

Structural Model of Adolescent Happiness Based on the Five Facets of Mindfulness: The Mediating Roles of Emotion Regulation, Resilience, and Social Support

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Article Info

Article type:

Original Research

Section:

Clinical Psychology

How to cite this article:

Asgharigivehchi, M. & Arshiha, A. S. (2027). Structural Model of Adolescent Happiness Based on the Five Facets of Mindfulness: The Mediating Roles of Emotion Regulation, Resilience, and Social Support. *KMAN Counseling and Psychology Nexus*, 5, 1-17.

<http://doi.org/10.61838/kman.psynexus.6484>



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ABSTRACT

This study aimed to test a structural model of adolescent happiness based on the five facets of mindfulness and to examine the simultaneous mediating roles of adaptive emotion regulation, resilience, and perceived social support. A cross-sectional correlational design using structural equation modeling was employed. Participants were 604 adolescents aged 15–18 years enrolled in Grades 10–12 in public high schools in Tehran, Iran, who were selected through multistage cluster sampling. Data were collected using the Five Facet Mindfulness Questionnaire, Cognitive Emotion Regulation Questionnaire–Short Form, Connor–Davidson Resilience Scale, Multidimensional Scale of Perceived Social Support, and Oxford Happiness Questionnaire. Pearson correlations and an observed-variable structural equation model were used to examine direct and indirect associations. Indirect effects were evaluated using 2,000 bias-corrected bootstrap resamples. The hypothesized model demonstrated excellent fit, $\chi^2(3) = 3.94$, $p = .269$, CFI = .999, TLI = .993, RMSEA = .023, and SRMR = .009, and explained 55.5% of the variance in happiness. Resilience ($\beta = .327$, $p < .001$), perceived social support ($\beta = .244$, $p < .001$), and adaptive emotion regulation ($\beta = .243$, $p < .001$) independently predicted happiness. Non-reactivity was the strongest predictor of emotion regulation ($\beta = .318$), resilience ($\beta = .291$), and social support ($\beta = .268$), all $p < .001$, and showed the largest total indirect effect on happiness ($\beta = .238$, 95% CI [.193, .285]). Non-judging, Acting with Awareness, and Describing also showed significant indirect effects through all three mediators. Observing showed a significant total indirect effect primarily through resilience. After the mediators were included, only Acting with Awareness retained a significant direct effect on happiness ($\beta = .108$, $p = .001$). Adolescent happiness appears to be associated with distinct mindfulness facets through multiple psychological and interpersonal pathways, particularly resilience, adaptive emotion regulation, and perceived social support, with Non-reactivity emerging as the most influential indirect predictor.

Keywords: adolescent happiness, mindfulness, emotion regulation, resilience, social support, structural equation modeling

1. Introduction

Happiness during adolescence is increasingly recognized as a central indicator of positive psychological development rather than merely the absence of emotional or behavioral problems. Within the broader framework of subjective well-being, happiness reflects the extent to which individuals experience positive affect, evaluate their lives favorably, and perceive their daily functioning as meaningful and satisfying. Contemporary well-being research has emphasized that subjective well-being is a multidimensional construct shaped by cognitive evaluations of life as well as recurrent emotional experiences, interpersonal relationships, and personal psychological resources (Diener et al., 2018). This perspective is especially relevant during adolescence, a developmental period characterized by accelerated biological maturation, heightened emotional reactivity, increasing autonomy, identity exploration, expanding peer involvement, and growing academic and social demands. These developmental transitions can create substantial opportunities for growth while simultaneously increasing vulnerability to emotional instability, stress, interpersonal conflict, and reduced well-being. Accordingly, identifying psychological processes that contribute to adolescent happiness is important not only for understanding normative development but also for informing preventive and school-based programs designed to strengthen positive mental health.

Among the psychological constructs increasingly investigated in relation to adolescent well-being, mindfulness has received considerable attention. Mindfulness broadly refers to the capacity to attend deliberately to present-moment experiences while adopting an open, receptive, and nonjudgmental orientation toward internal and external events. Rather than representing a unitary ability, contemporary conceptualizations emphasize that mindfulness consists of multiple related skills, including observing experiences, describing internal states, acting with awareness, refraining from judging thoughts and emotions, and allowing internal experiences to arise without automatically reacting to them. These facets may not contribute equally to well-being, because each represents a different mode of processing experience. Acting with awareness, for example, may reduce automatic and distracted behavior, whereas non-judging may diminish secondary emotional responses produced by evaluating unpleasant experiences as unacceptable. Non-reactivity may

support the ability to experience difficult emotions without impulsive responding. Consequently, examining the five facets separately may provide a more precise account of how mindfulness is associated with adolescent happiness than treating mindfulness as a single global construct.

The growing interest in mindfulness among adolescents is supported by accumulating intervention research. Systematic reviews indicate that mindfulness-based interventions can produce beneficial changes in emotional and psychological functioning among children and adolescents, although the magnitude of effects may vary according to intervention format, sample characteristics, and targeted outcomes (Carneiro & Pozza, 2025). In school contexts, mindfulness programs have been associated with multiple outcomes relevant to adolescent functioning, including improvements in aspects of emotional well-being, psychological adjustment, attentional functioning, coping, and classroom-related experiences (D'Souza & Smyth, 2025). Evidence from culturally diverse settings further suggests that both taught and self-help mindfulness-based programs may influence adolescents' well-being, mental health, coping strategies, prosocial behavior, and behavioral difficulties (Zhou & McLellan, 2024). Nevertheless, universal mindfulness programs do not necessarily produce uniform improvements across all indicators of adolescent well-being, and findings from cluster-randomized trials suggest that effects may depend on the mechanisms through which mindfulness is translated into everyday psychological functioning (Qvick et al., 2026). This variability underscores the importance of moving beyond the simple question of whether mindfulness is associated with happiness and examining the pathways through which specific mindfulness skills may contribute to positive well-being.

One theoretically important mechanism is emotion regulation. Adolescence involves substantial changes in emotional intensity, social sensitivity, and the complexity of emotion-eliciting situations. Effective regulation therefore becomes particularly important for maintaining psychological equilibrium and positive functioning. Cognitive emotion regulation refers to the conscious cognitive strategies individuals use to interpret, manage, or modify the emotional consequences of stressful experiences. These strategies include relatively adaptive processes such as acceptance, positive refocusing, refocusing on planning, positive reappraisal, and putting events into perspective, as well as less adaptive strategies such as rumination, catastrophizing, and excessive self-blame or other-blame (Garnefski & Kraaij, 2006). Adolescents who are better able

to use adaptive cognitive strategies may be more capable of reducing prolonged negative affect, recovering from stressful events, maintaining goal-directed behavior, and sustaining positive evaluations of their lives.

Mindfulness is theoretically positioned to influence emotion regulation because mindful awareness alters how emotional experiences are monitored and accepted. The Monitor and Acceptance Theory proposes that mindfulness involves at least two key processes: enhanced monitoring of present-moment experiences and an accepting orientation toward those experiences. Monitoring increases awareness of emotional and sensory events, whereas acceptance reduces maladaptive evaluative reactions to them (Lindsay & Creswell, 2017). This framework suggests that greater awareness without acceptance may not always be sufficient to improve emotional outcomes, while the combination of monitoring and acceptance may facilitate more adaptive emotional responding. More recent work examining the psychological and neural mechanisms of trait mindfulness has similarly emphasized the centrality of emotional regulation processes and has provided further support for distinguishing monitoring-related and acceptance-related components when explaining the psychological benefits of mindfulness (Buric et al., 2024). From this perspective, facets such as Non-judging and Non-reactivity may be especially important because they reduce secondary reactivity to distressing thoughts and emotions, while Acting with Awareness may facilitate more deliberate regulatory responses.

