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Effectiveness of Lyubomirsky's Happiness Training on Life Satisfaction and Hope in Mothers of Children with Autism Spectrum Disorder

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A B S T R A C T

Purpose: This study aimed to evaluate the effectiveness of Lyubomirsky's happiness training package on life satisfaction and hope in mothers of children diagnosed with autism spectrum disorder (ASD).

Methods and Materials: The research employed a quasi-experimental design with pretest-posttest and a control group. A total of 40 mothers of children with ASD from the Golhaye Beheshti Center in Qom were selected through simple random sampling and randomly assigned to experimental and control groups (20 participants each). After accounting for attrition, the final sample included 15 participants per group. The intervention group received Lyubomirsky's happiness training over eight 90-minute sessions, while the control group received no intervention. Data were collected using the Satisfaction with Life Scale (Diener et al., 1985) and the Hope Scale (Snyder et al., 1991), both validated for use in Iranian samples. Inferential analysis was conducted using ANCOVA in SPSS version 26.

Findings: Results showed that, after controlling for pretest scores, there was a significant increase in posttest life satisfaction scores in the intervention group compared to the control group ($F(1,33) = 13.437$, $p = .001$, $\eta^2 = .289$). Similarly, hope scores significantly increased in the intervention group ($F(1,33) = 18.268$, $p < .001$, $\eta^2 = .356$). Significant improvements were also observed in the subscales of agency thinking ($F(1,33) = 12.000$, $p = .001$, $\eta^2 = .267$) and pathways thinking ($F(1,33) = 5.621$, $p = .024$, $\eta^2 = .146$). All assumptions for ANCOVA, including normality, homogeneity of regression slopes, and linearity, were met.

Conclusion: Lyubomirsky's happiness training proved to be an effective positive psychology intervention in enhancing life satisfaction and hope among mothers of children with ASD. Given its structured, culturally adaptable, and non-pharmacological nature, it can be implemented in family counseling and rehabilitation settings to promote psychological well-being in this high-risk population.

Keywords: *Autism spectrum disorder, mothers, life satisfaction, hope, Lyubomirsky happiness training, positive psychology intervention.*

1. Introduction

Mothers of children with autism spectrum disorder (ASD) are among the most vulnerable groups in the field of mental health, facing a range of chronic and multidimensional challenges. ASD is characterized by deficits in social interaction, repetitive behaviors, and language difficulties, which complicate parenting—particularly for mothers. These difficulties are often exacerbated by the severity of the child's symptoms, complex caregiving demands, lack of adequate social support, and additional financial pressures (Du et al., 2025). Studies have shown that perceived stress levels in mothers of children with autism are significantly higher than those of mothers of neurotypical children or children with other developmental disabilities (Nemati et al., 2024). Additionally, such stress is associated with clinical symptoms of depression, anxiety, chronic fatigue, and reduced social functioning in mothers. The ongoing experience of frustration, role strain, and emotional exhaustion further depletes psychological and social resources, adversely affecting both mental and physical health in the long term(Elemo & Can, 2025).

The psychological dimensions of this situation extend beyond stress and include significantly compromised quality of life. Quality of life is a multidimensional construct encompassing physical, psychological, social, and existential domains, all of which can be strained under special parenting conditions. Reports indicate that mothers of children with autism score lower in areas such as physical health, life satisfaction, perceived social support, and psychological coherence compared to the general population (Beheshti et al., 2022). Moreover, hope for the future, a core component of psychological well-being, is significantly diminished in this group. While hope can serve a protective role against the negative impacts of stress, mothers of children with special needs often face persistent obstacles that weaken this inner resource (Khalili et al., 2024). This condition not only impairs caregiving performance but also affects emotional interactions within the family, the child's well-being, and family cohesion (Al Eid et al., 2024). Therefore, accurately identifying the psychological state of these mothers is essential to deepening our understanding of the psychological consequences of autism for family systems.

