

SUPPLEMENTARY MATERIALS

DESCRIPTIONS OF INTERNET MEMES RATED BY THE STUDY PARTICIPANTS

Pessimism:

Meme 1: A template depicting Artur Schopenhauer with the caption: "Money doesn't bring happiness. Nothing else does either".

Meme 2: A holiday, exotic landscape with the caption: "Every day is a good day to give up".

Meme 3: A template depicting Artur Schopenhauer with the caption: "If the goat didn't jump, it would suffer for a different reason".

Meme 4: A full glass from which, despite being tilted, nothing spills into the second, empty glass. The full glass has the caption: "Life's opportunities, abundance, wealth, beautiful and happy moments". The empty glass has the caption: "My life".

Meme 5: Two happy people holding hands and running through a meadow with the caption: "Hope is the first step to disappointment".

Meme 6: A template depicting Artur Schopenhauer with the caption: "Everything will be fine. I was joking".

Anxiety:

Meme 1: A man with a pained expression on his face with the description: "Anxiety disorder with panic attacks. I love her so much that my heart beats faster".

Meme 2: The face of a frightened man with the caption: "Neurosis: Aren't you afraid?; Me: Of what?; Neurosis: I don't know; Me: My God, you're right".

Meme 3: Text: "Pressing your forehead with your index finger can help you increase your anxiety". Underneath, a doll with a dented forehead and the caption: "Me".

Meme 4: A man waking up with a smile with the caption: "When you wake up and enjoy those 30 seconds of peace because your fears are still slumbering".

Meme 5: An anonymous internet comment saying: "How can you not like neurosis? It just makes my life easier. For example, tomorrow I have to go to the doctor at 11:00 am and I don't even have to set an alarm because I'm already awake at 3:40 am".

Meme 6: Photo of a dog with a scared expression and the caption: "When your anxiety disappears and you don't have it anymore and it makes you feel anxious again".

Procrastination:

Meme 1: Smiling Kermit the Frog lying on the bed with the caption: "Me: I'll do it at 4 pm; Time: It's 4:05 pm; Me: I'll wait until 5 pm though".

Meme 2: A man lying under a blanket on a couch. The image has the caption: "I have so much to do. I'll start with a nap".

Meme 3: Gummi Bear called Zummy surrounded by books and looking as if pondering something. The image has the caption: "When I have so much to study that I'm wondering which show to watch first".

Meme 4: A woman vacuuming the desert with a caption: "I just need to sweep the desert and I can go to study".

Meme 5: A man sleeping on a burning couch. The man is labeled with the words: "Me taking a nap". The couch is labeled with the words: "Duties I avoid".

Meme 6: Kermit the Frog sitting with his head down with the caption: "When you leave things for tomorrow and tomorrow comes".

Depression:

Meme 1: A template showing a smiling older man with a drum with the description: "That one serotonin molecule that helps me get through Monday".

Meme 2: The caption reads: "Therapist: Are you having suicidal thoughts?; Me: Only in normal amounts; Therapist: Normal amount is 0". Underneath is an image of a Muppet-like puppet with a facial expression indicating that it is trying to hide something.

Meme 3: A photo of a smiling older man sitting at a laptop with a cup in his hand. The photo has the caption: "When you're tired and depressed but you drank coffee so you're productive and depressed".

Meme 4: The image is divided into two parts. The top part labeled "Normal Brain" shows a drawing of a brain walking past a puddle labeled "sadness". The brain says: "Oh, a puddle of sadness. I better avoid it". The bottom part is labeled "My Brain". In this part, the brain says, "Oh, a puddle of sadness" and then jumps into the puddle and starts pouring the water over itself.

Meme 5: An image of a dialogue in an internet chat. At the top is the question: "What do you usually eat your toast with?". Below is the answer: "With a hope that I'll choke and die".

Meme 6: A picture with the question at the top: "How are you feeling today?". Below is a picture of an armchair with broken legs.

Masking feelings:

Meme 1: Smiling man drinking coffee with the caption: "Constantly joking to hide the fact that I'm unhappy".

Meme 2: An image of an iceberg, a small part of which is above the sea surface, and the rest is hidden under the sea. The upper part has the caption: "What I tell people who offer me support". The lower part has the caption "What's really inside me".

Meme 3: Picture of a cartoon character. Above the question: "How do you manage to be so funny?". Below is the answer: "All my jokes are cries for help".

