

Research Paper

## Construction And Validation of Conversational AI Dependence During Stress Scale (CAIDSS)

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### ABSTRACT

Past few years have seen rise in use of conversational artificial intelligence (CAI) driven systems such as ChatGPT by OpenAI, Grok, Replika. Based on the statistics provided by their parent companies, CAIs have been used for personal matters especially for guidance and decision making. Given this surge in CAI's popularity, mental health support systems have also seen a shift towards CAI driven applications and chatbots. On one hand CAIs ease accessibility and affordability of support needed but on the other hand they face critical limitations such as lack of emotional intelligence and possible bias against gender, race, caste or ethnicity. Thus, this study was undertaken to develop a short screening tool that can aid people identify the extent to which an individual is uses CAIs to seek help under distress. The 4-item CAIDS scale showed good internal consistency ( $\alpha = 0.862$ ,  $\omega = 0.865$ ) and has a unidimensional factor structure based on exploratory factor analysis. Additionally, the correlation between CAIDSS and an established measure provided strong evidence for the former's convergent validity ( $r=0.82$ ). CAIDS scale is a reliable and valid tool that can be used in clinical and research contexts to better understand causes and outcomes of using CAI agents for guidance under distress.

**Keywords:** *Artificial intelligence, Stress, Coping, Psychological scale, AI dependence*

According to WHO (2025), 1.095 billion people in the world are living with mental disorders out which anxiety disorders have accounted for 4.4% of the prevalence rates. Stress from a psychological perspective is a response to a stimulus whose demands exceed the individual's current capacity to deal with it (Cohen & Janicki- Deverts, 2012; Lazarus, 1999). Ipsos global survey found (2024) 1 in 2 urban Indians (53%) have experienced stress which impacted their daily life in the past year. The proportion of individuals receiving minimally adequate treatment for mental health problems is highly variable, from around 23% in high-income nations to as low as 3% in low- and lower-middle-income nations (Bains & Abdijadid, 2023). Besides, poor infrastructure and medical facilities contributing to this handicap, the general as well as affected population's awareness also affects to health behavior. A survey (Yokoya et al., 2018) conducted during annual health checkups in Japan revealed 30% of participants had the stigmatizing belief that a weak personality causes depression. According to Indian Ministry of Health and welfare (2025) 70% to 92% of people with mental disorders do not receive proper treatment due to

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lack of awareness, stigma, and shortage of professionals. Some disorders such as schizophrenia, borderline personality disorders, etc. are in turn stigmatized by mental health providers which is reflected in the language they use to describe people with these disorders (APA, 2024).

Conversational artificial intelligence (CAI) is a user assistance system that engage with humans in an interactive conversation depend upon the user's need and contexts (Maedche et al. 2016; Fu et al., 2022). CAI driven chatbots and apps have seen growing research reception in the recent years due to people's shift towards online platforms for therapy. Reviews conducted on effectiveness of CAI driven chatbots in mental health sphere indicate promising results. Feng et al. (2025) reported CAIs having significant effect on depressive symptoms if used as an early intervention. Similar findings were reported by Li et al. (2023) where the effect size was found to be larger among multi-modal and generative CAIs integrated with mobile and instant messaging apps. A thematic analysis of user reviews on AI-based mental health support app 'Wysa' generated mixed reactions with majority users finding the app effective in addressing their mental health problems but it falls short due to its inability to address all types of mental health conditions and properly respond to the context (Chaudhry & Debi, 2024). Kulkarni et al. (2024) recommended use of CAIs based on BERT or LSTM architectures as a supplementary tool in mental health settings.

Although the above results indicate a promising future for CAI in mental health fields, there are certain limitations to be considered. The first is absence of emotional intelligence to understand the user's emotional state and reflect on it carefully. Most of the common CAIs such as ChatGPT, Grok, etc. have been trained on large amounts of training data including conversational dialogues. These CAI agents learn the patterns of these data and project an output that is the most probable according to the given input. Given the individual differences among array of users, a CAI cannot emulate a human's ability to empathize with and respond to a fellow human uniquely, depending upon the current context (Minerva & Giubilini, 2023). Another problem lies in training data itself which might contain biases that reflect socio-cultural inequalities which can lead to erroneous diagnosis and treatment recommendations (Celi et al., 2022). Despite current technical limitations of CAI, Rosenberg (2023) warns advancements in CAI will put users at manipulatory risks where CAIs will be able to mimic manipulation tactics of human salespeople which threatens epistemic agency of humans- ability to form and critically reflect upon a set of beliefs.