Life satisfaction, as a core component of subjective well-being, reflects an individual's overall evaluation of their life quality based on personal criteria, rather than objective realities. Unlike momentary emotions or fleeting moods, life satisfaction is based on long-term cognitive evaluations, making it a stable and reliable indicator of mental health (Wang et al., 2023). Individuals with high life satisfaction generally report better quality of social relationships, personal achievement, and life purpose. Empirical studies have shown that life satisfaction is associated with favorable psychological and physical outcomes such as reduced symptoms of depression, lower stress levels, and better performance in professional and family domains (Hamama, 2024). Given that life satisfaction is influenced by a combination of psychological, environmental, and personality factors, its assessment in specific populations—such as parents of children with special needs—is of particular importance.

Among parents, particularly mothers of children with developmental disorders such as autism, life satisfaction is often reported at lower levels compared to the general population. Various factors including social support, caregiving role strain, family interactions, economic status, and cultural expectations can influence mothers' perceptions of life satisfaction (Ben Natan et al., 2024). Research findings suggest that, in this population, life satisfaction is directly related not only to their mental health but also to the quality of care provided to their children. Decreased life satisfaction may lead to emotional burnout, social withdrawal, or even psychosomatic disorders, and over time, can undermine mothers' capacity to adapt to the challenges of parenting (Chaki & Faran, 2025). Therefore, precise assessment and analysis of life satisfaction in this group is crucial for designing supportive, preventive, and promotive interventions to maintain maternal mental health and enhance the quality of life in families with special-needs children.

Another key factor in maintaining the mental health of mothers of children with autism is their level of hopefulness regarding the future and their own capacity to cope with challenges—an aspect that can buffer against caregiving stress (Curtis & Izett, 2025). In positive psychology, hope is understood as a cognitive-emotional construct composed of two main components: goal-directed motivation and pathway thinking to achieve goals (Snyder et al., 1991). Individuals with higher levels of hope not only hold more positive views of the future but are also more capable of finding solutions, maintaining motivation, and overcoming obstacles in difficult situations. Research has shown that hope is positively correlated with life satisfaction, psychological resilience, social functioning, and reduced

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depression. This positions hope as an important internal resource in coping with crises and stressful situations, especially in high-pressure parenting contexts. Unlike optimism, which is based more on expecting positive outcomes, hope emphasizes the ability to plan and take active steps toward achieving goals. Consequently, hopeful individuals tend to feel less helpless in the face of problems and adopt a more active approach to problem-solving—qualities that are crucial in parenting children with special needs (Curtis & Izett, 2025).

Due to the demanding and chronic nature of caring for children with ASD, mothers are at a higher risk of losing hope for the future compared to other parenting groups. Emotional burdens stemming from the child's special needs, limited resources, and an uncertain future may reduce motivation and cause mothers to feel their efforts are futile (Radmard, 2023). Both qualitative and quantitative studies indicate that mothers with lower levels of hope are more prone to depression, emotional exhaustion, and social withdrawal. In contrast, mothers with higher levels of hope adapt more effectively, adopt a proactive approach to child-rearing, and report more positive family relationships. Furthermore, high hope is associated with better psychological and physiological well-being and serves a protective role against psychological harm (Heyrat & Sharifzadeh, 2021). Therefore, analyzing hope levels in this specific group can provide valuable insights into their psychological needs and guide the development of future support programs.

Given the concerningly low levels of life satisfaction and hope—two fundamental indicators of mental health—in mothers of children with autism, identifying and implementing effective approaches to enhance these components is critically important. One innovative approach that has attracted considerable attention in recent years is Lyubomirsky's happiness training package. This intervention, based on the theory of sustainable happiness, teaches individuals how to improve their levels of positive emotions, meaning, and life satisfaction through structured and evidence-based practices (Okabe-Miyamoto et al., 2023). Key components of this program include gratitude exercises, appreciation, focus on personal strengths, writing about positive experiences, and fostering a positive mindset. Multiple studies have reported the effectiveness of this intervention in enhancing well-being, reducing depression, and increasing hope (Martinez, 2024). For instance, research by Faraji Amiri et al. (2022) demonstrated that positive psychology interventions such as the Lyubomirsky package significantly increased life satisfaction in both clinical and non-clinical populations.

