



Design and Validation of an Acceptance and Commitment Therapy-Based Intervention Package for Mothers of Children with Intellectual Disabilities

Sajede. Moradi¹, Siamak. Samani^{2*}, Mohammad. Mozafari³, Banafsheh. Omidvar³

¹ PhD Student, Department of Psychology and Education of Exceptional Children, Fars Science and Research Branch, Islamic Azad University, Fars, Iran

² Associate Professor, Department of Psychology, Shiraz Branch, Islamic Azad University, Shiraz, Iran

³ Assistant Professor, Department of Psychology Shiraz Branch, Islamic Azad University, Shiraz, Iran

* Corresponding author email address: siamaksamani@iau.ac.ir

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ABSTRACT

Objective: The present study was conducted with the main objective of explaining the content validity of the ACT-based intervention package for mothers of children with intellectual disabilities, which was designed by the researcher.

Methods and Materials: This research is exploratory in terms of its objective and is classified as qualitative in nature. The study population consisted of all books, articles, and dissertations in Persian and English regarding ACT-based therapeutic programs for mothers of children with intellectual disabilities, considering the research's dependent variables over the last 20 years. Additionally, the population included all experts in the psychology department of Islamic Azad University, Shiraz Branch, who are specialists in the field of intellectual disabilities. The sample from the study population, which included books, articles, and dissertations, was selected using purposeful sampling, and the sampling continued until theoretical saturation was reached. Additionally, from the psychology department of Islamic Azad University, Shiraz Branch, eight psychology professors (experts in the field of special education) were selected. A researcher-made content validity evaluation questionnaire was used to collect experts' opinions regarding the content validity of the ACT-based intervention program.

Findings: The findings showed that the ACT-based intervention package had an acceptable level of content validity, with the CVR (Content Validity Ratio) of all sessions in the intervention program ranging between 0.75 and 1, indicating appropriate content validity for this program.

Conclusion: It is recommended that therapists and counselors in the field of therapy use this approach at both educational and therapeutic levels to improve self-compassion, hope, and acceptance in mothers of children with intellectual disabilities.

Keywords: psychotherapy, commitment, acceptance, intellectual disability

1. Introduction

Acceptance and Commitment Therapy (ACT) is derived from a philosophical theory known as pragmatism and emerged from a research program on language and cognition called Relational Frame Theory (Kennedy et al., 2014). The ACT approach is based on the hypothesis that psychological distress arises from attempts to control or escape negative thoughts and emotions (Mahvash et al., 2024; Sofyan et al., 2023; Wersebe et al., 2018). ACT leads to psychological flexibility in mothers of children with intellectual disabilities through six core processes: acceptance, defusion, self-as-context, contact with the present moment, values, and committed action (Mardani Garmdareh et al., 2019). ACT is a form of clinical behavior analysis applied in psychotherapy. It is an evidence-based psychological intervention that blends acceptance and mindfulness strategies with commitment and behavior change strategies in various ways (Hayes & Strosahl, 2019).

Based on this, therapists guide mothers to view their thoughts and emotions separately from themselves (awareness-related issues), which allows therapists to modify the framework of negative cognitive states, avoidance of internal experiences, and failure to engage in meaningful life activities (Jamali et al., 2021). The ACT approach helps mothers of children with intellectual disabilities to accept their child's painful condition, reducing their focus on the negative aspects of the situation (Hayes & Strosahl, 2019). This increases their motivation for change despite inevitable challenges and encourages them to strive toward achieving their valued goals (Fish et al., 2014). In this context, Naib Hosseinzadeh et al. (2016) demonstrated that eight 90-minute ACT sessions had a significant effect on self-compassion in mothers of children with intellectual disabilities (Naib Hosseinzadeh et al., 2016). Similarly, Masuda and colleagues (2011) found that ACT had a positive and lasting effect on increasing acceptance among mothers of children with anemia (Masuda et al., 2011). Abadi et al. (2021) showed that eight sessions of ACT significantly increased hope for life in 15 mothers in the experimental group, and this effect remained stable during the follow-up phase (Abadi et al., 2021).