Dependence upon AI has been linked to decrease in autonomy, confidence and critical cognitive abilities such as problem solving and decision making (Morales-García et al., 2024; Parsakia, 2023; Arora et al., 2021). In context of coping and mental health support, Khawaja & Bélisle-Pipon (2023) have argued ignorance of limitations that come with chatbots can lead to therapeutic misconception, where a user overestimates their ability to provide actual therapeutic support and hence, lead to persistent dependence for support. This is an alarming issue since one of the aims of a therapeutic alliance is to foster autonomy in the individual which is closely related to manage their distress. User's autonomy is threatened when they come under the false belief of CAI being a human and unfortunately this process can also take place unconsciously through anthropomorphism- a false belief that an entity possesses human like traits when in reality it doesn't (Marchegiani, 2025).

### ***Present study***

Most of the existing frameworks in stress and coping are process oriented that fail to shed light on content and functional utility of dealing with specific stressors i.e. the what (type of

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coping mechanism) and why (reasons to choose one mechanism over another) (Skinner & Edge, 1998; Aldwin, 2012). Given the increasing discussion about popular use of CAI in mental health avenues, this study aims to shed light on the same as a coping mechanism. Despite the adequate discussion of negative consequences of depending upon AI in mental health context especially as a medium of support during distress (Nizamani et al., 2024; Xie et al., 2022; Laestadius et al., 2022), there have been fewer contributions to quantify this construct. A quick screening tool can aid professionals and even mental health applications to identify CAI as a coping mechanism, plan goals and activities accordingly to design interventions that place individual autonomy and self-efficacy at its core.

### *Objectives*

- To develop a short scale that quantifies use of CAI as a coping mechanism across all age groups
- To assess psychometric properties of the scale i.e. factorial structure, internal consistency and convergent validity with an already established scale measuring a similar construct.

## **METHODOLOGY**

### *Research design*

The study employed a cross-sectional design to approach all phases quantitatively from scale construction to its preliminary validation.

### *Item writing*

Initially, 6 items were developed through a systematic process that involved using established scales (Chen, 2015; Liu & Ma, 2018; Goh & Hartanto, 2025). The items were modified to match the context of the current study. Based on the existing works key areas for dependence on CAI to cope during stress were- compulsive use, inability to find or reduced use of alternative resources for coping, using CAI as the sole coping mechanism and inability to restrict the use of CAI. This initial pool of 6 items was measured on a 5-point Likert scale (1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often and 5 = Always).

10 people were sampled in convenience to respond to the scale in order to establish its face validity. Additionally, two clinical psychologists were consulted to review the items. Both the participants and experts were asked to carefully read the items and if they felt, any item was irrelevant or out of place from the rest, they must indicate the same along with the reason behind their decisions. The participants deemed all 6-items as relevant and fitting but the experts objected to items 5 and 6 in the scale- '*My discomfort is further increased if I cannot access my usual chatbot/CAI under distress*' and '*I have tried to reduce my use of chatbots for mental-health support but could not*' respectively. The justification given by first reviewer behind these objections was the scale assesses to what extent an individual is dependent upon CAI to cope rather than directly measuring addiction or compulsive use of CAI agents to cope. Item 5 reflects the withdrawal and item 6 aligns with perceived loss of control while dependency to cope is different from addiction or compulsive use and might not necessarily be a pathological issue. Reviewer 2 shared the same stance as the first, that dependence must not be mixed with addiction or compulsive use but instead of eliminating the items altogether, they suggested to extend the scale of include more items that reflected compulsive use. The second reviewer added if the scale is extended to include more dimensions, it must also incorporate what type of coping (ex: problem or emotion focused) is being undertaken through CAI.

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Considering the initial aim to design a short screening tool, the author decided to remove the last two items altogether. However, the suggestions to extend and incorporate more dimensions in the scale would be addressed in prospective works taken upon to construct a longer format of the present scale. Hence, the final 4-item scale was further validated.