Research conducted in various countries, including the study by Azad and Aleyasin (2023), has shown the effectiveness of positive psychology interventions in promoting psychological well-being among mothers of children with intellectual disabilities (Azad & Aleyasin, 2023). Similarly, a study by Çomaklı Duvar et al. (2025) on a sample of adults revealed that happiness-based programs can significantly increase levels of hope and life satisfaction. One of the additional advantages of this intervention is its flexibility for cultural adaptation, which makes it suitable for use among vulnerable groups such as parents of children with special needs. Due to its skill-based, practice-oriented, and non-pharmacological nature, the Lyubomirsky package can be regarded as a viable and effective alternative in mental health promotion programs, especially for mothers who have limited access to professional psychological services due to caregiving responsibilities (Çomaklı Duvar et al., 2025).

Considering the high psychological vulnerability of mothers of children with autism and the key role of factors such as life satisfaction and hope in their psychological adaptation, examining tools that can improve these dimensions is of both theoretical and practical significance. On the other hand, the Lyubomirsky happiness package, supported by a strong theoretical foundation and empirical evidence, can be utilized as an evidence-based intervention to enhance life quality and psychological capital among mothers. Given its simple structure, potential for group implementation, and content adaptability, it is highly suitable for implementation in counseling centers, rehabilitation facilities, and NGOs working with children with special needs.

Despite the reported effectiveness of the happiness package in various studies, most of the existing research has been conducted in general populations or has focused on only one of the variables—life satisfaction or hope. Few studies have simultaneously examined both variables in mothers of children with autism. Moreover, most of the prior research has been conducted within Western cultural contexts, and there is a scarcity of studies examining this intervention in non-Western settings such as Iran. Therefore, the present study aims to address this scientific gap by focusing on the effects of Lyubomirsky's happiness package on life satisfaction and hope in mothers of children with ASD. Accordingly, this study seeks to answer the following question: Can Lyubomirsky-based happiness training lead to

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increased life satisfaction and hope in mothers of children diagnosed with autism spectrum disorder?

2. Methods and Materials

2.1. Study Design and Participants

The present study aimed to examine the effectiveness of Lyubomirsky's happiness training package on life satisfaction and hope in mothers of children with autism spectrum disorder (ASD). This research employed a two-group quasi-experimental design with pretest-posttest measurements conducted for both the experimental and control groups. The statistical population consisted of all mothers of children with ASD attending the Golhaye Beheshti Center in Qom during the spring of 2024. Initially, 40 individuals were selected through simple random sampling using the center's registry list. Then, using a random number table, the children and their mothers were randomly assigned to either the experimental or control group.

The sample size was determined based on the standard formula for intervention studies and a previous study by Moghtadayi and Khosh Akhlagh (2015), resulting in 20 participants for each group (Moghtadayi & Khosh Akhlagh, 2015). Considering a potential 10% dropout rate, the final number remained 20 per group, totaling 40 participants for the study.

Following the allocation of participants to the experimental and control groups, separate orientation sessions were held. In the experimental group, participants were briefed on the study's purpose, autism spectrum disorder, and its impact on family life. The control group was also introduced to the general aims of the research. All participants then completed the study questionnaires. The experimental group received Lyubomirsky's happiness training (Lyubomirsky, 2008) through group sessions, while the control group did not receive any intervention. At the end of the training sessions, the participants again completed the questionnaires. Due to some mothers' absences and incomplete questionnaires, both groups were reduced to 15 participants.

Inclusion criteria included having a child diagnosed with ASD based on a formal report by a licensed psychiatrist or psychologist; being the child's biological mother or primary caregiver; being aged between 25 and 55 years; having at least a high school diploma to comprehend session content; not receiving concurrent psychological therapy or interventions such as positive psychology, cognitive-behavioral therapy (CBT), or mindfulness-based therapy in the past three months; willingness and commitment to participate regularly in the sessions (e.g., eight 90-minute sessions over four weeks); absence of severe psychiatric disorders (self-reported or specialist-referred), such as psychosis, bipolar I disorder, or active addiction; and providing written informed consent.

