

The Effectiveness of Dialectical Behavior Therapy on Health Anxiety, Perfectionism, and Identity Crisis among 15- to 18-Year-Old Students in Selective and Gifted Schools

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ABSTRACT

This study aimed to investigate the effectiveness of dialectical behavior therapy in reducing health anxiety, perfectionism, and identity crisis among 15- to 18-year-old male students enrolled in selective public and gifted schools. This applied, quasi-experimental study employed a pretest-posttest control-group design with a one-month follow-up. The statistical population consisted of approximately 1,500 male students aged 15-18 years attending selective public and gifted schools in Kermanshah, Iran, during the 2024-2025 academic year. Using convenience sampling and predetermined inclusion criteria, 40 eligible students were selected and randomly assigned to an experimental group and a control group, with 20 participants in each. Data were collected using the Ahmadi Identity Crisis Questionnaire, Hill Perfectionism Questionnaire, and Short Health Anxiety Inventory. The experimental group received eight 60-minute group-based dialectical behavior therapy sessions delivered twice weekly over one month, whereas the control group received no intervention. Assessments were conducted at pretest, posttest, and one-month follow-up. Data were analyzed using repeated-measures analysis of variance and Bonferroni-adjusted comparisons in SPSS version 27. Significant time-by-group interaction effects were observed for total health anxiety ($F=5.418$, $p=.010$, $\eta^2=.125$), illness likelihood ($F=9.257$, $p=.001$, $\eta^2=.196$), and negative consequences ($F=7.840$, $p=.002$, $\eta^2=.171$), whereas general health concern was not significant ($p=.252$). Significant interaction effects were also found for total perfectionism ($F=12.735$, $p=.001$, $\eta^2=.251$), interpersonal sensitivity ($F=5.631$, $p=.005$), striving for excellence ($F=14.009$, $p=.001$), organization ($F=6.730$, $p=.002$), purposefulness ($F=4.874$, $p=.010$), and high standards for others ($F=3.890$, $p=.025$), while perceived parental pressure was not significant ($p=.943$). Identity crisis also showed a significant time-by-group interaction ($F=7.659$, $p=.001$, $\eta^2=.168$). Bonferroni comparisons confirmed significantly lower total health anxiety, total perfectionism, and identity crisis scores in the experimental group. Dialectical behavior therapy was effective in reducing health anxiety, most dimensions of perfectionism, and identity crisis among male students in selective and gifted schools, with effects generally maintained at one-month follow-up.

Keywords: Dialectical Behavior Therapy; Health Anxiety; Perfectionism; Identity Crisis; Gifted Students; Adolescents

1. Introduction

Adolescence is a developmental period characterized by rapid biological, cognitive, emotional, and social changes that can substantially affect psychological adjustment. During this stage, individuals are expected to establish a more coherent sense of self, regulate increasingly complex emotions, adapt to growing academic and interpersonal demands, and negotiate expectations imposed by family, school, and peers. These developmental tasks can become particularly demanding for students enrolled in selective and gifted schools, where academic competition, achievement expectations, and concerns about performance may intensify psychological pressure. Gifted and high-achieving students may experience distinctive patterns of self-evaluation and achievement striving that, when rigid or excessive, can contribute to maladaptive perfectionism and emotional difficulties. Qualitative evidence concerning gifted students suggests that perfectionistic tendencies can have enduring psychological consequences and may influence how students interpret academic performance, mistakes, expectations, and self-worth over time (Rahmawati et al., 2026). Teachers working with students who display perfectionistic patterns have similarly emphasized the complexity of perfectionism in educational settings and the importance of recognizing that apparently high standards may coexist with substantial internal pressure, fear of failure, and emotional vulnerability (Molnar, 2026). Accordingly, psychological interventions for adolescents in academically demanding environments should address not only overt symptoms of distress but also the emotional and cognitive processes underlying health anxiety, perfectionism, and disturbances in identity development.

Health anxiety is one psychological difficulty that may interfere with adolescents' emotional well-being and daily functioning. It refers to excessive concern, fear, or preoccupation regarding one's current or future health and is often accompanied by heightened attention to bodily sensations, catastrophic interpretations of relatively benign physical experiences, repeated checking, reassurance seeking, and difficulty tolerating uncertainty. Although health-related concerns may occur across different age groups, adolescence can create conditions in which such concerns become especially salient because of increased bodily awareness, developmental changes, social comparison, and growing exposure to health-related information. When health concerns become excessive,

adolescents may devote substantial cognitive and emotional resources to monitoring symptoms and anticipating negative health outcomes. These processes can intensify anxiety and interfere with academic concentration, interpersonal functioning, and emotional regulation. Psychological approaches that directly strengthen emotion-regulation capacity, distress tolerance, and nonjudgmental awareness may therefore be particularly relevant for reducing maladaptive responses to health-related uncertainty.

Anxiety among adolescents is not a unitary phenomenon but can be maintained by difficulties in emotion regulation, heightened sensitivity to distress, rigid thinking patterns, and ineffective coping strategies. Dialectical behavior therapy has increasingly been examined as an intervention capable of addressing these processes. Research among adolescents has shown that dialectical behavior therapy-based interventions can reduce anxiety symptoms by teaching skills that improve awareness of emotional states and promote more adaptive responses to distress. For example, Bowers and colleagues reported beneficial effects of dialectical behavioral therapy on anxiety levels among African American adolescents, suggesting that DBT skills may be useful in reducing anxiety-related symptoms in adolescent populations (Bowers et al., 2024). In another adolescent sample, training based on dialectical behavior therapy was effective in improving emotion regulation and reducing social avoidance and distress among adolescents with social anxiety disorder (Astaneh et al., 2020). These findings are consistent with the broader theoretical assumption that anxiety can be reduced when individuals learn to observe internal experiences without immediately reacting to them and acquire strategies for regulating intense emotional responses.

Evidence from student populations has further supported the applicability of dialectical behavior therapy to anxiety-related problems. A brief DBT skills training-informed intervention was examined in relation to test anxiety and demonstrated the potential of DBT-derived skills to address anxiety in performance-oriented academic contexts (Jameson et al., 2024). This finding is particularly relevant to students in selective and gifted schools, who may be exposed to substantial evaluative pressure and may experience heightened concern regarding mistakes, performance outcomes, and future academic success. Research with students experiencing depression has likewise indicated that dialectical behavior therapy can improve psychological components such as stress, anxiety, and depression while influencing problem-solving styles

(Yarvaissi et al., 2021). Furthermore, studies focusing on emotion regulation and distress tolerance have shown that DBT-based interventions can reduce anxiety sensitivity and difficulties in emotion regulation, reinforcing the importance of these mechanisms in the management of anxiety-related psychological distress (Sehati et al., 2019). Although health anxiety is conceptually distinct from generalized, social, or test anxiety, these findings suggest that interventions targeting emotion regulation, distress tolerance, and cognitive-emotional reactivity may also be relevant to excessive health-related fears.