### *Sample and procedure*

Participants were recruited through online platforms such as Reddit, Survey circle and Discord. The questionnaire was open to adults from all the six continents. Initially, 181 people had responded to the online questionnaire distributed through google forms. 175 final responses were retained since six respondents had failed the attention check used for random responding.

The questionnaire consisted of three sections- (1) Information, consent and demographics, (2) The 4-item Conversational AI dependence during stress scale (CAIDSS) and (3) The 11-item Generative AI dependency scale (GAIDS) by Goh & Hartanto (2025) to establish convergent validity.

### *Data analysis*

All the statistical analysis was conducted in Jamovi, an open-sourced software (Version 2.6). Following descriptives, internal consistency of the scale was assessed through both Cronbach's alpha and McDonald's omega. Exploratory Factor analysis (EFA) was conducted to identify the underlying factor structure of the final scale. Bartlett's test of sphericity, Kaiser Meyer Olkin (KMO) Measure of sampling adequacy and Chi-squared test of model fit were conducted as pre-requisites to EFA. A significant Bartlett's test of sphericity and KMO values exceeding 0.50 are the usual norms to proceed with EFA. Factor retention was done in accordance with eigenvalues greater than one and visual analysis of Cattell's scree plot. The threshold for factor loadings of items was at 0.50.

## RESULTS AND DISCUSSION

### Descriptives

*Table 1: Descriptives of both scales grouped by gender*

	Gender	Mean	Median	SD	Skewness		Kurtosis	
					Skewness	SE	Kurtosis	SE
GAIDS	Female	32.52	32.00	5.66	0.205	0.237	-0.429	0.469
	Male	32.88	31.50	5.82	0.594	0.299	0.508	0.590
CAIDSS	Female	9.12	8.00	3.67	0.689	0.237	-0.537	0.469
	Male	9.19	8.00	3.93	0.818	0.299	-0.240	0.590

GAIDS scores were approximately normally distributed for both females ( $M = 32.6$ ,  $SD = 5.67$ ) and males ( $M = 32.7$ ,  $SD = 5.87$ ). However, CAIDSS scores showed slight to moderate positive skew, particularly for males ( $M = 9.02$ ,  $SD = 3.91$ ), with skewness ranging from 0.57 to 0.94 and kurtosis from  $-0.73$  to  $-0.03$ . All skewness and kurtosis values fall well within Hair et al.'s (2010) and Byrne's (2010) recommended thresholds (skewness  $\pm 2$ ; kurtosis  $\pm 7$ ). This indicates that the GAIDS and CAIT scores for both genders are approximately normally distributed with no significant deviations from normality. However, slight positive skewness in CAIDSS scores of males suggests a mild floor effect where male participants tend towards lower dependence levels.

**Internal consistency reliability**

**Table 2: Item-total correlation and measures of internal consistency**

	Item-total correlation	If item dropped	
		Cronbach's $\alpha$	McDonald's $\omega$
1	0.635	0.855	0.857
2	0.686	0.834	0.838
3	0.757	0.805	0.810
4	0.767	0.800	0.808

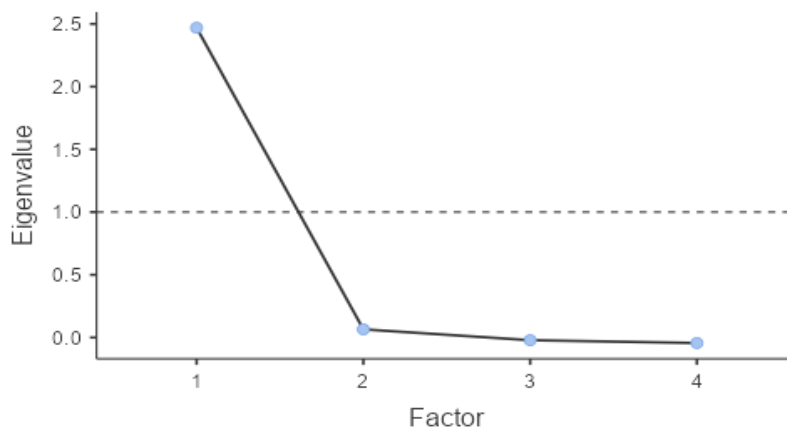
The overall internal consistency of the 4-item CAIDSS was good ( $\alpha = 0.862, \omega = 0.865$ ). The item total correlation was between 0.63 to 0.76 ( $p < 0.001$ ) indicating all items were positively correlated to the overall scale. The item dropped reliability analyses (Table 2) show each item significantly contributes to the overall structure of the scale with the reliability being affected least by dropping item 1 and most by dropping item 4.