Exclusion criteria were missing more than two sessions (over 25% of sessions); non-cooperation in completing the pretest, posttest, or follow-up assessments; initiation of new psychiatric or psychological treatment during the study period that might influence the outcomes; providing false information in intake forms or initial interviews; experiencing acute psychiatric crises (e.g., active suicidal ideation or psychiatric hospitalization during the intervention); or formally requesting withdrawal from the study at any stage.

This research adhered to ethical principles, including explaining the study objectives to participants, ensuring confidentiality and anonymity, obtaining informed consent, voluntary participation, the right to withdraw, answering participants' questions, and providing access to the results upon request.

2.2. Measures

2.2.1. Satisfaction with Life

The Satisfaction with Life Scale (SWLS) was developed by Diener et al. (1985). This scale contains 5 items, each rated on a 7-point Likert scale ranging from 1 to 7. According to Diener et al. (1985), the SWLS demonstrates good internal consistency (Cronbach's alpha = .78) and test-retest reliability over two months (r = .82) (Diener et al., 1985). Bayani et al. (2007), who translated and validated the Persian version of the scale, confirmed its reliability in an Iranian population and reported a Cronbach's alpha of .88 (Bayani et al., 2007).

2.2.2. Hope

The Hope Scale by Snyder et al. (1991) consists of 12 items rated on an 8-point Likert scale ranging from 1 (strongly disagree) to 8 (strongly agree). The agency subscale includes items 2, 9, 10, and 12; the pathways subscale includes items 1, 4, 7, and 8; and items 3, 5, 6, and 11 are fillers. The total score ranges from 8 to 64, with 8 representing the lowest and 64 the highest level of hope. The instrument's validity was reported by Snyder et al. (1991) as

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.69. In a study by Kermani et al. (2011) on 660 female students in Tehran, the internal consistency of the scale was confirmed with a Cronbach's alpha of .89. The scale showed significant positive correlations with positive affect, optimism, life satisfaction, and self-esteem, and significant negative correlations with anxiety and pessimism (Kermani et al., 2011).

2.3. Interventions

2.3.1. Lyubomirsky's Happiness Training

The intervention protocol consisted of eight 90-minute group sessions based on Lyubomirsky's happiness training model (Lyubomirsky, 2008), emphasizing positive psychology principles. In the first session, participants were introduced to the research, the importance of positive psychology, and how to identify happiness-enhancing activities aligned with personal values and preferences; they were also taught to "act like a happy person" and given related assignments. The second session reviewed previous content and introduced gratitude, optimism, and techniques to reduce rumination and social comparison, with corresponding exercises assigned. The third session addressed kindness, cultivating social relationships, and coping with stress, followed by relevant homework. In the fourth session, forgiveness, living in the present moment (flow and savoring), and their roles in happiness were discussed and practiced. The fifth session covered goal commitment, spirituality and meaning, and physical self-care through meditation and exercise, all linked to improved well-being. In the sixth session, five strategies for achieving sustainable happiness were taught, along with related exercises. The seventh session focused on understanding clinical depression, its causes, and evidence-based treatments. The eighth and final session included a comprehensive review of all sessions, participant reflections on chosen happiness strategies, and administration of the posttest.

2.4. Data Analysis

Descriptive statistics (mean, standard deviation) and inferential statistics (analysis of covariance) were used for data analysis with SPSS version 26. Table 1 presents the structure of Lyubomirsky's happiness training protocol.

3. Findings and Results

According to the demographic results, the mean age of mothers in the intervention group was 36.00 years with a standard deviation of 6.14, while in the control group the mean age was 33.94 years with a standard deviation of 5.18. Approximately 65% of mothers in the intervention group and 37% in the control group had completed high school education. The means and standard deviations for life satisfaction and hope before and after the intervention are presented in Table 1.