Empirical research among adolescents increasingly supports this proposed link between mindfulness and emotion regulation. Randomized evidence has shown that mindfulness training may improve momentary mindfulness and emotion-regulatory functioning among adolescents exposed to chronic stressors, suggesting that mindfulness-related skills may alter the way young people respond to emotionally challenging situations in daily life (Miller-Chagnon et al., 2024). Similarly, mindfulness-based interventions in general adolescent populations have been associated with changes in symptoms and specific emotion-regulation strategies (Piguet et al., 2025). Recent secondary analyses of randomized trials have also indicated that mindfulness can shape emotion regulation among non-clinical adolescents, further supporting the view that emotional regulatory processes are among the principal pathways through which mindfulness may affect broader psychological functioning (Mendola et al., 2026). A systematic review focused specifically on emotional

dysregulation has likewise concluded that mindfulness-based interventions show promise for adolescents experiencing difficulties in managing emotions, although methodological heterogeneity remains an important issue in the literature (Sharma et al., 2026). These findings collectively suggest that adaptive emotion regulation may mediate associations between particular mindfulness facets and adolescent happiness.

Resilience represents a second plausible mechanism. Resilience refers to the capacity to adapt successfully, recover from adversity, and maintain or regain effective functioning despite stress or challenging circumstances. During adolescence, resilience is particularly important because young people encounter simultaneous academic, interpersonal, familial, and developmental pressures. Adolescents who possess stronger resilience are more likely to recover from negative experiences without allowing temporary stressors to produce persistent reductions in well-being. Mindfulness may strengthen resilience by encouraging flexible attention, decentering from distressing cognitions, greater tolerance of emotional discomfort, and reduced automatic reactivity. Mindfulness training has been associated with improvements in both resilience and emotional regulation in adolescents, supporting the possibility that these constructs constitute related but distinguishable pathways linking mindfulness with positive adaptation (Navidi Moghadam, 2025). Current intervention research is also increasingly designed around resilience as a primary mechanism through which mindfulness may protect vulnerable youth. For example, the Promoting Resilience in Youth through Mindfulness Meditation program was specifically developed to examine whether mindfulness training added to usual care can reduce internalizing problems and alter cognitive and neural processes related to resilience among help-seeking young people (Schepers et al., 2025).

Resilience is also directly relevant to positive well-being. Research among preadolescents has shown that resilience and social support are significant predictors of life satisfaction, indicating that internal adaptive capacity and external interpersonal resources may jointly contribute to positive evaluations of life (Ayllón-Negrillo et al., 2024). In adolescence, resilience may enhance happiness by enabling individuals to interpret difficulties as manageable, maintain psychological continuity during stressful transitions, and recover more rapidly following emotional setbacks. In this sense, resilience may explain why adolescents who are more mindful do not merely experience fewer difficulties but may

also report greater happiness. A structural perspective is particularly useful because resilience can be examined simultaneously with other mechanisms rather than treated as an isolated predictor.

Perceived social support constitutes a third important pathway. Adolescents increasingly orient toward peer relationships while continuing to depend on family relationships and other significant interpersonal figures for emotional security, validation, belonging, and practical assistance. Perceived social support refers not only to the objective presence of social networks but also to the individual's belief that supportive others are available when needed. Such perceptions can enhance positive affect, buffer stress, strengthen self-worth, and contribute to favorable judgments of life circumstances. Evidence indicates that social support plays a meaningful role in adolescent and preadolescent life satisfaction, particularly when considered alongside resilience (Ayllón-Negrillo et al., 2024). Moreover, models of adolescent well-being suggest that social support, emotion regulation, and resilience may operate concurrently rather than independently. Azpiazu Izaguirre and colleagues demonstrated that adolescent life satisfaction can be meaningfully explained through the combined contribution of social support, emotion regulation, and resilience, providing a strong empirical basis for integrating these constructs within a single explanatory framework (Azpiazu Izaguirre et al., 2021).

Mindfulness may contribute to perceived social support through several interpersonal processes. Adolescents who act with greater awareness may attend more effectively to social cues and engage more fully in interpersonal exchanges. Those who respond nonjudgmentally to their own internal experiences may also be less defensive in interactions with others, while non-reactivity may reduce impulsive responses during conflict. These tendencies can facilitate more stable and supportive relationships and may alter how available support is perceived. Mindfulness-related changes in self-perception may further affect social functioning. Qualitative research examining changes following mindfulness-based compassionate approaches has suggested that mindfulness practice may alter self-schemas and the ways individuals interpret themselves in relation to emotional and interpersonal experiences (Scheepbouwer et al., 2026). Although such findings arise from a different clinical context, they support the broader proposition that mindfulness may influence the interpretive frameworks through which individuals evaluate both themselves and their relationships.

The relationship between mindfulness and adolescent well-being is therefore likely to be multimechanistic. Emotion regulation represents the capacity to manage internal affective responses, resilience reflects the ability to sustain and restore adaptive functioning under stress, and social support represents the interpersonal resources available to facilitate coping and positive adjustment. These processes are conceptually distinct, yet they are likely interconnected. Adaptive emotion regulation may strengthen resilience by helping adolescents tolerate and reinterpret stressful experiences, whereas supportive relationships may provide resources that facilitate both regulation and resilient recovery. At the same time, resilient adolescents may maintain relationships more effectively and perceive their social environment more positively. This interdependence argues for testing the three mechanisms simultaneously, because examining them separately may overestimate the unique contribution of any one mediator.

Existing research provides several reasons to expect mindfulness to influence these pathways. School-based and clinical studies indicate that mindfulness interventions may affect a broad array of outcomes, yet recent reviews also demonstrate heterogeneity in effectiveness and point to the need for more detailed explanatory models (Carneiro & Pozza, 2025; D'Souza & Smyth, 2025). Research on emotional dysregulation increasingly suggests that the benefits of mindfulness are at least partly mediated by improved emotional processing (Sharma et al., 2026), while recent randomized studies support changes in regulation strategies following mindfulness training (Mendola et al., 2026; Piguet et al., 2025). Similarly, intervention studies and emerging protocols increasingly position resilience as a major target of mindfulness programs for adolescents and youth (Navidi Moghadam, 2025; Schepers et al., 2025). Despite these advances, relatively less attention has been devoted to determining whether the five mindfulness facets show distinct structural relationships with happiness through adaptive emotion regulation, resilience, and social support when these mediators are considered simultaneously.

This distinction is theoretically consequential. The five facets of mindfulness may engage different psychological mechanisms. Observing may increase awareness of internal and external events, but heightened observation alone may not necessarily enhance happiness unless it is accompanied by adaptive coping capacities. Describing may support emotional clarity by allowing adolescents to label internal experiences, thereby facilitating regulation and interpersonal communication. Acting with Awareness may reduce

automatic behavior and increase intentional engagement with activities and relationships, potentially contributing directly to positive functioning. Non-judging may limit self-critical evaluations of emotional states and thereby promote adaptive regulation, while Non-reactivity may provide the psychological space required to tolerate distress, recover from setbacks, and respond flexibly to interpersonal situations. Monitor and Acceptance Theory provides a useful basis for expecting particularly strong effects from acceptance-related facets because monitoring and acceptance may have different psychological consequences (Lindsay & Creswell, 2017). The emerging evidence on trait mindfulness and emotion-regulation mechanisms similarly supports a facet-sensitive approach rather than treating mindfulness as an undifferentiated global trait (Buric et al., 2024).