**Exploratory Factor analysis**

The KMO Measure of Sampling Adequacy indicated good overall sampling adequacy (KMO = 0.814) with individual item MSAs ranging from 0.793 to 0.856. Bartlett’s Test of Sphericity was significant ( $\chi^2(6) = 326, p < .001$ ), indicating that the correlation matrix significantly differed from an identity matrix and supporting the suitability of the data for factor analysis. The chi-squared test of model fit was non-significant, ( $\chi^2(2) = 3.81, p = .149$ ). These results support the adequacy of the factor structure.

Eigenvalues from the exploratory factor analysis yielded a single-factor solution with only the first factor’s eigenvalue being greater than one (eigenvalue= 2.47), accounting for 61.7% of the total variance. The remaining factors had eigenvalues close to zero or negative supporting the unidimensional nature of the scale. Based on the eigenvalues and visual analysis of the scree plot (Figure 1) which showed a clear elbow after the first factor, a one-factor structure was confirmed for CAIDS scale.

**Figure 1: Cattell’s scree plot**



**Table 3: Factor loadings and unique variance**

Item	Factor 1	Uniqueness
1	0.685	0.531
2	0.752	0.434
3	0.843	0.290
4	0.851	0.275

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Factors were extracted via minimum residual method with Promax rotation. The EFA yielded a one-factor solution where factor loadings ranged from 0.68 to 0.85 suggesting satisfactory shared variance among the items with the underlying factor. The unique variance ranged between 0.27 to 0.53 indicating that the identified factor accounts for substantial variance across all 4-items.

### Convergent validity

	GAIDS	Cognitive Pre.	Negative Conseq.	Withdrawal
CAIDSS (Pearson's r)	0.82	0.66	0.75	0.78

To establish convergent validity, the 11-item Generative AI dependence scale (GAIDS) (Goh & Hartanto, 2025) was administered due to its proximity to the construct in question. Additionally, GAIDS has been validated on a larger sample and more systematically than CAIDSS, making it a psychometrically subpar measure. GAIDS measures dependence upon generative AI systems across three dimensions- cognitive preoccupation, negative consequences, withdrawal. CAIDSS showed an overall significant and strong positive correlation with GAIDS ( $r=0.62$ ,  $p<0.001$ ); where individually, it showed the highest correlation with withdrawal ( $r=0.78$ ,  $p<0.001$ ) followed by negative consequences ( $r=0.75$ ,  $p<0.001$ ) and cognitive preoccupation dimension ( $r=0.66$ ,  $p<0.001$ ).

## DISCUSSION

In light of increasing usage of AI, particularly CAI such as ChatGPT, Grok, etc. for personal matters (OpenAI, 2025) including support during emotional distress (Chauhan, 2025), the present study aimed to construct and validate a short Conversational AI dependence during stress scale (CAIDSS) that assesses dependence upon CAI to cope during stress. Using CAI for mental health support in itself is not an issue when the user is aware of the architecture behind CAIs and the high probability of committing errors may it be factual. However, higher dependence suggests over-reliance on CAI as the sole medium to cope during stress, avoiding any other accessible resources such as friends, family and professionals. Existing literature does support the potential of CAI as a mental health tool but not without warnings (Parsakia, 2023; Arora et al., 2021). As stated earlier, any kind of intervention or support must be extended for a limited amount of time to foster self-efficacy and autonomy, for the individual to deal with similar situations on their own. An ideal support system does not explicitly offer solutions to the individual but guides them to find the appropriate solution on their own. However, CAI's constant availability, provision of explicit advice or solutions and inability to equip individuals with adequate coping self-efficacy breeds dependence upon them. Stress is induced when the individual perceives the demand exceeding their resources (mental, physical and environmental). With CAI, the individual might never stop perceiving a similar situation as stressful, their coping self-efficacy will be undermined and they would always turn to CAIs for support. Hence, the alleviation of stress or any problem through the use of CAI is temporary.

