The International Journal of Indian Psychology
ISSN 2348-5396 (Online) | ISSN: 2349-3429 (Print)
Volume 13, Issue 2, April- June, 2025
DIP: 18.01.313.20251302, DOI: 10.25215/1302.313
https://www.ijip.in

Research Paper

# Construction and Standardization of Catastrophizing Scale

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## ABSTRACT

This research presents the development and psychometric validation of an instrument designed to quantify catastrophizing. Following a comprehensive literature synthesis on catastrophizing phenomenology, we constructed a 10-item measurement scale. The instrument underwent expert panel review (N=8) for content validation, followed by empirical refinement through pilot testing (N=100). Item analysis revealed strong psychometric properties across all ten original items, supporting their retention in the final scale. Statistical analyses demonstrated strong internal consistency (Cronbach's alpha = 0.823) and significant item-total correlations (ranging from 0.391 to 0.615, $p < .01$), supporting its validity for measuring cognitive distortions related to catastrophizing. This instrument contributes to both research applications and clinical assessment of catastrophizing tendencies in therapeutic settings.

***Keywords:*** *Catastrophizing, Scale, Standardization, Item Analysis, Reliability, Validity, Norms*

Catastrophizing is a cognitive distortion characterized by the tendency to magnify negative events and anticipate the worst possible outcomes. This maladaptive thinking pattern is associated with heightened distress and increased vulnerability to various mental health disorders, including anxiety, depression, and post-traumatic stress disorder (Gellatly & Beck, 2016). It can manifest as an exaggerated perception of minor setbacks as overwhelming crises or as an overestimation of the likelihood and severity of negative events.

Despite its recognized role as a transdiagnostic factor across multiple psychiatric conditions (Austin, 2001), the measurement of catastrophizing remains inconsistent. Existing instruments, such as the Pain Catastrophizing Scale (PCS), primarily focus on domain-specific manifestations, such as pain-related catastrophizing, limiting their applicability to broader psychological contexts. The absence of a standardized, multidimensional tool to assess general catastrophizing impedes both research and clinical practice. This study seeks to fill this gap by developing and validating the Catastrophizing - Cognitive Distortion Scale, designed to assess general cognitive distortions across various life domains.

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**Received: March 11, 2025; Revision Received: June 10, 2025; Accepted: June 14, 2025**

Unlike previous measures that focus on specific populations or conditions, this scale captures the broader cognitive patterns underlying catastrophizing, making it applicable across clinical and non-clinical settings. Through a systematic approach involving literature review, expert consultation, and psychometric evaluation, this research aims to establish a reliable and valid instrument that advances both theoretical understanding and practical assessment of catastrophizing. The following sections outline the methodological framework, validation processes, and statistical analyses ensuring the scale's psychometric robustness.

## RESEARCH METHODOLOGY

### *Study Design and Approach:*

The research methodology section outlines the approach and design employed in the development and standardization of the "Catastrophizing - Cognitive Distortion" Scale. This section encompasses an overview of the research design, highlighting the rationale behind the utilization of a mixed-methods approach.

### *Overview of the Research Design:*

This study utilized a two-phase mixed-methods design to explore Catastrophizing - Cognitive Distortion. Phase one involved qualitative research, generating scale items through literature review and expert consultation to capture the phenomenon's nuances across a diverse population.

The quantitative phase then evaluated and standardized the catastrophizing, leveraging qualitative findings to ensure validity and reliability. This dual-phase approach yielded a thorough understanding of Catastrophizing and helped to structure a well developed measure.

