

## Original Article

## Unveiling mental health memes: impact on employees' well-being amid workload and occupational stress

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## ABSTRACT

**Introduction:** Occupational health concerns employees' physical and mental well-being in the workplace. Common mental illnesses such as stress, anxiety, and depressive disorders constitute a growing threat to workplace well-being and the ability to meet demanding performance standards. The objective was to explore whether employees in the workplace setting experiencing symptoms of stress, anxiety, and depression interpret mental health memes (related to stress, anxiety, and depression) differently from control memes (i.e., control memes depicting general social commentary).

**Methods:** The study employed a quasi-experimental design and, applied to 56 employees of a private university in Dehradun. Convenience sampling was used to select employees. A survey was conducted using questionnaires to examine symptoms of mental health disorders like stress, anxiety, and depression, as well as the perception of mental health memes compared to control memes. For data analysis, a mixed model ANOVA (2x2) was performed using IBM-SPSS version 25.0 for Windows. The duration of this study was from August 12 to December 27, 2023.

**Results:** The results found that a significant main effect of meme type on ratings of relatability, a significant group meme type interaction demonstrates that, compared to control participants ( $M=3.73$ ,  $SD=0.77$ ), individuals in workplace settings experiencing symptoms of mental health issues ( $M=4.19$ ,  $SD=0.69$ ) rated the mental health memes as significantly more relatable. However, there were no significant differences in terms of humor, shareability, or their potential to improve mood.

**Conclusion:** Despite their predominantly negative connotation, online internet memes about mental health may have the potential to offer benefits to employees who are employed and consistently exhibit indicators of mental health issues within the workplace.

**Keywords:** Anxiety, Depression, Mental health memes, Occupational health, Social media, Stress.

## Introduction

Occupational health and safety were overlooked in traditional and modern communities until recently. In the early 1940s, World War II influenced the workforce and accelerated occupational health development. Since then, workplace health and safety awareness has grown in industrialized and developing nations.<sup>1</sup> Despite efforts to reduce hazards and

occupational illnesses, including fatalities, workplace safety and health issues have remained a prominent focus of inquiry due to changing work and international competition.<sup>2-4</sup> Instead, most research has focused on safety-related outcomes like injuries and accidents rather than health-related repercussions like stress disorders.<sup>4</sup>

Recently, the workplace has placed an increased emphasis on the mental well-being of its employees. This is because mental health concerns directly affect business operations and employees.<sup>5</sup> Occupational attributes, including extended work hours, frequent interruptions, and significant employment insecurity, have been found to have detrimental effects on individuals' mental well-being. Prominent mental health conditions, including anxiety, depression, and stress, are increasingly recognized as detrimental factors to workplace well-being and the capacity to meet demanding performance standards.<sup>6</sup> The 7<sup>th</sup> Fold's Employee Well-being Survey of 509 Indian employees in metropolitan cities and diverse sectors found that 36% have mental health issues and 50% are worried about the pandemic's impact on their future.<sup>7</sup> Another Deloitte Touche Tohmatsu India LLP (DTTILP) survey of 3,995 Indian employees found that 47% of professionals cited workplace stress as the leading cause of mental health issues, financial issues, and the coronavirus pandemic.<sup>8</sup> According to these surveys, workplace mental health needs immediate attention. Traditional methods like educating employers and employees about mental health issues, inviting experts, etc., are used to improve health and well-being. Still, the burden of mental health issues is expected to climb further.<sup>9</sup> However, new mental health tools and solutions are urgently needed, and any solution must use scalable technology to reach billions at risk and millions in need.<sup>10</sup>