Perfectionism represents another important psychological variable among high-achieving adolescents. Perfectionism is generally characterized by the setting of excessively high standards, rigid self-evaluation, concern over errors, and a tendency to link personal worth to successful performance. Although certain dimensions of perfectionistic striving may be associated with motivation and persistence, maladaptive forms of perfectionism are frequently linked to anxiety, emotional exhaustion, self-criticism, and impaired well-being. Recent research indicates that perfectionism can interact with other psychological processes in ways that adversely affect functioning. For example, perfectionism has been associated with poorer sleep quality, with depression and anxiety operating as important explanatory mechanisms (Du, 2026). Similarly, research examining perfectionism and sleep among graduate students has highlighted the role of competitive personality and resilience in shaping the consequences of perfectionistic tendencies (Liu, 2026). These findings suggest that perfectionism is not merely an achievement-related personality characteristic but may function within a broader system of emotional vulnerability, competitive pressure, and maladaptive coping.

In gifted students, perfectionism may be especially important because academic excellence and high expectations can become incorporated into self-concept. Gifted students may internalize strong standards for achievement and perceive mistakes as evidence of personal inadequacy rather than as ordinary components of learning. Long-term qualitative research on perfectionism among gifted students has shown that perfectionistic tendencies may influence emotional well-being, coping patterns, and adjustment across time (Rahmawati et al., 2026). Teacher perspectives similarly indicate that perfectionism among students is multidimensional and may be misunderstood when academic success masks internal distress (Molnar, 2026). In this context, interventions that merely focus on achievement behavior may be insufficient. Students may

benefit more from approaches that teach acceptance, flexible goal pursuit, emotional awareness, tolerance of imperfection, and more adaptive responses to perceived failure.

Research also indicates that psychological interventions can modify perfectionistic tendencies. Emotional intelligence training, for example, has been found to reduce social anxiety and perfectionism among students, suggesting that improved emotional awareness and regulation may weaken maladaptive perfectionistic processes (Shafiee Sourak & Shamsoddinpour, 2026). Although this intervention differs from dialectical behavior therapy, the finding is theoretically relevant because emotional awareness and regulation constitute central components of DBT. Dialectical behavior therapy teaches individuals to identify emotional experiences, accept difficult internal states, and select effective behavioral responses rather than acting automatically in response to distress. Such skills may reduce the tendency to respond to mistakes, criticism, or unmet standards with excessive self-evaluation and emotional escalation. DBT may therefore be useful for adolescents whose perfectionism is maintained by rigid standards, intolerance of emotional discomfort, and all-or-nothing evaluations of performance.

Identity development constitutes a third major developmental challenge during adolescence. Identity formation involves integrating values, goals, beliefs, social roles, interpersonal experiences, and expectations into a relatively coherent understanding of the self. When this process is disrupted or remains unstable, adolescents may experience identity crisis, including uncertainty regarding personal goals, future roles, relationships, values, and self-definition. Identity crisis is especially relevant during adolescence because this developmental period requires increasingly autonomous decisions regarding education, occupation, peer relationships, and personal values. In educational contexts marked by intense expectations, students may experience a conflict between externally defined standards of success and internally emerging preferences or values. If adolescents have difficulty differentiating their own goals from the expectations of parents, peers, or educational institutions, identity development may become more unstable.

Empirical studies have demonstrated that identity crisis is associated with both interpersonal and contextual factors. Social capital and the generational gap have been identified as predictors of identity crisis, indicating that identity development is influenced by the quality of social

relationships and the extent to which young individuals experience congruence or conflict with broader social expectations (Amini et al., 2026). Identity crisis has also been examined as a mediating mechanism in the relationship between social network participation and body-image concerns among students, suggesting that instability in self-definition can contribute to the psychological effects of social comparison and digitally mediated interpersonal experiences (Nemeti et al., 2022). These findings are important for adolescents growing up in environments in which academic, social, familial, and digital expectations may simultaneously shape self-evaluation.

Intervention studies further demonstrate that identity crisis can be responsive to psychological treatment. Responsibility training based on reality therapy has been found to reduce identity crisis among female high school students, highlighting the potential value of interventions that strengthen personal choice, responsibility, and coherent goal-directed behavior (Adib Manesh, 2023). Group counseling based on reality therapy has likewise shown effectiveness in addressing identity crisis among school students (Kakia, 2014). These findings suggest that identity crisis is not simply a fixed developmental condition but can be modified through structured psychological interventions that promote self-awareness, responsibility, realistic decision making, and adaptive interpersonal functioning. Dialectical behavior therapy may extend these benefits by helping adolescents tolerate ambiguity, regulate emotionally intense experiences, and integrate apparently contradictory aspects of the self through a dialectical framework emphasizing both acceptance and change.

Dialectical behavior therapy was initially developed as a comprehensive cognitive-behavioral treatment and is organized around core domains including mindfulness, emotion regulation, distress tolerance, and interpersonal effectiveness. The dialectical perspective emphasizes that seemingly contradictory experiences can coexist and that psychological growth often requires balancing acceptance of present circumstances with active efforts toward change. This framework may be particularly appropriate for adolescents, whose developmental experience is often characterized by competing needs for autonomy and belonging, achievement and self-acceptance, stability and exploration. Mindfulness skills may help adolescents observe thoughts and emotions without immediately identifying with them; emotion-regulation skills may reduce vulnerability to intense affect; distress-tolerance skills may support coping with uncertainty, failure, and frustration; and

interpersonal-effectiveness skills may improve communication with parents, teachers, and peers.

A growing body of research supports the application of DBT across a range of adolescent and student psychological problems. Dialectical behavior therapy has been shown to reduce irritability and aggression among adolescents with disruptive mood dysregulation disorder, indicating its usefulness for improving emotional and behavioral regulation in younger populations (Ahmadian et al., 2024). In students with attention-deficit/hyperactivity disorder, DBT has been reported to improve academic emotion components and self-control, suggesting that its benefits can extend beyond symptom reduction to educationally relevant self-regulation processes (Sadeghi, 2024). DBT has also been compared with cognitive behavioral therapy in students with obsessive-compulsive disorder, with findings indicating beneficial effects on attention and related cognitive functioning (Amighi et al., 2025). These studies collectively suggest that the mechanisms targeted by DBT may be relevant across diverse psychological and academic difficulties.