Table 1

Mean and Standard Deviation of Life Satisfaction and Hope

Variable	Phase	Group	M	SD
Life Satisfaction	Pretest	Intervention	14.05	4.23
		Control	15.12	3.73
	Posttest	Intervention	16.15	3.15
		Control	14.31	3.17
Hope – Total	Pretest	Intervention	28.50	5.35
		Control	28.37	4.48
	Posttest	Intervention	31.15	2.88
		Control	28.25	3.51
Agency Thinking	Pretest	Intervention	14.40	3.57
		Control	14.37	2.39
	Posttest	Intervention	15.95	2.06
		Control	14.31	2.30
Pathways Thinking	Pretest	Intervention	14.10	2.59
		Control	14.00	2.89
	Posttest	Intervention	15.20	1.98
		Control	13.93	2.01

Additionally, the data for life satisfaction and hope in the pretest and posttest phases met the assumptions of normal distribution, covariate and dependent variable linearity, and homogeneity of regression slopes. Table 2 presents the

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ANCOVA results for the variables of life satisfaction and hope.

Table 2

ANCOVA Results for Life Satisfaction and Hope

Variable	Source	df	Mean Square	F	p	η^2
Life Satisfaction	Pretest	1	206.502	51.051	<.001	.607
	Group	1	54.354	13.437	.001	.289
	Error	33	4.045			
Hope	Pretest	1	214.321	54.729	<.001	.624
	Group	1	71.537	18.268	<.001	.356
	Error	33	3.916			
Agency Thinking	Pretest	1	95.922	49.102	<.001	.598
	Group	1	23.443	12.000	.001	.267
	Error	33	1.954			
Pathways Thinking	Pretest	1	59.223	25.409	<.001	.435
	Group	1	13.100	5.621	.024	.146
	Error	33	2.331			

As observed, the F value for life satisfaction, after controlling for pretest scores, was 13.437, which was significant at $p < .05$. Therefore, the posttest scores of life satisfaction showed a significant difference between the intervention and control groups after controlling for pretest scores. It can be concluded that life satisfaction significantly increased in the intervention group compared to the control group after the training.

The analysis also revealed that the effectiveness of Lyubomirsky's happiness training on hope ($F = 18.268$, $p < .05$), agency thinking ($F = 12.000$, $p < .05$), and pathways thinking ($F = 5.621$, $p < .05$) was statistically significant.

Table 3 presents the results of the between-subjects effects test, clarifying the differences in dependent variables by group.

Table 3

Test of Between-Subjects Effects for Life Satisfaction and Hope in Intervention and Control Groups

Source	Sum of Squares	df	Mean Square	F	p	η^2
Intervention						
Life Satisfaction	54.354	1	54.354	13.437	.001	.289
Hope	71.537	1	71.537	18.268	<.001	.356
Error						
Life Satisfaction	133.485	33	4.045			
Hope	129.229	33	3.916			

Based on the results presented in Table 3, after adjusting for the covariate, there was a statistically significant difference between the intervention and control groups in both dependent variables—life satisfaction and hope. The intervention group had higher posttest mean scores compared to the control group. Considering the effect size values, it can be concluded that Lyubomirsky's happiness training package had the greatest impact on hope ($\eta^2 = .356$), followed by life satisfaction ($\eta^2 = .289$).

4. Discussion and Conclusion

This study aimed to evaluate the effectiveness of Lyubomirsky's happiness training package on life satisfaction and hope among mothers of children with autism spectrum disorder (ASD). The results indicated that the intervention led to improvements in both life satisfaction and hope. Data analysis showed that the mean scores of life satisfaction and hope were significantly higher in the experimental group compared to the control group after the intervention, with the happiness training package demonstrating greater effectiveness in enhancing these

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variables. These findings are consistent with previous research (Azad & Aleyasin, 2023; Çomaklı Duvar et al., 2025; Faraji Amiri et al., 2022; Martinez, 2024).

In explaining the effectiveness of Lyubomirsky's happiness training in increasing life satisfaction, the theoretical structure and skill-based nature of this intervention can be emphasized. The training package, through techniques such as gratitude exercises, positive journaling, goal-oriented focus, fostering hope, and mindfulness, helps individuals improve their cognitive evaluations of life quality (Çomaklı Duvar et al., 2025). Life satisfaction, as an index of subjective well-being, is influenced by a combination of cognitive and emotional factors, and interventions that target cognitive reframing, enhance positive emotions, and strengthen interpersonal relationships can contribute to its improvement. The present findings align with meta-analytic evidence by Faraji Amiri et al. (2022), which demonstrated that positive psychology interventions significantly increase life satisfaction across both clinical and non-clinical populations (Faraji Amiri et al., 2022). Similarly, the study by Martinez (2024) emphasized the dynamic role of daily positive activities in enhancing happiness and life satisfaction, suggesting that even brief interventions, when implemented with consistency and awareness, can yield long-term changes (Martinez, 2024).