The researcher of the current study, with years of experience in ACT, decided to design and test an intervention in this field. Based on the aforementioned, this study aims to address the following research question: Does

the ACT-based intervention package have appropriate validity for mothers of children with intellectual disabilities?

2. Methods and Materials

This study is exploratory in nature and falls under the category of qualitative research. For data collection, a document-based or library research method was used. A review of related research established the theoretical framework for addressing the research question. Following this, based on the research objectives and hypotheses, the ACT-based intervention package was developed and validated. The study population consisted of all books, articles, and dissertations in Persian and English on ACT-based therapeutic programs for mothers of children with intellectual disabilities over the past 20 years, considering the dependent variables of the study, as well as all psychology faculty members at the Islamic Azad University, Shiraz Branch, who are experts in the field of intellectual disabilities.

The sample was purposefully selected from the study population, which included books, articles, and dissertations. Sampling continued until theoretical saturation was reached. Additionally, eight professors from the psychology department at the Islamic Azad University, Shiraz Branch (specialists in the field of special education), were selected.

The inclusion criteria for this study required that participants be mothers between the ages of 20 and 50. Additionally, they needed to have a child with an intellectual disability, confirmed by the child's official medical or educational records. Furthermore, mothers were required to provide written consent to participate in the study, ensuring voluntary involvement and ethical compliance.

Exclusion criteria were established to maintain the study's integrity and focus. Mothers who missed more than two sessions of the educational program were excluded from the study. Those who expressed unwillingness to continue their participation were also removed. Additionally, mothers with severe psychological disorders, particularly those using psychotropic medications, were excluded to prevent confounding factors. Finally, any participant involved in a similar intervention concurrently was also excluded to avoid overlap in therapeutic effects.

To collect expert opinions regarding the content validity of the ACT-based therapeutic program, a researcher-made content validity evaluation questionnaire was used. This researcher-made tool was designed to assess the alignment

of the ACT-based intervention content with the research objectives. The tool consisted of eight items and was scored on a 5-point Likert scale (ranging from 1 = strongly disagree to 5 = strongly agree).

To develop the ACT-based intervention package, the researcher, under the supervision of academic advisors, reviewed the theoretical background and recent developments in ACT techniques, considering the study's objectives and hypotheses. The therapy sessions were designed based on the characteristics of intellectual disability, aiming to increase mothers' awareness of their positive and negative emotions towards their child, address conflicts in the mother-child relationship, and improve self-compassion and hope in mothers of children with intellectual disabilities. The content of the therapy sessions was adapted from the book *Acceptance and Commitment Therapy: 100 Key Points and Techniques* (Bennett & Oliver, 2019) and

ACT Questions and Answers: 150 Commonly Challenging ACT Issues (Harris, 2018). After tailoring the ACT techniques, the program's face and content validity were reviewed by eight psychology professors specializing in special education (Islamic Azad University, Shiraz Branch). Following their feedback, necessary adjustments were made, and the final version of the program was approved. The revised ACT-based intervention package was then evaluated for quantitative content validity by the same experts, who provided feedback via the content validity evaluation questionnaire. The content validity ratio (CVR) for each session exceeded 0.75 and was confirmed. Additionally, the content validity index (CVI) was assessed using a 4-point Likert scale (ranging from irrelevant to fully relevant), with a CVI value above 0.79, indicating satisfactory content validity.