DBT has also been used successfully in populations requiring adaptation to specific identity and contextual needs. Affirmative DBT skills training with sexual minority veterans, for example, demonstrated the adaptability of DBT principles to identity-relevant emotional and interpersonal challenges (Cohen et al., 2021). This is theoretically important because identity difficulties often involve invalidation, internal conflict, difficulties with self-acceptance, and tension between personal experiences and social expectations. A treatment model emphasizing validation while simultaneously encouraging adaptive behavioral change may therefore provide an appropriate framework for adolescents experiencing uncertainty about identity. Although the developmental and contextual characteristics of adolescent students differ from those of adult clinical populations, the flexibility of DBT suggests that its core skills can be adapted to diverse psychological needs.

Comparative evidence also supports the broader psychological benefits of DBT in student populations. A randomized controlled trial comparing cognitive behavioral therapy and dialectical behavior therapy among medical students found that both approaches could contribute to psychological capital, further suggesting that DBT can strengthen adaptive psychological resources rather than merely reduce psychopathological symptoms (Dong et al., 2024). This feature may be particularly important among

gifted and selective-school students, for whom psychological interventions should ideally preserve healthy achievement motivation while reducing maladaptive emotional patterns. Rather than simply lowering standards, DBT may help students develop flexibility in responding to high expectations, tolerate temporary failure, and regulate emotional reactions to academic or interpersonal stressors.

The interrelationships among health anxiety, perfectionism, and identity crisis also provide a rationale for examining them together. Excessive perfectionistic standards may amplify health anxiety by increasing intolerance of uncertainty and creating a rigid expectation of complete control over physical and emotional functioning. At the same time, adolescents who define themselves primarily through achievement may become vulnerable to identity instability when they perceive themselves as failing to meet academic or interpersonal expectations. Health-related concerns may further disrupt identity development by increasing attention to perceived vulnerability and reducing engagement in developmentally important activities. The emotional processes linking these difficulties may include heightened anxiety, self-criticism, emotional dysregulation, avoidance, reassurance seeking, and reduced tolerance of ambiguity. Because DBT directly targets several of these processes, it offers a theoretically coherent intervention for simultaneously addressing multiple psychological vulnerabilities.

The relevance of such an intervention may be particularly pronounced among adolescents in selective and gifted schools. These students are often expected to perform at a high academic level and may experience pressure from themselves, parents, teachers, and competitive educational environments. While high achievement itself is not pathological, persistent demands for excellence may contribute to maladaptive perfectionism when adolescents equate mistakes with failure or personal inadequacy. Similarly, strong academic expectations may complicate identity formation if students experience difficulty distinguishing personal aspirations from externally imposed goals. Health anxiety may also become more difficult to manage in individuals who have a strong need for certainty and control. The literature on perfectionism, identity, anxiety, and DBT therefore converges on the importance of interventions that promote psychological flexibility, emotional regulation, acceptance, and effective coping.

Despite the growing evidence supporting DBT, several gaps remain. Much of the existing research has examined DBT in relation to anxiety, depression, emotion regulation,

aggression, self-control, or other clinical and educational outcomes rather than simultaneously assessing health anxiety, perfectionism, and identity crisis. Studies of identity crisis have frequently used reality therapy or correlational designs rather than DBT-based interventions (Adib Manesh, 2023; Amini et al., 2026; Kakia, 2014). Similarly, emerging studies of perfectionism have emphasized its associations with anxiety, sleep, competitive personality, resilience, or emotional intelligence interventions rather than evaluating whether DBT can reduce maladaptive perfectionistic tendencies in gifted adolescents (Du, 2026; Liu, 2026; Shafiee Sourak & Shamsoddinpour, 2026). Although research has demonstrated beneficial effects of DBT on anxiety-related outcomes in adolescents and students (Bowers et al., 2024; Jameson et al., 2024; Yarvaisi et al., 2021), evidence concerning health anxiety specifically remains comparatively limited.

Moreover, examining the durability of therapeutic effects is important because improvements observed immediately after treatment may not necessarily persist once structured sessions end. Adolescents may initially demonstrate symptom reduction under therapist guidance but encounter difficulty maintaining skills when exposed again to academic pressure, family expectations, interpersonal conflict, and uncertainty. A follow-up assessment therefore provides important evidence regarding whether DBT skills are incorporated sufficiently to support continued psychological adjustment. This is particularly relevant for interventions involving mindfulness, distress tolerance, emotion regulation, and interpersonal effectiveness, as these skills are intended to be repeatedly practiced and generalized to everyday contexts.

Taken together, the literature suggests that dialectical behavior therapy possesses a combination of mechanisms that may be particularly relevant for adolescents experiencing elevated health anxiety, maladaptive perfectionism, and identity crisis. Its emphasis on mindfulness may reduce automatic reactions to health-related thoughts and self-critical evaluations; its emotion-regulation strategies may decrease vulnerability to intense anxiety and frustration; distress-tolerance skills may strengthen the ability to cope with uncertainty, imperfection, and identity-related ambiguity; and interpersonal-effectiveness skills may help adolescents manage expectations and relationships without compromising self-respect. Evidence supporting the effectiveness of DBT across anxiety, emotion regulation, attention, self-control, aggression, and psychological adjustment further provides a

strong empirical foundation for its application in academically demanding adolescent populations (Ahmadian et al., 2024; Amighi et al., 2025; Astaneh et al., 2020; Dong et al., 2024; Sadeghi, 2024). Accordingly, the present study aimed to investigate the effectiveness of dialectical behavior therapy in reducing health anxiety, perfectionism, and identity crisis among 15- to 18-year-old male students attending selective public and gifted schools.