Nowadays, social media has played a significant role in increasing the prominence of internet memes, which serve as vehicles for disseminating information through comedy and sarcasm.<sup>11,12</sup> It is defined as a piece of culture, usually a joke, that becomes influential through its transmission on the internet.<sup>13</sup> It is a type of content that is quickly disseminated and highly captivating, typically in animation, GIFs, images, text, or video.<sup>14-16</sup> Recently, a significant proportion of mental health memes have been seen in pages, groups, and forums devoted to the dissemination of content related to the symptoms of mental health

disorders such as Anxiety, Depression, Stress, and Suicidal Ideation, and these pages, groups, and forums have a wide range of users. Previous studies reflect the pivotal role of internet memes in disseminating information with humor, improving knowledge, and spreading awareness<sup>17,18</sup>, as well as a coping mechanism and communication platform for mental health issues.<sup>19-21</sup> While some psychiatrists and media sources believe that internet memes associated with mental health issues are linked to adverse outcomes, empirical evidence does not support this belief.<sup>22</sup> Despite the prevalence of mental health memes, we have a limited understanding of how these internet memes are interpreted in working contexts, particularly among employees with mental health difficulties. This aspect is relatively unexplored, emphasizing the need for additional research to fully comprehend the dynamics and implications of mental health meme involvement in the workplace.

The present paper examines symptoms of mental health disorders, such as stress, anxiety, and depression, in a workplace setting of a private university, and the employees experiencing symptoms of depression, anxiety, and stress interpret mental health memes differently as compared to non-mental health memes or control memes. The structure of this paper is as follows: This article first outlines the methodology section, providing details on the selection of the subject, the questionnaire scale used (Depression Anxiety Stress Scale - 21 Items, DASS-21), the use of pictorial stimuli, the procedure followed, and the statistical analysis conducted. Subsequently, the results and discussions are presented, followed by the conclusion.

## Methods

This study utilized a quantitative, quasi-experimental within-subjects research design in its attempt to explore whether employees in the workplace setting experiencing symptoms of stress, anxiety, and depression interpret mental health memes differently from control memes. This study was conducted in the administrative

block (Registrar's Office, HR Department, IT Department, Student Affairs/Services, Examination Office) of a private university in Dehradun, where a survey was conducted first to determine the awareness of "Internet Memes." It was discovered that 65 employees (Registrar's Office=09, HR Department=12, IT Department=20, Student Affairs/Services=17, Examination Office=07) were aware of internet memes. According to Krejcie & Morgan (1970), the sample size for a population of 65 employees is 56, with a 95% confidence level and a 5% error estimate. The sample size was calculated using  $s = \chi^2 NP(1-P)/d^2(N-1) + \chi^2 P(1-P)$ , where  $s$ = required sample size,  $\chi^2$ = the table value of chi-square for 1 degree of freedom at the desired confidence level (3.841),  $N$  = population size,  $P$ = the population proportion (assumed to be .50 since this would provide the maximum sample size),  $d$  = the degree of accuracy expressed as a proportion (.05). After that, a survey was conducted using questionnaires to examine symptoms of mental health disorders like stress, anxiety, and depression, as well as the perception of mental health memes compared to control memes. A sample of 56 employees initially participated in the survey, and 46 employees (with a mean age of 33.13 years, ranging from 24 to 49, and 63.04% of whom were male) provided complete data. Convenience sampling, a type of non-probability sampling, was used. The study lasted from August 12 to December 27, 2023.

Furthermore, this study utilized the 21-item version of the Depression Anxiety Stress Scale.<sup>23</sup> The scale comprises three subscales specifically developed to assess symptoms of depression, anxiety, and stress experienced over the preceding week. The Likert scale evaluates items with a numerical range from 0 to 3. A score of 0 signifies that the item was irrelevant to the individual in any way, whereas a score of 1 indicates that it was somewhat applicable or occurred occasionally. A score of 2 signifies that

the item was applied extensively or for a significant portion of the time, while a score of 3 shows that the item was employed to a great extent or for most of the time. The aggregate of the individual items yields a cumulative score ranging from 0 to 21, with higher scores signifying increased degrees of symptoms associated with stress, anxiety, and depression. Specifically, for depression (0-4 indicates normal severity, 5-6 mild, 7-10 moderate, 11-13 severe, 14+ extremely severe), for anxiety (0-3 indicates normal, 4-5 mild, 6-7 moderate, 8-9 severe, 10+ extremely severe), and for stress (0-7 indicates normal, 8-9 mild, 10-12 moderate, 13-16 severe, 17+ extremely severe).