A structural equation modeling framework is particularly appropriate for evaluating these relationships because it enables the simultaneous estimation of multiple direct and indirect pathways while accounting for associations among predictors and mediators. Structural modeling can distinguish the unique contribution of each mindfulness facet to each proposed mediator and determine whether associations with happiness remain after the mediating mechanisms are taken into account. It also allows specific indirect effects to be contrasted, thereby clarifying whether particular mindfulness dimensions are linked to happiness predominantly through emotion regulation, resilience, social support, or a combination of these pathways. Such multivariate modeling is preferable to a sequence of separate regressions when the theoretical model involves interrelated predictors and multiple simultaneous mediators, because it permits evaluation of the coherence of the overall hypothesized system and the magnitude of its component pathways (Kline, 2023).

The present focus is also important because positive developmental outcomes deserve attention alongside psychopathology. Much mindfulness research with young people has understandably emphasized anxiety, depression, emotional dysregulation, internalizing symptoms, and other difficulties. However, mental health cannot be reduced to the absence of symptoms. Happiness and subjective well-being constitute meaningful outcomes in their own right and are increasingly regarded as central indicators of adaptive functioning (Diener et al., 2018). Recent adolescent mindfulness trials have explicitly begun to examine well-being outcomes rather than focusing exclusively on symptom reduction (Qvick et al., 2026), and culturally

diverse intervention research suggests that mindfulness may influence positive functioning as well as distress-related outcomes (Zhou & McLellan, 2024). Developing a clearer account of the pathways connecting mindfulness to happiness may therefore contribute to a more balanced science of adolescent mental health that addresses both the reduction of problems and the cultivation of psychological strengths.

Finally, investigating these relationships among Iranian adolescents can extend a literature that has developed across diverse cultural and educational settings but still requires greater contextual breadth. The meaning and expression of happiness, interpersonal support, emotion regulation, and mindfulness may be influenced by family structures, school environments, cultural expectations, and social norms. At the same time, evidence from international studies suggests that core mechanisms involving regulation, resilience, and interpersonal support may show considerable cross-contextual relevance. Testing these constructs within a single structural model can therefore clarify whether theoretically expected relationships emerge within an Iranian adolescent sample while also generating evidence relevant to culturally responsive school and mental-health interventions. In addition, recent work showing that mindfulness-related change may extend to self-schemas and broader patterns of self-interpretation suggests that its effects may involve multiple interconnected levels of psychological functioning rather than a single isolated process (Scheepbouwer et al., 2026). Understanding which facets are most strongly connected to specific adaptive mechanisms may help identify more precise intervention targets and reduce reliance on broad, undifferentiated mindfulness programs.

Therefore, the aim of the present study was to test a structural model of adolescent happiness based on the five facets of mindfulness and to examine the simultaneous mediating roles of adaptive emotion regulation, resilience, and perceived social support.

2. Methods and Materials

2.1. Study Design and Participants

This study employed a cross-sectional correlational design using structural equation modeling (SEM) to examine the structural relationships between the five facets of mindfulness and adolescent happiness, with adaptive emotion regulation, resilience, and perceived social support considered as simultaneous mediating mechanisms. The

target population consisted of adolescents enrolled in Grades 10–12 in public high schools in Tehran, Iran, during the 2025–2026 academic year. Data collection was conducted between February and May 2026. A multistage cluster sampling procedure was employed to achieve adequate representation of adolescents from geographically and socioeconomically diverse areas of Tehran. In the first stage, five educational districts, including Districts 2, 5, 8, 11, and 16, were selected to represent northern, western, central and eastern, and southern areas of the city. In the second stage, lists of public girls' and boys' high schools within each selected district were obtained, and schools were selected from these lists. Subsequently, intact classrooms were randomly selected from participating schools, and all eligible students in the selected classrooms were invited to participate. Eligibility criteria included being between 15 and 18 years of age, current enrollment in Grades 10–12, sufficient Persian-language literacy to understand and complete the self-report questionnaires, provision of adolescent assent, and written informed consent from a parent or legal guardian. Students with a documented severe neurological disorder, significant intellectual disability, or another condition that substantially impaired their ability to comprehend and independently complete the questionnaires were excluded from participation.

A total of 638 adolescents received the study questionnaires and accompanying research materials, of whom 619 returned completed or partially completed questionnaires, corresponding to a response rate of 97.0%. Following data screening, 15 records were excluded because of highly patterned responses, internally inconsistent response profiles, or other indications of clearly invalid questionnaire completion. The final analytic sample therefore consisted of 604 adolescents. Participants had a mean age of 16.52 years ($SD = 0.85$), with an age range of 15 to 18 years. Of the final sample, 322 participants (53.3%) were girls and 282 (46.7%) were boys. Regarding educational grade, 223 adolescents (36.9%) were enrolled in Grade 10, 207 (34.3%) were enrolled in Grade 11, and 174 (28.8%) were enrolled in Grade 12. The resulting sample size was considered sufficient for the estimation of the proposed structural model, given the number of observed variables and structural paths included in the analysis, and exceeded conventional recommendations for achieving stable parameter estimation in an observed-variable SEM of comparable complexity (Kline, 2023). Prior to questionnaire administration, coordination was established with school administrators and counselors. Parents or legal guardians

received written information describing the objectives, procedures, voluntary nature, confidentiality safeguards, and potential implications of participation. Adolescents were invited to participate only after parental or guardian consent had been obtained and they had provided their own assent. Questionnaires were administered collectively in classroom settings and required approximately 30–40 minutes to complete. Trained research assistants provided standardized instructions and remained available to clarify procedural questions without influencing participants' responses. Students were explicitly informed that participation was voluntary, that declining or discontinuing participation would have no academic or administrative consequences, and that their individual responses would not be disclosed to teachers, school officials, parents, or other students. The research protocol was approved by [insert name of institutional ethics committee] under Approval No. [insert actual code], and all procedures involving adolescent participants were conducted in accordance with the ethical principles of the Declaration of Helsinki and applicable standards governing research with minors.

2.2. Data Collection Tools

Five Facet Mindfulness Questionnaire. Mindfulness was assessed using the 39-item Five Facet Mindfulness Questionnaire (FFMQ) developed by Baer et al. (2006). The questionnaire conceptualizes mindfulness as a multidimensional construct comprising five distinguishable but related facets: Observing, Describing, Acting with Awareness, Non-judging of Inner Experience, and Non-reactivity to Inner Experience. The Observing, Describing, Acting with Awareness, and Non-judging dimensions each contain eight items, whereas the Non-reactivity dimension contains seven items. Respondents indicate the extent to which each statement characterizes their typical experiences using a five-point Likert scale ranging from 1 (never or very rarely true) to 5 (very often or always true). After appropriate reverse scoring of negatively worded items, higher scores indicate stronger mindfulness-related abilities within the corresponding facet. Possible scores range from 8 to 40 for the Observing, Describing, Acting with Awareness, and Non-judging subscales and from 7 to 35 for the Non-reactivity subscale. Because the conceptual objective of the present study was to investigate whether distinct mindfulness skills demonstrated differential direct and mediated relationships with adolescent happiness, the five FFMQ facets were analyzed separately rather than being

reduced to a single overall mindfulness score. Evidence supporting the psychometric adequacy of the Persian version has been reported by Khanjani et al. (2022), who examined the instrument among 571 Iranian students and supported its five-factor structure, reporting RMSEA = .06, GFI = .91, and NFI = .87, together with a total-scale Cronbach's alpha coefficient of .78 and theoretically consistent relationships with indices of emotion regulation. In the present study, the five facet scores demonstrated satisfactory internal consistency, with Cronbach's alpha coefficients ranging from .79 to .87.

