of this study, dark humor is defined as a type of humor that presents distressing or morbid subjects such as death, disease, disability, warfare, or psychological distress with often ironic or bitter amusement (Voisey & Heintz, 2024). Likewise, emotional desensitization is defined as the psychological phenomenon in which repeated exposure to violence results in diminished emotional responsiveness to such acts or events (Fanti et al., 2009).

Despite the extensive current research that links violent video games and media exposure to aggressive behaviors and desensitization (Bushman & Huesmann, 2013), there exists little literature discussing the implications of this research on meme culture, with even less linking meme culture to desensitization. Specifically, literature in this field primarily focuses on direct exposure to explicitly violent material, such as in video games, while neglecting research regarding the impacts of the content of memes on emotional development, particularly the indirect normalization of violence through violence-centred memes. This normalization refers to the occurrence when repeated consumption of violence framed in a humorous context results in a decline in the gravity or negative emotions associated with the dark subject matter the joke is based upon. In contrast to the passivity that goes into consuming videos and TV shows, memes inherently require active interpretation, interaction, and sharing. They have become entrenched in adolescent interaction, not only in online spaces but also in everyday language, putting them in a unique position in daily life that video games or movies fail to accomplish, and thus requiring further research specifically pertaining to memes. This study aims to investigate the research question: “To what extent does the current meme culture of violence correlate with the decrease of empathy observed in adolescents in the public high schools in the Western USA?”

LITERATURE REVIEW

Development of Violent Behaviors

The overwhelming majority of the literature in this field delves into the relationship between media depictions of violence and negative behaviors, contributing to the scholarly understanding of digital media and their implications for empathy as well. For instance, Bushman & Huesmann (2013) concluded that consistent exposure to violent entertainment such as video games can lead to individuals perceiving aggressive tendencies as normal behavior, which can in turn result in diminished empathy and increased aggression. Empathy in this study was defined as the ability to understand, be sensitive to, and vicariously experience another person’s feelings and experiences. Similarly, Fanti et al. (2009) found that this desensitization to violence can occur even over a short period of time, which highlights the strength of the correlation between violence consumption and behaviors. The overarching ramification of this existing research is that exposure to violent or emotionally distressing media can normalize and promote

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aggressive tendencies in adolescents. Memes become pivotal to this understanding as they act as an essential carrier for such types of content while being primarily utilized by adolescents. Thus, the trend seen in these prior studies raises concerns about whether it may continue in the current adolescent digital culture.

Dark Humour and Aversive Psychological Impacts

Recent studies done in the past 5 years have started examining more of how humour as engaged with on digital platforms shapes perceptions of morality and empathy. More specifically, sources such as Voisey&Heintz(2024) and Basler et al.(2025) explore dark humour and its impacts on the development of qualities that would set the foundation to not be as sensitive to tragic events, along with a greater appreciation for that type of entertainment. This was exemplified by a positive correlation discovered between engaging in online trolling, developing Dark Tetrad traits such as sadism, and an increased tolerance toward distressing content when engaging in dark humor, as found across various sources. The Dark Tetrad is a psychological term used to label a group of personality traits made up of narcissism, Machiavellianism, psychopathy, and the aforementioned sadism. Overall, these qualities are associated with antisocial behaviour and studies investigating a lack of empathy.

Memes as Coping Mechanisms

In contrast to the majority of findings on the promotion of violent behaviors and decline in empathy associated with this type of media engagement, there remains previously established research that highlights the more beneficial functions that memes provide. For instance, Klein-Thomas's (2021) work found that the spread of memes, specifically mashup image macros that incorporate both Bollywood references and Caribbean transcultural references, enabled young women in Trinidad to engage with their gender and identity in a humorous manner. In a similar vein, Thomson (2024) asserts that doctoral memes about depreciation and gallows humor should be considered a viable platform for identity formation, coping, and community building among both fellow doctoral researchers and supervisors to express the difficulties of the career. In short, there is an existing perspective that concedes to the potential psychological benefits of memes, with even some research promoting darker memes as coping mechanisms.

Gaps in Existing Research

Deficiencies in the related literature include a lack of any empirical research that establishes a strong correlation between meme exposure and significant changes in empathy or emotional sensitivity. For instance, most studies fail to analyze memes shared on platforms like TikTok or Instagram, instead focusing on other types of violent media and their effects on aggression and desensitization. In doing this, sources fail to properly address the effects of implicit violence shown in the media and instead only focus on explicit and direct examples of violence. The audience most interested in my research would likely be psychologists or researchers in psychology, particularly those studying the implications of the digital age on mental development and behavior. Educators and parents would also be interested in the findings of this study to limit the influence of memes on adolescents' minds and to improve any future media literacy teachings. As social media continues to be integrated into adolescents' daily social and educational contexts, understanding how meme consumption affects empathy is crucial for educated intervention and

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effective teaching. The purpose of my study is to test the theory of media-aided desensitization to violence that relates the repeated exposure to violent and depressing media in a meme format to a reduction of emotional response and empathy toward real-world tragedies, attempting to control for prior exposure to the internet and violent content for adolescents at urban public high schools in the Western United States. Exposure to the dark-humor memes will be defined as the frequency and nature of the participants' interactions with humorous or ironic online content depicting violence, suffering, or socially taboo concepts. Emotional sensitivity and empathy will be defined as the participant's self-reported feelings toward topics that are largely outside of the social norm for morality and interaction. The intervening variable, a participant's prior or personal exposure to violence, will be defined as the frequency and type of prior interactions with violent TV shows, video games, and news, which may impact the observation of violent memes' influence on the participants.

