





Original Article

Development and Validation of a Self-Awareness Intervention based on Monotheistic Innateness: A Mixed Method Experimental Study of Cognitive Emotion Regulation in Female Adolescents

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Abstract

Background: A robust sense of self facilitates emotional comprehension, stress management, and adaptive lifestyle behaviors. Incorporating spiritual or religious dimensions can enhance self-awareness and resilience. This study developed and validated a faith-based self-awareness intervention grounded in Islamic epistemology, assessing its effects on cognitive emotion regulation among adolescents.

Methods: Employing a sequential mixed-methods design, the qualitative phase utilized Attride-Stirling's thematic analysis framework to examine library resources, identifying constructs for a self-awareness package rooted in Islamic epistemology, with subsequent expert validation by psychologists. The quantitative phase evaluated efficacy in 30 female secondary students (aged 13–16 years) from Shadegan via a pre-test-post-test control group design. Participants were purposively selected and randomly allocated; the experimental group underwent eight 90-minute sessions, whereas controls received no intervention and were wait-listed. Cognitive emotion regulation was measured using the Cognitive Emotion Regulation Questionnaire (CERQ), with data analyzed via repeated-measures ANOVA in SPSS-23.

Results: Qualitative analysis yielded a faith-based self-awareness framework rooted in Islamic epistemology, comprising one overarching theme, five organizing themes, and 22 basic themes. Content validity was affirmed (CVI=0.79; CVR=0.75). Quantitatively, the experimental group exhibited significant gains in adaptive emotion-regulation strategies relative to controls ($P < 0.001$, $\eta^2 = 0.45$), confirming intervention efficacy.

Conclusion: This mixed-methods investigation validates an Islamic epistemology-based self-awareness package, evidencing improved adaptive emotion regulation in adolescents. Results underscore the promise of epistemologically aligned interventions for bolstering psychological well-being and interpersonal functioning.

Keywords: Emotion; Psychological well-being; Self psychology; Students.

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Introduction

The World Health Organization (WHO) has long emphasized the importance of life skills education to promote psychological well-being and

adaptive functioning across diverse societal contexts (1). However, the design and implementation of these skills must be tailored to cultural and contextual nuances

to ensure their relevance and effectiveness. Self-awareness, a critical life skill, is particularly vital during adolescence, as it fosters emotional understanding, self-regulation, and adaptive decision-making (2). In this study, self-awareness is defined as the ability to recognize and understand one's emotions, thoughts, motivations, and behaviors, enabling individuals to align their actions with personal and cultural values (3). This skill is closely linked to cognitive emotion regulation, which involves the use of cognitive strategies to manage emotional responses to stressors (4). A robust sense of self-awareness enhances adolescents' capacity to navigate emotional challenges, build resilience, and foster healthy social interactions (5).

While secular self-awareness programs, such as those proposed by the WHO, emphasize universal psychological principles, they often lack integration with cultural or religious frameworks, limiting their applicability in faith-oriented societies like Iran (6). In contrast, Islamic teachings offer a unique perspective on self-awareness, rooted in a faith-based self-awareness framework rooted in Islamic epistemology that emphasizes the recovery of one's intrinsic connection to divine purpose (7). This framework, referred to as a faith-based self-awareness model rooted in Islamic epistemology, draws from Islamic epistemology, which views self-awareness as a process of aligning one's identity with spiritual values, such as seeking truth and divine connection (e.g., recognizing God as the source of existence and purpose) (8). Research suggests that proficiency in self-awareness is linked to emotion recognition and regulation, responsibility or social ethics, and achievement motivation, thereby contributing to the enhancement of these psychological attributes (5). A study by Yazdani et al. (9) investigating the needs of youth and adolescents revealed that presenting teenagers with a positive model of self-awareness could mitigate numerous psychological challenges in their adult

years. They identified self-awareness, interpersonal communication, and relationship management as key attributes and necessities for this age demographic. Furthermore, Jafari et al. (10) explored the impact of self-awareness training on women's efficacy and increased happiness, with their findings indicating a positive and significant effect of the training workshop on these outcomes. Morales et al. (11) also conducted research titled "The precise effect of simulation on the acquisition of self-awareness, empathy, and patient-centered care among adolescents," and their results led to a recommendation for the use of simulation-based interventions to enhance self-awareness. The findings from surveys by Sandu et al. (12) concerning the development of self-awareness in adolescents demonstrated that individuals' self-awareness is continually reshaped through their social interactions. Their research also corroborated a positive and significant correlation between the level of self-awareness and adolescents' self-perception.