Cognitive Emotion Regulation Questionnaire–Short Form. Adaptive cognitive emotion regulation was measured using the short form of the Cognitive Emotion Regulation Questionnaire (CERQ-Short) developed by Garnefski and Kraaij (2006). The instrument consists of 18 items assessing nine cognitive strategies commonly employed in response to stressful, unpleasant, or emotionally demanding experiences. These dimensions are self-blame, acceptance, rumination, positive refocusing, refocus on planning, positive reappraisal, putting into perspective, catastrophizing, and other-blame, with each strategy represented by two items. Participants respond to each item on a five-point Likert scale ranging from 1 (almost never) to 5 (almost always), with higher scores reflecting greater habitual use of the corresponding cognitive regulation strategy. In accordance with the conceptual model of the present study and established applications of the CERQ, an adaptive cognitive emotion-regulation composite was calculated from the acceptance, positive refocusing, refocus on planning, positive reappraisal, and putting into perspective dimensions. The resulting adaptive-regulation composite comprised 10 items and had a possible score range of 10 to 50, with higher scores representing greater reliance on constructive cognitive strategies for managing emotional experiences. The Persian short form has demonstrated satisfactory psychometric properties. Hasani et al. (2024), in an evaluation involving 1,825 Iranian participants, including 436 adolescents, reported evidence supporting the reliability, factorial validity, convergent and criterion-related validity, sensitivity to therapeutic change, and measurement invariance of the Persian instrument. In the present sample, the adaptive cognitive emotion-regulation composite demonstrated good internal consistency, with a Cronbach's alpha coefficient of .86.

Connor–Davidson Resilience Scale. Psychological resilience was assessed using the 25-item Connor–Davidson Resilience Scale (CD-RISC) developed by Connor and

Davidson (2003). The scale was designed to measure individuals' perceived ability to cope effectively with adversity, recover from stressful circumstances, adapt to change, maintain goal-directed functioning under pressure, and draw upon psychological resources when confronted with difficult situations. Each item is rated on a five-point response scale ranging from 0 (not true at all) to 4 (true nearly all of the time), producing a total score ranging from 0 to 100. Higher total scores indicate greater psychological resilience. The original CD-RISC demonstrated satisfactory reliability and construct validity across clinical and nonclinical populations. Evidence supporting the applicability of the Farsi version to adolescent populations has also been reported. Nooripour et al. (2022), in a study involving 475 Iranian adolescent girls, reported supportive psychometric evidence for the Farsi CD-RISC, including an interpretable factorial structure and theoretically meaningful associations with mindfulness, self-efficacy, and related psychological constructs. In the current study, the total CD-RISC score was used as the observed indicator of resilience in the proposed structural model. Internal consistency was high in the present sample, with a Cronbach's alpha coefficient of .91.

Multidimensional Scale of Perceived Social Support. Perceived social support was evaluated using the 12-item Multidimensional Scale of Perceived Social Support (MSPSS) developed by Zimet et al. (1988). The MSPSS assesses individuals' perceptions of the availability and adequacy of emotional and instrumental support from three principal interpersonal sources: family, friends, and a significant other. Each source of support is represented by four items. Participants rate their agreement with each statement using a seven-point Likert scale ranging from 1 (very strongly disagree) to 7 (very strongly agree). Item scores may be used to calculate separate subscale scores for the three support sources as well as an overall perceived social-support score. In the present study, the total score was employed to represent the adolescent's overall perception of available interpersonal support. Total scores can range from 12 to 84, with higher values indicating greater perceived social support. The Persian version of the MSPSS has demonstrated satisfactory reliability and factorial validity in Iranian populations. Bagherian-Sararoudi et al. (2013) supported the original three-factor structure and reported Cronbach's alpha coefficients of .84 and .92 for the total scale across Iranian samples, in addition to a two-month test–retest reliability coefficient of .84. In the current study,

the total MSPSS score exhibited excellent internal consistency, with a Cronbach's alpha coefficient of .92.

Oxford Happiness Questionnaire. Adolescent happiness was assessed using the Oxford Happiness Questionnaire (OHQ) developed by Hills and Argyle (2002). The OHQ is a 29-item self-report instrument designed to assess general happiness and positive psychological well-being, including positive affect, life satisfaction, sense of purpose, positive self-evaluation, social interest, and perceived psychological functioning. Items are rated on a six-point Likert-type response format, with negatively phrased items reverse scored prior to calculation of the overall score. The summed total score can range from 29 to 174, with higher scores indicating greater subjective happiness and psychological well-being. The OHQ has been extensively applied in both general and student populations and has demonstrated satisfactory reliability and construct validity. Evidence for the psychometric adequacy of its Persian-language version has also been reported. Liaghatdar et al. (2008) found satisfactory internal consistency as well as evidence for construct and concurrent validity among Iranian respondents. Because happiness represented the principal endogenous outcome of the proposed structural model, the total OHQ score was used as the observed outcome variable. In the present sample, internal consistency of the OHQ was excellent, with a Cronbach's alpha coefficient of .93.

2.3. Data Analysis

Statistical analysis was conducted in sequential preliminary and structural stages. Initially, the dataset was screened for completeness, invalid response patterns, univariate distributions, and the suitability of the variables for parametric multivariate analysis. Descriptive statistics, including means, standard deviations, minimum and maximum values, skewness, and kurtosis, were calculated for all principal study variables. Pearson product-moment correlation coefficients were subsequently estimated to assess the magnitude and direction of bivariate associations among the five mindfulness facets, adaptive cognitive emotion regulation, resilience, perceived social support, and happiness. Distributional assumptions were evaluated through skewness and kurtosis indices, with absolute skewness values below approximately 2 and absolute kurtosis values below approximately 7 considered acceptable for maximum-likelihood estimation. The reliability of each measure was evaluated using Cronbach's alpha coefficients. Potential multicollinearity among

predictor variables was also considered before estimation of the structural model to ensure that the separate mindfulness facets provided sufficiently distinguishable information for simultaneous inclusion in the model.

Following preliminary analyses, an observed-variable structural equation model was estimated using maximum-likelihood estimation. Observing, Describing, Acting with Awareness, Non-judging of Inner Experience, and Non-reactivity to Inner Experience were specified as exogenous predictors and were permitted to freely intercorrelate in recognition of their theoretical relationships as dimensions of the broader mindfulness construct. Adaptive emotion regulation, resilience, and perceived social support were entered simultaneously as mediating variables, while happiness was specified as the principal endogenous outcome. Each mindfulness facet was modeled as a predictor of all three mediators and of happiness. In turn, adaptive emotion regulation, resilience, and perceived social support were simultaneously specified as predictors of happiness. The residual terms of the three mediators were permitted to covary because these psychosocial resources were theoretically expected to share variance not fully explained by the mindfulness facets. Importantly, direct paths from each mindfulness facet to happiness were retained in the structural model, allowing the indirect pathways through emotion regulation, resilience, and perceived social support to be interpreted as mediation effects while simultaneously estimating the remaining direct associations between specific mindfulness facets and adolescent happiness.