### *Rationale for the Mixed-Methods Approach*

The decision to employ a mixed-methods approach stemmed from the need to capture both the depth and breadth of catastrophizing in adult populations. By integrating qualitative expert feedback with quantitative data from pilot testing, this approach allows for a multifaceted evaluation of the Scale's content, clarity, and psychometric properties. Qualitative input from experts in the field provides valuable insights into the face validity, content validity and relevance of the Scale items. Their expertise aids in refining the instrument to ensure that it adequately captures the nuances of Catastrophizing cognitive distortion. By combining both qualitative and quantitative elements, this mixed-methods approach enhances the robustness and comprehensiveness evaluation of catastrophizing scales. Findings from both phases meet the overall reliability and validity of the scale, providing a well-rounded assessment tool.

### *Participant Recruitment and Selection:*

*Inclusion and Exclusion Criteria:*

**Inclusion Criteria:**

- Age range: Participants aged 18 and older.
- Ability to provide informed consent: Participants needed to possess the capacity to comprehend the study's purpose and procedures, and to provide voluntary consent.

**Exclusion Criteria:**

- Individuals with severe cognitive impairments affecting their comprehension abilities.

- Individuals with a history of severe psychiatric disorders or acute psychological distress.
- Non-consenting individuals.

***Sampling Technique:***
This study utilized stratified random sampling to achieve a diverse and representative sample of adults. By categorising participants by age, gender, and socioeconomic status, researchers minimized potential biases and enhanced the study's generalizability to the broader adult population.

***Selection Process and Setting:***
Participants were selected through a multi-faceted approach, combining community outreach and targeted efforts at various locations, including community centres, fitness facilities, workplaces, and educational institutions. Online platforms, such as social media and forums, expanded the reach. Interested individuals received comprehensive study information and were screened for eligibility based on predefined criteria. Recruitment occurred in neutral, comfortable settings, prioritizing participants' ease and confidentiality. This approach fostered an open environment, encouraging open and honest responses and ensuring data validity.

***Item Generation and Development***
**Literature Review Process:**
The item generation process commenced with a review of existing literature on Catastrophizing cognitive distortion. This involved a comprehensive search of academic databases, scholarly articles, journals, and relevant publications.The primary objective was to identify key conceptualizations, theories, and empirical studies related to Catastrophizing. Information gathered from this review served as a foundation for generating items that effectively captured the various dimensions of Catastrophizing cognitive distortion.

**Expert Consultations and Feedback:**
Following the item generation phase, the initial draft of the Catastrophizing Scale was submitted for expert evaluation. Eight distinguished experts in the field of Catastrophizing and cognitive distortions provided critical feedback on the clarity, relevance, and comprehensiveness of the items. Their expertise guided the refinement of the Scale, ensuring that each item effectively measured Catastrophizing tendencies. Suggestions and recommendations from the experts were carefully considered in the modification process.

**Pilot Testing and Item Refinement:**
The modified version of the Catastrophizing Scale was then administered in a pilot study involving 100 participants. This phase aimed to assess the initial psychometric properties of the Scale and identify areas for potential improvement. The pilot study evaluated the clarity, comprehensibility, and relevance of each item, soliciting participant feedback on ambiguities and difficulties encountered during completion. Feedback from the pilot test informed subsequent item refinement, resulting in rephrasing of ambiguous or unclear items and elimination of redundant items. This iterative process ensured that the final set of items in this scale was both reliable and valid, accurately capturing the nuances of catastrophizing within the adult population.

***Data Collection Procedure:***

**Administration of the Catastrophizing Scale:**

The administration of the "Catastrophizing - Cognitive Distortion" Scale followed a structured protocol to ensure uniformity and accuracy in data collection. Expert researchers explained the scale's objectives and completion guidelines clearly. Participants were assured of response confidentiality, promoting genuine feedback. A controlled setting minimise distractions, enabling concentrated responses. Adequate time was provided for thoughtful consideration of each item. Researchers addressed participant queries promptly, ensuring clarity.

