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Development of a Causal Model of Marital Distress Tolerance Based on Cognitive Flexibility and Family-of-Origin Health with the Mediating Role of Problem-Solving Skills

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A B S T R A C T

The objective of this study was to develop and test a causal structural model explaining marital distress tolerance based on cognitive flexibility and family-of-origin health, with the mediating role of effective and ineffective problem-solving skills. This applied–developmental study was conducted using a quantitative, descriptive–correlational design based on structural equation modeling. The statistical population consisted of couples experiencing marital conflict who referred to counseling centers in Tehran during the second half of 2021. Using G*Power software and considering effect size and statistical power, a sample of 350 participants was selected through convenience sampling. Data were collected using standardized self-report instruments, including the Emotional Distress Tolerance Scale, the Family-of-Origin Health Scale, the Cognitive Flexibility Inventory, and the Social Problem-Solving Questionnaire. Data analysis was performed using SPSS for descriptive statistics and SmartPLS-3 for evaluating the measurement and structural models. Inferential results showed that cognitive flexibility had a significant positive direct effect on marital distress tolerance and significant effects on both effective and ineffective problem-solving skills. Family-of-origin health also exerted a significant positive direct effect on marital distress tolerance and significantly predicted problem-solving skills. Ineffective problem-solving skills had a significant negative effect on marital distress tolerance, whereas effective problem-solving skills showed a significant positive effect. The structural model demonstrated high explanatory power, with substantial coefficients of determination for marital distress tolerance and both types of problem-solving skills, as well as satisfactory predictive relevance indices, confirming the adequacy and robustness of the proposed model. The findings indicate that marital distress tolerance is a multidimensional construct shaped by cognitive flexibility and family-of-origin health, both directly and indirectly through problem-solving skills, highlighting the importance of integrated cognitive–familial approaches in understanding and improving couples' emotional resilience.

Keywords: *Marital distress tolerance; cognitive flexibility; family-of-origin health; problem-solving skills; structural equation modeling*

1. Introduction

Marital relationships constitute one of the most central and emotionally charged interpersonal contexts in adult life, and their quality has profound implications for individual psychological well-being, family functioning, and social health. In recent decades, increasing attention has been paid to the mechanisms through which couples cope with marital stressors, conflicts, and emotional challenges, particularly in societies undergoing rapid social, cultural, and economic change. One construct that has gained substantial prominence in this context is *marital distress tolerance*, which refers to individuals' capacity to endure, regulate, and adaptively respond to emotional distress arising within marital interactions. Low levels of distress tolerance have been consistently associated with heightened marital conflict, emotional disengagement, maladaptive communication patterns, and reduced marital satisfaction, whereas higher distress tolerance is linked to greater emotional stability and constructive conflict management (Rauf et al., 2023; Shahabi et al., 2021; Vahdani et al., 2020).

Empirical evidence suggests that distress tolerance plays a pivotal role in determining how couples experience and manage inevitable marital stressors. Couples with limited capacity to tolerate emotional discomfort are more prone to impulsive reactions, emotional withdrawal, and escalation of conflicts, which in turn exacerbate marital dissatisfaction and burnout (Arshadi et al., 2021; Dibazar & Mahboubizadeh, 2021). Conversely, individuals with higher distress tolerance demonstrate greater emotional persistence, adaptive coping, and resilience in the face of marital adversity, enabling them to engage in problem-focused and emotionally regulated responses (Esmaeili et al., 2023; Gholipour et al., 2022). Given these findings, understanding the psychological and familial antecedents of marital distress tolerance has become a critical focus for both researchers and practitioners in the fields of marital and family psychology.

Among the psychological factors proposed to underlie distress tolerance, *cognitive flexibility* has emerged as a particularly influential construct. Cognitive flexibility refers to the capacity to shift perspectives, generate alternative interpretations, and adapt cognitive strategies in response to changing situational demands. Individuals with higher cognitive flexibility are better able to reframe negative experiences, inhibit rigid or catastrophic thinking, and select adaptive behavioral responses when confronted with stress (Emadoleslami et al., 2021; Jalili & Mahmoodi, 2021). In the marital context, cognitive flexibility enables partners to interpret conflicts more realistically, consider their spouse's perspective, and avoid inflexible attributional patterns that intensify emotional distress. Research has consistently demonstrated a positive association between cognitive flexibility and distress tolerance, suggesting that flexible cognitive processing buffers individuals against emotional overwhelm in stressful relational situations (Giovannini et al., 2022; Yıldız & Büyükfırat, 2024; Zanganeh Parsa & Hobi, 2021).