Overall model fit was evaluated using multiple complementary indices rather than relying exclusively on the chi-square statistic. The reported indices included the model chi-square statistic and its degrees of freedom, the comparative fit index (CFI), Tucker-Lewis index (TLI), root mean square error of approximation (RMSEA) with its corresponding confidence interval, and standardized root mean square residual (SRMR). Consistent with established SEM recommendations, CFI and TLI values approaching or exceeding .95 and RMSEA and SRMR values below approximately .06 to .08 were interpreted as indicating satisfactory to good model fit, while the chi-square statistic was considered in conjunction with these indices because of its sensitivity to sample size (Kline, 2023). Standardized path coefficients were reported to facilitate comparison of the relative magnitude of relationships across the model. Statistical significance for individual direct paths was evaluated at $p < .05$. The mediating roles of adaptive emotion regulation, resilience, and perceived social support were

assessed by estimating specific indirect effects from each of the five mindfulness facets to happiness through each mediator. Indirect effects were tested using 2,000 bias-corrected bootstrap resamples, and mediation was considered statistically supported when the corresponding 95% bootstrap confidence interval did not include zero. This simultaneous mediation approach made it possible to determine not only whether mindfulness was associated with adolescent happiness, but also which specific mindfulness facets were related to happiness through improved emotion-regulation capacities, enhanced resilience, greater perceived social support, or a combination of these mechanisms.

3. Findings and Results

All study variables demonstrated approximately symmetric distributions, with skewness values close to zero

and no evidence of problematic univariate non-normality. Descriptive statistics for the demographic and principal study variables are presented in Table 1. The observed means and standard deviations indicated adequate variability across all continuous measures, and the observed score ranges were broadly consistent with the theoretical ranges of the instruments. Bivariate correlations among the principal study variables were uniformly in the expected positive direction. Happiness showed the strongest correlation with resilience ($r = .591$), followed by adaptive emotion regulation ($r = .546$) and perceived social support ($r = .501$). Among the five mindfulness facets, Non-reactivity to Inner Experience demonstrated the strongest bivariate association with happiness ($r = .490$), followed by Acting with Awareness ($r = .463$) and Non-judging of Inner Experience ($r = .406$).

Table 1

Sample Characteristics and Descriptive Statistics (N = 604)

Variable	n / M	% / SD	Observed Range	Possible Range
Age (years)	16.52	0.85	15–18	15–18
Girls	322	53.3	—	—
Boys	282	46.7	—	—
Grade 10	223	36.9	—	—
Grade 11	207	34.3	—	—
Grade 12	174	28.8	—	—
FFMQ Observing	23.78	7.84	8–40	8–40
FFMQ Describing	24.03	8.17	8–40	8–40
FFMQ Acting with Awareness	24.51	8.58	8–40	8–40
FFMQ Non-judging	23.76	8.96	8–40	8–40
FFMQ Non-reactivity	20.94	7.32	7–35	7–35
Adaptive emotion regulation	29.96	10.17	10–50	10–50
Resilience	49.79	23.12	1–99	0–100
Perceived social support	48.04	18.69	12–84	12–84
Happiness	100.69	35.86	30–173	29–174

Pearson correlation coefficients among the study variables are presented in Table 2. The mindfulness facets were positively intercorrelated, although the magnitudes of these associations varied. The strongest association among the mindfulness dimensions was observed between Acting with Awareness and Non-judging ($r = .369$), followed by Acting with Awareness and Non-reactivity ($r = .335$), and Describing and Acting with Awareness ($r = .323$). Adaptive

emotion regulation correlated most strongly with Non-reactivity ($r = .500$) and Non-judging ($r = .465$), whereas resilience showed its strongest mindfulness-related correlation with Non-reactivity ($r = .478$). Perceived social support was likewise most strongly associated with Non-reactivity ($r = .389$). These patterns provided preliminary support for the hypothesized structural relationships among mindfulness, the proposed mediators, and happiness.

Table 2

Pearson Correlations Among the Study Variables

Variable	1	2	3	4	5	6	7	8	9
1. Observing	—								

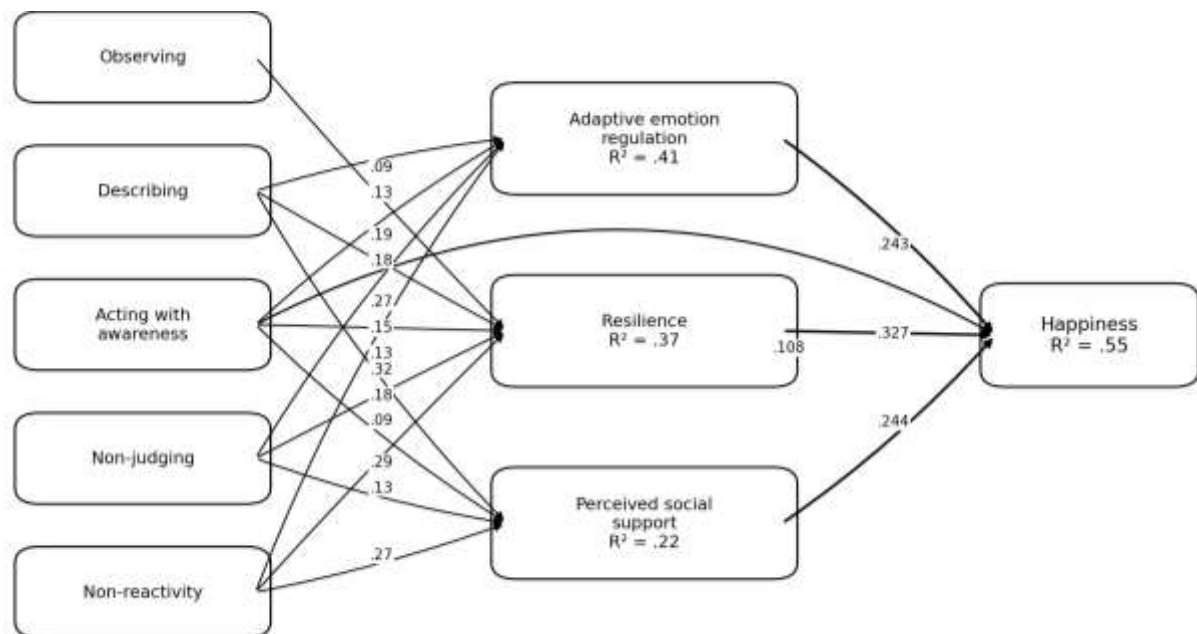
2. Describing	.250	—							
3. Acting with Awareness	.259	.323	—						
4. Non-judging	.090	.218	.369	—					
5. Non-reactivity	.318	.222	.335	.310	—				
6. Emotion regulation	.238	.291	.440	.465	.500	—			
7. Resilience	.324	.364	.405	.372	.478	.360	—		
8. Social support	.222	.265	.287	.284	.389	.330	.314	—	
9. Happiness	.288	.339	.463	.406	.490	.546	.591	.501	—

The hypothesized parallel-mediation structural model demonstrated excellent fit to the observed data, $\chi^2(3) = 3.94$, $p = .269$, CFI = .999, TLI = .993, RMSEA = .023, and SRMR = .009. All major fit indices were therefore well within commonly accepted thresholds for good model fit. The five mindfulness facets jointly explained 40.6% of the variance in adaptive emotion regulation, 37.3% of the variance in

resilience, and 21.7% of the variance in perceived social support. The complete structural model accounted for 55.5% of the variance in adolescent happiness, indicating substantial explanatory power. Figure 1 presents the standardized coefficients for the statistically significant structural paths.

