

A Comparison of Cognitive Emotion Regulation, Hope, Psychological Flexibility, and Quality of Life Between Male Working Adolescents and Non-Working Male Adolescents

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ABSTRACT

Purpose: This study aimed to compare cognitive emotion regulation, hope, psychological flexibility, and quality of life between male working adolescents and non-working male adolescents.

Methods and Materials: In terms of its objective, this was an applied study, and in terms of the data-collection method, it employed a descriptive causal-comparative design. The statistical population consisted of all male working adolescents aged 12–18 years residing in Khorramabad, Iran, during 2023–2024 (N = 160), whose names and records were registered with the Welfare Organization of the city. G*Power software was used to determine the sample size required for two independent groups and the comparison of four variables. The results indicated that a sample of 30 participants was appropriate for this study. The participants were selected through simple random sampling. Four questionnaires were used to collect the data: Gross's Cognitive Emotion Regulation Questionnaire, Snyder's Hope Scale, the Psychological Flexibility Questionnaire developed by Bond et al., and the Quality of Life Questionnaire developed by Varni et al. Using SPSS version 23, multivariate analysis of variance was employed to examine differences between the groups, and independent-samples t tests were used to compare each of the study variables separately between the two groups.

Findings: The statistical analyses revealed significant differences between male working adolescents and non-working male adolescents in terms of quality of life, psychological flexibility, hope, and cognitive emotion regulation ($p < .001$).

Conclusion: Considering the findings and the significant differences between male working adolescents and non-working male adolescents in quality of life, psychological flexibility, hope, and cognitive emotion regulation, researchers in psychology, counseling, social work, and educational sciences are advised to design and conduct intervention-oriented studies in various institutions and organizations, including schools, municipalities, and welfare organizations, to improve the quality of life of working children and adolescents.

Keywords: Cognitive Emotion Regulation, Hope, Psychological Flexibility, Quality of Life Between Adolescents.

1. Introduction

Adolescence is a critical developmental period characterized by rapid biological maturation, cognitive reorganization, emotional differentiation, identity formation, and expanding social responsibilities. Experiences during this period can influence not only immediate psychological adjustment but also educational attainment, occupational functioning, interpersonal relationships, and health across the life course. For this reason, investment in adolescent well-being is increasingly regarded as a social, developmental, and economic priority rather than merely a matter of individual mental health (Ross et al., 2022). Quality of life during adolescence reflects the interaction of physical health, emotional well-being, social relationships, family conditions, school functioning, perceived safety, and opportunities for personal development. Evidence indicates that age-related changes in mental well-being and quality of life are not linear and may be shaped by the adolescent's family, social, educational, and economic environment (Cilar Budler & Stiglic, 2023). Studies have also shown that adolescents' quality of life is associated with demographic characteristics, health status, family relationships, socioeconomic resources, school experiences, and access to supportive social networks (Magiera & Pac, 2022). Furthermore, global evidence suggests that psychological vulnerabilities and patterns of distress may differ across gender groups, although such differences are strongly influenced by cultural expectations, social roles, and differential exposure to stressors (Morjig, 2024). Accordingly, adolescents living under conditions of economic hardship, unstable family functioning, social marginalization, or premature employment may face substantially different developmental trajectories from their peers who experience more stable living and educational conditions.

Child labor is one of the most visible manifestations of socioeconomic inequality and structural vulnerability among children and adolescents. Although employment during adolescence may, under safe and regulated conditions, contribute to responsibility, competence, occupational identity, and the acquisition of practical skills, the developmental consequences of adolescent work depend heavily on its quality, intensity, safety, duration, and compatibility with schooling (Staff & Mortimer, 2024). Work that is physically demanding, exploitative, hazardous, poorly compensated, or performed under coercive conditions may restrict educational opportunities, increase