The scale's internal consistency for the 4-item CAIDSS using Cronbach's alpha and McDonald's omega was good ( $\alpha = 0.862$ ,  $\omega = 0.865$ ) and item-drop analyses (Table 2) confirmed that each item contributes meaningfully to the scale. Exploratory factor analysis yielded a one-factor structure (Figure 1) with a single factor accounting for 61.7% of the variance in 4-items. Factor loadings ranged from 0.68 to 0.85 with uniqueness between 0.27 and 0.53 (Table 3). Convergent validity was established through strong positive correlation with GAIDS (Table 4) with the highest associations observed for withdrawal ( $r = 0.78$ )

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followed by negative consequences ( $r = 0.75$ ). Hence, CAIDSS assesses affective and functional aspects of AI use dependence since it closely aligns with withdrawal and negative consequence dimensions of GAID scale. The lower correlation with cognitive preoccupation supports the decision of removing the two items from initial pool of six to prevent the scale from being a measure of general or compulsive use only. These findings collectively show that CAIDSS is a reliable and a unidimensional measure of CAI dependence to cope during stress with good convergent validity.

### **Implication**

CAIDSS scale is a short screening tool that can be used in both formal and informal settings. Individuals scoring higher on this scale can be taught about how CAIs work and the risks of relying on them especially for a delicate matter like mental health. Therapists can successfully use this tool to design an intervention that helps the individual reduce their dependence upon CAIs and place autonomy at the center of their intervention. Future research can explore several factors that lead to dependence such as the amount of stress experienced during lifetime, availability of support systems, anthropomorphism of present-day CAIs, etc. Additionally, psychological variables as part of the self-systems such as self-efficacy, epistemic agency, etc. can also be assessed in relation to CAI dependence and stress to understand their roles as protective factors or outcomes (Folkman & Moskowitz, 2000; Chesney et al., 2006; Vasquez et al., 2021) which in turn have clinical relevance.

### **Limitations**

Despite its strengths, the current study has limitations that can be overcome by further exploration. The scale's dimensionality can be expanded to include broader perspectives on dependence such as negative consequences, withdrawal, type of coping, etc. In addition, a confirmatory analysis must be conducted on a separate sample to confirm the one-factor solution yielded by the exploratory factor analysis in the study. Given, the scale includes sample across all six continents, more works addressing cultural adaptations in different languages and possibly re-writing items to better suit the cultural or linguistic contexts can be undertaken.

## **CONCLUSION**

The current study developed a short and psychometrically sound measure- Conversational AI dependence during stress scale (CAIDSS) which quantifies an individual's reliance on CAIs for coping. The results indicate satisfactory psychometric properties of a scale with good internal consistency and a unidimensional factor structure as was aimed initially. Future works further confirming the one-factor solution and expanding the scope of the scale are underway.

## **REFERENCES**

- Aldwin, C. M. (2012). Stress and coping across the lifespan. In S. Folkman (Ed.), *The Oxford handbook of stress, health, and coping* (pp. 15–34). Oxford University Press. <https://doi.org/10.1093/oxfordhb/9780195375343.013.0002>
- American Psychological Association. (2024). *Fighting stigma by mental health providers toward patients*. Monitor on Psychology. <https://www.apa.org/monitor/2024/07/stigma-against-patients>
- Arora, A., Chakraborty, P., Bhatia, M.P.S. (2021). Problematic Use of Digital Technologies and Its Impact on Mental Health During COVID-19 Pandemic: Assessment Using Machine Learning. In: Arpaci, I., Al-Emran, M., A. Al-Sharafi, M., Marques, G. (eds) *Emerging Technologies During the Era of COVID-19 Pandemic*. Studies in