Figure 1

Standardized Structural Model of Adolescent Happiness.



The standardized direct effects are presented in Table 3. The five mindfulness facets were differentially associated with the three proposed mediators. Non-reactivity emerged as the strongest predictor of adaptive emotion regulation ($\beta = .318$, $p < .001$), resilience ($\beta = .291$, $p < .001$), and perceived social support ($\beta = .268$, $p < .001$). Non-judging also demonstrated a comparatively strong positive association with adaptive emotion regulation ($\beta = .271$, $p < .001$). Acting with Awareness significantly predicted adaptive emotion regulation ($\beta = .194$, $p < .001$), resilience ($\beta = .151$, $p < .001$), and perceived social support ($\beta = .087$, $p = .037$). Describing showed smaller but statistically

significant positive paths to all three mediators. Observing significantly predicted resilience ($\beta = .132$, $p < .001$), whereas its direct paths to adaptive emotion regulation ($\beta = .040$, $p = .242$) and perceived social support ($\beta = .069$, $p = .080$) were not statistically significant.

All three mediators independently and positively predicted happiness. Resilience demonstrated the strongest unique association with happiness ($\beta = .327$, $p < .001$), followed by perceived social support ($\beta = .244$, $p < .001$) and adaptive emotion regulation ($\beta = .243$, $p < .001$). After simultaneous inclusion of the mediators, only Acting with Awareness retained a statistically significant direct

association with happiness ($\beta = .108$, $p = .001$). The direct effects of Observing ($\beta = .014$, $p = .646$), Describing ($\beta = .024$, $p = .425$), Non-judging ($\beta = .037$, $p = .259$), and Non-reactivity ($\beta = .059$, $p = .092$) on happiness were not statistically significant. This pattern suggests that the

associations of these mindfulness facets with happiness were largely transmitted through adaptive emotion regulation, resilience, and perceived social support, whereas Acting with Awareness maintained both direct and mediated relationships with happiness.

Table 3

Standardized Direct Effects in the Structural Model

Predictor	Outcome	β	SE	p
FFMQ Observing	Adaptive emotion regulation	.040	.034	.242
FFMQ Describing	Adaptive emotion regulation	.088	.034	.010
FFMQ Acting with Awareness	Adaptive emotion regulation	.194	.036	< .001
FFMQ Non-judging	Adaptive emotion regulation	.271	.035	< .001
FFMQ Non-reactivity	Adaptive emotion regulation	.318	.036	< .001
FFMQ Observing	Resilience	.132	.035	< .001
FFMQ Describing	Resilience	.179	.035	< .001
FFMQ Acting with Awareness	Resilience	.151	.037	< .001
FFMQ Non-judging	Resilience	.175	.036	< .001
FFMQ Non-reactivity	Resilience	.291	.037	< .001
FFMQ Observing	Perceived social support	.069	.039	.080
FFMQ Describing	Perceived social support	.131	.039	< .001
FFMQ Acting with Awareness	Perceived social support	.087	.042	.037
FFMQ Non-judging	Perceived social support	.134	.040	< .001
FFMQ Non-reactivity	Perceived social support	.268	.041	< .001
FFMQ Observing	Happiness	.014	.030	.646
FFMQ Describing	Happiness	.024	.031	.425
FFMQ Acting with Awareness	Happiness	.108	.033	.001
FFMQ Non-judging	Happiness	.037	.033	.259
FFMQ Non-reactivity	Happiness	.059	.035	.092
Adaptive emotion regulation	Happiness	.243	.036	< .001
Resilience	Happiness	.327	.035	< .001
Perceived social support	Happiness	.244	.031	< .001

Bootstrap analyses supported statistically significant total indirect effects for all five mindfulness facets (Table 4). Non-reactivity demonstrated the largest total indirect association with happiness ($\beta = .238$, 95% CI [.193, .285]), followed by Non-judging ($\beta = .156$, 95% CI [.118, .195]), Acting with Awareness ($\beta = .118$, 95% CI [.076, .159]), Describing ($\beta = .112$, 95% CI [.074, .153]), and Observing ($\beta = .070$, 95% CI [.033, .111]). For Non-reactivity, all three specific indirect pathways were statistically significant. The strongest indirect pathway operated through resilience ($\beta = .095$, 95% CI [.066, .126]), followed by adaptive emotion regulation ($\beta = .077$, 95% CI [.051, .109]) and perceived social support ($\beta = .065$, 95% CI [.042, .091]).

Observing demonstrated a distinctive mediation pattern. Its specific indirect effect through resilience was statistically

significant ($\beta = .043$, 95% CI [.020, .071]), whereas its indirect effects through adaptive emotion regulation ($\beta = .010$, 95% CI [−.006, .027]) and perceived social support ($\beta = .017$, 95% CI [−.001, .038]) were not statistically supported because their confidence intervals included zero. Thus, the significant total indirect association between Observing and happiness was attributable primarily to the resilience pathway. In contrast, Describing, Acting with Awareness, Non-judging, and Non-reactivity each demonstrated statistically significant specific indirect effects through all three mediating variables, indicating that these mindfulness facets were associated with greater happiness through multiple complementary psychological and interpersonal mechanisms.

Table 4*Bootstrapped Indirect Effects of Mindfulness Facets on Happiness*

Facet	Mediator	Indirect β	95% CI Low	95% CI High
Observing	Emotion regulation	.010	-.006	.027
Observing	Resilience	.043	.020	.071
Observing	Social support	.017	-.001	.038
Observing	Total indirect	.070	.033	.111
Describing	Emotion regulation	.021	.005	.041
Describing	Resilience	.059	.035	.087
Describing	Social support	.032	.013	.052
Describing	Total indirect	.112	.074	.153
Acting with Awareness	Emotion regulation	.047	.027	.071
Acting with Awareness	Resilience	.049	.023	.077
Acting with Awareness	Social support	.021	.001	.046
Acting with Awareness	Total indirect	.118	.076	.159
Non-judging	Emotion regulation	.066	.042	.092
Non-judging	Resilience	.057	.034	.082
Non-judging	Social support	.033	.013	.054
Non-judging	Total indirect	.156	.118	.195
Non-reactivity	Emotion regulation	.077	.051	.109
Non-reactivity	Resilience	.095	.066	.126
Non-reactivity	Social support	.065	.042	.091
Non-reactivity	Total indirect	.238	.193	.285

4. Discussion

The present study examined a structural model of adolescent happiness based on the five facets of mindfulness and tested the simultaneous mediating roles of adaptive emotion regulation, resilience, and perceived social support. The findings supported the proposed model and demonstrated that the five mindfulness facets were positively associated with the three mediating mechanisms to differing degrees, while emotion regulation, resilience, and social support each independently predicted happiness. The structural model showed excellent overall fit and explained 55.5% of the variance in adolescent happiness, indicating that the combination of mindfulness-related skills and the proposed psychological and interpersonal mechanisms accounted for a substantial proportion of individual differences in well-being. Among the mediators, resilience showed the strongest unique association with happiness, followed by perceived social support and adaptive emotion regulation. At the level of mindfulness facets, Non-reactivity emerged as the most consistently influential predictor of the mediators and had the largest total indirect effect on happiness. Non-judging, Acting with Awareness, and Describing also demonstrated significant indirect effects through all three mediators, whereas the indirect association of Observing with happiness was

primarily carried through resilience. After the mediators were included in the model, only Acting with Awareness retained a significant direct path to happiness, suggesting partial mediation for this facet and predominantly indirect pathways for the remaining mindfulness dimensions.