Despite the recognized importance of self-awareness, there is a notable gap in the literature: a lack of cohesive educational frameworks that integrate Islamic principles rooted in Islamic epistemology to foster self-awareness among adolescents, particularly in Muslim-majority contexts like Iran (6, 8). Within our academic tradition, which is informed by the principles of Islamic epistemology, self-awareness is understood through a more expansive lens. This study specifically targeted female secondary students in Iran, as adolescence is a critical period for identity formation, and females in this cultural context may face unique social and emotional challenges influenced by gender-specific societal expectations (13, 14). Qorbanpoor Lafmejani's (8) critique of Rogers' anthropological foundations highlights the Islamic perspective that humans are inherently valuable, possessing intrinsic dignity and the potential for acquired dignity. Individuals must

harmonize their negative aspects through the guidance of reason and their innate disposition. From an Islamic standpoint, progressing along the path of servitude with divine motivation fosters self-awareness and self-actualization. Madavvar et al. (15)'s examination of the foundations of moral education in the anthropological theory of Martyr Motahhari concluded that "the innate nature of self-awareness," "self-awareness as a prerequisite for self-knowledge," and "moral self-development through volition" are integral tenets of moral education within Martyr Motahhari's anthropological framework.

Adolescence is characterized by the fundamental inquiry, "Who am I?". The process of answering this essential question, which can span several years, culminates in critical awareness and recognition, a phenomenon known as identity formation (13). During this developmental stage, individuals actively seek to establish their identity, displaying both heightened energy and sensitivity to environmental cues and personal accountability (14). Concurrently, the contemporary world presents a landscape of intricate complexities and challenges, subjecting individuals' lives to unique hardships and instabilities (16). The current study addresses this by developing and validating a self-awareness training package grounded in a faith-based framework rooted in Islamic epistemology, designed to enhance cognitive emotion regulation among female secondary students in Iran. The findings may offer insights for other Muslim-majority populations or faith-based educational contexts, where culturally aligned interventions could similarly support adolescent emotional development.

Methods

Design

This research employed a mixed-methods approach, specifically a sequential

exploratory design (qualitative-quantitative).

Qualitative Phase

Methodologically, this investigation adopted an exploratory qualitative research design, employing thematic analysis to identify relevant constructs and develop the training package. Data were collected through library-based research. Thematic analysis was conducted following the framework proposed by Attride-Stirling (17), which utilizes a deductive approach to theme identification, employing a hierarchical structure of overarching, organizing, and basic themes based on their position and nature within the thematic network. In this study, the process of theme identification moved deductively from the overarching theme (self-awareness skill based on a faith-based framework rooted in Islamic epistemology) towards the basic themes (from a holistic to a granular perspective). This involved the initial formulation of research questions, the extraction of pertinent theories and texts, and their subsequent integration with the textual data. To this end, all published literature up to 2023 pertaining to self-awareness skill based on a faith-based framework rooted in Islamic epistemology was examined. Purposive sampling was employed, selecting resources relevant to the research focus, including books, peer-reviewed scholarly articles, and dissertations identified through academic databases and library catalogs at Iranian universities. Data collection continued until theoretical saturation was achieved, at which point no new information emerged. The strength of this sampling strategy lies in its ability to enhance the validity of prior findings through the recurrence of themes in subsequent data. In the second phase of the qualitative component, a sample of eight experts, comprising four clinical psychologists and four educational psychologists with advanced degrees and at least five years of professional experience in adolescent mental health or Islamic

psychology, was purposively selected to evaluate the content and scientific rigor of the self-awareness skill training package based on a faith-based framework rooted in Islamic epistemology, specifically designed for secondary school students. The number of experts was determined by the minimum requirements for comprehensive content evaluation and to ensure adequate statistical power for subsequent quantitative analyses.