Studies conducted on couples experiencing marital difficulties indicate that cognitive inflexibility is closely linked to heightened emotional reactivity, intolerance of ambiguity, and maladaptive coping strategies, all of which undermine distress tolerance and marital adjustment (Shahabi et al., 2021; Vahdani et al., 2020). In contrast, cognitively flexible individuals demonstrate enhanced emotional regulation, persistence in the face of relational stress, and openness to problem resolution, thereby reducing the intensity and duration of marital distress (Emadoleslami et al., 2021; Kim & Jang, 2022). Recent international findings further support the role of cognitive flexibility as a protective factor that indirectly influences psychological adjustment through distress tolerance mechanisms across diverse populations and clinical contexts (Giovannini et al., 2022; Yıldız & Büyükfırat, 2024).

Beyond individual cognitive characteristics, the broader relational and developmental context in which individuals are embedded also plays a crucial role in shaping marital functioning. In this regard, *family-of-origin health* has been identified as a foundational determinant of adult relational patterns. Family-of-origin health reflects the degree of emotional security, autonomy, intimacy, and functional interaction experienced within the primary family system. Theoretical models grounded in family systems theory posit that early family experiences shape internal working models of relationships, emotion regulation strategies, and conflict resolution styles, which are later reenacted in marital relationships (Hosseini et al., 2013; Kim & Lee, 2024). Individuals raised in healthier family environments are more likely to develop adaptive emotional coping skills and constructive interpersonal strategies, whereas dysfunctional family-of-origin experiences are associated with emotional dysregulation and maladaptive relational behaviors.

Empirical research has provided substantial support for the association between family-of-origin health and adult marital outcomes. Studies have shown that healthier family-of-origin environments are linked to greater marital

KMAN-CPN KMAN-Counseling & Psychology Nexus
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intimacy, constructive conflict resolution, and psychological well-being, while unhealthy family backgrounds are associated with higher marital conflict, emotional insecurity, and vulnerability to distress (Hosseini et al., 2013; Zandi et al., 2024). More recent evidence suggests that family-of-origin health exerts both direct and indirect effects on marital functioning through psychological mediators such as attachment security, emotional regulation, and mentalization (Kim & Woo, 2025; Lewis et al., 2025). These findings underscore the enduring influence of early family dynamics on adults' capacity to tolerate and manage emotional distress within intimate relationships.

Another key mechanism linking cognitive and familial factors to marital distress tolerance is *problem-solving skills*. Social problem-solving theory conceptualizes problem-solving as a multidimensional process involving cognitive orientation toward problems and the selection of effective or ineffective behavioral strategies. Adaptive problem-solving skills, such as positive problem orientation and logical problem-solving, facilitate constructive engagement with marital challenges, whereas maladaptive styles, including avoidance, impulsivity, and negative problem orientation, exacerbate distress and conflict (Gholipour et al., 2022; Kim & Jang, 2022). In marital relationships, problem-solving skills serve as a critical conduit through which cognitive flexibility and family-of-origin experiences translate into day-to-day coping behaviors.

Research indicates that individuals with higher cognitive flexibility tend to employ more effective problem-solving strategies, which in turn enhance their tolerance for emotional distress (Kim & Jang, 2022; Zanganeh Parsa & Hobi, 2021). Conversely, cognitive rigidity is associated with ineffective problem-solving patterns that amplify emotional distress and undermine relational stability. Similarly, family-of-origin health has been shown to influence the development of problem-solving orientations, as individuals raised in supportive and structured family environments are more likely to internalize constructive coping and negotiation strategies (Hosseini et al., 2013; Zandi et al., 2024). Despite these theoretical and empirical linkages, relatively few studies have simultaneously examined cognitive flexibility, family-of-origin health, and problem-solving skills within an integrated causal framework to explain marital distress tolerance.

Recent intervention-based studies further highlight the clinical relevance of these constructs. Training programs targeting cognitive and emotional skills, such as marital adjustment training, schema therapy, and relationship enrichment interventions, have demonstrated significant improvements in distress tolerance and marital functioning (Arshadi et al., 2021; Esmaeili et al., 2023; Gholipour et al., 2022). These findings suggest that distress tolerance is not only a static trait but also a modifiable capacity influenced by cognitive, emotional, and relational processes. However, most existing research has examined these variables in isolation or through simple correlational designs, limiting the understanding of their complex interrelationships.