exposure to violence and injury, and interfere with normative emotional and social development. Longitudinal and economic evidence suggests that child labor can cast a prolonged shadow over adolescent mental health, particularly among young people from socioeconomically disadvantaged families (Jayawardana et al., 2023). Hazardous child labor has also been associated with poorer psychosocial functioning and a greater probability of school dropout, indicating that labor participation may simultaneously affect psychological well-being and educational continuity (Thi et al., 2023). These outcomes are not solely attributable to work itself; rather, child labor is often embedded in a broader ecology of poverty, family instability, limited social protection, and reduced access to education and health services. Poverty during childhood restricts access to safe housing, adequate nutrition, learning opportunities, recreational resources, and stable caregiving, thereby increasing the likelihood of developmental disadvantage (Oppenheim, 2024). Family structure and socioeconomic status have similarly been identified as important determinants of children's and adolescents' mental health, particularly when financial strain interacts with parental stress and reduced family support (Gruning Parache et al., 2024).

The effects of economic deprivation on adolescent development are multidimensional. Econeurobiological perspectives emphasize that poverty-related stress, nutritional deficiencies, environmental hazards, educational inequities, and limited access to supportive interventions may influence brain development, behavior, and school adjustment (Muallem et al., 2024). Malnutrition, which is more common in socioeconomically vulnerable populations, has been associated with differences in early cognitive development and neurophysiological functioning, suggesting that material deprivation can affect the biological foundations of subsequent learning and self-regulation (Hartjen et al., 2024). Moreover, children experiencing family homelessness or unstable housing may exhibit heterogeneous profiles of neurodevelopmental functioning, depending on the severity and duration of adversity and the availability of protective relationships and services (Herbers et al., 2023). Working adolescents may therefore experience cumulative disadvantage involving inadequate nutrition, inconsistent schooling, unsafe work environments, family financial pressure, and limited access to developmentally appropriate support. These conditions may compromise their ability to regulate emotions, maintain hope, respond flexibly

to distress, and experience satisfactory quality of life. In contrast, non-working adolescents who remain consistently engaged in school and receive greater family and institutional support may have more opportunities to develop adaptive cognitive, emotional, and interpersonal competencies.

Exposure to trauma and adverse childhood experiences represents another important mechanism through which child labor and social vulnerability may affect psychological functioning. Street-connected and working children frequently encounter violence, neglect, exploitation, family separation, stigmatization, and chronic insecurity. Research on street children has shown that trauma may influence emotional well-being as well as the quality of relationships between children and their families (Daniel, 2025). Early-life stress can produce chronic effects on neural development, stress-response systems, learning, and emotional functioning, particularly when exposure is severe or prolonged (Takatsuru & Miyagawa, 2023). Large-scale evidence has also linked adverse childhood experiences with a broad range of mental health outcomes extending into adulthood, demonstrating that the psychological consequences of early adversity may persist long after the original exposure has ended (Danielsdottir et al., 2024). Similarly, adverse childhood experiences have been associated with poorer adult mental health and increased engagement in health-risk behaviors, highlighting the cumulative and cross-domain consequences of childhood adversity (Landa-Blanco et al., 2024). Expanded definitions of adverse childhood experiences that incorporate poverty, school bullying, and natural disasters further suggest that developmental risk cannot be understood solely through experiences occurring within the household (Sasaki et al., 2024). Children may also be indirectly affected by the unresolved adverse experiences of their parents, as parental trauma can influence caregiving behavior, emotional availability, and the emotional climate of the household (Decker et al., 2024). In addition, stress experienced during adolescence may predict both general stress and work-related stress in early adulthood, indicating continuity between adolescent adversity and later occupational adjustment (Winding et al., 2024).