2. Methods and Materials

2.1. Study Design and Participants

The present study was an applied, quasi-experimental investigation employing a pretest–posttest control-group design with a one-month follow-up assessment. The statistical population consisted of all male students aged 15–18 years enrolled in selective public and gifted schools in Kermanshah, Iran, during the autumn semester of the 2024–2025 academic year. The target population comprised approximately 1,500 students. Participants were recruited using convenience sampling from Mostafa Parvini Selective Public School, Javad al-Aemeh Selective Public School, Shahid Beheshti Gifted School, Imam Ali Selective Public School, and Shahid Keshvari Selective Public School in Kermanshah. Initially, eligible students were screened using the Ahmadi Identity Crisis Questionnaire, the Hill Perfectionism Questionnaire, and the Short Health Anxiety Inventory. Based on the predetermined eligibility criteria, 40 students were selected and then randomly allocated to either the experimental group receiving dialectical behavior therapy or the control group, with 20 participants in each group. The inclusion criteria were being male and between 15 and 18 years of age, enrollment in a selective public or gifted school, obtaining an identity crisis score greater than 45, a perfectionism score greater than 174, and a health anxiety score greater than 27, willingness to participate in the study, and absence of an acute psychological disorder based on self-report. The exclusion criteria consisted of absence from more than two intervention sessions, incomplete responses to the study questionnaires, and receipt of another psychological intervention during the study period. Regarding age, eight participants (20.0%) were 15 years old, 10 (25.0%) were 16 years old, 15 (37.5%) were 17 years old, and seven (17.5%) were 18 years old. In terms of educational grade, five participants (12.5%) were in the ninth grade, 12 (30.0%) were in the tenth grade, 17 (42.5%) were in the eleventh grade, and six (15.0%) were in the twelfth grade. After obtaining the necessary authorization

and coordinating with the General Department of Education of Kermanshah Province, eligible students completed the pretest assessments. The experimental group subsequently received the dialectical behavior therapy intervention over one month, whereas the control group received no psychological intervention during this period. Immediately after completion of the intervention, both groups completed the posttest assessment, and a follow-up assessment was administered to both groups one month later. Thus, measurements were obtained at three time points: pretest, posttest, and one-month follow-up. Informed consent was obtained from the participating students and their legal guardians before enrollment. Participation was voluntary, confidentiality and anonymity were maintained throughout the study, and participants were informed that they could discontinue participation without adverse consequences.

2.2. Instruments

Ahmadi Identity Crisis Questionnaire. The Identity Crisis Questionnaire was developed by Ahmadi in 1997 as a paper-and-pencil self-report instrument for assessing identity crisis among adolescents. The instrument evaluates identity-related difficulties across 10 domains, including difficulties in establishing long-term goals, uncertainty regarding occupational choice, lack of an appropriate model for friendship, problems related to sexual behavior, difficulties in religious identification and understanding, insufficient adherence to moral values, lack of commitment to group obligations, negative self-perception, lack of effort and initiative, and difficulties in time management. Respondents select the alternative that best represents their condition, and responses are scored according to the scoring system of the instrument, with higher total scores indicating a greater degree of identity crisis and lower scores representing more successful identity development. The total score ranges from 0 to 90. For participant screening in the present study, scores greater than 45 were considered indicative of elevated identity crisis. Previous psychometric evaluations have supported the reliability of the questionnaire. An initial Cronbach's alpha coefficient of .86 was reported, while another study reported an internal consistency coefficient of .89 and a split-half reliability coefficient of .95, indicating satisfactory reliability. In the present study, the internal consistency of the questionnaire was reassessed using Cronbach's alpha, which yielded a coefficient of .76.

Hill Perfectionism Questionnaire. The Perfectionism Questionnaire developed by Hill and colleagues in 2004 was

used to assess participants' perfectionistic tendencies. The version employed in the present study consisted of 58 items assessing six dimensions of perfectionism, including interpersonal sensitivity, striving for excellence, organization, perceived parental pressure, purposefulness, and high standards for others. Items are rated on a four-point Likert scale ranging from 1 for "strongly disagree" to 4 for "strongly agree," with higher scores reflecting stronger perfectionistic tendencies. According to the scoring interpretation applied in the present study, total scores from 58 to 116 indicate a low level of perfectionism, scores from 116 to 174 indicate a moderate level, and scores of 174 or above represent a high level of perfectionism. Accordingly, a score greater than 174 was used as one of the inclusion criteria. The instrument has demonstrated satisfactory psychometric characteristics in previous studies. Hill and colleagues reported internal consistency coefficients ranging from .83 to .91 across its dimensions. In an Iranian psychometric evaluation, the overall Cronbach's alpha coefficient was reported as .89, while factor analysis using principal component analysis with Varimax rotation supported the multidimensional structure of the scale. In the present study, Cronbach's alpha for the overall questionnaire was .78, indicating acceptable internal consistency.

Short Health Anxiety Inventory. Health anxiety was assessed using the short form of the Health Anxiety Inventory developed from the cognitive model of health anxiety and hypochondriasis proposed by Salkovskis and Warwick. The original long form was developed in 1989, and the short form introduced by Salkovskis and Warwick in 2002 was used in the present study. The short-form instrument contains 18 self-report items and assesses three principal aspects of health anxiety, including the main health-anxiety component, general health concerns, and perceived negative consequences of illness. Each item presents four statements describing progressively increasing levels of health-related concern, and respondents select the statement that best describes their current experience. Responses are scored from 0 to 3, with higher total scores representing greater health anxiety. A score greater than 27 was used as the eligibility threshold in the present investigation. The Persian version of the questionnaire was translated and psychometrically evaluated by Nargesi in 2011, with content reviewed by experts in the relevant field. In a sample of 375 participants, a Cronbach's alpha coefficient of .87 was reported. Previous studies have also reported a test-retest reliability coefficient of approximately .90 and Cronbach's alpha coefficients ranging from .70 to

.82. Evidence of convergent validity has additionally been reported through associations with other measures of illness-related beliefs and anxiety. In the present study, the internal consistency coefficient calculated using Cronbach's alpha was .77.

2.3. Interventions

The experimental group participated in a group-based dialectical behavior therapy intervention adapted from the protocol described by Linehan and Wilks in 2015. The intervention consisted of eight 60-minute sessions delivered twice weekly over a period of approximately one month. The first session introduced the principles of dialectical behavior therapy, including the dialectical balance between acceptance and change, and focused on fundamental mindfulness skills such as observing, describing, and participating in present-moment experiences. The second session addressed emotion regulation by helping participants identify emotions, understand their functions, and become familiar with basic strategies for modifying maladaptive emotional responses. The third session continued emotion-regulation training and emphasized the relationships among thoughts, emotions, and behaviors; participants were taught to identify unhelpful cognitions, evaluate their consequences, and use cognitive restructuring strategies to challenge maladaptive interpretations. The fourth session focused on interpersonal effectiveness and assertiveness, including skills for appropriately making requests, refusing unreasonable demands, communicating personal needs, and maintaining self-respect during interpersonal interactions. The fifth session addressed distress tolerance and differentiated situations requiring active problem solving from circumstances requiring psychological tolerance and acceptance. Participants practiced distress-tolerance strategies such as radical acceptance, self-soothing, and techniques for improving the immediate emotional experience. The sixth session focused on identity and self-esteem and explored the role of self-concept and identity development in psychological well-being; participants were encouraged to develop greater self-acceptance and were taught strategies intended to strengthen and regulate self-esteem. The seventh session integrated previously learned mindfulness, emotion-regulation, interpersonal-effectiveness, and distress-tolerance skills and emphasized their application to realistic academic, family, health-related, and interpersonal situations encountered by adolescents. Participants reviewed difficulties experienced in applying

the skills and practiced selecting appropriate strategies for different situations. The eighth and final session consisted of a comprehensive review of the intervention, consolidation of the skills learned throughout the program, recognition of participants' progress, discussion of strategies for maintaining treatment gains, and planning for continued independent practice following termination of the sessions. The control group did not receive the dialectical behavior therapy program during the intervention period. Outcome measures were administered to both groups immediately before the intervention, immediately after completion of the eight sessions, and again one month after the posttest to assess the maintenance of intervention effects.