In contrast to earlier research or an existing picture set of internet memes that focuses solely on depression symptoms, a new picture set of memes related to mental health, such as stress, anxiety, and depression, was developed and validated for this study as pictorial stimuli.<sup>24</sup> Although a conventional definition of an internet meme frequently refers to a still image with text added, we collected text-added memes relating to mental health from a social media platform. Internet memes featuring GIFs and short videos were not selected. Social media platforms (Facebook, Instagram, Twitter) identified forty-eight still with text-added memes. Six of the final stimuli displayed affective content related to the experience of depression (such as hopelessness, life devaluation, etc.), anxiety (such as situational anxiety and subjective experience of anxious affect), and stress (such as irritable/over-reactive and impatient). The remaining six memes, control or non-mental health memes, generally featured humorous social commentary or everyday situations. Figure 1 shows (a) an example of a mental health meme and (b) an example of a control meme. The final stimuli were further reviewed by one psychologist independent of the research team.



**Figure 1.** (a) An example of a mental health meme, and (b) an example of a control meme. (Source: RozBuzz)

In an online survey questionnaire, employees were randomly shown twelve still-with-text-added internet memes (mental health and control). The online survey has two parts. The first segment asks employees demographic questions. Employees rated each Internet meme on a five-point Likert scale from strongly disagree (=1) to strongly agree (=5) as relatable, humorous, shareable, and likely to make someone with mental health issues feel good in the second section. The DASS-21 scale followed the survey questionnaire. After the study was finished, employees received a debriefing on its purpose.

Initially, the employees are grouped. The DASS-21 scale categorized employees by symptom severity. Those scoring  $\leq 4$  for depression,  $\leq 3$  for anxiety and  $\leq 7$  for stress on the DASS-21 scale were assigned to the control group, whereas those scoring  $\geq 5$  for depression,  $\geq 4$  for anxiety, and  $\geq 8$  for stress were assigned to the mental health concerns symptoms group. The employees with mild and moderate symptoms were assigned to the experimental group due to the potential manifestation of these symptoms in the future. Six employees were excluded as they did not belong to either group. The experimental group consisted of twenty employees who scored high on the DASS-21 scale, with a mean age of 32, and 60% of them were male. On the other hand, the control group (twenty employees) had a mean age of 36, and 70% of its members were male. The average perception ratings for the control and mental

health memes were calculated for each group and the overall sample. Each parameter, such as relatability, humor, shareability, and feel-good factor, was evaluated this way.

A mixed model ANOVA (2x2) was employed to examine whether employees who experience symptoms of depression, anxiety, and stress interpret mental health memes differently from non-mental health memes or control memes. This examined group (experimental vs control) and meme type (Mental health vs nonmental health) impacts and group×meme type interactions. Our study focused on investigating variations among groups (experimental vs control) regarding the perception of mental health memes as relatable, humorous, shareable, and something that would make someone with mental health issues feel good about mental health memes, in contrast to control memes, which primarily portrayed commonplace situations or humorous social commentary. The normality and variance homogeneity hypotheses were investigated using Shapiro-Wilk and Levene's statistical tests. No violation of the assumptions for a mixed model ANOVA occurred.  $p$ -values less than 0.05 were considered significant. SPSS 25 was used for data processing. The study was approved by the Institutional Ethics Committee, UPES, Dehradun, India (Registration No. EC/NEW/INST/2022/2820). In the study, the participants' data remained confidential, and informed consent was taken from all participants.



## Results

Table 1 shows the means and standard deviations of meme ratings for the control group and experimental group (which assessed symptoms of

stress, anxiety, and depression) during the observation of mental health and control memes.