Cognitive emotion regulation is one of the central psychological capacities through which adolescents interpret and manage stressful experiences. It refers to the cognitive processes and strategies used to monitor, evaluate, modify, or maintain emotional responses. Adaptive strategies, such as positive reappraisal, acceptance, planning, and

perspective-taking, can help adolescents reduce emotional distress and respond constructively to adversity. In contrast, maladaptive strategies, including rumination, catastrophizing, self-blame, and persistent suppression, may intensify negative affect and contribute to psychological problems. Emotion regulation undergoes substantial development during adolescence because of ongoing changes in cognitive control, social sensitivity, autonomy, and emotional reactivity (Fombouchet et al., 2023). However, the development of effective regulation is not automatic and may depend on family relationships, cognitive resources, social learning, and opportunities to practice adaptive coping. Daily-life research indicates that affective inhibition, cognitive control, and physiological regulation contribute to the dynamic regulation of emotions among adolescents (Debra et al., 2024). Adolescents exposed to chronic stress may find it more difficult to inhibit impulsive responses, reframe negative experiences, or recover from emotionally activating situations. Working adolescents may therefore rely more heavily on avoidance, suppression, or other short-term regulatory strategies when confronting occupational demands, financial pressure, social stigma, or unsafe environments.

Family functioning is particularly important in the development of emotion-regulation competencies. Developmentally supportive families provide adolescents with emotional security, predictable boundaries, opportunities for communication, and models of constructive coping. Conversely, conflict, neglect, inconsistent caregiving, and poor family problem-solving may undermine adaptive regulation. Research comparing adolescents with conduct disorder and their typically developing peers has demonstrated meaningful associations between developmental family functions and cognitive emotion regulation (Bakht Shokuhi et al., 2025). Parental psychological flexibility may also affect children's behavior through the mediation of children's emotion-regulation abilities, suggesting that regulatory patterns are embedded within family systems rather than existing solely as individual characteristics (Ren et al., 2022). For working adolescents, family economic hardship may require early assumption of adult responsibilities, while parental stress may reduce the availability of emotional guidance and support. These circumstances may impair the acquisition of adaptive emotion-regulation strategies and increase vulnerability to anxiety, behavioral difficulties, interpersonal conflict, and reduced well-being.

The importance of cognitive emotion regulation is further supported by studies conducted under conditions of widespread stress. During the COVID-19 pandemic, maladaptive emotion-regulation strategies were associated with greater psychological disturbance and anxiety among students, indicating that regulatory style can shape responses to uncertain and threatening environments (Sanaei et al., 2023). Cognitive emotion regulation has also been linked to resilience, coping strategies, and anxiety among individuals who experienced COVID-19 infection, demonstrating that its effects may operate both directly and indirectly through coping processes (Sadri Damirchi et al., 2023). These findings are relevant to working adolescents because their daily lives may involve persistent uncertainty, limited control, and repeated exposure to stressful events. Importantly, emotion regulation is modifiable. A systematic review of interventions designed to improve emotion regulation across children, adolescents, and adults found that structured psychological programs can strengthen regulatory competencies, although effects vary according to the population, intervention model, and outcome measure (Lancastle et al., 2024). Identifying groups with lower levels of cognitive emotion regulation is therefore essential for the development of targeted preventive and therapeutic interventions.

Hope is another major psychological resource in adolescence. Within hope theory, hope is commonly understood as a goal-directed cognitive and motivational system involving agency, or the perceived capacity to initiate and sustain movement toward goals, and pathways, or the perceived ability to identify workable routes to those goals. Hope enables adolescents to interpret obstacles as challenges that can be managed rather than as definitive evidence of failure. A review of positive youth development across non-Western and culturally diverse settings suggests that hope is associated with resilience, adaptive functioning, educational engagement, and constructive future orientation (Bowers & Bowers, 2023). Hope may also extend beyond personal achievement and contribute to prosocial attitudes and behaviors that benefit other people and communities (Schornick et al., 2023). Nevertheless, hope is shaped by social and material conditions. Adolescents whose goals are repeatedly blocked by poverty, exclusion, unsafe work, educational deprivation, or family instability may experience diminished agency and perceive fewer pathways toward a desirable future.