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- Systems, Decision and Control, vol 348. Springer, Cham. [https://doi.org/10.1007/978-3-030-67716-9\\_13](https://doi.org/10.1007/978-3-030-67716-9_13)
- Bains, N., & Abdijadid, S. (2023). Major depressive disorder. In StatPearls. StatPearls Publishing. <https://www.ncbi.nlm.nih.gov/books/NBK559078/>
- Celi, L. A., Cellini, J., Charpignon, M.-L., Dee, E. C., Dernoncourt, F., Eber, R., et al. (2022). Sources of bias in artificial intelligence that perpetuate healthcare disparities—a global review. *PLoS Digit. Health* 1:e0000022. doi: 10.1371/journal.pdig.0000022
- Chaudhry, B., & Debi, H. (2024). User perceptions and experiences of an AI-driven conversational agent for mental health support. *MHealth*, 10. doi:10.21037/mhealth-23-55
- Chauhan, R. (2025, August 21). *ChatGPT is most popular AI tool as 88% students seek stress relief*. India Today. <https://www.indiatoday.in/education-today/news/story/chatgpt-is-most-popular-ai-tool-as-88-students-seek-stress-relief-2774840-2025-08-21>
- Chen, H.-I. (2015). The development of a scale to measure smartphone dependency. *Metallurgical & Mining Industry*, 9.
- Chesney, Margaret & Neilands, Torsten & Chambers, Donald & Taylor, Jonelle & Folkman, Susan. (2006). A validity and reliability study of the Coping Self-Efficacy Scale. *British journal of health psychology*. 11. 421-37. 10.1348/135910705X53155.
- Cohen, S., & Janicki-Deverts, D. (2012). Who's stressed? Distributions of psychological stress in the United States in probability samples from 1983, 2006, and 2009. *Journal of Applied Social Psychology*, 42(6), 1320–1334
- Edge, E. S. K. (1998). Reflections on Coping and Development across the Lifespan. *International Journal of Behavioral Development*, 22(2), 357–366. <https://doi.org/10.1080/016502598384414>
- Feng, Y., Hang, Y., Wu, W., Song, X., Xiao, X., Dong, F., & Qiao, Z. (2025). Effectiveness of AI-driven conversational agents in improving mental health among young people: Systematic review and meta-analysis. *Journal of Medical Internet Research*, 27, e69639. <https://doi.org/10.2196/69639>
- Folkman, S., & Moskowitz, J. T. (2000). Positive affect and the other side of coping. *The American psychologist*, 55(6), 647–654. <https://doi.org/10.1037//0003-066x.55.6.647>
- Fu, Tingchen & Gao, Shen & Zhao, Xueliang & Wen, Ji-rong & Yan, Rui. (2022). Learning towards conversational AI: A survey. *AI Open*. 3. 10.1016/j.aiopen.2022.02.001.
- Goh, A. Y. H., Hartanto, A., & Majeed, N. M. (2025). Generative Artificial Intelligence Dependency: Scale Development, Validation, and its Motivational, Behavioral, and Psychological Correlates. *Computers in Human Behavior Reports*, 100845. <https://doi.org/10.1016/j.chbr.2025.100845>
- Ipsos. (2024, October 13). *1 in 2 urban Indians have felt stressed to the extent that it impacted their daily life: Ipsos World Mental Health Day Survey 2024*. Ipsos. <https://www.ipsos.com/en-in/1-2-urban-indians-have-felt-stressed-extent-it-impacted-their-daily-life-ipsos-world-mental-health>
- Khawaja Z and Bélisle-Pipon J-C (2023) Your robot therapist is not your therapist: understanding the role of AI-powered mental health chatbots. *Front. Digit. Health* 5:1278186. doi: 10.3389/fdgth.2023.1278186
- Kulkarni, Swarali & Parkar, Erum & Lonkar, Rutuja & Pareek, Preksha & Patil, Shruti & Kusal, Sheetal. (2024). Conversational AI for Mental Health Support. 1-7. 10.1109/MITADTSoCiCon60330.2024.10575117.
- Laestadius, L., Bishop, A., Gonzalez, M., Illenčík, D., & Campos-Castillo, C. (2022). Too human and not human enough: A grounded theory analysis of mental health harms