Quantitative Phase

The quantitative component of this research utilized an experimental design, specifically a pre-test-post-test-follow-up with a control group. To minimize bias, the study employed a single-blind design, where participants were unaware of their group assignment (experimental or control). Researchers delivering the intervention were not blinded due to the nature of the training, but data analysts were blinded to group allocation to ensure objectivity in data processing and analysis. The target population consisted of female secondary school students (aged 13-16 years, grades 7-9) residing in Shadegan city, Iran, in 2023, all identifying as Iranian Muslims. The sample size of 30 students (15 per group) was determined based on a power analysis for repeated measures ANOVA, targeting a power of 0.80, an alpha of 0.05, and a medium effect size ($f=0.25$), which indicated a minimum of 28 participants was sufficient. The criteria for inclusion in the study were as follows: scoring below the mean on the Spiritual Well-being Questionnaire, which assesses existential and religious well-being; provision of both student and parental consent for program participation; and absence of involvement in any concurrent psychological programs. Conversely, the exclusion criteria encompassed adherence to a religion other than Islam, a history of neurological disorders (such as epilepsy), current receipt of psychiatric treatment, and absence from more than two sessions of the educational intervention. Participants were recruited through announcements at

secondary schools in Shadegan, with teachers and counselors identifying eligible students based on the Spiritual Well-being Questionnaire scores. Ultimately, 30 students who scored below the mean on the Spiritual Well-being Questionnaire were selected and randomly assigned to either the experimental or control group using a random number generator, with each group comprising 15 participants. The intervention consisted of eight weekly 90-minute sessions, as outlined in Table 2, delivered according to the protocol established in the qualitative phase. The control group received no intervention during the study period, remained on a waiting list, and continued with their regular school activities without additional psychological or educational programs. A post-test assessment was administered immediately following the conclusion of the intervention sessions, and a follow-up assessment was conducted two months thereafter. All interventions were delivered by a doctoral candidate in clinical psychology with specialized training in adolescent counseling and Islamic psychotherapy, under the guidance of a faculty advisor with expertise in educational psychology.

Measurement Instrument

The primary measurement instrument employed in this study was the Cognitive Emotion Regulation Questionnaire (CERQ), developed by Garnefski and Kraaij (4). This instrument consists of 36 items, each rated on a 5-point Likert scale ranging from 1 (“never”) to 5 (“always”). The CERQ assesses nine distinct subscales, each representing a specific cognitive strategy for regulating emotions. Garnefski and Kraaij (4) reported the reliability of the CERQ using Cronbach’s alpha, yielding coefficients of 0.91 for positive regulation strategies and 0.87 for negative regulation strategies. Moreover, Mohsenabadi and Fathi-Ashtiani (18) corroborated the reliability of the Persian version of the CERQ in their research, reporting

Cronbach's alpha coefficients ranging from 0.72 to 0.91 and test-retest reliability coefficients ranging from 0.75 to 0.88 for its subscales. In the current study, the internal consistency reliability of the CERQ was assessed using Cronbach's alpha, resulting in coefficients of 0.79 for adaptive emotion-regulation strategies and 0.83 for maladaptive emotion-regulation strategies.

Data Analysis

The content validity of the developed training package was evaluated using the expert agreement coefficient method, based on the feedback provided by eight specialists in the relevant field. Specifically, Content Validity Ratio (CVR) indices were computed following Lawshe's technique, and the Content Validity Index (CVI) was calculated according to the methodology proposed by Waltz and Bausell. Furthermore, Holsti's coefficient was utilized to assess the internal consistency of the training package by quantifying the level of agreement between the expert panel and the researcher. For the quantitative analysis, the assumptions of repeated measures ANOVA were tested. Normality of data distribution was assessed using the Shapiro-Wilk test, which confirmed that the data for adaptive and maladaptive emotion-regulation strategies were normally distributed ($p > 0.05$ for all groups and time points). Homogeneity of variances was verified using Levene's test, which indicated no significant differences in variances across groups at pre-test, post-test, and follow-up ($P > 0.05$). For the analysis of the collected data, repeated measures analysis of variance (ANOVA) was employed. All statistical analyses were performed using SPSS software, version 23, and the level of statistical significance was set at $p < 0.05$.