The strong role of resilience in explaining adolescent happiness is consistent with research identifying resilience as an important determinant of positive psychological functioning during adolescence. Adolescents who are able to adapt to stress, recover from setbacks, and maintain effective functioning under difficult circumstances are more likely to sustain positive evaluations of their lives despite developmental and environmental challenges. The present finding that resilience demonstrated the largest unique path to happiness is consistent with evidence showing that resilience substantially contributes to life satisfaction in younger populations (Ayllón-Negrillo et al., 2024). It also accords with research demonstrating that adolescent life satisfaction can be explained by the combined contribution of resilience, emotion regulation, and social support (Azpiazu Izaguirre et al., 2021). Resilience may be particularly consequential during adolescence because this developmental period involves multiple simultaneous stressors, including academic pressures, changing peer relationships, increased autonomy, identity-related concerns, and heightened emotional sensitivity. Adolescents with stronger resilience may therefore be better able to

prevent transient stressors from developing into persistent reductions in happiness.

The finding that adaptive emotion regulation independently predicted happiness also supports theoretical and empirical work emphasizing the importance of regulatory processes for adolescent well-being. Cognitive emotion regulation determines how adolescents interpret and mentally respond to emotionally salient or stressful events. Strategies such as positive reappraisal, acceptance, positive refocusing, planning, and putting events into perspective can reduce the persistence of negative affect and facilitate more constructive responses to adversity (Garnefski & Kraaij, 2006). In the present model, adolescents who reported greater use of adaptive cognitive emotion-regulation strategies also reported higher happiness, even after resilience, social support, and direct mindfulness effects were taken into account. This finding is consistent with previous evidence that emotion regulation contributes to adolescent life satisfaction when modeled alongside resilience and social support (Azpiazu Izaguirre et al., 2021). It also aligns with intervention research showing that mindfulness training can influence emotion-regulation processes in adolescents and that these changes may represent an important pathway through which mindfulness affects broader psychological outcomes (Mendola et al., 2026; Piguet et al., 2025).

Perceived social support likewise made an independent contribution to adolescent happiness. This result reinforces the view that happiness during adolescence is not solely an intrapersonal phenomenon but is strongly embedded within interpersonal contexts. Adolescents who perceive their family members, friends, and significant others as available and supportive may experience greater belonging, emotional security, validation, and assistance in coping with daily challenges. Previous findings have similarly identified social support as a meaningful predictor of life satisfaction in preadolescents and adolescents (Ayllón-Negrillo et al., 2024; Azpiazu Izaguirre et al., 2021). The current results extend this literature by demonstrating that social support remains associated with happiness even when adaptive emotion regulation and resilience are modeled simultaneously. Thus, positive social environments may contribute to adolescent happiness through mechanisms that are not reducible to individual coping capacity alone.

A particularly important finding was the central role of Non-reactivity to Inner Experience. Non-reactivity was the strongest predictor of adaptive emotion regulation, resilience, and perceived social support, and it also

demonstrated the largest total indirect association with happiness. This pattern suggests that the capacity to experience thoughts, emotions, and bodily sensations without immediately becoming absorbed in or acting upon them may represent one of the most psychologically consequential mindfulness skills for adolescents. The result is theoretically compatible with Monitor and Acceptance Theory, which proposes that awareness of present-moment experience is most beneficial when accompanied by an accepting and non-reactive orientation toward internal events (Lindsay & Creswell, 2017). Non-reactivity may create a psychological interval between emotional activation and behavioral response, allowing adolescents to select more adaptive regulatory strategies, recover more effectively from stress, and respond less impulsively in interpersonal situations.

The observed importance of Non-reactivity is also consistent with recent work on the psychological mechanisms of trait mindfulness. Research examining monitoring and acceptance processes has suggested that acceptance-related characteristics play a central role in the relationship between mindfulness and emotion regulation (Buric et al., 2024). The present findings provide structural support for this proposition in adolescence, as Non-reactivity was not only associated with adaptive regulation but also with resilience and social support. Its association with resilience may reflect an increased ability to tolerate discomfort without escalating negative internal states, thereby facilitating recovery following stressful experiences. Its association with social support may indicate that adolescents who are less impulsively reactive during emotional or interpersonal situations are better able to preserve relationships and perceive others as supportive. These pathways may explain why Non-reactivity showed the largest indirect contribution to happiness even though its residual direct effect on happiness was not statistically significant.

Non-judging of Inner Experience also emerged as an important mindfulness facet, particularly in relation to adaptive emotion regulation. Its comparatively strong path to emotion regulation suggests that adolescents who are less inclined to evaluate their thoughts and feelings as unacceptable, wrong, or threatening may be better able to regulate emotions constructively. This interpretation is again consistent with acceptance-based accounts of mindfulness (Lindsay & Creswell, 2017). When negative emotions are met with harsh self-evaluation, adolescents may experience secondary distress that intensifies rather than resolves the

initial emotional response. By contrast, a nonjudgmental stance may reduce self-criticism and cognitive elaboration, making adaptive strategies such as reappraisal and acceptance more accessible. Recent systematic and intervention evidence supports the broader connection between mindfulness and reduced emotional dysregulation in adolescence (Mendola et al., 2026; Sharma et al., 2026). The present model suggests that Non-judging may be one of the specific components through which this regulatory advantage emerges.

Acting with Awareness demonstrated a somewhat different pattern. It significantly predicted all three mediators and was the only mindfulness facet that retained a statistically significant direct association with happiness after the mediators were included. This finding indicates that Acting with Awareness may influence adolescent happiness through both mediated and unmediated mechanisms. Adolescents who intentionally attend to their present activities rather than functioning automatically may be more likely to engage fully in academic tasks, social relationships, recreational experiences, and everyday pleasurable activities. Such engagement may directly contribute to positive affect and a stronger sense of meaningful functioning. At the same time, greater awareness of ongoing behavior may facilitate earlier recognition of emotional changes, more deliberate coping, and more effective interpersonal behavior. This interpretation is compatible with findings from adolescent mindfulness trials showing improvements in momentary mindfulness and emotion regulation following training (Miller-Chagnon et al., 2024). It also accords with broader intervention evidence indicating that mindfulness programs may influence both psychological distress and positive well-being outcomes (D'Souza & Smyth, 2025; Qvick et al., 2026).

Describing also showed significant, although more modest, direct associations with all three mediators and significant indirect effects on happiness through emotion regulation, resilience, and social support. The ability to identify and verbally label internal experiences may facilitate psychological functioning by increasing emotional clarity. Adolescents who can accurately describe their thoughts and feelings may find it easier to cognitively reappraise stressful experiences, communicate emotional needs to others, and organize internal experiences in ways that promote recovery from stress. This may help explain why Describing was associated not only with emotion regulation but also with resilience and perceived social support. Effective emotional labeling and communication

may improve both intrapersonal and interpersonal adjustment, thereby contributing indirectly to happiness. Although Describing was not directly associated with happiness after the mediators were considered, its significant indirect effects suggest that its contribution is expressed primarily through these intermediate psychological processes.