**Table 1.** Means and standard deviations of ratings of memes for the control and experimental (stress, anxiety, and depression symptoms) groups while observing mental health and control memes:

Measure	Mental Health Memes		t	p	Cohens'd
	Experimental group (stress, anxiety, depression symptoms) n= (20)	Control group n= (20)			
Ratings					
Relatable	4.19 ± 0.69	3.73 ± 0.77	-1.97	0.05*	0.734
Humorous	4.08 ± 0.68	3.50 ± 0.69	-2.67	0.01**	0.689
Shareable	3.94 ± 0.67	3.61 ± 0.67	-1.50	0.135	0.672
Feel good	3.93 ± 0.71	3.50 ± 0.77	-1.80	0.79	0.744
	Control Memes				
Relatable	3.71 ± 0.743	3.60 ± 0.81	-0.469	0.642	0.782
Humorous	3.91 ± 0.63	3.40 ± 0.90	-2.06	0.046	0.783
Shareable	3.72 ± 0.71	3.62 ± 0.76	-0.426	0.672	0.738
Feel good	3.84 ± 0.74	3.47 ± 0.72	-1.62	0.113	0.732

\*Sig. at <0.05, \*\*<0.01

The variances of the Relatable, Humorous, Shareable, and Feel-good ratings through a Mixed-model, Repeated-Measures analysis are shown in Table 2. The questionnaire analysis found a significant main effect of meme type ( $F(1,38) = 15.87, p=0.001$ , partial  $\eta^2=.29$ ) on ratings of relatability. Moreover, a significant group×meme type interaction demonstrates that, compared to control participants ( $M=3.73, SD=0.77$ ), individuals experiencing symptoms of mental health issues ( $M=4.19, SD=0.69$ ) rated the mental health memes as significantly more relatable ( $F(1,38) = 5.05, p=0.03$ , partial  $\eta^2=.11$ ). No main effect of group type ( $F(1,38) = 1.60, p=.214$ , partial  $\eta^2=.04$ ) was observed. Individual analysis of relatable ratings for each meme type revealed a significant difference between individuals experiencing symptoms of depression ( $M=4.19, SD=0.69$ ) and control participants ( $M=3.73, SD=0.77$ ) for mental health memes only ( $t(38) = -1.97, p=0.05$ ). No group differences were observed for control memes ( $t(38) = -0.469, p=0.64$ ).

Furthermore, the results revealed a significant main effect of the group type ( $F(1,38) = 6.30$ ,

$p=0.016$ , partial  $\eta^2=.14$ ) on humor ratings. However, no main effects of meme type ( $F(1,38) = 2.49, p=0.123$ , partial  $\eta^2=.06$ ) or group×meme type interactions ( $F(1,38) = 0.18, p= 0.667$ , partial  $\eta^2=.005$ ) were determined. Individual analysis of humorous ratings for each meme type revealed a significant difference between individuals experiencing symptoms of depression ( $M=4.08, SD= 0.68$ ) and control participants ( $M= 3.50, SD= 0.69$ ) for mental health memes only ( $t(38) = -2.67, p=0.05$ ). No group differences were observed for control memes ( $t(38) = -2.06, p=0.046$ ).

For shareability, the results revealed that no main effect of the meme type ( $F(1,38) = 2.34, p=0.134$ , partial  $\eta^2=.05$ ), group ( $F(1,38) = 0.99, p=0.324$ , partial  $\eta^2=.026$ ), or group×meme type interactions ( $F(1,38) = 2.71, p= 0.107$ , partial  $\eta^2=.067$ ).

For Feel-good, the results revealed that no main effect of the meme type ( $F(1,38) = 0.32, p=0.575$ , partial  $\eta^2=.008$ ), group ( $F(1,38) = 3.69, p=0.062$ , partial  $\eta^2=.089$ ), or group×meme type interactions ( $F(1,38) = 0.055, p= 0.816$ , partial  $\eta^2=.001$ ).