METHODS

Introduction

This study employed a quantitative cross-sectional survey design in order to properly address the research question. The complete survey instrument can be viewed in Appendix C. In this design, I first curated a dataset of 10 memes categorized into dark humor memes(5 items) and non-dark humor memes (5 items), the latter of which encompassed the genres wholesome and absurdist. The inclusion of different memes of lighter subject matter assists in establishing how reactions in terms of discomfort, desire to share with others, and humor vary across meme genres and establish desensitization to darker humor. These memes were selected using the procedure outlined in prior research on the impacts of digital humor (Vickery, 2025), which is specified as selecting these memes from publicly accessible platforms where these images are commonly found, including Reddit, searching with terms such as "dark humor" and "edgy humor" to gather memes representative of common dark humor. Of these findings, any explicit depictions of death or trauma were excluded to reduce any possible discomfort in participants. After completing the compilation of the meme for this study, a single comprehensive survey was made and distributed through Google Forms. The form itself was divided into a pretest and a meme-exposure section.

The purpose of the survey is to portray the curated set of memes, with each requiring a rating using the Likert scale (van de Wal et al., 2022) from 1(strongly disagree) to 5(strongly agree) to empirically measure discomfort, individual humor appraisal, and perceived peer and social norms. The population of this study consisted of adolescents living in the U.S. and currently enrolled as students in urban or suburban high schools in grades 9th to 12th; thus, the selection of the participants was a process of convenience sampling. After participants submitted the survey, responses were reviewed and filtered for errors, such as incomplete responses. In terms of data analysis, Likert-scale values were assigned Pearson correlation coefficients to assess the existence and strength of the correlational relationship between emotional engagement and meme consumption. This approach was capable of measuring the differences in emotional sensitivity through controlled exposure to tragedy-based meme content. As the research question seeks to identify the extent of the correlation, a quantitative experimental design was the most appropriate method for this study, as it provided measurable data that was statistically analyzed to

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determine the strength of the correlation found between meme exposure and empathy reduction using measurable variables. This design is also commonly used in the existing literature on the impacts of media and desensitization, including empirical research on violent media and dark humor and their effects on emotion formation. Moreover, the utilization of a replicable, structured procedure allowed me to minimize potential personal bias in conducting the study, account for intervening variables, and establish experimental reliability by enabling others to replicate the design and obtain the same results.

Rationale

There are several alternative methods that could have been implemented for this study, such as qualitative structured interviews or content analysis of tragedy-centred memes that are widely consumed by adolescents. However, the limitations of these other options arise in that they fail to produce empirical measurements required to adequately answer the research question. For instance, a qualitative research method, though providing insight into adolescents' perceptions of meme culture and the nuances of its role in popular culture, would be unable to produce statistically significant evidence of changes in sensitivity after exposure, in a manner that could solidly define the extent of impact. Similarly, surveys alone would demonstrate the relationship between meme usage and empathy that the research questions aimed to investigate, but would ultimately fail to support a causal relationship. Moreover, this approach would be unfit for determining the impact of memes on adolescent empathy, as it would neither allow for control over participants' exposure to memes nor adequately support that the results of desensitization were solely due to the presence of the memes. In contrast, the cross-sectional survey design is capable of specifically isolating the effect of meme exposure across the vast and diverse population of American high schoolers by allowing me to compare the participants' emotional sensitivity before and after meme exposure, as well as compare the empathy-measuring variables across groups, referring to age, gender, and meme content. Therefore, this approach best answers the research question while also enabling me to build validity and limit the influence factors. It is also important to note that the dark humor memes selected for the data collection instrument, rather than explicitly describing or depicting trauma or violence in an offensive way, were instead based on more non-graphic references that drew upon themes of discomfort. This decision was made with the understanding that participants were adolescents and may experience psychological distress or more severe instances of these memes. Nevertheless, this does not discount the value of these memes as examples of dark humor, as their appeal still relies on challenging moral norms. Furthermore, these memes even portray the more widespread dark humor that the average adolescent engages with as compared to more visceral or upsetting forms of dark humor largely consumed by those who actively look for dark humor, making them an appropriate exemplification of dark humor-based memes for this particular study.