Moreover, cultural context plays an important role in shaping marital dynamics, family structures, and coping processes. In collectivistic and family-oriented societies, such as Iran, family-of-origin experiences and interpersonal problem-solving styles may exert particularly strong influences on marital adjustment and emotional regulation. While several Iranian studies have addressed distress tolerance, cognitive flexibility, or family health separately (Emadoleslami et al., 2021; Shahabi et al., 2021; Zanganeh Parsa & Hobi, 2021), there remains a notable gap in research employing comprehensive structural models that simultaneously account for these interrelated constructs. Addressing this gap is essential for developing culturally sensitive theoretical models and evidence-based interventions tailored to couples experiencing marital distress.

In light of the theoretical foundations and empirical evidence reviewed, it becomes evident that marital distress tolerance is a multifaceted construct shaped by individual cognitive capacities, early family experiences, and proximal coping mechanisms such as problem-solving skills. Cognitive flexibility may enhance distress tolerance both directly, by enabling adaptive appraisal and emotional regulation, and indirectly, by fostering effective problem-solving strategies. Similarly, family-of-origin health may exert enduring effects on distress tolerance by shaping emotional resilience and coping orientations, with problem-solving skills acting as a critical mediating pathway. However, the precise pattern of direct and indirect relationships among these variables remains insufficiently understood.

Accordingly, the present study seeks to address this gap by proposing and testing a causal structural model of marital distress tolerance based on cognitive flexibility and family-of-origin health, with the mediating role of problem-solving skills. The aim of this study is to develop and evaluate a causal model explaining marital distress tolerance based on cognitive flexibility and family-of-origin health, with problem-solving skills serving as a mediating variable.

KMAN-CPN KMAN-Counseling & Psychology Nexus
E-ISSN: 3041-9026

2. Methods and Materials

2.1. Study Design and Participants

The present study was an applied–developmental investigation conducted within a quantitative research paradigm. From a methodological perspective, it employed a descriptive–correlational design using structural equation modeling to examine both direct and indirect relationships among the study variables. The target population consisted of all couples experiencing marital conflict who sought counseling services at counseling centers in Tehran during the second six months of the year 2021. To determine an adequate sample size, G*Power software was used by considering parameters such as anticipated effect size, statistical power, and significance level. Based on these calculations, a sample of 350 participants was deemed sufficient for structural equation modeling. Participants were selected using an accessible convenience sampling method from among eligible couples who met the inclusion criteria, including willingness to participate and completion of all research instruments. Data were collected in accordance with ethical research principles, and participants were assured of confidentiality and voluntary participation.

2.2. Measures

Marital distress tolerance was assessed using the Emotional Distress Tolerance Scale developed by Simons and Gaher in 2005. This self-report instrument consists of 15 items designed to measure individuals' perceived capacity to tolerate emotional distress. The scale encompasses four subdimensions: emotional distress tolerance, absorption by negative emotions, subjective appraisal of distress, and regulation of efforts to alleviate distress. Higher scores on this measure indicate greater levels of distress tolerance, whereas total scores below 45 reflect low distress tolerance. Items are rated on a five-point Likert scale ranging from completely agree to completely disagree, with one item scored in reverse. Previous research has demonstrated acceptable psychometric properties for this scale, with reported Cronbach's alpha coefficients for the subscales ranging from 0.70 to 0.82 and an overall reliability coefficient of 0.82. Iranian validation studies have also supported its reliability and test–retest stability.

Family-of-origin health was measured using the Family-of-Origin Scale developed by Hovestadt and colleagues in 1985. This 40-item instrument assesses individuals' perceptions of the emotional climate and functioning of their family of origin, focusing on two core dimensions: autonomy and intimacy. The scale is designed to capture the degree to which individuals experienced balanced independence and emotional closeness within their primary family system. High internal consistency has been reported for this instrument, with a Cronbach's alpha of approximately 0.95 in the original version. Studies conducted in Iran have confirmed its factorial validity through factor analysis and have reported satisfactory test–retest reliability coefficients.

Cognitive flexibility was evaluated using the Cognitive Flexibility Inventory developed by Dennis and Vander Wal in 2010. This self-report questionnaire consists of 20 items that assess an individual's ability to adapt cognitive processing strategies in response to changing situational demands. The instrument measures three key aspects of cognitive flexibility: perceived controllability, perception of alternative explanations for behavior, and perception of multiple solution options. Items are rated on a seven-point Likert scale ranging from strongly disagree to strongly agree. The original version of the scale demonstrated Cronbach's alpha coefficients ranging from moderate to high for the subscales and total score, and Iranian studies have reported reliability coefficients between 0.84 and 0.91. Evidence for convergent validity has been established through correlations with measures of depression and related constructs.