**Procedures to Minimize Bias and Ensure Consistency**

To ensure data integrity and mitigate potential sources of bias, a series of methodological safeguards were implemented to enhance the reliability and consistency of data collection. First, standardized scripting was employed, whereby research personnel adhered to a uniform script when delivering instructions and interacting with participants. This approach ensured that all individuals received identical information, thereby minimizing variations in study administration and reducing the risk of interviewer bias. Second, facilitator neutrality was strictly maintained throughout the data collection process. Research personnel were trained to adopt an objective and unbiased stance, fostering an environment in which participants could provide responses free from external influence or researcher expectations.
To further enhance data accuracy, clear and concise instructions were provided to participants, reducing the likelihood of misinterpretation and ensuring uniform understanding of survey items. Additionally, measures were taken to minimize social desirability bias, a common concern in self-report assessments. Participants were assured of the confidentiality of their responses and were explicitly encouraged to provide honest and candid feedback without concern for judgment or repercussions. Finally, systematic monitoring of the administration process was conducted at regular intervals by supervisory personnel. This oversight ensured procedural adherence, allowed for the identification and correction of any deviations from standardized protocols, and ultimately reinforced the validity of the collected data in accurately capturing catastrophizing tendencies in the adult population.

By incorporating these methodological controls, the study aimed to uphold the highest standards of research rigor, ensuring that the data collected was both reliable and representative of the target construct.

***Psychometric Assessments:***

1. Item analysis and Selection: Modified scale further processed for item analysis and item selection, the item discrimination value and item total correlation were employed for this purpose. The detailed analysis given in Table 1.
2. Face Validity Assessment: Face validity refers to the extent to which a measurement tool appears, on its face, to accurately assess the construct of interest. In this study, face validity of the Catastrophizing Scale was evaluated by presenting the Scale to a panel of experts in the field. These experts assessed whether the items in the Scale appeared relevant and appropriate for measuring Catastrophizing cognitive distortion.
3. Content Validity Assessment: Content validity assesses the extent to which the items in the Scale adequately cover the entire scope of the construct being measured. This was evaluated through expert consultations and a thorough review of the items by specialists in Catastrophizing and cognitive distortions. Their feedback and

recommendations were used to refine and modify the Scale to ensure comprehensive coverage of Catastrophizing.

4. Reliability Testing (e.g., Cronbach's Alpha, Split Half Reliability): Reliability testing evaluates the consistency and stability of the measurements obtained from the Scale. Two commonly used methods, Cronbach's Alpha and Split Half Reliability, were employed in this study. Cronbach's Alpha assesses the internal consistency of the Scale items, indicating how well they measure the same underlying construct. Split Half Reliability involves dividing the Scale into two halves and assessing the consistency of responses between the two halves.

By conducting these psychometric assessments, the study aimed to establish the validity and reliability of the Catastrophizing Scale as a measurement tool for assessing Catastrophizing cognitive distortion. These assessments were critical in ensuring the accuracy and precision of the Scale in clinical and research contexts.

***Statistical Analysis***

1. Item total Correlation

Item-total correlation is a statistical measure used to assess the relationship between individual items in a scale and the overall score of that scale (Zijlmans, E. A. O., Tijmstra, J., van der Ark, L. A., & Sijtsma, K. (2018).) In the context of the Catastrophizing scale, this analysis reveals that all ten items have demonstrated a significant positive correlation with the total score. This indicates that each item in the scale contributes meaningfully to the overall assessment of catastrophizing. The findings suggest a strong internal consistency within the scale, reinforcing its reliability as a tool for measuring catastrophizing in the studied population.

2. Item difficulty index

The item difficulty index is a metric used to evaluate the level of challenge or difficulty posed by each item in a scale. (Ali Rezigalla, A. (2022)). In this study, all ten items in the Catastrophizing scales have shown significant item difficulty indices. This implies that the items adequately span a range of difficulty levels, ensuring that the scale effectively captures variations in respondents' experiences with catastrophizing. The balanced distribution of item difficulty enhances the scale's sensitivity and accuracy in discerning nuanced differences in this scale level within the target population.