Results

Qualitative Findings

The thematic network pertaining to self-awareness grounded in a faith-based framework rooted in Islamic epistemology

consisted of one overarching theme, five organizing themes, and twenty-two basic themes. Subsequent to the extraction of these themes, Lawshe's method was employed to calculate the CVR index, and Waltz and Bausell's method was used to determine the CVI in order to validate the derived thematic network; these results are presented in Table 1. The calculated CVI for the themes was 0.79, and the CVR was 0.75. Given the panel of eight responding experts, these values exceeded the established standard for both indices, thus confirming the acceptable content validity of the thematic network. To evaluate the internal consistency of the training package, Holsti's coefficient was utilized to quantify the level of agreement between the expert panel and the researcher. The resulting Holsti's reliability coefficient of 0.92 indicated a satisfactory level of internal consistency for the identified thematic structure.

Finally, Table 2 presents the self-awareness skills training package based on a faith-based framework rooted in Islamic epistemology, which comprises eight 90-minute sessions designed for female secondary school students.

Quantitative Findings

Of the 30 female secondary school students enrolled and randomized into the experimental ($n=15$) and control ($n=15$) groups, all completed the study with no attrition or exclusions post-randomization, as participants adhered to the inclusion criteria and attended all required sessions. Prior to conducting the repeated measures ANOVA, the assumptions of normality and homogeneity of variances were tested.

The Shapiro-Wilk test confirmed that the data for adaptive and maladaptive emotion-regulation strategies were normally distributed across all groups and time points ($P > 0.05$). Levene's test verified homogeneity of variances, with no significant differences observed at pre-test, post-test, or follow-up ($P > 0.05$).

Table 2. Content of the self-awareness skills training package based on a faith-based framework rooted in Islamic epistemology

Session	Objectives and Content
1	The session focused on introducing participants, outlining the objectives of the sessions, and exploring the concept of self-awareness. It emphasized the dual nature of human existence (natural and supernatural) and highlighted the importance of achieving balance and effectively managing these dimensions.
2	This session explored the characteristics of the authentic self, including strengths and weaknesses, and provided a definition of the human being as presented in the Quran. It underscored the necessity of realistic self-knowledge, examined mechanisms that hinder alignment with the authentic self, and discussed individual capabilities and inherent worth.
3	The session addressed the nature of emotions, their identification, and management, focusing on their communicative and motivational functions. It explored types of positive and negative emotions, their impact on behavior, and the concept of emotion-regulation strategies. Additionally, the session introduced the notion of inclination and the skills required for its effective regulation.
4	This session examined the innate need to understand the origin and ultimate purpose of life, focusing on the relationship with God. It explored the concept of needs and their various types, the pursuit of divine connection, God-consciousness, and common errors in identifying the true Lord. The session also addressed the unity of the origin and the hereafter, intrinsic human needs (survival, security, belonging, and attachment), the proper orientation of these needs, and self-awareness regarding intentions and behaviors.
5	The session explored intrinsic needs and the barriers to their recognition and fulfillment, focusing on needs such as perfectionism, truth-seeking, virtue-seeking, altruism, pleasure-seeking, and beauty-seeking. It highlighted the significance and practical applications of each need while addressing common errors in their identification.
6	This session focused on the concept of innate intellect and methods for its development, exploring transcendent cognitions and inclinations. It discussed the inner discerning faculty, self-regulation through innate intellect, and the importance of fostering a positive attitude toward rational insights.
7	The session examined strategies for activating innate intellect and processes to enhance its function, including remembrance and reflection on the Creator. It addressed the pathology of intellectual performance, the role of divine revelation, knowledge, consultation, and analysis of past lives. Additionally, the session explored the mechanism of ignorance and methods to counteract it.
8	This session focused on values, meaning-making, and the selection of a life plan, emphasizing inclinations and their management within a lifestyle framework. It highlighted the importance of meaning-making, goal-setting, and aligning personal goals with the purpose of creation. Additionally, the session explored the concept of a life plan, its alignment with divine will, and the management of inclinations in accordance with God's plan.