Problem-solving skills were measured using the short form of the Revised Social Problem-Solving Inventory developed by D'Zurilla, Nezu, and Maydeu-Olivares in 2002. This 25-item self-report measure assesses individuals' orientations and strategies in dealing with everyday problems. It evaluates five dimensions of social problem solving, including positive problem orientation, negative problem orientation, rational problem solving, impulsive or careless style, and avoidant style. These dimensions collectively reflect both adaptive and maladaptive problem-solving approaches. Items are rated on a five-point Likert scale ranging from not at all to very much. Prior research has reported strong psychometric properties for this scale, with acceptable ranges of Cronbach's alpha coefficients and test–retest reliability. Iranian studies have similarly confirmed its internal consistency, temporal stability, and construct validity.

KMAN-CPN KMAN-Counseling & Psychology Nexus
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2.3. *Data analysis*

Data analysis was conducted using both descriptive and inferential statistical procedures. In the descriptive phase, measures of central tendency and dispersion were calculated to summarize participants' demographic characteristics and main study variables. In the inferential phase, structural equation modeling was employed to test the hypothesized causal model, including both direct effects of cognitive flexibility and family-of-origin health on marital distress tolerance and indirect effects mediated by problem-solving skills. Statistical analyses were performed using SPSS software for preliminary analyses and SmartPLS version 3 for testing the measurement and structural models. Model fit indices, path coefficients, and significance levels were examined to evaluate the adequacy of the proposed model and the strength of the relationships among variables.

3. Findings and Results

The demographic characteristics of the participants indicated that the sample consisted of 400 individuals, with an equal gender distribution such that 200 participants (50%) were men and 200 participants (50%) were women. In terms of educational attainment, 62 participants (15.5%) had a diploma, 72 participants (18.0%) held an associate degree, 192 participants (48.0%) had a bachelor's degree, and 74 participants (15.5%) possessed a master's degree or higher, indicating that the majority of the sample had completed university-level education. Regarding age, participants ranged from 19 to 63 years, with a mean age of 38.81 years and a standard deviation of 7.59, reflecting a predominantly middle-adulthood sample. The duration of marriage among participants varied from 2 to 18 years, with a mean marital duration of 5.42 years and a standard deviation of 2.62, suggesting that most participants were in the early to middle stages of their marital relationships.

Table 1

Descriptive Statistics of the Study Variables

Variables	Subscale	N	Mean	Standard Error of Mean	Standard Deviation
Distress Tolerance	Tolerance	330	9.75	0.16	2.77
	Absorption	330	9.55	0.15	5.44
	Appraisal	330	20.00	0.29	2.85
	Regulation	330	9.08	0.15	3.64
Family Health	—	320	133.94	1.80	5.51
Cognitive Flexibility	Controllability	330	23.30	0.30	5.99
	Behavioral Justification	330	26.70	0.33	3.41
	Alternative Options	330	16.82	0.18	4.38
Problem Solving	Positive Orientation	330	16.37	0.24	4.18
	Rational Problem Solving	330	16.30	0.23	4.17
	Negative Orientation	330	17.30	0.23	4.31
	Impulsive Style	330	16.57	0.20	2.30
	Avoidant Style	330	10.08	0.12	12.67
Total Scores	Total Distress Tolerance	330	49.51	0.69	13.63
	Total Cognitive Flexibility	330	67.37	0.75	7.85
	Effective Problem Solving	330	33.03	0.40	10.26
	Ineffective Problem Solving	330	43.03	0.56	2.77

As shown in Table 1, the descriptive statistics indicated moderate to relatively high levels of distress tolerance among participants across its subdimensions, with the highest mean observed for the appraisal component and the lowest mean for the regulation component. The mean total distress tolerance score suggested an overall moderate capacity to tolerate emotional distress in the sample. Family-of-origin health demonstrated a relatively high mean score with low variability, indicating a generally favorable perception of family health among participants. With respect to cognitive flexibility, participants reported the highest mean scores on behavioral justification and controllability, reflecting a relatively strong perceived ability to reinterpret situations and exert cognitive control, while the alternative options subscale showed comparatively lower but still moderate scores. In the domain of problem-solving skills, positive orientation and rational problem solving displayed similar mean values, suggesting balanced adaptive problem-solving tendencies, whereas negative orientation, impulsive style, and avoidant style indicated the presence of

KMAN-CPN KMAN-Counseling & Psychology Nexus
E-ISSN: 3041-9026

maladaptive approaches at varying levels. Finally, the total scores revealed that effective problem-solving skills were moderately developed, while ineffective problem-solving tendencies were also present, highlighting variability in participants' coping and cognitive–behavioral strategies within marital contexts.