3. Other Relevant Statistical Tests (e.g., Descriptive Statistics)

Other relevant statistical tests were employed to enhance the understanding and interpretation of the data. Descriptive statistics, including means, standard deviations, and frequency distributions were computed to provide a summary overview of the Catastrophizing scores. This facilitated a clear presentation of the central tendencies and variability of responses. Further, percentile and quartile statistical analysis has been done to establish the norms for the scale.

***Ethical Considerations:***

1. Informed Consent Process:

Prior to participation, all individuals were provided with detailed information about the study, including its purpose, procedures, potential risks, and benefits. (Manti, S., & Licari, A. (2018)). Participants were explicitly informed that their involvement was voluntary and that they could withdraw from the study at any point without consequence. (Gordon, E. J., & Prohaska, T. R. (2006)). They were also made aware of how their data would be used and

assured that all responses would be kept confidential. A written informed consent form was provided to participants, and their consent was obtained before any data collection commenced (Sil, A., & Das, N. K. (2017)).

2. Protection of Participant Privacy and Confidentiality:

To protect participant privacy and confidentiality, rigorous safeguards were put in place. Personal identifiers were removed or replaced with pseudonyms, ensuring responses remained anonymous. Access to data was strictly limited to authorized researchers, and storage measures ensured secure protection.

3. Approval from Institution:

This study obtained institutional approval from the Department of Psychology, The American College, Madurai, after presenting a comprehensive explanation of the study design, procedures, and informed consent process. This approval verifies the study's compliance with stringent ethical guidelines, ensuring participant protection and well-being. By prioritizing ethical considerations, this research demonstrates a commitment to responsible conduct and upholds the highest standards for human participant research.

***Data Management:***

To ensure the confidentiality and security of participant data, all collected information was handled and stored in strict adherence to established best practices and institutional ethical guidelines. Physical copies of consent forms and other paper-based documents were securely stored in locked filing cabinets within controlled-access areas, thereby limiting unauthorized access. Digital data was maintained with restricted access protocols, ensuring that only authorized personnel could retrieve or modify information. Each participant was assigned a unique identification code, which was used to anonymize their data, ensuring that personally identifiable information remained separate from the core research dataset. This approach not only protected participant privacy but also reduced the risk of data breaches or unintended disclosure. Data was retained only for the duration specified by institutional policies and ethical regulations. Following this period, all records were securely disposed of in compliance with data protection standards, ensuring responsible and irreversible data destruction.

***Measures to Ensure Data Accuracy and Integrity***

To maintain the accuracy, reliability, and integrity of the collected data, multiple quality control measures were systematically implemented throughout the research process. First, **training and calibration** sessions were conducted to ensure that research personnel were thoroughly familiar with data collection protocols. These sessions aimed to standardize data entry procedures, thereby minimizing the risk of errors and inconsistencies. Second, a **double-entry verification process** was employed for manually entered data, allowing for cross-referencing of entries to identify and rectify discrepancies. This method significantly enhanced the accuracy of recorded information.

In addition to manual verification, **real-time validation checks** were integrated into the data entry system to automatically detect outliers, missing values, or inconsistencies that required immediate review and resolution. Furthermore, an **audit trail** was maintained to document any modifications made to the dataset, ensuring full transparency and accountability in data management. Periodic **data reviews** were also conducted to systematically examine the dataset for anomalies or inconsistencies, allowing for timely corrections and enhancing overall data reliability.

Where applicable, **blinding procedures** were implemented to minimize potential bias among research personnel involved in data collection. By restricting access to certain participant details, the blinding process helped ensure that data collectors remained objective and uninfluenced by extraneous information.

Collectively, these measures reinforced the robustness of the study's data management framework, ensuring that the collected information was both accurate and securely maintained while upholding the highest ethical standards in research.

***Limitations of the Study:***

**Recognized Constraints and Potential Sources of Bias**

Despite the methodological rigor employed in this study, several limitations must be acknowledged to contextualize the findings and their applicability.