Table 3 presents the means and standard deviations of adaptive and maladaptive cognitive emotion regulation strategies, as measured by the CERQ, in the experimental and control groups at the pre-test, post-test, and follow-up stages.

Figure 1 illustrates the mean scores of adaptive and maladaptive emotion-regulation strategies for the experimental and control groups across pre-test, post-test, and follow-up assessments. The experimental group, which underwent the faith-based self-awareness training rooted in Islamic epistemology, demonstrated a

marked increase in adaptive strategies from pre-test (M=37.33) to post-test (M=46.00), with gains largely sustained at follow-up (M=45.66), reflecting the intervention's sustained impact. In contrast, the control group showed minimal change in adaptive strategies (pre-test M=37.60, post-test M=36.93, follow-up M=37.66). Both groups exhibited stable maladaptive strategy scores, with the experimental group slightly decreasing from 37.86 to 37.13 and the control group from 35.46 to 34.86, suggesting the intervention primarily enhanced adaptive coping mechanisms.

Table 3. Means and standard deviations of adaptive and maladaptive emotion-regulation strategies in the experimental and control groups

Variable	Group	Pre-test Mean \pm SD	Post-test Mean \pm SD	Follow-up Mean \pm SD
Adaptive emotion-regulation strategies	Control	37.60 \pm 2.29	36.93 \pm 2.74	37.66 \pm 2.27
	Experimental	37.33 \pm 2.32	46.00 \pm 5.04	45.66 \pm 4.65
Maladaptive emotion-regulation strategies	Control	35.46 \pm 5.64	35.00 \pm 5.54	34.86 \pm 5.38
	Experimental	37.86 \pm 6.06	37.13 \pm 6.08	38.06 \pm 6.45

Prior to conducting the data analysis, the key assumptions underlying the mixed-design repeated measures ANOVA, including the normality of data distribution and the homogeneity of variances, were assessed and subsequently verified.

The outcomes of the mixed-design repeated measures ANOVA are detailed in Table 4. As evident in the table, the F statistic for adaptive emotion-regulation strategies was statistically significant ($P < 0.001$, $\eta^2 = 0.61$ for time, $\eta^2 = 0.63$ for time \times group, $\eta^2 = 0.45$ for group), while the F statistic for maladaptive emotion-regulation strategies did not reach statistical significance ($P > 0.05$, $\eta^2 = 0.05$ for time, $\eta^2 = 0.04$ for time \times group, $\eta^2 = 0.05$ for group). These results indicated a significant change in the dependent variable of adaptive emotion-regulation strategies across the three time points. Moreover, a significant interaction effect between the experimental group and the measurement time points was observed for adaptive emotion-regulation strategies ($P < 0.001$, $\eta^2 = 0.63$). This finding demonstrates that the impact of the

educational intervention on adaptive emotion-regulation strategies varied significantly over the course of the study. Furthermore, the F statistic for the adaptive emotion-regulation strategies variable revealed a significant difference ($P < 0.001$, $\eta^2 = 0.45$) between the faith-based self-awareness group rooted in Islamic epistemology and the control group, which received no intervention. This indicates that the educational intervention resulted in a statistically significant improvement in adaptive emotion-regulation strategies within the experimental group compared to the control group.

Discussion

This research involved the design and validation of a self-awareness training program grounded in the principles of a faith-based self-awareness framework rooted in Islamic epistemology. Furthermore, the study assessed the efficacy of this newly developed intervention in influencing the emotion-regulation strategies of students.