Moreover, mothers of children with ASD, due to repeated experiences of anxiety, caregiving burden, internal conflict, and difficulty regulating emotions, are particularly vulnerable to significant declines in life satisfaction. In such contexts, interventions that shift focus from deficits to strengths, from lack to opportunity, and from worry to meaning can play a transformative role in reshaping one's outlook on life. Lyubomirsky's happiness training employs techniques that promote attitudinal renewal, attentional redirection, and enhanced self-awareness, enabling mothers to elevate their perception of life quality. According to Faraji Amiri et al. (2022), such interventions have led to meaningful improvements in life satisfaction among high-stress mothers (Faraji Amiri et al., 2022). Furthermore, given the cultural adaptability of the training package and its capacity for localization, positive outcomes can reasonably be expected within Iranian society as well. Therefore, the observed increase in life satisfaction in the intervention group can be attributed to the scientific foundation, content coherence, and the intervention's emphasis on individuals' internal and social resources.

To interpret the effectiveness of Lyubomirsky's training in enhancing hope—particularly the agency and pathways components—the Hope Theory proposed by Snyder (1991) offers valuable insights. This theory conceptualizes hope as a cognitive-motivational construct comprising the individual's ability to generate mental routes toward goals (pathways thinking) and the motivation to pursue those routes (agency thinking). The happiness package enhances both components by fostering a positive mindset, cultivating meaningful goals, emphasizing personal successes, and strengthening internal locus of control. Recent studies have shown that positive interventions can increase hope by enhancing self-efficacy, promoting the formulation of attainable goals, and developing realistic strategies (Snyder et al., 1991). For instance, consistent journaling about successes and positive life factors reinforces the belief that change is possible—an essential precursor to willpower and effective coping strategies.

Mothers of children with ASD are often at high risk of emotional burnout, reduced self-efficacy, and a sense of life stagnation. Such conditions frequently undermine components of hope, particularly agency thinking, as the ongoing behavioral and caregiving challenges may reinforce feelings of helplessness or learned helplessness. In these circumstances, the happiness training package, by offering structured and practical exercises, can restore a sense of agency and encourage the redefinition of life goals and trajectories. Focusing on strengths, identifying internal and external resources, and training in mindfulness can help mothers regain a sense of mastery over their lives and envision multiple pathways for growth and fulfillment. Thus, the observed increase in hope scores—especially in agency and pathways thinking—is not only statistically significant but also psychologically meaningful, reflecting restored motivation, meaning, and mental flexibility in these mothers.

In summary, the findings of the present study demonstrated that Lyubomirsky's happiness training, with its emphasis on positive psychology practices, significantly increased life satisfaction and hope in mothers of children with autism spectrum disorder. These results suggest that positive psychological interventions can be employed alongside traditional therapies as effective tools for promoting mental health in at-risk populations. However, this study faced some limitations, including a relatively small sample size, the absence of long-term follow-up to assess the durability of effects, and restriction of the sample to a single center. Future research is recommended to

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employ larger, multicenter, and longitudinal designs. Additionally, exploring the intervention's impact on other groups such as fathers, caregivers, or even the children themselves could open new avenues for family-centered interventions.

From an applied perspective, it is recommended that family counseling centers, special schools, and NGOs active in the rehabilitation field implement the happiness training program in the form of group workshops. This would not only enhance the mental health of mothers but also improve the overall quality of life in families with children who have special needs.

Authors' Contributions

All authors significantly contributed to this study.

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

In this study, to observe ethical considerations, participants were informed about the goals and importance of the research before the start of the interview and participated in the research with informed consent.

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