Table 2

Cronbach's Alpha, Composite Reliability, and Convergent Validity of the Study Variables

Component / Variable	Convergent Validity (AVE)	Cronbach's Alpha	Composite Reliability
Appraisal	0.710	0.917	0.936
Cognitive Flexibility (Total)	0.751	0.927	0.938
Distress Tolerance (Total)	0.612	0.954	0.959
Tolerance	0.707	0.792	0.879
Regulation	0.658	0.737	0.851
Behavioral Justification	0.623	0.785	0.824
Absorption	0.637	0.713	0.840
Positive Problem Solving	0.693	0.888	0.918
Ineffective Problem Solving	0.570	0.934	0.944
Effective Problem Solving	0.528	0.898	0.917
Logical Problem Solving	0.602	0.831	0.882
Negative Problem Orientation	0.724	0.905	0.929
Avoidant Style	0.629	0.708	0.835
Impulsive Style	0.708	0.896	0.924
Family Health	0.575	0.981	0.982
Controllability	0.601	0.888	0.913
Alternative Options	0.630	0.781	0.850

As presented in Table 2, the results of the measurement model evaluation indicate that all constructs demonstrated satisfactory internal consistency, convergent validity, and composite reliability. Cronbach's alpha coefficients for the study variables ranged from 0.708 to 0.981, exceeding the commonly accepted threshold and confirming strong internal consistency across all components. Composite reliability values were also high, ranging from 0.824 to 0.982, which further supports the reliability of the latent constructs in the model. In terms of convergent validity, the average variance extracted (AVE) values for all variables were above or close to the recommended minimum criterion of 0.50, indicating that a substantial proportion of variance in the observed indicators was explained by their corresponding latent constructs. Overall, these findings confirm that the measurement instruments used in the study possess adequate reliability and convergent validity, thereby providing a sound basis for subsequent structural equation modeling and hypothesis testing.

Table 3

Standardized Path Coefficients in the Structural Model

Structural Path	Standardized Coefficient	T-value	P-value
Cognitive Flexibility → Distress Tolerance	0.621	6.558	< 0.001
Cognitive Flexibility → Behavioral Justification	0.925	114.181	< 0.001
Cognitive Flexibility → Ineffective Problem Solving	0.268	2.617	0.009
Cognitive Flexibility → Effective Problem Solving	0.193	2.015	0.047
Cognitive Flexibility → Controllability	0.976	205.258	< 0.001
Cognitive Flexibility → Alternative Options	0.924	145.092	< 0.001
Distress Tolerance → Appraisal	0.957	220.151	< 0.001
Distress Tolerance → Tolerance	0.939	508.810	< 0.001
Distress Tolerance → Regulation	0.940	807.143	< 0.001
Distress Tolerance → Absorption	0.936	885.102	< 0.001
Ineffective Problem Solving → Distress Tolerance	−0.372	4.725	< 0.001
Ineffective Problem Solving → Negative Orientation	0.950	689.100	< 0.001
Ineffective Problem Solving → Avoidant Style	0.725	14.031	< 0.001
Ineffective Problem Solving → Impulsive Style	0.945	129.852	< 0.001

KMAN-CPN KMAN-Counseling & Psychology Nexus
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Effective Problem Solving → Distress Tolerance	0.241	2.210	0.043
Effective Problem Solving → Positive Orientation	0.923	155.107	< 0.001
Effective Problem Solving → Logical Problem Solving	0.880	601.051	< 0.001
Family Health → Distress Tolerance	0.436	3.766	< 0.001
Family Health → Ineffective Problem Solving	0.607	6.451	< 0.001
Family Health → Effective Problem Solving	0.813	12.750	< 0.001

As shown in Table 3, cognitive flexibility exerted a significant positive direct effect on distress tolerance, as well as on its related cognitive components, including behavioral justification, controllability, and perception of alternative options. Cognitive flexibility was also significantly associated with both effective and ineffective problem-solving skills, indicating its central role in shaping adaptive and maladaptive coping processes. Distress tolerance showed very strong and significant paths to its four observed dimensions, confirming the robustness of this latent construct. Ineffective problem-solving skills had a significant negative effect on distress tolerance, whereas effective problem-solving skills positively predicted distress tolerance, supporting the hypothesized mediating mechanisms. Family-of-origin health demonstrated significant positive effects on distress tolerance and effective problem-solving skills, while also being positively associated with ineffective problem-solving skills, reflecting the complex role of early family experiences in adult coping patterns.