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- from emotional dependence on the social chatbot Replika. *New Media & Society*, 26(10), 5923-5941. <https://doi.org/10.1177/14614448221142007>
- Lazarus, R. S. (1999). *Stress and emotions: A new synthesis*. New York: Springer Publishing Company.
- Li, H., Zhang, R., Lee, YC. *et al.* Systematic review and meta-analysis of AI-based conversational agents for promoting mental health and well-being. *npj Digit. Med.* 6, 236 (2023). <https://doi.org/10.1038/s41746-023-00979-5>
- Liu, C., & Ma, J. (2018). Development and validation of the Chinese social media addiction scale. *Personality and Individual Differences*, 134, 55–59. <https://doi.org/10.1016/j.paid.2018.05.046>
- Maedche, Alexander & Morana, Stefan & Schacht, Silvia & Werth, Dirk & Krumeich, Julian. (2016). *Advanced User Assistance Systems*. *Business & Information Systems Engineering*. 58. 10.1007/s12599-016-0444-2.
- Marchegiani, B. (2025), Anthropomorphism, False Beliefs, and Conversational AIs: How Chatbots Undermine Users' Autonomy. *J Appl Philos.* <https://doi.org/10.1111/japp.70008>
- Minerva, F., and Giubilini, A. (2023). Is AI the future of mental healthcare? *Topoi Int. Rev. Philos.* 42, 1–9. doi: 10.1007/s11245-023-09932-3
- Ministry of Health and Family Welfare. (2025, February 7). *Advancing Mental Healthcare in India* [Press release]. <https://mohfw.gov.in/?q=en/pressrelease-206>
- Morales-García WC, Sairitupa-Sanchez LZ, Flores-Paredes A, Pascual-Mariño J, Morales-García M. Influence of Self-Efficacy in the Use of Artificial Intelligence (AI) and Anxiety Toward AI Use on AI Dependence Among Peruvian University Students. *Data and Metadata*. 2025; 4:210. <https://doi.org/10.56294/dm2025210>
- Nizamani, Murk & Ramzan, Faisal & Fatima, Mahnoor & Asif, Muhammad. (2024). Investigating How Frequent Interactions with AI Technologies Impact Cognitive and Emotional Processes. *Bulletin of Business and Economics (BBE)*. Vol. 13 No. 3 (2024). 10.61506/01.00498.
- OpenAI. (2025, September 15). *How people are using ChatGPT*. <https://openai.com/index/how-people-are-using-chatgpt/>
- Parsakia, K. (2023). The Effect of Chatbots and AI on The Self-Efficacy, Self-Esteem, Problem-Solving and Critical Thinking of Students. *Health Nexus*, 1(1), 71-76.
- Rosenberg, Louis. (2023). The Manipulation Problem: Conversational AI as a Threat to Epistemic Agency. 10.48550/arXiv.2306.11748.
- Vazquez, C., Valiente, C., García, F. E., Contreras, A., Peinado, V., Trucharte, A., & Bentall, R. P. (2021). Post-Traumatic Growth and Stress-Related Responses During the COVID-19 Pandemic in a National Representative Sample: The Role of Positive Core Beliefs About the World and Others. *Journal of happiness studies*, 22(7), 2915–2935. <https://doi.org/10.1007/s10902-020-00352-3>
- World Health Organization. (2025). *World mental health today: Latest data*. Geneva: World Health Organization. <https://www.who.int/publications/i/item/9789240113817>
- Xie, Tianling & Pentina, Iryna. (2022). Attachment Theory as a Framework to Understand Relationships with Social Chatbots: A Case Study of Replika. 10.24251/HICSS.2022.258.
- Yokoya, S., Maeno, T., Sakamoto, N., Goto, R., & Maeno, T. (2018). A Brief Survey of Public Knowledge and Stigma Towards Depression. *Journal of clinical medicine research*, 10(3), 202–209. <https://doi.org/10.14740/jocmr3282w>

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### ***Conflict of Interest***

The author(s) declared no conflict of interest.

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## **Appendix 1: CAIDS Scale**

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### ***Conversational AI dependence during stress scale (CAIDSS)***

#### ***Definitions***

- **Stress:** Stress can be defined as a state of worry or mental tension caused by a difficult situation (WHO). Here, difficult situation implies the individual does not possess resources (mental or physical) to deal with the demands of situation.
- **Coping:** Coping involves spending mental energy on the demands (mental or physical) of the difficult situation.
- **CAI:** conversational AI which can engage with users in a human-like conversational flow such as Replika, ChatGPT, Grok, etc.

Keep in mind, the items are applicable when you are under stress, specifically how frequently you engage in the actions described by the statements below where: 1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often and 5 = Always.

#### ***Items***

- I instinctively turn to CAI to cope with my stress
- I cannot find ways to manage stress without CAI
- Without CAI's support I feel helpless during difficult times
- My use of CAI to cope during stress has made me less likely to seek help from other sources (friends, family, professionals, etc.)

**Scoring:** Addition of scores across four items

Maximum score is 20 while minimum score is 4 where higher the score, greater the dependence.