Meme 4: A picture of a smiling fish behind a window, raising one of its fins in greeting. The picture has the caption: "When you meet your friends in town after weeks of a nervous breakdown and pretend that everything is fine with you".

Meme 5: An image divided into two parts. The top one shows a man making a gesture of disapproval and the caption: "Sharing your experiences". The bottom one shows a man making a gesture of approval and the caption: "Sharing memes about how emotionally unstable you are".

Meme 6: A picture of a large block of ice or glass next to which is an elongated figure of Spongebob having a very similar shape. The block of glass or ice is captioned: "People living happily without any mental problems". The figure of Spongebob is captioned: "Me pretending to be like them".

Social isolation:

Meme 1: Jerry Mouse lying in bed watching TV with the caption: "Sorry, something came up".

Meme 2: The drawing shows a character from the Moomins called Buka. Buka says: "I am not antisocial. I am selectively social". The word "selectively" is in bold.

Meme 3: The drawing shows a comic book insect calmly eating a hamburger. The drawing is captioned: "When everyone else's drama is happening but it doesn't concern you because you're antisocial and have no social life".

Meme 4: Above the drawing is a caption: "My new business cards just arrived." Below is a drawing of a business card with the caption: "Please do not contact me".

Meme 5: The drawing shows Kermit the frog, lying on a bed, first without any covers, then with

them. The caption above the drawing reads: "Me: No one invites me/ Friend: Do you want to go out?/ Me: [the drawing with the covers pulled tighter]".

Meme 6: The image is divided into two parts. The first part shows a large group of people who look like a family, sitting at a table and looking in the same direction. This part has the caption: "Oh my, who decided to come out of their room?!" The second part shows a lonely man with a worried expression on his face.

Coping with problems:

Meme 1: A white-painted child standing near a white wall signed "Me". Next to him, another child searching for him signed "My problems".

Meme 2: The drawing shows a therapist and his client. The therapist asks: "What should we do when we are sad?". The client replies: "We click 'Add to cart'".

Meme 3: A drawing divided into four parts depicting sleeping Homer Simpson, a dog, Spongebob, and a woman. The drawing has the caption: "When people ask me how I deal with all the problems that fate has thrown at me".

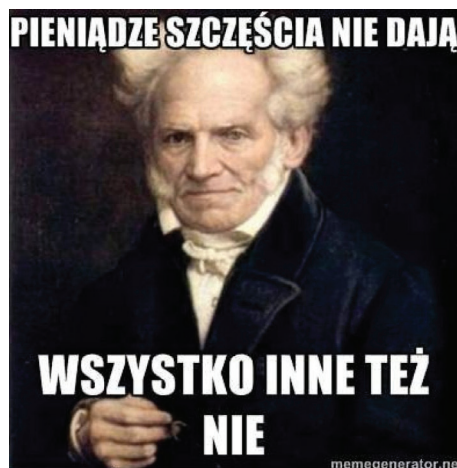
Meme 4: Above is a cut on the hand signed "my life problems". A plaster is stuck on the cut with the caption "memes".

Meme 5: A picture of a dog preparing a large alcoholic drink. Above the picture is the caption: "When you know alcohol won't solve your problems, but you have to try one last time to be sure".

Meme 6: A picture of the back of a man's head looking at himself in a mirror. The mirror also shows the back of the same man's head. The picture is captioned: "Me when I try to face my problems".