Figure 1

Standardized Coefficients of the Main Research Model

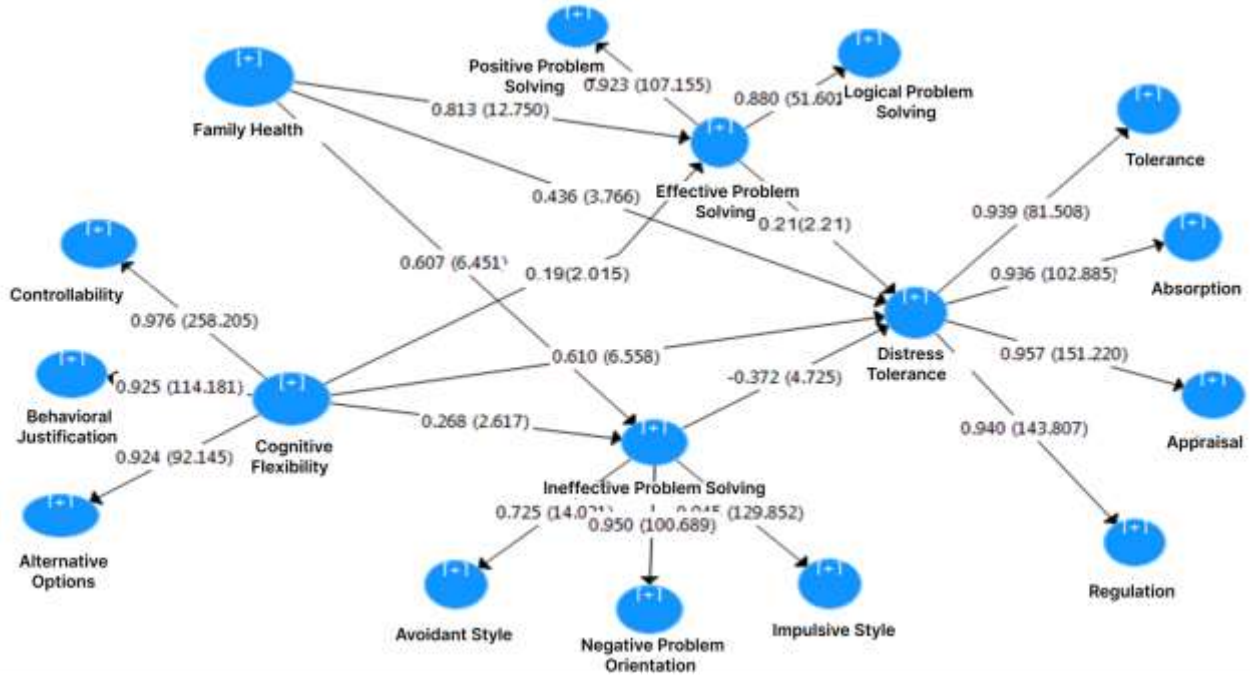

Table 4

Coefficient of Determination (R^2), Adjusted R^2, Predictive Relevance (Q^2), and Communality

Endogenous Variable	R^2	Adjusted R^2	Q^2 (Predictive Relevance)	Communality
Distress Tolerance	0.753	0.750	0.427	0.758
Ineffective Problem-Solving Skills	0.731	0.725	0.382	0.689
Effective Problem-Solving Skills	0.821	0.817	0.400	0.712

As reported in Table 4, the coefficients of determination indicated that the model explained a substantial proportion of variance in the endogenous variables, with R^2 values of 0.753 for distress tolerance, 0.731 for ineffective problem-

KMAN-CPN KMAN-Counseling & Psychology Nexus
E-ISSN: 3041-9026

solving skills, and 0.821 for effective problem-solving skills. The adjusted R^2 values further confirmed the stability of these estimates. In addition, the Q^2 values exceeded the recommended threshold, indicating adequate predictive relevance of the model, while the communality indices suggested satisfactory shared variance between latent constructs and their indicators. Overall, these findings confirm the strong explanatory and predictive power of the proposed causal model.