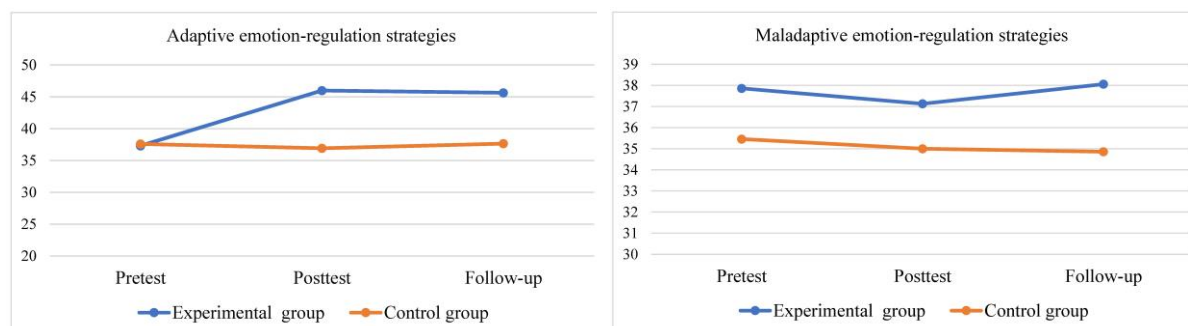


Figure 1. Adaptive and maladaptive emotion-regulation strategies scores across phases

Table 4. Repeated-measures ANOVA results for adaptive and maladaptive emotion-regulation strategies

Variables	Source	SS	df	MS	F	P	η^2
Adaptive emotion-regulation strategies	Time	355.20	1.26	280.58	44.74	0.001	0.61
	Time \times Group	377.86	1.26	298.49	47.60	0.001	0.63
	Group	672.40	1	672.40	23.77	0.001	0.45
Maladaptive emotion-regulation strategies	Time	5.60	1.14	4.87	1.74	0.197	0.05
	Time \times Group	4.62	1.14	4.02	1.44	0.243	0.04
	Group	149.51	1	149.51	1.49	0.232	0.05

The qualitative phase employed thematic analysis, following Attride-Stirling's (17) framework, to deductively code library resources and identify one overarching theme (self-awareness skill based on a faith-based framework rooted in Islamic epistemology), five organizing themes (awareness of one's identity, inclinations and needs, interests and feelings, values and goals, and life program), and twenty-two basic themes. The components of self-awareness skill based on a faith-based framework rooted in Islamic epistemology were identified and extracted from resources related to self-awareness and innate disposition, and thematic analysis was performed on these data. The results obtained from the qualitative opinions of experts and the quantitative content validity coefficients indicated that, from the experts' perspective, all sessions were necessary in terms of the content validity ratio, and therefore, the most important and accurate content was selected. Furthermore, in terms of the content validity index, all sessions were rated as completely relevant or relevant but requiring revision. The results of this study can be compared with the studies of Qorbanpoor Lafmejani (8) and Madavvar et al. (15).

Subsequent to the development and validation of the thematic network for the identified themes, multifaceted tasks were designed to construct the training package. Within the thematic domain of "awareness of one's identity," the activities and instructions at this stage aimed to facilitate adolescents' introspection, their articulation of self-definitions, and their responses to critical identity-formation inquiries. These questions included: "Do I

possess adequate self-knowledge?", "Can I recognize and manage my emotions effectively?", "What values do I prioritize?", and "What are my life goals?", among others. Furthermore, this section encompassed an exploration of their existential dimensions, emphasizing the dual nature of human beings: the natural self, encompassing instincts and fundamental mental processes shared with animals, and the complex cognitive functions unique to humans. Additionally, this segment addressed the process of ignorance in human cognition and various cognitive and intellectual errors, including fundamental intellectual errors (such as the uncritical and blind acceptance of information from authority figures or significant others, including ancestors, social groups, and media) and cognitive distortions (such as dichotomous thinking, magnification, negativity bias, prejudgment, personalization, catastrophizing, and unfair social comparison).