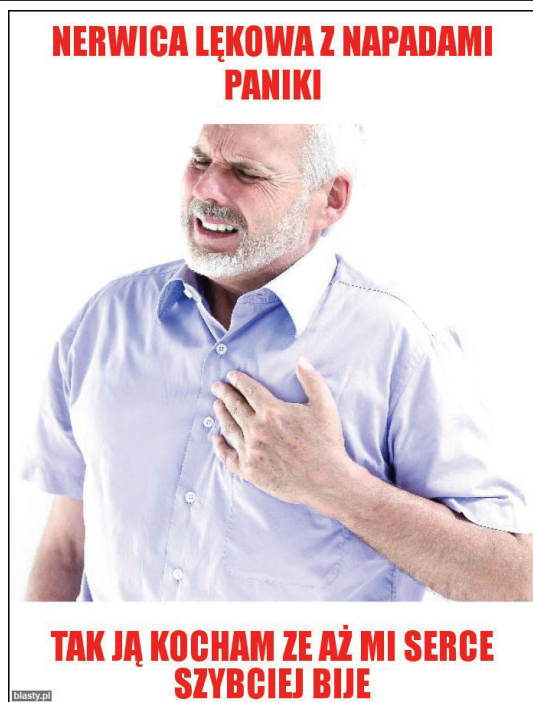
SAMPLE INTERNET MEMES RATED BY THE STUDY PARTICIPANTS

Pessimism



Source: <https://dziennikzachodni.pl/memy-z-schopenhauerem-internauciu-ucza-pesymizmu-galeria/ga/10375302/zd/19379744>

Anxiety



Source: <https://www.blasty.pl/56129/nerwica-lekowa-z-napadami-paniki>

Procrastination



Source: <https://megahumor24h.pl/obrazki/20171124204213uid1.JPG>

Depression



Source: <https://memisko.pl/obrazek/1468/przemeczenie-i-depresja/>

Masking feelings



Source: <https://www.instagram.com/p/CCPeYpcJxxW/> (our own translation into Polish)

Social isolation

"Sory, coś mi wypadło"



Source: https://www.instagram.com/anxious_af/ (our own translation into Polish)

Coping with problems



<https://besty.pl/4029049>

Table S1

Descriptive statistics of study variables

	Overall			Men			Women		
	Mean (<i>SD</i>)	Skewness	Kurtosis	Mean (<i>SD</i>)	Skewness	Kurtosis	Mean (<i>SD</i>)	Skewness	Kurtosis
Funniness									
Pessimism	3.22 (1.16)	0.16	-0.59	2.97 (1.04)	0.21	0.31	3.32 (1.19)	0.10	-0.68
Anxiety	3.22 (1.17)	0.14	-0.67	2.77 (0.91)	-0.23	-0.61	3.38 (1.21)	0.05	-0.86
Procrastination	3.48 (1.30)	-0.04	-0.86	2.76 (1.13)	0.35	-0.73	3.73 (1.27)	-0.22	-0.68
Depression	3.60 (1.18)	-0.18	-0.55	3.38 (1.06)	-0.39	-0.62	3.67 (1.21)	-0.17	-0.59
Masking feelings	2.74 (1.24)	0.43	-0.60	2.29 (0.91)	0.91	-1.30	2.90 (1.30)	0.29	-0.79
Social isolation	3.43 (1.21)	0.02	-0.58	2.86 (1.09)	0.41	-0.39	3.63 (1.18)	-0.12	-0.40
Coping with problems	3.47 (1.22)	0.02	-0.86	2.86 (1.06)	0.51	-0.58	3.68 (1.20)	-0.18	-0.68
Relatedness									
Pessimism	2.82 (1.13)	0.25	-0.69	2.60 (1.14)	0.45	-0.58	2.90 (1.13)	0.19	-0.67
Anxiety	2.72 (1.31)	0.44	-0.77	2.14 (1.09)	0.90	-0.13	2.92 (1.32)	0.29	-0.83
Procrastination	2.67 (1.28)	-0.16	-0.92	3.20 (1.28)	0.12	-0.76	3.83 (1.24)	-0.25	-0.90
Depression	2.95 (1.20)	0.24	-0.76	2.65 (1.29)	0.43	-0.84	3.05 (1.15)	0.24	-0.68
Masking feelings	3.04 (1.32)	0.23	-0.90	2.74 (1.20)	0.51	-0.58	3.14 (1.35)	0.12	-0.94
Social isolation	3.28 (1.28)	0.07	-0.92	2.93 (1.18)	0.25	-0.84	3.40 (1.29)	-0.02	-0.92
Coping with problems	2.97 (1.13)	0.18	-0.69	2.59 (1.08)	0.45	-0.43	3.11 (1.12)	0.09	-0.67
Humor style									
Affiliative	5.33 (1.40)	-0.74	0.00	5.35 (1.20)	-0.71	-0.16	5.33 (1.12)	-0.76	0.09
Self-enhancing	3.95 (1.10)	0.19	-0.42	4.16 (1.22)	0.09	-0.30	3.86 (1.05)	0.16	-0.56
Aggressive	3.36 (0.85)	0.45	0.01	3.77 (0.98)	0.06	-0.41	3.21 (0.75)	0.37	0.02
Self-defeating	3.51 (1.13)	0.21	-0.40	3.56 (1.06)	0.19	-0.23	3.49 (1.15)	0.22	-0.44
Rumination	3.93 (0.88)	-0.93	0.06	3.88 (0.87)	-0.82	0.01	3.85 (0.89)	-0.98	0.13
Reflection	3.68 (0.88)	-0.23	-0.82	3.68 (0.86)	-0.27	-0.73	3.68 (0.89)	-0.22	-0.84
Self-liking	2.64 (0.97)	0.28	-0.68	2.68 (0.94)	0.14	-0.35	2.64 (0.98)	0.33	-0.75
Self-competence	2.60 (0.73)	0.74	-0.24	2.67 (0.77)	-0.03	-0.12	2.57 (0.72)	0.04	0.19