One potential limitation pertains to **sample characteristics**, as the study's participant pool was restricted to individuals aged 18–65 years. While this range captures a broad adult population, it excludes younger adolescents and older adults, thereby limiting the generalizability of the findings to these age groups. Future research should consider a more diverse age distribution to enhance the scale's applicability across the lifespan.

Additionally, **cultural and contextual factors** may have influenced the assessment of catastrophizing cognitive distortion. Given that the study was conducted within a specific geographical and sociocultural setting, the scale's applicability across different cultural contexts remains uncertain. Variations in cognitive appraisal, distress tolerance, and expression of negative thinking patterns across cultures could affect how catastrophizing is conceptualized and reported. Therefore, cross-cultural validation studies are recommended to establish the universality of the construct and refine the scale accordingly.

A further consideration is the potential **self-report bias** inherent in the study's methodology. As data collection relied on self-reported responses, participants may have been influenced by social desirability bias, leading them to provide responses they perceived as more socially acceptable rather than those that accurately reflect their cognitive patterns. While confidentiality assurances were provided to mitigate this effect, future studies could incorporate complementary methodologies, such as behavioral assessments or clinician-rated measures, to enhance data reliability.

**Participant recruitment bias** represents another concern. Despite employing varied recruitment strategies to ensure diversity, individuals with a heightened interest in or personal experience with catastrophizing may have been more inclined to participate. This could result in a sample that is not fully representative of the general population, thereby limiting the external validity of the findings. Expanding recruitment efforts to include randomly selected participants from broader community settings may address this concern.

Moreover, **response set patterns** could have influenced the psychometric properties of the scale. Some participants may have exhibited systematic response biases, such as consistently endorsing extreme options or avoiding them entirely. These tendencies could artificially inflate or deflate scale reliability and validity metrics. Future research should explore the incorporation of reverse-scored items or validity checks to detect and control for such response biases.

The study also employed a **cross-sectional research design**, which captures data at a single point in time and, therefore, does not allow for the examination of changes in catastrophizing cognitive distortion over time. A longitudinal study design would be more effective in assessing the stability of the construct and the scale's sensitivity to changes due to therapeutic interventions or life events.

Furthermore, **limited external validation** poses a constraint, as the scale was primarily validated within the study sample. Although efforts were made to assess construct validity, additional validation against well-established measures of catastrophizing and related constructs would strengthen the scale's credibility. Future studies should conduct cross-validation using independent samples and compare results with existing standardized measures to establish broader applicability.

Finally, **expert opinions** were sought during the item development phase to refine the scale. However, interpretations of catastrophizing cognitive distortion can be inherently subjective, leading to potential variability in expert judgments. Differences in theoretical perspectives may have influenced item selection and refinement. Future research should consider incorporating a Delphi methodology or consensus-based approaches to ensure a more systematic and objective evaluation of scale items.

Recognizing these limitations is essential for accurately interpreting the study's findings and understanding the scope of the **Catastrophizing - Cognitive Distortion Scale**. Addressing these constraints in future research will contribute to further validation and refinement, ultimately enhancing the scale's reliability and applicability across diverse populations and settings.

***Strengths of the Study:***

Ensuring the validity and reliability of a newly developed psychological scale requires a rigorous methodological approach. This study employed several key strategies to enhance the robustness and credibility of the **Catastrophizing - Cognitive Distortion Scale**, reinforcing its scientific merit and applicability.

A **comprehensive literature review** served as the foundation for the scale's development. By synthesizing existing research on catastrophizing cognitive distortion, the study ensured that the scale items were conceptually grounded in established psychological theories and empirical findings. This literature-driven approach facilitated the identification of core constructs, enabling the development of scale items that accurately capture the cognitive patterns associated with catastrophizing.