Within the thematic area of "awareness of one's inclinations and needs," the curriculum aims to cultivate students' consciousness of their Creator and their understanding of themselves as beings fundamentally reliant on God. Subsequently, instruction is provided to facilitate the recognition of innate human tendencies and inclinations, specifically "God-seeking, perfection-seeking, virtue-seeking, truth-seeking, creativity, and the need for connection." Concerning the theme of "awareness of one's interests and feelings," this section focuses on educating students in identifying their own emotions and their communicative and motivational

roles, distinguishing between effective and ineffective emotional responses and their impact on personal and interpersonal behavior, managing both positive and negative emotions, and acknowledging the ephemeral nature of emotional states alongside the capacity to navigate joy and sorrow in both positive and negative experiences. Emotion-regulation strategies are addressed through techniques such as attributing meaning to emotions and interpreting the causes of adverse events and disasters as trials, expiation for wrongdoings, or the prevention of more significant misfortunes. Furthermore, students are introduced to the concept of inclination and the skill of regulating it. The organizing theme of awareness of values and goals encompasses instruction on the nature and function of values, fostering an understanding of the significance and necessity of meaning-making in life, discovering more profound personal meaning, and developing the ability to focus attention and attachment towards a transcendent entity. Goal setting in life to mitigate the fragmentation of conflicting objectives is also planned within this stage. Consequently, aligning behavioral motivations with personal goals is emphasized to prevent internal conflict and disorientation. This involves individuals consciously orienting their actions towards transcendent growth and planning their behavior with an aim aligned with spiritual advancement, while remaining vigilant against pursuing contradictory objectives. The theme of “awareness of one’s life program” includes familiarization with the concept of a life program, the selection of a personal life program from available choices while avoiding uncritical imitation of others’ lifestyles, understanding the characteristics of a suitable life program, managing inclinations in accordance with God’s program for life, and differentiating between self-constructed, other-constructed, and divinely constructed programs. Considering the content outlined and the reviewed expert opinions, it is

reasonable to anticipate that this training package possesses sufficient validity for instructing students in self-awareness grounded in a faith-based framework rooted in Islamic epistemology.

To ascertain the external validity of the training package within the quantitative phase of the study, the variable of emotion-regulation strategies was examined in female students, with the findings indicating satisfactory external validity. As a result, the self-awareness skill training package grounded in a faith-based framework rooted in Islamic epistemology demonstrates adequate validity and can be implemented as an educational resource for teaching this skill to secondary school students. The outcomes of this phase align with the findings reported in the studies of Irajirad and Haji (19), Sayahi and Safarzadeh (20), and Côté (21). In interpreting this research outcome, it can be posited that, consistent with the findings of several scholars, the development of self-awareness enables students to achieve a lucid and precise comprehension of their personality, encompassing weaknesses, strengths, thoughts, beliefs, motivations, emotions, and communication patterns (22). Unlike secular self-awareness programs that often focus on cognitive-behavioral techniques, such as mindfulness-based stress reduction, or other faith-based interventions like Christian mindfulness programs that emphasize meditation and prayer, this intervention leverages Islamic epistemology to foster self-awareness through alignment with divine purpose, offering a culturally resonant approach for Muslim adolescents (7). Furthermore, by cultivating an awareness of their existential origins and the understanding that their diverse needs are integral to their cognitive and emotional development, students were empowered to re-evaluate their self-concept and previously selected goals, thereby facilitating the alignment of their life expectations with the perceived purposes of creation (23, 24).

Upon acquiring the pivotal skill of self-awareness, the adolescent participants in this study demonstrated a more adaptive and constructive engagement with their emotions, exhibited deeper introspection regarding their feelings, and approached problem-solving with greater realism. Notably, they were able to contextualize each stressor within a broader framework linked to divine wisdom and providence, consequently enhancing their efforts and persistence in identifying viable solutions aligned with their capabilities. Furthermore, they demonstrated an increased capacity to acknowledge the positive dimensions of challenging situations. Cognitively, this translated to a heightened awareness that aligning their own characteristics with the attributes and qualities of the Divine—specifically, reinforcing their personal traits based on the conviction that humans are minute emanations or rays from the ultimate source of light, understood as God, and are continuously empowered by this source—fostered greater resilience in the face of adversity. This enhanced resilience manifested as more adaptive emotion-regulation strategies in response to everyday disruptions (25).