4. Discussion

The present study aimed to develop and test a causal model of marital distress tolerance based on cognitive flexibility and family-of-origin health, with the mediating role of problem-solving skills. Overall, the findings provided strong empirical support for the proposed structural model and highlighted the complex interplay between cognitive, developmental, and behavioral factors in explaining couples' capacity to tolerate marital distress. The results demonstrated that cognitive flexibility and family-of-origin health exert both direct and indirect effects on marital distress tolerance, while effective and ineffective problem-solving skills play a significant mediating role in these relationships. These findings contribute to a more integrated understanding of marital distress tolerance as a multidimensional construct rooted in both individual cognitive processes and early family experiences.

One of the central findings of this study was the significant positive direct effect of cognitive flexibility on marital distress tolerance. This result indicates that individuals who are more capable of shifting cognitive perspectives, generating alternative interpretations, and perceiving controllability in challenging situations tend to tolerate marital distress more effectively. This finding is consistent with prior research showing that cognitive flexibility is a crucial protective factor against emotional dysregulation and psychological distress (Emadoleslami et al., 2021; Giovannini et al., 2022; Jalili & Mahmoodi, 2021). In the marital context, cognitively flexible individuals are better able to reinterpret conflicts, avoid rigid attributional patterns, and regulate negative emotions, which reduces emotional overwhelm during marital disagreements. Similar results were reported by Zanganeh Parsa and Hobi, who found that cognitive flexibility significantly predicted distress tolerance in couples experiencing marital infidelity (Zanganeh Parsa & Hobi, 2021). The present findings extend this evidence by demonstrating that cognitive flexibility remains a robust predictor of distress tolerance within a comprehensive structural model that includes familial and behavioral mediators.

In addition to its direct effect, cognitive flexibility was found to have significant positive associations with both effective and ineffective problem-solving skills. Although the relationship with effective problem-solving was stronger and theoretically expected, the positive association with ineffective problem-solving suggests that higher cognitive engagement may also increase awareness of multiple problem-solving approaches, including maladaptive ones, particularly in high-conflict marital contexts. Nevertheless, the overall pattern of results indicated that cognitive flexibility primarily facilitates adaptive problem-solving orientations, such as positive problem orientation and logical problem solving, which in turn enhance marital distress tolerance. These findings align with previous studies emphasizing the role of cognitive flexibility in promoting adaptive coping and problem-solving strategies under stress (Kim & Jang, 2022; Yıldız & Büyükfırat, 2024).

The mediating role of problem-solving skills emerged as one of the most important contributions of the present study. Effective problem-solving skills showed a significant positive effect on marital distress tolerance, whereas ineffective problem-solving skills exerted a significant negative effect. This pattern underscores the behavioral mechanisms through which cognitive and familial factors translate into emotional outcomes within marital relationships. Couples who approach marital problems with positive orientation and logical reasoning are more likely to manage emotional distress constructively, thereby increasing their tolerance for marital stress. In contrast, maladaptive strategies such as avoidance, impulsivity, and negative problem orientation intensify emotional distress and reduce tolerance. These findings are consistent with social problem-solving theory and prior empirical research demonstrating that maladaptive problem-solving styles are closely linked to emotional dysregulation and marital conflict (Gholipour et al., 2022; Kim & Jang, 2022). The strong negative path from ineffective problem-solving skills to distress tolerance observed in this study highlights the critical role of behavioral coping patterns in shaping emotional resilience within marriage.

Another key finding was the significant direct effect of family-of-origin health on marital distress tolerance. Individuals who reported healthier family-of-origin experiences demonstrated higher levels of distress tolerance in their marital relationships. This result supports family

KMAN-CPN KMAN-Counseling & Psychology Nexus
E-ISSN: 3041-9026

systems and attachment-based theories, which posit that early family environments shape emotional regulation capacities and relational coping strategies that persist into adulthood (Hosseini et al., 2013; Kim & Lee, 2024). Healthy family-of-origin experiences likely foster emotional security, autonomy, and constructive conflict resolution skills, all of which contribute to greater tolerance of emotional distress in intimate relationships. The present findings are consistent with prior Iranian studies that have reported positive associations between family-of-origin health and marital intimacy, constructive conflict resolution, and psychological well-being (Hosseini et al., 2013; Zandi et al., 2024).