Observing showed the most distinctive pattern among the five mindfulness facets. Although it was positively correlated with happiness at the bivariate level, its direct paths to adaptive emotion regulation, perceived social support, and happiness were not significant in the full structural model. Its significant total indirect effect was driven primarily by resilience. This result supports the view that simple heightened awareness of internal and external experiences may not automatically produce positive psychological outcomes. Within Monitor and Acceptance Theory, monitoring is expected to increase awareness of affective experience, but its benefits depend substantially on whether that awareness is accompanied by acceptance (Lindsay & Creswell, 2017). Increased observation without adequate acceptance or regulatory capacity may make adolescents more aware of unpleasant emotions without necessarily improving their ability to manage them. The present finding therefore helps explain why Observing had a weaker structural role than Non-reactivity or Non-judging. Its association with resilience, however, suggests that increased awareness of internal and environmental cues may still support adaptive functioning when it contributes to recognizing stressors and mobilizing coping resources.

The mediating results further clarify the mechanisms linking mindfulness to happiness. For Describing, Acting with Awareness, Non-judging, and Non-reactivity, significant indirect effects emerged through all three mediators, indicating that mindfulness may contribute to happiness through multiple parallel processes. This pattern is consistent with the broader literature showing that mindfulness-based interventions produce a range of psychological outcomes rather than influencing a single isolated mechanism (Carneiro & Pozza, 2025; D'Souza & Smyth, 2025). Mindfulness may help adolescents regulate their internal emotional responses, maintain functioning in the face of adversity, and perceive greater support within their interpersonal environments. These processes then independently contribute to happiness. Such a multidimensional mechanism may also help explain heterogeneity in mindfulness intervention effects. Programs may be more successful when they simultaneously

strengthen regulatory, resilience-related, and interpersonal capacities rather than focusing exclusively on attentional control.

The findings are also compatible with recent randomized and quasi-experimental evidence demonstrating that mindfulness interventions can improve emotion regulation and resilience in adolescents (Miller-Chagnon et al., 2024; Navidi Moghadam, 2025; Piguet et al., 2025). More broadly, systematic reviews have reported beneficial effects of mindfulness-based interventions on emotional dysregulation and several dimensions of child and adolescent mental health (Carneiro & Pozza, 2025; Sharma et al., 2026). At the same time, evidence from universal school-based programs indicates that effects on well-being are not always uniform or large (Qvick et al., 2026), emphasizing the importance of identifying which adolescents benefit, which components of mindfulness are most influential, and which psychological processes account for observed improvements. The present facet-level findings may contribute to this question by suggesting that acceptance- and awareness-related mindfulness skills do not operate identically.

The current findings also have implications for emerging models of mindfulness and resilience in youth. The PRYME trial framework explicitly conceptualizes mindfulness training as a potential means of strengthening resilience and reducing vulnerability to internalizing problems among help-seeking youth (Schepers et al., 2025). The present study complements this intervention-oriented perspective by showing that naturally occurring individual differences in mindfulness facets are structurally associated with resilience in a nonclinical adolescent sample. Non-reactivity, Describing, Non-judging, Acting with Awareness, and Observing all significantly predicted resilience, although Non-reactivity showed the strongest relationship. This suggests that resilience may represent a broad pathway through which several mindfulness capacities contribute to positive psychological functioning.

At a more general level, the findings support contemporary conceptualizations of subjective well-being as the product of multiple interacting psychological and social systems rather than a single trait or emotional state (Diener et al., 2018). Happiness in adolescence appears to be associated with how young people attend to their internal experiences, how they regulate emotions, how effectively they adapt to stress, and how much support they perceive in their social environments. Mindfulness may contribute to this system not simply by producing a state of calmness but by influencing patterns of self-regulation, coping,

interpersonal functioning, and self-related processing. Research showing that mindfulness-based practices may alter self-schemas also supports the possibility that mindfulness changes broader interpretive frameworks through which individuals understand themselves and their experiences (Scheepbouwer et al., 2026). Although such evidence has emerged in different populations, it is compatible with the idea that mindfulness-related changes may extend across emotional, cognitive, and interpersonal domains.

5. Conclusion

Taken together, the present findings support a differentiated rather than unitary understanding of mindfulness in relation to adolescent happiness. Non-reactivity appeared to be the most influential indirect contributor, Non-judging was particularly important for adaptive emotion regulation, Acting with Awareness contributed both directly and indirectly to happiness, Describing operated through all three mediators, and Observing was linked to happiness primarily through resilience. These distinctions are important because they suggest that different mindfulness skills may activate different psychological pathways. The results therefore extend prior research by integrating the five mindfulness facets with emotion regulation, resilience, social support, and happiness within a single structural model and by demonstrating that these mediating mechanisms make distinct simultaneous contributions to adolescent well-being.

The present study has several limitations that should be considered when interpreting the findings. First, the cross-sectional design prevents causal conclusions regarding the direction of associations among mindfulness, emotion regulation, resilience, social support, and happiness. Although the proposed structural pathways were theoretically grounded, reciprocal or bidirectional relationships are possible. Second, all variables were measured using self-report instruments, which may have increased common-method variance and introduced response biases such as social desirability or inaccurate self-perception. Third, participants were recruited from public high schools in selected educational districts of Tehran, which may limit generalizability to adolescents in rural areas, private schools, other Iranian regions, or different cultural contexts. Fourth, the study used observed composite scores in the structural model rather than item-level latent variables, which reduced model complexity but did not

explicitly model measurement error. Finally, although the model incorporated three theoretically important mediators, additional mechanisms such as self-compassion, cognitive flexibility, sleep quality, family functioning, school climate, and perceived stress may also contribute to the relationship between mindfulness and happiness.

Future studies should examine the proposed model longitudinally to establish temporal ordering and determine whether mindfulness facets predict subsequent changes in emotion regulation, resilience, social support, and happiness. Experimental and intervention studies could test whether changes in specific mindfulness facets produce corresponding changes in the mediating mechanisms identified here. Future research should also employ multi-informant and multimethod assessment, including parent or teacher reports, behavioral measures of regulation, ecological momentary assessment, and physiological or neurocognitive indicators. Latent-variable SEM may further clarify the relationships after accounting for measurement error. Replication across different regions, socioeconomic groups, educational settings, and cultural contexts would help determine the generalizability of the model. Additional studies could also test moderated mediation by gender, age, socioeconomic status, baseline stress, or psychological symptoms and investigate whether the relative importance of the five mindfulness facets differs across developmental stages or levels of adversity.

From a practical perspective, the findings suggest that adolescent well-being programs may benefit from targeting specific mindfulness skills rather than presenting mindfulness as a single undifferentiated competency. School-based and counseling interventions may place particular emphasis on strengthening non-reactivity, nonjudgmental acceptance, and acting with awareness while simultaneously teaching adaptive cognitive emotion-regulation strategies and resilience-building skills. Because perceived social support independently contributed to happiness, programs should also include interpersonal components that promote supportive peer relationships, family communication, help-seeking, and access to trusted adults. Counselors and school psychologists may use mindfulness-informed exercises alongside emotion-regulation training, stress-management activities, and social-support enhancement rather than relying on mindfulness practice alone. Such integrated interventions may be especially useful for adolescents experiencing high academic stress, interpersonal difficulties, or low subjective well-being, because they address both internal regulatory

capacities and the social resources that support sustained happiness.

Authors' Contributions

Authors equally contributed 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.

Acknowledgments

We would like to express our gratitude to all individuals helped us to do the project.

Declaration of Interest

The authors report no conflict of interest.

Funding

According to the authors, this article has no financial support.

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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