Participants

The participants of this study were all adolescents enrolled in grades 9 through 12 at urban high schools in the United States. Likely aged 13 to 19 years old, adolescents in this range were chosen because they are the most active consumers of meme culture and social media, making them the most relevant population for measuring meme-aided desensitization (van de Wal et al., 2022). Furthermore, their emotional development is shaped during these formative years and, thus, they are most susceptible to the influence of these types of media (Vossen et al., 2016). The schools involved will likely be selected based on

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proximity, accessibility, and demographic diversity typical of the United States. Due to the fact that this research was centered around meme influence in relation to adolescents enrolled in high school, parental consent (Appendix A) and participant assent (Appendix B) forms were obtained for all minor participants prior to the procedure. Participation was voluntary, and all participants were informed they could leave the study at any point. The information collected by the research was not identifiable and remains anonymous. In terms of quantity, this study aimed to recruit 30 participants to achieve a representative sample that would lead to increased reliability and generalizability.

Data Collection Instruments

This study requires several instruments to acquire data, primarily the pretest and posttest surveys themselves. Participants will complete a two-part survey that involves multiple-choice questions designed to quantify emotional sensitivity throughout the study. The participants completed the pretest survey, which recorded general social media usage, the type of humor they most interact with, baseline emotional sensitivity, and demographic information such as age, gender, and grade. Moving onto the meme-exposure portion, the survey presented the participants with a curated set of memes, with each requiring a rating using the Likert scale to assign empirical values to discomfort, individual humor appraisal, and perceived peer and social norms for measurement. Expanding on this, another need for the data collection process was the curated set of 10 memes itself, which was shown to the participants. As mentioned before, 5 memes were selected to represent dark humor, based on violence or tragedy, expressed through a humorous or ironic lens, and excluding explicit, graphic, or distressing material. 5 additional memes were included in the dataset to examine the effects of meme exposure across genres and to support claims about desensitization occurring in response to dark humor-based memes. Although this procedure is replicable, the study cannot be described as conducted without the aid of a researcher, as they are responsible for selecting and filtering the memes, administering the assessments, and ensuring that ethical guidelines are consistently applied when working with minor participants. In addition to this responsibility, the researcher is required to recognize incomplete answers or surveys that were not completed in accordance with directions.

RESULTS

After the survey was disseminated and data collection was complete, the study yielded a total of 26 participant responses. The sample consisted of 3.8% 9th graders, 34.6% 10th graders, 53.8% 11th graders, 7.7% 12th graders. Of these participants, all were ages ranging from 13 to 18+, with 53.8% of the responses being provided by 16-year-olds, 23.1% by 17-year-olds, 15.4% by 15-year-olds, and 7.7% by 14-year-olds.

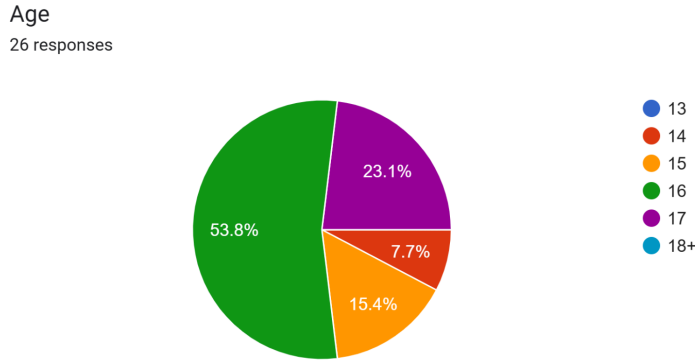


Figure 1: Pie-chart of age demographic distribution of participants

Participants in this study reported varying levels of daily social media usage, though the majority of the respondents selected 2-4 hours per day(42.3%) to describe their average social media usage. In terms of exposure to and interaction with memes, the study found that participants largely utilized platforms such as Instagram(76.9%), YouTube(42.3%), TikTok(34.6%), and Discord(34.6%) for both the viewing and sharing of memes, with only 7.7% reporting they “rarely” encountered memes. Regarding the type of online humour that they have most recently engaged with on these platforms, participant responses were composed of satire/irony(69.2%), absurdist memes(50%), wholesome/positive memes(50%), political memes(50%), dark humour(34.6%), and other(26.9%). Of these responses, 50% of participants selected “I find it really funny” when asked why they were drawn to these types of humour, followed by 15.4% who found it helpful to cope with stress. Closing the demographics portion of the survey, 38.5% of responses stated that the participant believed that their adolescent peers of a similar age “most likely engage very often” in the previously selected genres of memes. The responses then found that 34.6% of participants felt somewhat uncomfortable, while another 34.6% felt somewhat amused when seeing memes about dark or violent topics.