2.4. Data analysis

Data were analyzed using descriptive and inferential statistical procedures in IBM SPSS Statistics version 27. Descriptive statistics, including the mean and standard deviation, were calculated to summarize health anxiety, perfectionism, and identity crisis scores in the experimental and control groups across the pretest, posttest, and follow-up assessments. Before performing inferential analyses, the relevant statistical assumptions were examined. The normality of the distributions was evaluated using the

Shapiro–Wilk test, while assumptions concerning homogeneity of variances and equality of variance–covariance structures were also examined using the appropriate statistical tests. Following confirmation of the required assumptions, repeated-measures analysis of variance was conducted to evaluate changes in health anxiety, perfectionism, and identity crisis over the three measurement occasions and to determine whether the pattern of change differed between the experimental and control groups. The principal effects of time and group, as well as the group-by-time interaction, were examined to determine the effectiveness of dialectical behavior therapy and the maintenance of its effects at the one-month follow-up. Statistical significance was evaluated at the .05 level.

3. Findings and Results

The descriptive statistics for identity crisis, perfectionism and its subscales, and health anxiety and its subscales were calculated separately for the experimental and control groups across the pretest, posttest, and one-month follow-up assessments. Table 1 presents the minimum, maximum, mean, and standard deviation for all study variables at the three measurement occasions.

Table 1

Descriptive Statistics for the Study Variables by Group and Measurement Time

Variable	Group	Pretest, Mean $\pm$ SD	Posttest, Mean $\pm$ SD	Follow-up, Mean $\pm$ SD
Identity crisis	Experimental	57.00 $\pm$ 9.66	51.55 $\pm$ 8.73	48.55 $\pm$ 9.09
	Control	55.00 $\pm$ 8.18	55.60 $\pm$ 7.72	61.90 $\pm$ 7.85
Interpersonal sensitivity	Experimental	73.05 $\pm$ 6.60	65.10 $\pm$ 4.16	65.45 $\pm$ 4.92
	Control	72.50 $\pm$ 4.71	72.65 $\pm$ 5.06	68.90 $\pm$ 6.64
Striving for excellence	Experimental	18.10 $\pm$ 2.40	15.95 $\pm$ 2.80	13.15 $\pm$ 2.45
	Control	17.75 $\pm$ 2.51	19.45 $\pm$ 4.27	19.80 $\pm$ 2.60
Organization	Experimental	19.25 $\pm$ 3.00	18.75 $\pm$ 3.09	19.60 $\pm$ 2.18
	Control	21.75 $\pm$ 3.50	23.10 $\pm$ 2.49	19.70 $\pm$ 3.01
Perceived parental pressure	Experimental	24.00 $\pm$ 2.97	24.90 $\pm$ 2.12	23.80 $\pm$ 3.28
	Control	23.55 $\pm$ 2.74	24.70 $\pm$ 2.47	23.75 $\pm$ 2.29
Purposefulness	Experimental	25.45 $\pm$ 3.26	22.30 $\pm$ 3.70	19.95 $\pm$ 4.23
	Control	25.35 $\pm$ 2.94	24.90 $\pm$ 3.24	24.20 $\pm$ 3.53
High standards for others	Experimental	32.25 $\pm$ 2.35	28.95 $\pm$ 2.94	29.30 $\pm$ 3.11
	Control	31.50 $\pm$ 2.48	31.05 $\pm$ 2.11	31.20 $\pm$ 2.30
Total perfectionism	Experimental	192.10 $\pm$ 9.08	175.95 $\pm$ 7.74	171.25 $\pm$ 10.95
	Control	192.40 $\pm$ 7.78	195.85 $\pm$ 7.74	187.55 $\pm$ 9.89
General health concern	Experimental	14.95 $\pm$ 2.83	16.05 $\pm$ 3.41	15.55 $\pm$ 2.70
	Control	16.10 $\pm$ 3.09	15.65 $\pm$ 2.70	14.60 $\pm$ 2.47
Illness likelihood	Experimental	13.80 $\pm$ 2.74	11.10 $\pm$ 2.38	9.20 $\pm$ 2.39
	Control	13.90 $\pm$ 2.80	12.65 $\pm$ 2.34	13.90 $\pm$ 2.33
Negative consequences	Experimental	9.95 $\pm$ 2.70	7.65 $\pm$ 1.72	7.45 $\pm$ 2.03
	Control	11.50 $\pm$ 3.08	12.05 $\pm$ 1.87	12.80 $\pm$ 1.39
Total health anxiety	Experimental	38.70 $\pm$ 4.19	34.80 $\pm$ 3.92	32.20 $\pm$ 4.18

Control	41.50 ± 6.36	40.35 ± 3.43	41.30 ± 3.65
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As shown in Table 1, the mean identity crisis score in the experimental group declined from 57.00 at pretest to 51.55 at posttest and further to 48.55 at follow-up. In contrast, the corresponding means in the control group were 55.00, 55.60, and 61.90, respectively. A similar pattern was observed for total perfectionism, which decreased in the experimental group from 192.10 at pretest to 175.95 at posttest and 171.25 at follow-up, whereas the control group showed substantially smaller and less consistent changes, with means of 192.40, 195.85, and 187.55. Total health anxiety also declined in the experimental group from 38.70 at pretest to 34.80 at posttest and 32.20 at follow-up, compared with relatively stable scores of 41.50, 40.35, and 41.30 in the control group. At the subscale level, the most evident reductions in the experimental group were observed for illness likelihood, negative consequences, interpersonal sensitivity, striving for excellence, purposefulness, and high standards for others, whereas general health concern and perceived parental pressure showed comparatively limited changes.