SAMPLE ITEMS FROM THE SCALES USED IN THE STUDY

Rumination-Reflection Questionnaire (Trapnell & Campbell, 1999)

Rumination scale: "Often I'm playing back over in my mind how I acted in a past situation".

Reflection scale: "I love to meditate on the nature and meanings of things".

Self-liking/Self-competence Scale – Revised Version (Tafarodi & Swann, 1995; Polish version: Szpitalak & Polczyk, 2015)

Self-competence scale: "I perform very well at a number of things".

Self-liking scale: "I feel comfortable with myself".

Humor Styles Questionnaire (Martin et al., 2003; Polish version: Hornowska & Charytonik, 2011)

Affiliative humor: "I enjoy making people laugh".

Self-enhancing humor: "If I am feeling depressed, I can usually cheer myself up with humor".

Aggressive humor: "If someone makes a mistake, I will often tease them about it".

Self-defeating humor: "I let people laugh at me or make fun at my expense more than I should".

LIMITATIONS OF THE CURRENT STUDY ON FUNNINESS AND RELATEDNESS RATINGS OF MEMES ABOUT PSYCHOLOGICAL PROBLEMS

Our study has several limitations. Firstly, our sample included more women than men. Women are more likely than men to respond to and participate in online surveys (Becker, 2022); however, future studies should focus on reducing the gender gap.

Secondly, our study did not include participants' opinions about the possibility of facing psychological problems in everyday life and considering such problems as typical. Therefore, future studies should include variables related to these aspects, for example, self-compassion (Neff, 2003).

Thirdly, our sample was rather homogeneous in terms of age. Currently, young adults have many opportunities to learn about mental health, and mental health is a popular topic in popular culture (Kresovich, 2022). However, older people less often acknowledge mental problems and have limited access to mental health services (de Mendonça Lima & Ivbijaro, 2013). Therefore, future studies should include people of different ages.

Fourthly, our study was limited to Polish participants. In the future, cross-cultural research is necessary, as most countries have distinct social norms and beliefs about mental health that can shape how mental health-related memes are perceived and rated.

A cross-cultural approach to assessing the funniness and relatedness of memes to psychological problems may be important due to the different importance of symptoms across cultures, for example, in depression (Noguchi et al., 2021).

The fifth limitation is the cross-sectional nature of this study. Future research could adopt a longitudinal or intervention-based design to examine whether exposure to mental health-related memes over time influences psychological outcomes. For instance, presenting humorous content that normalizes psychological struggles might help reduce internalized stigma, challenge prejudices, and foster greater acceptance of one's condition. Moreover, meme-based interventions could promote insight into mental health mechanisms and facilitate emotional processing. Exploring these applications would deepen understanding of the potential therapeutic and psychoeducational value of digital humor in mental health contexts.

The sixth limitation is that our study did not control for participants' cognitive functioning. Some studies show that depressed individuals have reduced comprehension of cognitively demanding content, such as riddles or jokes (Falkenberg et al., 2011), which may impact their ratings of meme funniness. Moreover, changes in linguistic communication accompanying mood disorders (Trifu et al., 2024) may influence how memes, which are based on the simultaneous reception of images and text, are perceived.

Finally, we did not ask participants to rate the funniness and relatability of funny memes that did not refer to mental health issues. Therefore, based on our data, we were unable to determine whether people's reactions to humorous memes about psychological issues differed from their general reactions to funny content. Adding ratings of the funniness of neutral memes would help to determine whether category effects reflect participants' problem-specific resonance or their general humor appreciation.

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