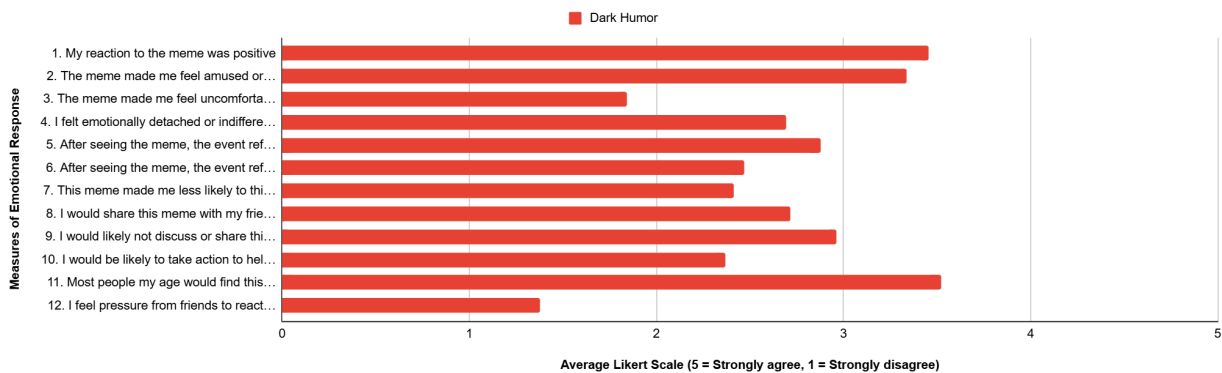


Figure 2A: Horizontal bar graph displaying mean Likert Scale responses to dark humor memes across categories of humor perception, emotional detachment, discomfort, and social influence

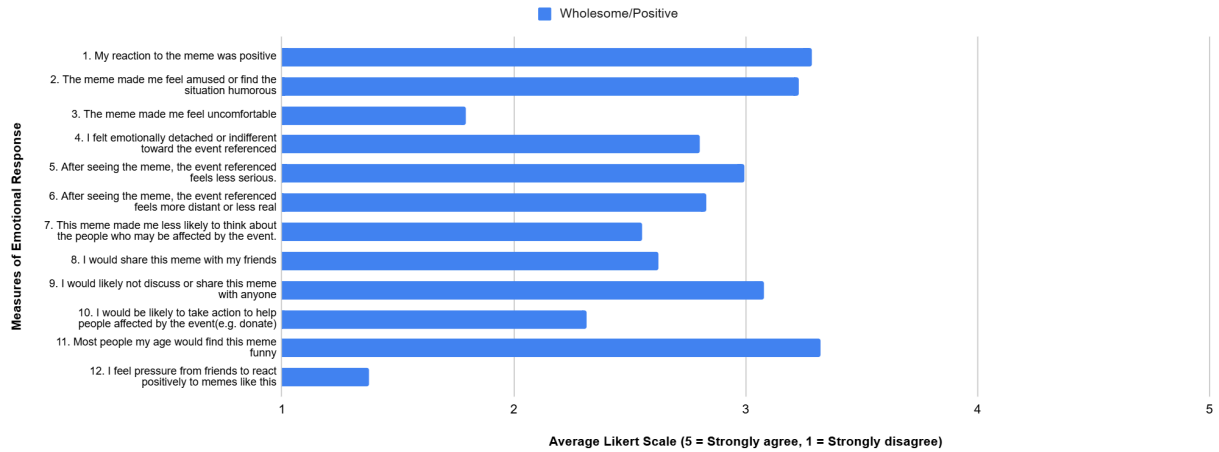


Figure 2B: Horizontal bar graph displaying mean Likert Scale responses to non-dark humor memes across categories of humor perception, emotional detachment, discomfort, and social influence

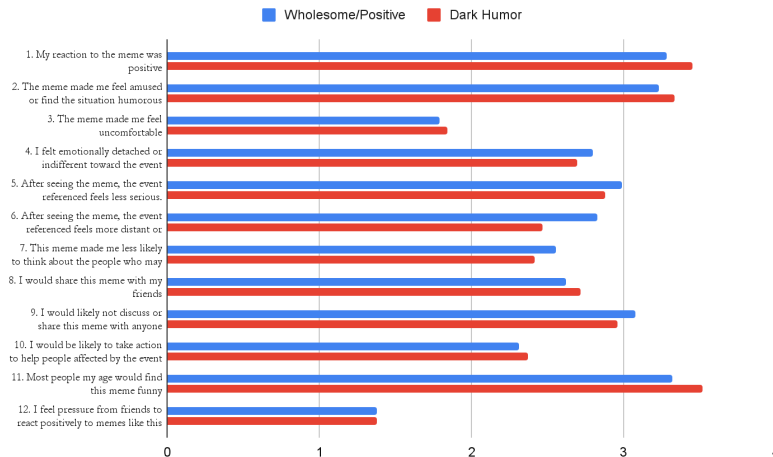


Figure 2C: Comparative, horizontal bar graph displaying mean Likert Scale responses between dark humor and non-dark humor memes across categories of humor perception, emotional detachment, discomfort, and social influence.

Emotional Responses Among Meme Types

Once the Likert-scale questions for all 10 memes were answered, statistical analysis, including calculation of measures of central tendency, was conducted to examine the relationship between memory type and indicators of empathy and desensitization. Initially, a Pearson correlation was considered to quantify the strength of the relationship, but the resulting values revealed only minimal differences between dark and non-dark humor memes rather than establishing a strong or consistent correlation. These weak correlations resulted in the analysis shifting to focus on descriptive statistics.