The meaning of hope may be especially complex among adolescents living in unstable or marginalized conditions.

Research involving adolescents and young people from refugee backgrounds has shown that hope may be conceptualized through safety, belonging, education, family reunification, mobility, and the possibility of building a stable future (Dimoski et al., 2025). Among adolescents in Tanzania, hope for the future has likewise been associated with personal, family, educational, and social factors, indicating that hope is not merely an internal trait but also a response to perceived opportunity and support (Osman et al., 2024). For working adolescents, hope may be weakened when immediate survival demands displace long-term educational or occupational goals. At the same time, some working adolescents may retain high hope when they perceive their work as meaningful, believe that it contributes to family welfare, or have access to supportive adults and realistic opportunities for advancement. Thus, assessing hope among working adolescents can reveal whether their difficult circumstances are associated with a reduced sense of agency, limited perceived pathways, or both.

Hope has important implications for subsequent health and well-being. Longitudinal evidence indicates that higher hope during adolescence predicts a range of favorable outcomes in adulthood, including better psychological well-being, stronger social functioning, healthier behaviors, and greater life satisfaction (Long et al., 2024). Hope is also amenable to intervention. A randomized controlled trial of a hope-focused intervention delivered to adolescents by trained paraprofessionals demonstrated that structured programs can cultivate hopeful thinking and related psychological strengths (Scioli et al., 2025). Such findings are particularly relevant for vulnerable adolescents because hope-based interventions may help them formulate attainable goals, identify alternative pathways, strengthen problem-solving, and maintain motivation despite environmental constraints. However, effective intervention requires an understanding of whether working adolescents differ from non-working adolescents in their baseline levels of hope and how hope is related to other psychological capacities.

Psychological flexibility refers to the ability to remain in contact with present experiences, including difficult thoughts and emotions, while selecting behaviors that are consistent with personal values and situational demands. A psychologically flexible individual can modify ineffective behavioral patterns, tolerate distress without excessive avoidance, and continue pursuing meaningful goals despite internal discomfort (Cherry, 2023). Psychological flexibility is therefore broader than the absence of distress; it reflects

the capacity to adaptively respond to changing contexts. Daily-life studies have demonstrated that psychological flexibility is associated with cognitive-affective processes and more adaptive responses to emotional experiences among young adults (Westhoff et al., 2024). Among adolescents, psychological flexibility has also been connected with learning engagement, suggesting that flexible responding may support persistence, motivation, and adaptive participation in educational activities (Yue & Zhang, 2025). Working adolescents may have fewer opportunities for consistent schooling and may face rigid external demands that restrict autonomous, values-based action. Repeated exposure to uncontrollable stress may encourage experiential avoidance, emotional suppression, and inflexible coping, thereby reducing psychological flexibility.

Psychological flexibility is closely related to cognitive emotion regulation and mental health. Evidence from clinical populations indicates that psychological flexibility and cognitive emotion-regulation strategies are jointly associated with mental health outcomes, suggesting that these constructs may represent complementary aspects of adaptive functioning (Hussain et al., 2023). Cognitive emotion regulation primarily concerns how individuals cognitively modify emotional experiences, whereas psychological flexibility concerns the broader capacity to remain open to experience and adapt behavior in accordance with values and situational requirements. An adolescent may possess knowledge of adaptive cognitive strategies but remain behaviorally inflexible when confronted with stress, or may display flexibility despite experiencing strong negative emotions. Examining both constructs therefore provides a more comprehensive account of psychological adaptation. Among working adolescents, reduced flexibility may manifest as difficulty adjusting to school demands, limited problem-solving in occupational contexts, withdrawal from supportive relationships, or persistence in ineffective coping patterns.