The application of the metaphor of humanity as God's distinct creation, emphasizing inherent value from a creationist standpoint, facilitated an understanding among the female students that, in contrast to other beings, they possess the capacity for insightful perseverance in overcoming challenges. Furthermore, the instructional use of the "ice" metaphor, prompting reflection on the ephemeral nature of worldly existence, including its suffering and pleasures, alongside guidance on regulating personal inclinations by considering the positive facets of issues and developing enhanced action plans, enabled them to acquire more effective strategies for managing their emotions and navigating life's difficulties (26). Concerning the observed lack of efficacy of the faith-based self-awareness

training package rooted in Islamic epistemology on maladaptive emotion-regulation strategies, several factors may contribute. The intervention primarily targeted the enhancement of adaptive strategies, such as positive refocusing and acceptance, rather than directly addressing maladaptive strategies like self-blame or rumination. Additionally, the adolescent participants' limited life experiences and the influence of familial and cultural norms in Shadegan, such as a tendency toward strict parenting styles, may have reinforced maladaptive coping patterns, making them resistant to change within the intervention's short duration of eight sessions.

Several limitations should be noted. The small sample size ($n=30$) and focus on female students limit the generalizability of the findings to broader populations, including male adolescents or those from different cultural backgrounds. Additionally, the reliance on self-reported data from the CERQ introduces potential self-report bias, as participants may have over- or under-reported their emotion regulation abilities due to social desirability or limited self-insight. Facilitator bias is also a concern, as the intervention was delivered by a single doctoral candidate, potentially influencing outcomes despite supervision. For educators and clinicians, this training package offers practical applications. School counselors in Muslim-majority regions can incorporate the program into mental health curricula to support adolescents in developing adaptive emotion-regulation strategies, using group workshops to foster self-awareness through culturally relevant metaphors and teachings. Clinicians may adapt the package for individual therapy, tailoring sessions to address specific emotional challenges while aligning with Islamic values rooted in Islamic epistemology. Future research should explore the intervention's effectiveness with larger, mixed-gender samples and across diverse cultural settings to enhance generalizability. Longitudinal studies with

extended follow-up periods could assess the sustainability of improvements in emotion regulation. Additionally, comparing this faith-based approach rooted in Islamic epistemology with secular frameworks, such as mindfulness-based interventions, or other faith-based programs, like Christian mindfulness, would provide deeper insights into its relative efficacy and cultural specificity. The prevailing parenting style in Shadegan city, often characterized by strictness and environmental criticism, could have exerted a negative moderating effect on the effectiveness of the training package.

Conclusion

The findings of this mixed-methods study provide compelling evidence for the viability and efficacy of a self-awareness training package rooted in the principles of a faith-based framework based on Islamic epistemology. The qualitative phase yielded a rich and multifaceted understanding of this conceptualization of self-awareness, delineated by a central overarching theme, supported by five organizing themes, and further elaborated through twenty-two foundational themes. The acceptable inter-rater reliability among experts during the validation process underscores the content validity and relevance of the developed training package. Furthermore, the quantitative results demonstrate a statistically significant enhancement in cognitive emotion regulation among students who participated in the training package compared to the control group. This suggests that the integration of Islamic epistemological principles within a structured educational framework can positively influence students' capacity to manage and modulate their emotional responses. The observed improvement in cognitive emotion regulation has important implications for students' overall psychological well-being, academic performance, and social interactions. In conclusion, this research contributes to the

growing body of literature exploring the potential of culturally and religiously sensitive interventions in promoting self-awareness and emotional competence. The validated self-awareness training package based on a faith-based framework rooted in Islamic epistemology presents a promising tool for educators and mental health professionals seeking to foster these crucial skills in adolescent populations.

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Authors' contribution

Leila Khamisi: Conceptualization, methodology, formal analysis, investigation, data curation, writing – original draft, visualization, project administration. Parvin Ehteshamzadeh: Conceptualization, validation, resources, writing – review & editing, supervision, funding acquisition. Alireza Heidari: Methodology, validation, formal analysis, writing – review & editing, supervision. Fariba Kalantari: Investigation, resources, writing – review & editing, visualization. All authors have read and approved the final manuscript.

Ethical considerations

Ethical approval for this research was granted by the Ethics Committee of the Islamic Azad University, Ahvaz Branch, Iran (Approval Code: IR.IAU.AHVAZ.REC.1402.109).

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Conflicts of interest

The authors declare no conflict of interest, financial or otherwise.

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