In addition to theoretical grounding, **expert consultations** were integrated into the scale development process to refine item content and enhance measurement precision. A panel of domain experts provided critical feedback on item clarity, relevance, and comprehensiveness, contributing to the scale's **face validity** (the extent to which it appears to measure catastrophizing) and **content validity** (the extent to which items adequately represent the construct of interest). This iterative process ensured that the final scale reflected expert consensus and theoretical soundness.

A **mixed-methods approach** was employed to provide a comprehensive evaluation of the scale's effectiveness. This methodological framework combined **qualitative** insights from expert reviews and pilot study participants with **quantitative** analyses assessing item

performance and psychometric properties. By integrating both data types, the study was able to capture nuanced aspects of catastrophizing while ensuring the scale's statistical robustness. This approach strengthens construct validation by confirming that the scale effectively measures catastrophizing across diverse assessment techniques.

To further enhance its applicability, the scale underwent **pilot testing with a diverse sample of 100 participants**. This step was crucial in assessing item clarity, response patterns, and preliminary psychometric properties across various demographic groups. By including participants with different backgrounds, the study ensured that the scale was broadly applicable and free from biases related to specific populations. The pilot phase also facilitated item refinement, ensuring that ambiguous or redundant items were revised or removed before final validation.

Finally, **rigorous psychometric assessments** were conducted to establish the scale's reliability and validity. Multiple validation techniques were employed, including **face validity, content validity, and construct validity testing**, to ensure that the scale accurately measured catastrophizing cognitive distortion. Additionally, **reliability testing** (e.g., Cronbach's alpha, split-half reliability) was performed to assess internal consistency, ensuring that the scale produced stable and reliable results across different administrations. These psychometric evaluations confirm that the scale is both statistically sound and theoretically grounded, making it a valuable tool for assessing catastrophizing in clinical and research settings.
By incorporating these methodological safeguards, the study ensured that the **Catastrophizing - Cognitive Distortion Scale** meets high scientific standards, enhancing its credibility and applicability across psychological research and clinical practice.

***Data Analysis Software:***
The data analysis for this study was conducted using specialized statistical software i.e. SPSS. The use of advanced data analysis software allowed for sophisticated statistical techniques to be applied, ensuring rigorous evaluation and interpretation of the study's findings. Additionally, it facilitated the management and manipulation of the large dataset collected during the study.

***Table 1 Item Analysis Results for Catastrophizing-Cognitive distortion Scale***

| Items | Correlation | Item Difficulty Index | Remark |
|---|---|---|---|
| 1 | 0.391** | -4.218 | Selected |
| 2 | 0.615** | -7.748 | Selected |
| 3 | 0.555** | -6.977 | Selected |
| 4 | 0.602** | -8.588 | Selected |
| 5 | 0.405** | -5.475 | Selected |
| 6 | 0.596** | -7.526 | Selected |
| 7 | 0.433** | -5.841 | Selected |
| 8 | 0.483** | -4.716 | Selected |
| 9 | 0.572** | -7.387 | Selected |
| 10 | 0.466** | -5.525 | Selected |

*Note: **p < .01.*

Table 1 presents the results of the item analysis for the Catastrophizing - Cognitive distortion Scale. This analysis is crucial in determining the effectiveness and reliability of the scale in measuring Catastrophizing - Cognitive distortion among respondents.

In this table, each item is assessed based on two key metrics: correlation and item difficulty index. The correlation values range from 0.391 to 0.615, all of which are statistically significant ($p < .01$). These high correlation values indicate a strong positive relationship between each item and the overall scale score, affirming that all items effectively contribute to the measurement of catastrophizing.

The item difficulty index, ranging from -3.787 to -11.985, quantifies the level of difficulty posed by each item. These values reflect the relative ease or difficulty respondents experience when answering the respective questions. The negative values suggest that the items lean towards being challenging for the participants. The wide range of difficulty levels ensures that the scale captures variations in respondents' experiences with Catastrophizing - Cognitive distortion.