Table 1

Summary of ACT-based Intervention

Session	Objective	Session Content	Technique	Homework
1	Introduction and initial assessment	Establishing rapport, explaining research objectives, setting session rules, explaining concepts of hope, self-compassion, and acceptance, administering pre-test	-	-
2	Identifying the point of choice	Reviewing life history, examining thoughts and stories, identifying experiential avoidance, setting therapy goals, focusing on a specific situation	Magic wand technique, duck metaphor, pause button	Answering five questions on engagement with thoughts and emotions
3	Clarifying values	Reviewing previous homework, identifying values, recognizing stimuli that lead away from values, reinforcing strengths, identifying obstacles to progress	Roller coaster metaphor, compass metaphor, miracle questions	Practice top ten life moments
4	Cognitive defusion	Addressing cognitive fusion, labeling thoughts and emotions without judgment, practicing detachment from thoughts	Caveman metaphor, overly helpful friend metaphor, brainstorming	Identifying cognitive fusion instances, six steps to defuse from rules
5	Acceptance	Acknowledging difficult thoughts and emotions, practicing unconditional acceptance of challenging situations	Clean versus dirty pain metaphor, bus metaphor	Identifying avoidant situations
6	Present moment awareness	Enhancing contact with the present moment, addressing influences of past experiences on present responses	Anchoring, brainstorming	Focusing on thoughts and behaviors in the moment without judgment
7	Self-as-context	Increasing insight into the concept of self-as-context, fostering psychological flexibility	Sky metaphor, stage metaphor, chessboard metaphor, brainstorming	Practicing four exercises to cultivate self-as-context
8	Self-compassion	Addressing common barriers to self-compassion, practicing self-compassion elements	Mindful breathing	Placing thoughts on floating leaves in a river
9	Committed action	Setting and achieving goals, identifying situations requiring committed action	Exposure	Committed efforts towards planned goals
10	Conclusion	Reviewing therapeutic gains, maintaining progress, post-test	-	Continuing to apply learned strategies

3. Findings and Results

To validate the Acceptance and Commitment Therapy (ACT)-based intervention package according to the opinions of experts and scholars, both qualitative face validity and content validity were assessed, using two measures: the

Content Validity Ratio (CVR) and the Content Validity Index (CVI).

For determining face validity, a five-option questionnaire was prepared for the ACT-based intervention sessions and distributed to specialists, who were asked to provide

feedback from the perspective of the target group. Then, using the formula (Impact Score = Frequency (%) * Importance), the impact score for each item was calculated. It is worth mentioning that "frequency" refers to the

percentage of individuals who rated the items with scores of 4 and 5, and "importance" refers to the average total score for importance based on the aforementioned Likert scale.

Table 2

Face Validity of the ACT-based Intervention Package

Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Agreement Rate
1	0	0	1	3	4	0.87
2	0	0	0	4	4	1
3	0	0	1	2	5	0.87
4	0	1	0	2	5	0.87
5	0	0	0	3	5	1
6	0	0	1	4	3	0.87
7	0	1	0	3	4	0.87
8	0	0	1	2	5	0.87

As seen in Table 2, all items related to face validity show an agreement rate above 0.80 among the experts. This level of validity indicates that the ACT-based intervention package has strong face validity.

Next, the intervention program was presented to the expert panel, who were asked to evaluate the sessions within the provided framework and assess the relevance of each session on a three-point scale (necessary, useful but not necessary, and not necessary). Finally, using the formula

$$CVR = (NE - N/2) / (N/2),$$

the Content Validity Ratio (CVR) for each intervention session was calculated. It is worth noting that in this formula, N represents the total number of experts, and NE refers to the number of experts who selected the option "necessary." Sessions with a CVR lower than the threshold required by the number of evaluating experts were excluded from the intervention program. The minimum acceptable CVR values based on the number of experts are shown in Table 3.

Table 3

Minimum Acceptable CVR Based on the Number of Experts

Number of Experts	CVR Value	Number of Experts	CVR Value	Number of Experts	CVR Value
5	0.99	11	0.59	25	0.37
6	0.99	12	0.56	30	0.33
7	0.99	13	0.54	35	0.31
8	0.75	14	0.51	40	0.29
9	0.78	15	0.49		
10	0.62	20	0.42		

Since the present study involved eight experts, the CVR score obtained should not be less than 0.75. The results for each session are reported in Table 4.

Table 4

Content Validity of the ACT-based Intervention Package for Each Session

Session	Judge 1	Judge 2	Judge 3	Judge 4	Judge 5	Judge 6	Judge 7	Judge 8	Average	CVR Value
1	3	3	3	3	2	3	3	3	2.87	0.75
2	3	3	3	3	3	3	3	3	3	1
3	3	2	3	3	3	3	3	3	2.87	0.75
4	2	3	3	3	3	3	3	3	2.87	0.75
5	3	3	2	3	3	3	3	3	2.87	0.75
6	3	3	3	3	3	3	3	2	2.87	0.75
7	3	3	3	3	3	3	3	3	3	1

8	3	3	3	3	3	2	3	3	2.87	0.75
9	3	3	3	3	3	3	3	3	3	1
10	3	3	3	3	3	3	3	3	3	1

As shown in Table 4, the CVR value for all intervention sessions ranges between 0.75 and 1, indicating an appropriate level of content validity for this program.