Prior to conducting the repeated-measures analyses, the statistical assumptions were examined. The Shapiro–Wilk

test indicated acceptable distributional characteristics for the principal outcome variables across the three measurement occasions according to the prespecified criterion of .01; the obtained significance values ranged from .033 to .849. Levene's tests were nonsignificant for health anxiety, perfectionism, and identity crisis at pretest, posttest, and follow-up, with all p values exceeding .05, supporting the assumption of homogeneity of error variances. Box's M tests were also nonsignificant for health anxiety, total perfectionism, and identity crisis, with p values of .465, .490, and .951, respectively, indicating equality of the variance–covariance matrices across groups. Mauchly's test supported the assumption of sphericity for general health concern, illness likelihood, interpersonal sensitivity, striving for excellence, perceived parental pressure, purposefulness, total perfectionism, and identity crisis. Sphericity was violated for negative consequences, total health anxiety, organization, and high standards for others; therefore, Greenhouse–Geisser-adjusted results were considered for these variables. Collectively, the assumption testing supported the use of repeated-measures analysis of variance.

Table 2

Repeated-Measures Analysis of Variance for Health Anxiety, Perfectionism, and Identity Crisis

Outcome	Effect	F	p	Partial η^2
General health concern	Time	0.717	.491	.019
	Time × Group	1.403	.252	.036
Illness likelihood	Time	10.372	.001	.214
	Time × Group	9.257	.001	.196
Negative consequences	Time	1.605	.213	.041
	Time × Group	7.840	.002	.171
Total health anxiety	Time	6.618	.004	.148
	Time × Group	5.418	.010	.125
Interpersonal sensitivity	Time	11.320	.001	.230
	Time × Group	5.631	.005	.129
Striving for excellence	Time	2.776	.069	.068
	Time × Group	14.009	.001	.269
Organization	Time	2.499	.089	.062
	Time × Group	6.730	.002	.150
Perceived parental pressure	Time	2.025	.139	.051
	Time × Group	0.059	.943	.002
Purposefulness	Time	11.200	.001	.228
	Time × Group	4.874	.010	.114
High standards for others	Time	6.372	.003	.144
	Time × Group	3.890	.025	.093
Total perfectionism	Time	19.318	.001	.337
	Time × Group	12.735	.001	.251
Identity crisis	Time	0.786	.459	.020

The repeated-measures analysis presented in Table 2 demonstrated significant time-by-group interactions for illness likelihood, $F = 9.257$, $p = .001$, partial $\eta^2 = .196$; negative consequences, $F = 7.840$, $p = .002$, partial $\eta^2 = .171$; and total health anxiety, $F = 5.418$, $p = .010$, partial $\eta^2 = .125$. The interaction for general health concern was not significant, $F = 1.403$, $p = .252$. Thus, the effect of dialectical behavior therapy on health anxiety was primarily attributable to reductions in perceived illness likelihood and negative consequences rather than changes in general health concern. Significant time-by-group interactions were also found for interpersonal sensitivity, $F = 5.631$, $p = .005$, partial $\eta^2 = .129$; striving for excellence, $F = 14.009$, $p = .001$, partial $\eta^2 = .269$; organization, $F = 6.730$, $p = .002$, partial $\eta^2 = .150$; purposefulness, $F = 4.874$, $p = .010$, partial $\eta^2 = .114$; high standards for others, $F = 3.890$, $p = .025$,

partial $\eta^2 = .093$; and total perfectionism, $F = 12.735$, $p = .001$, partial $\eta^2 = .251$. However, the interaction for perceived parental pressure was nonsignificant, $F = 0.059$, $p = .943$. Among the perfectionism outcomes, the largest interaction effect was observed for striving for excellence, with approximately 26.9% of the variance associated with the time-by-group effect. Finally, a significant time-by-group interaction was found for identity crisis, $F = 7.659$, $p = .001$, partial $\eta^2 = .168$, indicating that changes in identity crisis differed significantly between the experimental and control groups across the three assessments. The nonsignificant main effect of time for identity crisis, $F = 0.786$, $p = .459$, further indicates that the overall temporal change was dependent on group membership rather than reflecting a uniform change across both groups.

Table 3

Bonferroni-Adjusted Pairwise Comparisons Between the Experimental and Control Groups

Outcome	Experimental Mean	Control Mean	Mean Difference (Experimental – Control)	p
General health concern	15.517	15.450	0.067	.899
Illness likelihood	11.367	13.483	-2.117	.001
Negative consequences	8.350	12.117	-3.767	.001
Total health anxiety	35.233	40.050	-5.817	.001
Interpersonal sensitivity	67.867	71.350	-3.483	.001
Striving for excellence	15.733	19.000	-3.267	.001
Organization	19.200	21.517	-2.317	.001
Perceived parental pressure	24.233	24.000	0.233	.647
Purposefulness	22.567	24.814	-2.250	.005
High standards for others	30.167	31.250	-1.083	.030
Total perfectionism	179.767	191.933	-12.167	.001
Identity crisis	52.367	57.500	-5.133	.001

The Bonferroni-adjusted comparisons shown in Table 3 indicated that the experimental group had significantly lower overall scores than the control group for illness likelihood, mean difference = -2.117, $p = .001$; negative consequences, mean difference = -3.767, $p = .001$; and total health anxiety, mean difference = -5.817, $p = .001$. No significant between-group difference was found for general health concern, $p = .899$. For perfectionism, significant between-group differences were observed for interpersonal sensitivity, mean difference = -3.483, $p = .001$; striving for excellence, mean difference = -3.267, $p = .001$; organization, mean difference = -2.317, $p = .001$; purposefulness, mean difference = -2.250, $p = .005$; high standards for others, mean difference = -1.083, $p = .030$; and total perfectionism, mean difference = -12.167, $p = .001$. In contrast, perceived parental pressure did not differ significantly between the

groups, $p = .647$. Identity crisis was also significantly lower in the experimental group than in the control group, with a mean difference of -5.133, $p = .001$. Taken together with the repeated-measures findings, these comparisons indicate that dialectical behavior therapy was associated with significant reductions in total health anxiety, most dimensions of perfectionism, and identity crisis, and that these improvements were generally maintained through the one-month follow-up assessment.

4. Discussion

The present study investigated the effectiveness of dialectical behavior therapy on health anxiety, perfectionism, and identity crisis among 15- to 18-year-old male students enrolled in selective public and gifted schools. The findings showed that dialectical behavior therapy

produced significant improvements in the principal psychological outcomes compared with the control condition. Specifically, significant time-by-group interaction effects were observed for total health anxiety, total perfectionism, and identity crisis. At the subscale level, the intervention significantly reduced illness likelihood and perceived negative consequences within health anxiety, whereas the effect on general health concern was not statistically significant. Regarding perfectionism, significant intervention effects were found for interpersonal sensitivity, striving for excellence, organization, purposefulness, and high standards for others, while perceived parental pressure did not change significantly. The identity crisis score also declined significantly in the experimental group over time. The descriptive pattern further indicated that reductions were not limited to the immediate posttest but were generally maintained or further strengthened at the one-month follow-up, suggesting that the intervention had a relatively stable short-term effect.