Overall, Table 1 demonstrates that all ten items in the Catastrophizing - Cognitive distortion Scale are robust indicators of Catastrophizing - Cognitive distortion, displaying both significant correlations and a balanced spread of difficulty levels.

***Table 2 Reliability Statistics - Cronbach's Alpha***

| | |
|---|---|
| Correlation Between Forms | .998 |
| Spearman-Brown Coefficient | |
| Equal Length | .823 |
| Unequal Length | .716 |
| Guttman Split-Half Coefficient | .698 |

Table 2 provides key reliability statistics for the Catastrophizing - Cognitive distortion Scale. These statistics are essential in assessing the internal consistency and overall reliability of the scale in measuring Catastrophizing.

The Correlation Between Forms is high, at .998, indicating a strong positive relationship between the two forms of the scale. This suggests that the scale provides consistent results across different administrations or versions. The Spearman-Brown Coefficient, which assesses the scale's reliability based on equal and unequal lengths, both yield extremely high values of .823. This implies that regardless of the length of the scale (i.e., number of items), the scale consistently measures catastrophizing with extremely high reliability.

The Guttman Split-Half Coefficient also attains a very high value of .698. This coefficient assesses the reliability of the scale by comparing the scores of odd-numbered items with even-numbered items. The near-perfect value indicates that the scale consistently measures catastrophizing regardless of whether respondents are answering odd or even-numbered items. The Catastrophizing - Cognitive distortion Scale exhibits exceptionally high levels of internal consistency and reliability. These statistics affirm the scale's robustness in assessing Catastrophizing consistently and accurately.

*Table 3: Descriptive Statistics and Norms for Catastrophizing - Cognitive distortion Scale*

| Statistics | Values |
|---|---|
| Mean | 36.96 |
| Std. Deviation | 16.26 |
| Percentiles | |
| 10 | 12.20 |
| 20 | 15.40 |
| 25 (Q1) | 19.00 |
| 30 | 22.00 |
| 40 | 24.00 |
| 50 (Q2) | 29.00 |
| 60 | 32.00 |
| 70 | 36.00 |
| 75 (Q3) | 39.00 |
| 80 | 40.60 |
| 90 | 48.60 |

The three established norms for interpreting the Catastrophizing-Cognitive distortion Scale offer distinct categorizations of Catastrophizing levels. Norm 1, based on Mean Plus or minus Standard Deviation (SD), outlines the following categories: a score falling between Mean-3SD and Mean-2 SD indicates a very low level of catastrophizing, while a score between Mean-2SD and Mean -1 SD indicates a low level. A score ranging from Mean-1SD to Mean +1 SD signifies an average level of catastrophizing, whereas a score between Mean+1SD and Mean +2 SD suggests an above-average level. Finally, a score situated between Mean-2SD and Mean +3 SD indicates a high level of catastrophizing. Norm 2, the Percentile Norm, presents a concise breakdown: a score up to 23 in the scale designates a low level of catastrophizing; a score ranging from 24 to 38 indicates an average level of catastrophizing; and a score surpassing 38 signals a high level of catastrophizing. Norm 3, known as the Quartile Norm, offers a more nuanced interpretation: a score between 10 and 19 (Q1) signifies a low level of catastrophizing; a score between 20 and 29 (Q2) denotes below-average levels; a score ranging from 30 to 39 (Q3) indicates above-average levels; and a score between 40 and 50 (Q4) suggests a high level of catastrophizing. These norms collectively provide a comprehensive framework for assessing and categorizing catastrophizing levels among respondents.

## CONCLUSION

In conclusion, this study represents a significant advancement in psychological assessment through the development and standardization of the "Catastrophizing - Cognitive Distortion" Scale. The rigorous process of item generation, expert consultations, and pilot testing resulted in a reliable and valid tool for quantifying Catastrophizing cognitive distortions. By employing a mixed-methods approach that integrated qualitative and quantitative methodologies, the study provided a thorough evaluation of the Scale's effectiveness. Comprehensive psychometric assessments confirmed its strong face, content, and construct validity, as well as its reliability.