To determine the existence and nature of the relationship between the study's variables, the data set of memes was separated into two categories, each representing dark humour and non-dark humour memes. The latter was a genre of memes that included wholesome and absurdist memes, and established an overarching trend across emotional response to memes and exposure. In analyzing patterns in the data collected, measures of central tendency—particularly means—were calculated to categorize the averages across aspects of emotional desensitization compared between dark and non-dark humour. With this highlighted, Figure 2 showcases that for questions relating to the measure of humour perception, the Likert scale values were found to be higher in dark humour memes in comparison to non-dark memes by roughly 0.108 to 0.169. Additionally, when asked if they believed that their peers would find the meme humorous, participants recorded a Likert score of 3.519 on dark humour memes and a score of 3.323 on non-dark humour memes. When examining the question pertaining to the experience of peer pressure to engage with the meme, both dark humour memes and non-dark humour memes had an average score of around 1.377. Yet, there was a suggestion that participants believed that their peers would find the humour of dark-humour-centred memes with a 3.519 Likert score, implying a possible factor of social influence on the results.

Humour Perception and Social Influence

With this highlighted, the findings of this study also indicate that adolescents perceive memes relating to dark humour as relatively more entertaining compared to non-dark humor memes. Figures 2A and 2C showcase that for questions relating to the measure of humour perception, the Likert scale values were found to be higher in dark humour memes in comparison to non-dark memes by roughly 0.108 to 0.169. Conversely, the data pertaining to emotional desensitization and overall lack of empathy highlighted a trend that did not align with the findings of similar research discussed in the literature review. In the quantification of desensitization, there was no consistent marker of perceived emotional detachment that was higher for non-dark-humor memes. As opposed to that finding, non-dark humor appeared to have a greater—however slight—influence on feelings of emotional desensitization. For instance, participants reported that events referenced in the memes felt “more distant or less real” when viewing non-dark humor memes, with scores averaging 2.831, compared to the reported 2.469 for dark-humor memes.

Reliability and Limitations

Prior to discussing and interpreting the findings, it's crucial to evaluate the reliability of the collected data. One of the primary limitations of this study was the risk of self-reporter bias, which can skew the results and yield inaccurate data, as is common in many survey-based studies. Participant responses could be influenced by a multitude of both indicated and personal factors that I cannot control. Namely, the aforementioned self-reporter bias is a phenomenon in which participants in surveys provide inaccurate or incomplete data to adhere to social desirability. However, the responses, though relying on participants' self-reported answers, were recorded on a standardized Likert scale, which enforces consistency in how the survey instrument was administered and completed. The standardized scale and repetition of structures through the exposures fostered consistency and reliability in the findings. In order to properly address the guiding question regarding the extent to which exposure to violent meme culture correlates with decreased empathy, the dataset of memes was included in the survey that listed both dark humour memes and non-dark humour memes of equal quantity. By incorporating both dark and non-dark memes

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into the dataset, the study was able to allow for more concrete conclusions. It provides the study with the ability to isolate the participant's emotional desensitization scores across meme content types.

The findings presented, given in terms of measures of central tendency, reveal how the memes categorized as dark humour were associated with Likert scores that correspond to only slightly higher or similar levels of emotional detachment in comparison to their non-dark humour counterpart over a clear difference. Highlighted in Figure 2, the Likert scale responses referring to dark humour memes consistently fell within the range of 2-3 when measuring emotional distance and indifference to tragedy and its potential victims. This stands in contrast to the scores of non-dark memes, which are generally recorded as similar or even higher, indicating a strong correlation between the type of memes and emotional sensitivity.

Interpretation of Comparative Findings

An interesting point found in the data collected by the study was that, in the preliminary portion of the survey, the second largest percentages (15.4%) of the responses to the question "Why would you say that you are drawn to these types of humour?" were the reported answers of "It helps me cope with stress" and "My friends engage in similar humour." This may signify that engagement in dark humour could have prospective application as a form of coping or stress relief rather than a factor influencing emotional detachment. On the other hand, these results may also indicate that the culture of dark humour that has accumulated on digital platforms is shaped by peer pressure and social influences. In all, these findings serve to showcase how complex of a phenomenon meme culture has become in modern day to day life.

While the results do not suggest or support the existence of a moderately strong, positive correlation between an adolescent's exposure to dark humor-based memes and displays of desensitization that were implicated by the literature review, it is essential to recognize that no claims of causation can be made between any of the variables investigated in this study. This stems from the cross-sectional nature of the study and the limited number of participants, which limits the generalizability of the results. Furthermore, correlation—which this data collection process of this study is based upon—does not imply causation. In fact, it is also possible that the results of this study may also be attributed to individuals who generally have a lower baseline for empathy or who tend to gravitate toward dark humor.

CONCLUSION

Following the analysis of the results, this research brings a significant, nuanced contribution to the scholarly understanding of digital humor and its role in the emotional processing systems of adolescents. The findings of the literature review do not strongly support the stance that the viewing of dark-humor-based memes is moderately associated with increased desensitization to real-world events or subjects typically perceived as serious and grave. The results of this study instead suggest that the relationship between empathy and meme type is a weak connection and is not limited to merely dark humor. This conclusion provides a complex addition to the findings drawn by the preexisting papers, which have established an increase in indifference and the development of antisocial traits that have

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emerged among adolescents as the popularity of these forms of entertainment circulates increasingly into regular digital interaction.