The significant reduction in total health anxiety is consistent with previous findings showing that dialectical behavior therapy can reduce anxiety-related symptoms by modifying maladaptive emotional and cognitive responses. Bowers and colleagues reported that DBT was effective in reducing anxiety levels among adolescents, supporting the applicability of the approach for younger populations experiencing elevated anxiety (Bowers et al., 2024). Similarly, Jameson and colleagues found that a brief DBT skills-based intervention was beneficial for reducing test anxiety, indicating that DBT skills can be useful in anxiety states characterized by anticipatory worry, cognitive overactivation, and difficulty regulating distress (Jameson et al., 2024). The present findings also align with the results of Yarvaisy and colleagues, who demonstrated reductions in stress, anxiety, and depression following DBT in students with depressive symptoms (Yarvaisy et al., 2021). Taken together, these findings support the view that DBT may influence anxiety through transdiagnostic mechanisms such as emotion regulation, distress tolerance, attentional control, and more adaptive responses to distressing internal experiences.

One possible explanation for the reduction in health anxiety is that DBT trains individuals to observe internal sensations, thoughts, and emotions without immediately interpreting them as threatening. Adolescents with elevated health anxiety may respond to ordinary physical sensations with catastrophic interpretations, hypervigilance, repeated checking, or reassurance-seeking behaviors. Mindfulness

and distress-tolerance skills may weaken this cycle by allowing the individual to notice bodily sensations without automatically escalating them into assumptions of illness. Emotion-regulation skills can further reduce physiological and cognitive arousal, while acceptance-oriented strategies may increase tolerance of uncertainty concerning bodily states. The findings of Sehati and colleagues, showing that DBT-based emotion regulation and distress tolerance reduced anxiety sensitivity and emotion-regulation difficulties, are consistent with this explanation (Sehati et al., 2019). Astaneh and colleagues likewise demonstrated that DBT-based skills training improved emotional regulation and reduced distress among adolescents with social anxiety disorder, suggesting that the ability to regulate internal emotional responses is an important pathway through which DBT may influence anxiety-related outcomes (Astaneh et al., 2020).

The subscale findings provide further nuance. The intervention significantly reduced perceived likelihood of illness and negative consequences of illness, but not general health concern. This pattern suggests that DBT may be more effective in modifying catastrophic interpretations and emotional reactions to perceived health threats than in eliminating ordinary or generalized attention to health. General health concern may partly reflect relatively stable or normative vigilance rather than dysfunctional anxiety, particularly in adolescents who are exposed to health information from families, school environments, and social media. In contrast, beliefs about the probability of developing illness and the perceived severity of its consequences may be more responsive to mindfulness, cognitive flexibility, emotion regulation, and distress-tolerance training. Thus, the nonsignificant change in general health concern does not necessarily contradict the overall effectiveness of the intervention; rather, it may indicate that DBT selectively influenced the more maladaptive and emotionally loaded dimensions of health anxiety.

The significant reduction in total perfectionism also represents an important finding. Perfectionism is often maintained by rigid standards, intolerance of mistakes, excessive self-evaluation, and difficulty accepting outcomes that fall short of internal expectations. These processes are highly relevant in selective and gifted educational environments, where students may experience continuous academic comparison, high parental expectations, and strong pressure to maintain superior performance. Rahmawati and colleagues emphasized that gifted students

may experience long-term psychological consequences associated with perfectionistic tendencies, including persistent self-pressure and difficulty coping with unmet standards (Rahmawati et al., 2026). Molnar similarly highlighted that perfectionism among students may be reinforced by educational expectations and may coexist with substantial emotional distress even when external performance remains high (Molnar, 2026). The reduction in perfectionism observed in the present study is therefore particularly meaningful in a high-achievement student population.

DBT may reduce perfectionism by promoting a more flexible and less judgmental relationship with thoughts and performance outcomes. Mindfulness encourages students to observe evaluative thoughts without automatically accepting them as objective truths, while emotion-regulation skills may reduce intense shame, disappointment, or frustration following mistakes. Distress tolerance may also help students endure the discomfort associated with imperfection rather than attempting to avoid or overcorrect it through excessive performance standards. The dialectical principle of simultaneously accepting oneself while pursuing change may be especially useful for perfectionistic students because it challenges the assumption that self-worth depends entirely on achievement. In this respect, the present findings are conceptually consistent with the study by Shafiee Sourak and Shamsoddinpour, who found that emotional intelligence training reduced perfectionism and social anxiety among students, indicating that strengthening emotional competencies can reduce maladaptive perfectionistic tendencies (Shafiee Sourak & Shamsoddinpour, 2026).

The reduction in perfectionism is also compatible with emerging research linking perfectionism to anxiety and other indicators of psychological strain. Du reported that perfectionism was related to poorer sleep quality among medical students through depression and anxiety, highlighting the emotional cost of rigid perfectionistic patterns (Du, 2026). Liu similarly showed that the relationship between perfectionism and sleep quality among graduate students was influenced by competitive personality and resilience, suggesting that perfectionism operates within a wider psychological system involving competition, coping resources, and emotional vulnerability (Liu, 2026). These studies support the interpretation that reducing maladaptive perfectionism may require more than changing standards alone. DBT may be effective because it strengthens emotional and behavioral flexibility, thereby weakening the

pathways through which rigid standards become psychologically harmful.

At the subscale level, the strongest effect was observed for striving for excellence, followed by organization and interpersonal sensitivity, while perceived parental pressure did not change significantly. The lack of significant change in perceived parental pressure is understandable because this dimension reflects an external interpersonal context that may not be directly altered by an individually or group-delivered student intervention. DBT can change how adolescents respond to parental expectations, but it does not necessarily change the behavior or standards of parents themselves. By contrast, interpersonal sensitivity, striving for excellence, organization, purposefulness, and standards for others are more closely tied to the student's own cognitive, emotional, and behavioral patterns and may therefore be more directly amenable to psychological skills training. The nonsignificant result for parental pressure may consequently indicate a boundary of the intervention rather than a failure of the broader DBT approach.

The significant reduction in identity crisis is another central finding of the study. Identity formation is one of the major developmental tasks of adolescence, and instability in goals, values, self-concept, and future orientation may be intensified by academic and social pressure. The present result is consistent with previous evidence showing that identity crisis can be modified through structured psychological interventions. Adib Manesh reported that responsibility training based on reality therapy reduced identity crisis among high school students (Adib Manesh, 2023), while Kakia found that group counseling based on reality therapy was effective in addressing identity crisis among school students (Kakia, 2014). Although these interventions differ theoretically from DBT, all emphasize greater self-awareness, responsibility, adaptive decision making, and more coherent engagement with personal goals.