Interestingly, family-of-origin health was also significantly associated with both effective and ineffective problem-solving skills. The strong positive effect on effective problem-solving skills aligns with previous evidence suggesting that individuals raised in supportive and structured family environments internalize adaptive coping and negotiation strategies (Hosseini et al., 2013; Kim & Woo, 2025). However, the positive association with ineffective problem-solving skills may reflect the complexity of family-of-origin influences, particularly in cultures where strong emotional bonds coexist with enmeshment or rigid interaction patterns. Such dynamics may simultaneously promote engagement with problems while limiting flexibility in certain behavioral responses. This finding echoes recent studies indicating that family-of-origin experiences can have multifaceted effects on adult relational functioning, depending on contextual and cultural factors (Lewis et al., 2025; Zandi et al., 2024).

The strong measurement paths from marital distress tolerance to its observed dimensions, including tolerance, absorption, appraisal, and regulation, further confirm the construct validity of distress tolerance in the marital domain. These results support prior conceptualizations of distress tolerance as a multidimensional capacity encompassing emotional endurance, cognitive appraisal, and behavioral regulation (Rauf et al., 2023; Shahabi et al., 2021). The robustness of these paths suggests that interventions targeting distress tolerance should address all of these components rather than focusing on emotional endurance alone.

5. Conclusion

Overall, the structural model demonstrated substantial explanatory and predictive power, as indicated by high coefficients of determination and satisfactory predictive relevance indices. This suggests that the integration of cognitive flexibility, family-of-origin health, and problem-solving skills provides a comprehensive framework for understanding marital distress tolerance. Compared with previous studies that examined these variables separately or through simple mediation models (Dibazar & Mahboubizadeh, 2021; Esmaeili et al., 2023; Vahdani et al., 2020), the present study offers a more nuanced explanation of how cognitive and developmental factors jointly influence emotional resilience in marriage. By situating problem-solving skills as a central mediating mechanism, the findings bridge cognitive, familial, and behavioral perspectives on marital functioning. From a broader perspective, the findings are also consistent with international research emphasizing the role of psychological flexibility and early relational experiences in emotional adjustment across different populations (Giovannini et al., 2022; Kim & Woo, 2025; Yıldız & Büyükfırat, 2024). This convergence suggests that the proposed model may have relevance beyond the specific cultural context of the present study, although cultural factors undoubtedly shape the expression and strength of these relationships.

Despite the strengths of the present study, several limitations should be acknowledged. First, the use of a cross-sectional design precludes definitive causal inferences, even though structural equation modeling was employed to test directional relationships. Second, the reliance on self-report measures may have introduced response biases, such as social desirability or shared method variance. Third, the sample was drawn from couples referring to counseling centers in Tehran, which may limit the generalizability of the findings to non-clinical populations or couples from different cultural or socioeconomic backgrounds. Finally, some potentially relevant variables, such as attachment styles or emotion regulation strategies, were not included in the model and may account for additional variance in marital distress tolerance.

Future studies are encouraged to employ longitudinal or experimental designs to more rigorously examine causal pathways among cognitive flexibility, family-of-origin health, problem-solving skills, and marital distress tolerance. Replication of the proposed model in diverse cultural contexts and non-clinical samples would enhance its generalizability. Additionally, future research could extend the model by incorporating other theoretically relevant variables, such as attachment security, mentalization, or communication patterns, to further elucidate the

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mechanisms underlying marital distress tolerance. Qualitative or mixed-methods approaches may also provide deeper insight into how couples subjectively experience and interpret distress tolerance within their relationships.

From a practical perspective, the findings highlight the importance of integrating cognitive, familial, and behavioral components in couple counseling and marital interventions. Practitioners may benefit from designing interventions that simultaneously enhance cognitive flexibility, address unresolved family-of-origin issues, and strengthen effective problem-solving skills. Psychoeducational programs aimed at increasing couples' awareness of maladaptive problem-solving patterns and promoting flexible cognitive appraisals may improve their capacity to tolerate marital distress. Furthermore, incorporating family-of-origin exploration into marital therapy could help couples understand the roots of their emotional reactions and develop more adaptive coping strategies, ultimately fostering greater resilience and stability in marital relationships.

Authors' Contributions

M.M. conceptualized the study, developed the structural model, and supervised the research process. O.M. managed participant recruitment, coordinated data collection at counseling centers, and contributed to the methodological design. L.M. conducted statistical analyses using SPSS and SmartPLS-3, interpreted the inferential results, and prepared the initial draft of the findings section. All authors contributed to manuscript writing, critically reviewed the content for intellectual accuracy, and approved the final version of the manuscript.

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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