Despite these perceptions, the conclusions drawn from this study must also take into account the emergence of several implications for the influence of these memes. In relation to desensitization, this study highlights that participants who interact with memes, regardless of whether or not they are based on dark-humor content or wholesome/absurdist content, consistently tend to report elevated levels of emotional detachment, which indicates that the repetitive nature of engaging with a meme can alter how adolescents perceive serious events. Specifically, rather than responding to these events with societal expectations of discomfort or empathy, users of these memes instead view such occurrences with an undercurrent of humor that allows them to distance themselves from the visceral, negative emotions and weight associated with the situations. This implication is also shaped by the additional findings of this study on the normalization and popularity of these memes.

Elaborating on this second implication, the findings highlight a measure of perceived social pressure rather than explicit peer pressure influencing the participants' involvement in and exposure to dark humour types of memes. In particular, the study detailed how when participants were asked to quantify if they believed that their peers would likely engage with this humour or if they experienced pressure to like those types of humour, they consistently reported scores that averaged from 3.3 to 3.5, while questions relating to feelings of direct peer pressure remained low and consistent between meme types(1.377). This not only solidifies the importance of analyzing the impacts of dark culture by establishing its widespread popularity, but it also indicates that the effects on sensitivity do not occur in isolation. The normalization of making light of such dark events is influenced by the surrounding culture of peer relationships and acceptance online. As this type of humour gains popularity and even becomes an expected type of humour to engage with, adolescents may feel motivated to conform to this dark meme-focused environment—despite any personal discomfort—that serves to make a substantial shift in the culture of digital spaces.

In talking about what these results signify for future research in this field, there must again be acknowledgment of the limitations of this study. Though this study identifies a correlation between dark memes and emotional desensitization through exposing participants to memes, there is no exploration of whether these changes in emotional perception last over extended periods of time. Therefore, future research exploring this topic can investigate if the trends observed in this study over a short period of exposure and response can be expanded over more extensive periods of time. This could be achieved through longitudinal designs, or perhaps an experimental design could be incorporated, involving physiological measurements of emotional reaction to decrease the bias potentially present in this study's approach.

APPENDICES

Appendix A: Parental Consent Form

Parental Permission to Participate in Research Involving Minimal Risk

Information for Parents to Consider Before Allowing Their Child to Participate

The following information is being presented to help you and your child decide whether or not your child wishes to be a part of a research study. Please read this information carefully. If you have any questions or if you do not understand the information, you are encouraged to ask the researcher. The decision to provide permission to allow your child to participate in the research study is up to you. If you choose to let your child be in the study, then you should sign this form. If you do not want your child to take part in this study, you should not sign the form.

Study name: **Meme-Aided Desensitization: Violent Meme Culture and the Decline of Adolescent Empathy**

Who is in charge of this study?

The person in charge of this study is Raagavi Mohan Kumar, a student researcher at Advanced Technologies Academy.

Where is the study going to take place and how long will it last?

The research will be conducted through Zoom call and will last approximately 50 minutes for each participant.

Why is this research being done?

The purpose of this study is the researcher hopes to examine whether the exposure to violence-based memes can cause a decrease in empathy or emotional sensitivity toward real-life tragedies.

Why is your child being asked to take part?

We are asking your child to take part in this research study because they are high school students in the western United States and are familiar with the current meme culture of one of the various media platforms.

Should your child take part in this study?

This informed consent form tells you about this research study. You can decide if you want your child to take part in it. This form explains:

- Why this study is being done.
- What will happen during this study and what your child will need to do.
- Whether there is any chance your child might experience potential benefits from being in the study.
- The risks of having problems because your child is in this study.

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Before you decide:

- Read this form.
 - Have a friend or family member read it.
 - Talk about this study with the person in charge of the study or the person explaining the study. You can have someone with you when you talk about the study.
 - Talk it over with someone you trust.
 - Find out what the study is about.
 - You may have questions this form does not answer. You do not have to guess at things you don't understand. If you have questions, ask the person in charge of the study or study staff as you go along. Ask them to explain things in a way you can understand.
 - Take your time to think about it.
-

What will happen during this study?

Your child will be asked to

- Complete a pretest survey about your opinions and reactions to tragic or emotional events
 - View a series of memes that will reference or make light of violence or tragedy in a humorous way
 - Complete a posttest survey afterward to measure any changes in empathy or emotional sensitivity
-

How many other people will take part?

Approximately 50 participants will take part in this study.

What other choices do you have if you decide not to let your child take part?

If you decide not to let your child take part in this study, that is okay.

Instead of being in this research study your child can choose not to participate.

Will your child be compensated for taking part in this study?

You will receive no payment or other compensation for taking part in this study.

What will it cost you to let your child take part in this study?

It will not cost you anything to let your child take part in the study.

What are the potential benefits to your child if you let him / her take part in this study?

Though not direct, your child will benefit from a new understanding of how the online humour that they are exposed to impacts their emotional development. This can promote healthier and more beneficial interactions with social media.

What are the risks if your child takes part in this study?