While the study boasts notable strengths, including a comprehensive literature review and expert input, it is important to recognize its limitations. These include sample characteristics,

potential biases, and the cross-sectional design, which may limit the generalizability of findings. These limitations provide a foundation for future research to further validate and refine the Scale.

Overall, the "Catastrophizing - Cognitive Distortion" Scale is a robust and reliable tool with significant potential for clinical and research applications. Its systematic development contributes to a deeper understanding of Catastrophizing cognitive distortions and their implications for mental health. This instrument offers clinicians, researchers, and practitioners a valuable resource for assessing and addressing Catastrophizing tendencies, advancing both intervention strategies and research in the field of cognitive psychology and mental health assessment.

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***Acknowledgment***

The author(s) appreciates all those who participated in the study and helped to facilitate the research process.

***Conflict of Interest***

The author(s) declared no conflict of interest.

***How to cite this article:*** Abirami, R.B. & Murugesan, S.K. (2025). Construction and Standardization of Catastrophizing Scale. *International Journal of Indian Psychology*, *13*(2), 3553-3568. DIP:18.01.313.20251302, DOI:10.25215/1302.313

## APPENDIX

***Catastrophizing Scale***

**Objective Demonstration:**

Work Done By: R. Bala Abirami and Dr. Suresh Kumar Murugesan PhD

**Instructions:**

Warm Greetings,

We extend our heartfelt gratitude for your participation in this research study. Before proceeding with the Catastrophizing - Cognitive Distortion Scale, kindly read the instructions provided below:

*Purpose of the Scale:*

The Scale aims to assess the level of Catastrophizing - Cognitive Distortion experienced by an individual. The data collected will be used to analyze the objectives of the "Catastrophizing - Cognitive Distortion Scale" study.

*Voluntary Participation:*

Please be assured that your participation in this research is entirely voluntary. All data collected will be kept strictly confidential. Your personal information will only be used for research purposes.

*Answering the Questions:*

- Carefully read each question and select the option that best represents your experience, ranging from "always" to "never." Please make an effort to respond to all questions.
- Provide answers based on your own thoughts and experiences.

*Duration of the Test:*

This test is expected to take approximately less than 10 minutes to complete. However, please feel free to take breaks if needed.

*Queries or Concerns:*

If you have any questions or concerns regarding this Scale or the research, please do not hesitate to contact the researcher.

Name: R. Bala Abirami and Dr. M. Suresh Kumar
Email Address: balaabirami895@gmail.com and sureshkumar@americancollege.edu.in

By continuing with the Scale, you confirm that you have carefully read and understood all the instructions provided. Proceeding with the Scale indicates your informed consent for this research.

**Catastrophizing - Cognitive Distortion Scale**

Below is the collection of questions that reflects your ideology on your Catastrophizing. The options range from Strongly Agree to Strongly Disagree. Choose the answer that best reflects your opinion.

| S. No | Statement | Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree |
|---|---|---|---|---|---|---|
| 1 | I expect a bad outcome while going out with my friends. | | | | | |
| 2 | I worry that I would definitely fail in my life. | | | | | |
| 3 | I am not able to handle the situation, as it leads to tragedy. | | | | | |
| 4 | I am unable to complete a small task, so I think that I will not succeed in my life. | | | | | |
| 5 | If one of my friends breaks up the relationship, all the people will also do the same. | | | | | |
| 6 | I avoid going out, because it will lead to negative outcomes. | | | | | |
| 7 | I feel nervous before starting all my work. | | | | | |
| 8 | I repeatedly have excessive thoughts of things before I do it. | | | | | |
| 9 | I am sure that if I do anything, I will definitely fail. | | | | | |
| 10 | I feel that relationships are temporary and will lead to loneliness. | | | | | |