**Table 2.** Mixed-model, Repeated-Measures analysis for a variance for Relatable, Humorous, Shareable, and Feel good Ratings:

Source	df	F	p-value	Partial Eta Squared	Observed Power
<b>Relatable</b>					
Between-subject effects					
Group	1	1.600	0.214	0.040	0.234
Error (Group)	38				
Within-subjects effect					
Memes	1	15.879	<0.001**	0.295	0.973
Memes×Group	1	5.054	0.030*	0.117	0.591
Error (Memes)	38				
<b>Humorous</b>					
Between-subject effects					
Group	1	6.307	0.016*	0.142	0.687
Error (Group)	38				
Within-subjects effect					
Memes	1	2.494	0.123	0.062	0.337
Memes×Group	1	0.188	0.667	0.005	0.071
Error (Memes)	38				
<b>Shareable</b>					
Between-subject effects					
Group	1	0.997	0.324	0.026	0.164
Error (Group)	38				
Within-subjects effect					
Memes	1	2.346	0.134	0.058	0.321
Memes×Group	1	2.718	0.107	0.067	0.362
Error (Memes)	38				
<b>Feel good</b>					
Between-subject effects					
Group	1	3.690	0.062	0.089	0.465
Error (Group)	38				
Within-subjects effect					
Memes	1	0.320	0.575	0.008	0.086
Memes×Group	1	0.055	0.816	0.001	0.056
Error (Memes)	38				

\*Sig. at &lt;0.05, \*\*&lt;0.01.

## Discussion

This study explored whether employees in a workplace setting who were experiencing significant symptoms of stress, anxiety, and depression would interpret mental health memes differently from control memes. Employees with symptoms of stress, anxiety, and depression rated mental health memes as more relatable than the control group in a workplace setting. However, there were no significant differences in terms of humor, shareability, or their potential to improve mood. In a notable case study, Jadayel et al<sup>25</sup> found that internet memes about

depression may encourage people to injure themselves or have suicidal thoughts. Additionally, Akil et al conducted a study with 32 healthy young adults to evaluate the impact of depression memes on depressive mood, revealing that exposure to such memes increased depressive symptoms, particularly associated with behavioral difficulties during emotional distress.<sup>26</sup> Conversely, Akram et al found that those with depressive symptoms evaluated depressive memes higher in terms of humor, relatability, shareability, and mood improvement

potential, and deficits influenced these variations in adaptive emotion management mechanisms.<sup>24</sup> Despite their negative content, such memes could provide benefits, including humor, peer support, and improved emotion regulation for those consistently experiencing depressive symptoms. In addition, Kariko and Anasih determined that college students in Jakarta may cope with mental health issues (anxiety, depression) by laughing at their problems, because of the humor and relatability that internet memes provide.<sup>19</sup> As a result, people have a forum to discuss their mental health and connect with others who are dealing with similar issues. Akram et al conducted a similar study in which participants with clinically severe anxiety symptoms found COVID-19 internet memes to be more humorous, relatable, and shareable than non-anxious controls.<sup>20</sup> Internet memes about the COVID-19 pandemic may act as a coping method for people who are experiencing significant anxiety symptoms. Similarly, Cauberghe et al demonstrated that young adults could use social platforms as a constructive coping method to deal with anxiety during the COVID-19 quarantine.<sup>27</sup> Along with existing data, online memes concerning mental health disorders (such as anxiety and depression) may be beneficial for people suffering from these conditions. Expanding on these observations, the present study determined a significant rise in relatability ratings among employees with symptoms of stress, anxiety, and depression, indicating that mental health memes can articulate and affirm their experiences, fostering a sense of connection and comprehension among a community facing comparable challenges. Furthermore, by sharing and watching mental health memes about these issues, employees who are highly stressed, anxious, or depressed may build social and emotional bonds with others who are regarded as socially supportive. Furthermore, LaRose et al imply that social support gained through online engagement may be effective in reducing psychiatric symptoms.<sup>28</sup>