There are minimal risks associated with this study. The memes utilized in this study do not contain explicit, graphic, or disturbing content but your child may feel slight discomfort based on personal experiences or preferences. Your child may stop participating at any time if they feel uncomfortable without any repercussions.

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Privacy and Confidentiality

We will keep your child's study records private and confidential. Certain people may need to see your child's study records. By law, anyone who looks at your child's records must keep them completely confidential. The only people who will be allowed to see these records are:

- The research team, including the Principal Investigator, study coordinator, and all other research staff.
- Certain government and university people who need to know more about the study. For example, individuals who provide oversight on this study may need to look at your records. This is done to make sure that we are doing the study in the right way. They also need to make sure that we are protecting your rights and your safety.
- Any agency of the federal, state, or local government that regulates this research. This includes the Department of Health and Human Services (DHHS) and the Office for Human Research Protection (OHRP).
- The USF Institutional Review Board (IRB) and its related staff who have oversight responsibilities for this study, staff in the USF Office of Research and Innovation, USF Division of Research Integrity and Compliance, and other USF offices who oversee this research.

We may publish what we learn from this study. If we do, we will not include your child's name. We will not publish anything that would let people know who your child is.

What happens if you decide not to let your child take part in this study? You can allow your child to continue to participate in the study. However, you can decide you want your child to stop taking part in the study for any reason at any time. If you decide you want your child to stop taking part in the study, tell the study staff as soon as you can.

- We will tell you how to stop safely. We will tell you if there are any dangers if your child stops suddenly.

Even if you want your child to stay in the study, there may be reasons we will need to withdraw him/her from the study. Your child may be taken out of this study if we find out it is not safe for your child to stay in the study or if your child is not coming for the study visits when scheduled. We will let you know the reason for withdrawing your child's participation in this study.

You can get the answers to your questions, concerns, or complaints.

If you have any questions, concerns or complaints about this study, call

Student Researcher

- Name - Raagavi Mohan Kumar
- Email - raagavi.1241510@nv.ccsd.net or raagavimk@gmail.com
- Phone: 725-277-1711

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If you have questions about your rights, general questions, complaints, or issues as a person taking part in this study, contact:

Research Advisor

- Teacher Name: Dr. Soo Park
- Email: parksw1@nv.ccsd.net
- School Phone: 702-799-7870

Consent for My Child to Participate in this Research Study

It is up to you to decide whether you want your child to take part in this study. If you want your child to take part, please read the statements below and sign the form if the statements are true.

I freely give my consent to let my child take part in this study and authorize that my child's health information as agreed above, be collected/disclosed in this study. I understand that by signing this form I am agreeing to let my child take part in research. I have received a copy of this form to take with me.

Signature of Parent of Child Taking Part in Study

Date

Printed Name of Parent of Child Taking Part in Study

Statement of Person Obtaining Informed Consent

I have carefully explained to the parent of the child taking part in the study what he or she can expect from their child's participation. I hereby certify that when this person signs this form, to the best of my knowledge, he/ she understands:

- What the study is about;
- What procedures/interventions/investigational drugs or devices will be used;
- What the potential benefits might be; and
- What the known risks might be.

I can confirm that this research subject speaks the language that was used to explain this research and is receiving an informed consent form in the appropriate language. Additionally, this subject reads well enough to understand this document or, if not, this person is able to hear and understand when the form is read to him or her. The parent signing this form does not have a medical/psychological problem that would compromise comprehension and therefore makes it hard to understand what is being explained and can, therefore, give legally effective informed consent. The parent signing this form is not under any type of anesthesia or analgesic that may cloud their judgment or make it hard to understand what is being explained and, therefore, can be considered competent to give permission to allow their child to participate in this research study.

Signature of Person Obtaining Informed Consent
Raagavi Mohan Kumar

Printed Name of Person Obtaining Informed Consent

Appendix B: Informed Assent Form

Assent to Participate in Research

Information for Persons under the Age of 18 Who Are Being Asked To Take Part in Research

Title of Study: **Meme-Aided Desensitization: Violent Meme Culture and the Decline of Adolescent Empathy**

Why am I being asked to take part in this research?

You are being asked to take part in a research study that aims to investigate how repeated exposure to memes that make light of violence or tragedy affect how adolescents emotionally respond to real-world events. You are being asked to participate because you are a high school student in the western region of the United States and have an awareness of the current meme culture.

Who is conducting this study?

The person in charge of this study is Raagavi Mohan Kumar, a student researcher at Advanced Technologies Academy.

What is the purpose of this study?

The purpose of this study is the researcher hopes to examine whether the exposure to violence-based memes can cause a decrease in empathy or emotional sensitivity toward real-life tragedies.

Where is the study going to take place and how long will it last?

The study will be conducted through Zoom call and will last approximately 50 minutes per participant. The study will include an initial short survey, viewing a series of memes, and completing a closing survey.

What will you be asked to do?

- Complete a pretest survey about your opinions and reactions to tragic or emotional events
- View a series of memes that will reference or make light of violence or tragedy in a humorous way
- Complete a posttest survey afterward to measure any changes in empathy or emotional sensitivity

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What things might happen if you participate?