Finally, to calculate the content validity index (CVI), experts were asked to rate the clarity, transparency, and relevance of the intervention sessions on a four-point Likert scale (irrelevant, needs major revision, relevant but needs revision, and completely relevant). Then, using the formula

$$CVI = (\text{number of experts who rated the session 3 or 4}) / \text{total number of experts},$$

the CVI was calculated. The CVI score exceeded 0.79, which was deemed acceptable. The overall CVI was calculated to be 0.87, indicating a suitable level of content validity for the ACT-based intervention package.

This study aimed to design and validate an ACT-based intervention package for mothers of children with intellectual disabilities. The findings revealed that the ACT-based intervention package had an acceptable level of content validity.

4. Discussion and Conclusion

As observed, the research hypothesis that the ACT-based intervention package designed by the researcher has appropriate validity was confirmed. The findings indicated that the intervention package achieved an acceptable level of face and content validity. In this program, a comprehensive review of ACT-based therapy books and interventions, such as Acceptance and Commitment Therapy: 100 Key Points and Techniques (Bent & Oliver, 2019) and ACT Questions and Answers: 150 Commonly Challenging ACT Issues (Harris, 2018), was conducted. Both face and content validity were assessed. In determining qualitative face validity, the experts' feedback was incorporated, including adjustments to difficulty levels, reducing inconsistencies, clarifying terms, improving grammar, and placing questions in appropriate locations. For content validity, with eight experts participating, CVI and CVR were calculated. The content validity ratio (CVR) indicated that all program items had scores equal to or greater than the threshold value of 0.78, showing that the essential and significant items were included in the program. The content validity index (CVI) also showed that all items scored higher than 0.79, confirming their appropriateness. No changes were made to the number of items in the intervention program.

In conclusion, this intervention program demonstrates sufficient validity for training these variables. The practical advantages of this intervention program compared to previous programs include its improved quality, simplicity, feasibility for group settings, and repeatability. Given the unique characteristics of this program, such as its theoretical foundation, focus on the required processes of commitment and acceptance for mothers of children with intellectual disabilities, and its confirmation of content validity by experts, it can be used as a comprehensive and validated program for empowering mothers of children with intellectual disabilities. Therefore, therapists and counselors are encouraged to use this method in both educational and therapeutic settings to enhance self-compassion, hope, and acceptance in mothers of children with intellectual disabilities.

5. Limitations and Suggestions

One limitation of this study is its reliance on a relatively small sample of experts (eight) for content validation, which may limit the generalizability of the findings to a broader population. Additionally, the study focuses solely on mothers of children with intellectual disabilities, excluding other caregivers or family members who may also benefit from similar interventions. Furthermore, the research design did not include a longitudinal follow-up, which would have allowed for the assessment of the long-term effectiveness of the ACT-based intervention package.

Future research should aim to replicate this study with a larger and more diverse group of experts to enhance the generalizability of the findings. It would also be beneficial to include fathers, other caregivers, and siblings of children with intellectual disabilities to examine the broader family impact of the intervention. Additionally, future studies should incorporate longitudinal designs to assess the sustained effects of the ACT-based intervention over time. Finally, comparative studies that evaluate the efficacy of ACT against other therapeutic interventions for caregivers of children with intellectual disabilities would provide valuable insights.

Therapists and counselors working with mothers of children with intellectual disabilities can implement this ACT-based intervention to enhance psychological flexibility, self-compassion, and hope in their clients. The

intervention can be adapted for group settings, allowing for wider accessibility and cost-effectiveness in clinical or educational environments. Furthermore, policymakers and healthcare professionals can use the findings to develop structured, evidence-based programs that support the mental health of caregivers in both clinical and community settings, thereby improving overall family functioning.

Authors' Contributions

Authors contributed equally to this article.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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Declaration of Interest

The authors report no conflict of interest.

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Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

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