The result also aligns with research showing that identity crisis is shaped by interpersonal and social processes. Amini and colleagues reported that social capital and the generational gap were related to identity crisis among university students, indicating that identity development is influenced by the quality of social relationships and the fit between personal and generational values (Amini et al., 2026). Nemeti and colleagues further demonstrated that identity crisis played a mediating role in the relationship between participation in social networks and body-image concerns among students, suggesting that instability in self-definition may amplify the impact of social comparison and

interpersonal pressures (Nemeti et al., 2022). In the context of selective and gifted schools, students may face particularly strong expectations regarding future educational trajectories, career decisions, and achievement-based identity. DBT may help adolescents respond to these pressures by strengthening mindfulness, emotional regulation, and self-acceptance, thereby reducing the degree to which self-definition depends on immediate performance or external evaluation.

The dialectical framework may be especially relevant to identity development because adolescence frequently involves apparently contradictory needs, including autonomy and belonging, achievement and self-acceptance, stability and exploration, and conformity and individuality. DBT explicitly teaches that seemingly opposing experiences can coexist and that individuals can accept themselves while simultaneously working toward change. This framework may help adolescents develop a more integrated self-concept rather than interpreting internal contradictions as evidence of confusion or failure. The identity-focused elements of the intervention, combined with mindfulness and emotion-regulation skills, may therefore have contributed to the observed reduction in identity crisis.

The findings are also consistent with broader evidence that DBT can improve self-regulatory and adaptive functioning in adolescents and students. Ahmadian and colleagues found that DBT reduced irritability and aggression among adolescents with disruptive mood dysregulation disorder, suggesting improvements in emotional and behavioral control (Ahmadian et al., 2024). Sadeghi reported that DBT improved academic emotional components and self-control among students with attention-deficit/hyperactivity disorder (Sadeghi, 2024). Amighi and colleagues also showed that DBT improved attentional functioning among students with obsessive-compulsive disorder, further demonstrating that the intervention can influence cognitive and self-regulatory processes beyond symptom reduction (Amighi et al., 2025). These results collectively support the interpretation that DBT may promote a more general capacity for emotional regulation, attentional control, and adaptive self-management.

Additional support comes from studies demonstrating that DBT can be adapted across diverse psychological and identity-related contexts. Cohen and colleagues showed the applicability of affirmative DBT skills training in a population facing identity-relevant interpersonal and emotional challenges, illustrating the flexibility of the approach (Cohen et al., 2021). Dong and colleagues, in a

randomized controlled trial among medical students, also reported that DBT could enhance psychological capital, suggesting that the intervention may strengthen adaptive psychological resources rather than merely reduce symptoms (Dong et al., 2024). This broader resource-building function may be particularly valuable for gifted and selective-school students, who may benefit from maintaining achievement motivation while reducing emotional rigidity, self-criticism, and maladaptive responses to pressure.

The maintenance of improvements at follow-up strengthens the interpretation of the findings. In the experimental group, identity crisis, total perfectionism, and total health anxiety generally continued to decline from posttest to follow-up. Such a pattern suggests that participants may have continued applying the skills acquired during intervention sessions after formal treatment ended. DBT is structured around repeated skills practice, and the continued use of mindfulness, emotion regulation, distress tolerance, and interpersonal effectiveness strategies may gradually consolidate behavioral change. The follow-up results therefore suggest that the intervention produced more than an immediate situational response to treatment sessions and may have initiated short-term internalization of adaptive coping strategies.

5. Conclusion

Overall, the findings indicate that DBT was effective in reducing total health anxiety, most dimensions of perfectionism, and identity crisis among male students in selective and gifted schools. The pattern of results also shows that the intervention was more effective for psychologically modifiable internal processes than for variables strongly dependent on external conditions, such as perceived parental pressure. These findings extend previous research on DBT by showing that its effects may encompass not only conventional anxiety and emotion-regulation outcomes but also maladaptive perfectionism and identity-related difficulties in academically demanding adolescent populations.

The present study had several limitations. The sample consisted exclusively of male students aged 15 to 18 years from selective and gifted schools in Kermanshah, which limits the generalizability of the findings to female students, adolescents from ordinary schools, other age groups, and students from different geographic or cultural contexts. The sample size was relatively small, with 20 participants in each

group, which may reduce statistical power and the precision of effect estimates. Convenience sampling was used at the recruitment stage, and the outcome variables were assessed through self-report questionnaires, potentially introducing response bias and shared-method variance. The follow-up period was limited to one month, preventing conclusions regarding long-term maintenance of treatment effects. Moreover, the study did not include an active comparison intervention, and therapist adherence, treatment fidelity, and participants' independent practice of DBT skills were not formally quantified. The reliance on self-reported absence of acute psychological disorders may also have limited the precision of participant screening.

Future studies should replicate the findings with larger and more heterogeneous samples that include female students, students from ordinary public and private schools, and participants from different cities and sociocultural backgrounds. Longer follow-up periods, such as three, six, or twelve months, would clarify the durability of treatment gains. Future research could compare DBT directly with other evidence-based interventions such as cognitive behavioral therapy, acceptance and commitment therapy, or reality therapy to determine whether specific mechanisms are responsible for changes in health anxiety, perfectionism, and identity crisis. Researchers should also examine potential mediators such as emotion regulation, distress tolerance, self-compassion, cognitive flexibility, and psychological resilience. Including parent- and teacher-reported outcomes, behavioral measures, and structured clinical interviews could strengthen measurement validity. It would also be useful to test whether parental involvement improves outcomes for dimensions such as perceived parental pressure.

In practice, school counselors and educational psychologists may consider incorporating structured DBT skills training into psychological support programs for adolescents experiencing excessive health anxiety, rigid perfectionistic tendencies, or identity-related difficulties. Group-based delivery may be particularly feasible in school settings because it can provide opportunities for skills practice, normalization of emotional experiences, and peer-supported learning. Programs should emphasize mindfulness, emotion regulation, distress tolerance, interpersonal effectiveness, and self-acceptance while adapting examples and exercises to academic stressors commonly experienced by high-achieving students. Schools may also benefit from complementary parent and teacher education aimed at reducing excessive performance pressure

and improving communication about expectations, mistakes, and achievement. Periodic booster sessions after the primary intervention may further support maintenance and generalization of acquired skills.

Authors' Contributions

Authors equally contributed to this article.

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

Transparency Statement

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