To the best of our knowledge, your participation in this study will not harm you as memes have been chosen to not include any disturbing, explicit, triggering, or graphic content. However, if any meme provided makes you feel uncomfortable you can stop participating at any time.

Is there benefit to me participating?

We cannot promise that you will receive a benefit from taking part in this research study. However, you may benefit from a new understanding of how the online humour that they are exposed to impacts their emotional development. This can promote healthier and more beneficial interactions with social media.

What other choices do I have if I do not participate?

You have the alternative to choose not to participate in this research study.

Do I have to take part in this study?

You should talk with your parents or guardian and others about taking part in this research study. If you do not want to take part in the study, that is your decision. Participation is completely voluntary. You should take part in this study because you want to volunteer.

Will I receive any compensation for taking part in this study?

You will not receive any compensation for taking part in this study.

Who will see the information about me?

Your information will be added to the information from other people taking part in the study so no one will know who you are.

Can I change my mind and quit?

If you decide to take part in the study you still have the right to change your mind later. No one will think badly of you if you decide to stop participating. Also, the people who are running this study may need to stop. If this happens, they will tell you when to stop and why.

What if I have questions?

You can ask questions about this study at any time. You can talk with your parents, guardian or other adults about this study. You can talk with the person who is asking you to volunteer. If you think of other questions later, you can ask them. If you have any questions, concerns or complaints about this study, contact:

Student Researcher:

- Name - Raagavi Mohan Kumar
- Email - raagavi.1241510@nv.ccsd.net or raagavimk@gmail.com
- Phone: 725-277-1711

If you have questions about your rights, general questions, complaints, or issues as a person taking part in this study, contact:

Research Advisor

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- Teacher Name: Dr. Soo Park
 - Email: parksw1@nv.ccsd.net
 - School Phone: 702-799-7870
-

You will be given a copy of this form.

Assent to Participate

I understand what the person conducting this study is asking me to do. I have thought about this and agree to take part in this study.

Name of person agreeing to take part in the study

Date

Signature of person agreeing to take part in the study

Raagavi Mohan Kumar

Name of person providing information (assent) to subject

Date

Appendix C: Survey Questions

(PRETEST)Meme-Aided Desensitization: Violent Meme Culture and the Decline of Adolescent Empathy:

1. Grade Level
 - a. 9th
 - b. 10th
 - c. 11th
 - d. 12th
2. Age
 - a. 13
 - b. 14
 - c. 15
 - d. 16
 - e. 17
 - f. 18+
3. How often do you use social media daily?

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- a. 0-1 hours
 - b. 1-2 hours
 - c. 2-4 hours
 - d. 4-6 hours
 - e. 6+ hours
4. How often do you encounter memes online?
- a. Never
 - b. Rarely
 - c. Sometimes
 - d. Often
 - e. Very often
5. Which platforms do you use most for viewing memes? (Select up to 3)
- a. Instagram
 - b. TikTok
 - c. X(Twitter)
 - d. Reddit
 - e. Youtube
 - f. Discord
 - g. Snapchat
 - h. Other
6. How would you describe the meme or online humor you most recently engaged with?(select all that apply)
- a. Wholesome/positive memes
 - b. Dark humor
 - c. Political memes
 - d. Satire/irony
 - e. Absurdist memes
 - f. Other
7. Why would you say that you are drawn to these types of humor?
- a. It helps me cope with stress
 - b. I find it the most funny
 - c. My friends share similar humor
 - d. It feels relatable
 - e. I don't know/I don't think about it
8. Do you believe that most other adolescents your age engage with memes like the ones you typically see?
- a. Yes, they most likely engage very often
 - b. Yes, they likely sometimes engage
 - c. Not sure
 - d. They likely rarely engage
 - e. No, they almost never
9. When I see memes about dark or violent topics (9/11, recent tragedies, etc.)I usually feel...

- a. Angry
- b. Very uncomfortable
- c. Somewhat uncomfortable
- d. Neutral
- e. Somewhat amused
- f. Very amused

Data Collection:

Answer the following questions honestly. Remember there are no right or wrong answers. Choose the option that best captures how you feel right now. Most of these questions use the 1-5 scale:

1 = Strongly disagree

2 = Disagree

3 = Neither agree nor disagree

4 = Agree

5 = Strongly agree

- 1. My reaction to the meme was positive(1-5)
- 2. The meme made me feel amused or find the situation humorous(1-5)
- 3. The meme made me feel uncomfortable (1-5)
- 4. I felt emotionally detached or indifferent toward the event referenced(1-5)
- 5. After seeing the meme, the event referenced feels less serious. (1-5)
- 6. After seeing the meme, the event referenced feels more distant or less real (1-5)
- 7. This meme made me less likely to think about the people who may be affected by the event. (1-5)
- 8. I would share this meme with my friends(1-5)
- 9. I would likely not discuss or share this meme with anyone(1-5)
- 10. I would be likely to take action to help people affected by the event(e.g. donate) (1-5)
- 11. Most people my age would find this meme funny (1-5)
- 12. I feel pressure from friends to react positively to memes like this(1-5)

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