Several studies have explored the stress-relieving

aspects of humor in memes. Humor has a crucial role in maintaining both mental and physical well-being.<sup>29</sup> Affiliative and self-enhancing humor styles are more successful in diminishing negative feelings and strengthening good emotions in mentally sound individuals, in contrast to aggressive and self-defeating humor styles.<sup>30</sup> Munir and Pandin<sup>31</sup> conducted a qualitative study investigating new perspectives on stress relief through digital humor, focusing on the role of various types of digital humor, such as interactive humor, hilarious images, alterations, phanimations, celebrity soundboards, and PowerPoint humor. The findings indicate that using humor in the digital age can predict positive effects and improve job-related well-being, emphasizing the importance of different and easily shared digital humor forms in controlling work stress. Similarly, Priyadarshini et al<sup>32</sup> examined the surge in Internet meme activity on social platforms during the COVID-19 lockdown, analyzing thirty popular Internet memes and utilizing machine learning algorithms, highlighting the increase in online social behavior during the lockdown and underscoring the stress-relieving role of humor through internet memes, with machine learning classifiers demonstrating superior performance compared to multi-layer perceptrons. In addition, Gardner et al<sup>33</sup> contemplated that individuals with depressive symptoms perceive more humor, relatability, shareability, and mood-improving potential in depressive Internet memes than controls, with these differences explained by self-defeating humor style. The results demonstrate that people who are depressed may benefit from connecting with depression-related Internet memes. In contrast, the present study found no significant differences in terms of humor, suggesting that humor, as depicted in internet memes, may have a universal appeal that surpasses individual disparities in mental health conditions. This suggests a subtle connection between internet meme content and its diverse influence on individuals in the workplace setting.

However, the lack of significant differences in

shareability, humor, and mood improvement between mental health memes and control memes raises some intriguing considerations. This suggests that, while employees with stress, anxiety, and depression symptoms find the content relatable, the factors impacting meme shareability and their potential to improve mood may be influenced by broader contextual or individual elements rather than the sheer presence of mental health themes. This intricacy implies that other factors besides content must be considered when analyzing how mental health memes affect social dynamics and mood in the workplace. Occupational stress is associated with depression, anxiety, and stress<sup>34</sup>, making mental health memes more relatable to affected employees, while control memes do not evoke similar responses. Further research may be needed to investigate the varied processes at play in the reception and impact of mental health memes in the workplace setting.

### Limitations

There are some limitations to the current study that should be addressed. The sample we used for this study mainly included male employees, so it's important to note that the findings may not apply as broadly to females. The experimental group comprised employees exhibiting mild symptoms. The present results cannot be extended to employees who fulfill the criteria for a severe serious disorder. Furthermore, the study sample was limited to employees from two blocks, namely academic and administrative, of a singular university. The results could not be

broadly applied to other universities or blocks because of the small sample size.

In the future, there is the prospect of employing neuro design strategies to address mental health issues. A more in-depth investigation using neuro-design techniques such as EEG and f-MRI might be conducted to evaluate the effect of affective memes on the human brain.<sup>16</sup> In addition, eye-tracking analysis can examine visual attention for meme design.<sup>35</sup>

### Conclusion

In sum, the perception of relatability for mental health memes was more excellent amongst employees in a workplace setting with symptoms of stress, anxiety, and depression relative to controls. However, there were no significant differences in humor, shareability, or their potential to improve mood. Despite their predominantly negative connotation, online memes of mental health may have the potential to offer benefits to employees who are employed and consistently exhibit indicators of mental health issues within the workplace. We need to do more studies to fully understand how employees in a workplace setting with stress, anxiety, and depression interact with mental health memes. This will help us figure out if these mental health memes can be used as a form of therapy. Because of this, employees who experience symptoms of stress, anxiety, and depression in the workplace may theoretically create social and emotional relationships with others through the sharing and observation of mental health memes. These bonds may be regarded as socially beneficial.

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