Quality of life provides an overarching framework for evaluating how adolescents experience their physical, emotional, social, and educational functioning. It captures dimensions of well-being that may not be adequately represented by symptom-based measures alone. In youth-care settings, quality-of-life assessment has been recognized as essential for understanding adolescents' needs, strengths, relationships, participation, and perceived satisfaction with life domains (Swerts et al., 2023). Health-related quality of life is also sensitive to the effects of chronic illness, injury,

disability, and functional impairment among children and adolescents (Sargenius et al., 2025). For working adolescents, quality of life may be influenced by fatigue, occupational injury, limited leisure, interrupted education, social exclusion, family financial strain, and inadequate access to health and welfare services. Iranian evidence has shown that social support is related to the quality of life of working children, particularly during periods of widespread social disruption such as the COVID-19 pandemic (Nazoktabar & Behbahani, 2022). This finding underscores the potential protective role of family, peers, schools, welfare organizations, and community institutions in mitigating the adverse effects of child labor.

Cognitive emotion regulation, hope, psychological flexibility, and quality of life are theoretically distinct but functionally interrelated. Adaptive cognitive emotion regulation may reduce emotional distress and help adolescents reinterpret difficult experiences, while psychological flexibility may enable them to tolerate unavoidable discomfort and choose behaviors aligned with meaningful goals. Hope may provide the motivational energy and perceived pathways required to sustain such goal-directed action, whereas quality of life reflects the broader consequences of these psychological capacities within physical, emotional, social, and educational domains. A working adolescent who can cognitively reappraise adversity, remain psychologically flexible, maintain realistic hope, and access supportive relationships may experience better quality of life despite socioeconomic hardship. Conversely, chronic stress, limited opportunity, maladaptive regulation, reduced flexibility, and diminished hope may interact to produce lower well-being. Despite the importance of these constructs, they are often investigated separately, and comparatively little attention has been paid to their simultaneous assessment among working and non-working male adolescents within the same sociocultural setting.

Accordingly, the aim of the present study was to compare cognitive emotion regulation, hope, psychological flexibility, and quality of life between male working adolescents and non-working male adolescents.

2. Methods and Materials

2.1. Study Design and Participants

This study compared cognitive emotion regulation, hope, psychological flexibility, and quality of life between male working adolescents and non-working male adolescents. In terms of its objective, the study was fundamental, and in

terms of its data-collection method, it employed a descriptive causal-comparative design. The statistical population consisted of all male working adolescents aged 12–18 years residing in Khorramabad, Iran, during 2023–2024 ($N = 160$), whose names and records were registered with the Welfare Organization of the city.

G*Power software was used to determine the sample size required for two independent groups and the comparison of four variables. The results indicated that the power analysis for a multivariate analysis of variance required a minimum sample size of 30 participants to achieve a minimum statistical power of .80, with an alpha level of .05 and a medium effect size ($d = 0.50$). These participants were selected through simple random sampling.

The variables examined in this study included membership in the group of male working adolescents, cognitive emotion regulation, hope, psychological flexibility, and quality of life. Four questionnaires were used to assess these variables and collect the data: Gross's Cognitive Emotion Regulation Questionnaire (Gross, 2003), Snyder's Hope Scale (Snyder, 2006), the Psychological Flexibility Questionnaire developed by Bond et al. (2011), and the Pediatric Quality of Life Inventory, or PedsQL.

To comply with ethical principles and protect the participants' privacy and confidentiality, identifying information, including participants' first and last names, was not recorded on any of the four questionnaires. Furthermore, to prevent errors in the statistical analyses, each participant was assigned a unique identification code.

After the research topic had been approved by the university and the necessary authorizations had been obtained, the implementation of the study commenced. The researcher visited the Welfare Organization of Khorramabad in person and initiated the data-collection process in coordination with the relevant officials.

The list of male working adolescents aged 12–18 years whose records were registered with the organization was considered the statistical population. With the cooperation of the Welfare Organization's personnel, eligible adolescents were invited to the organization's office. Before questionnaire administration began, written informed consent was obtained from the parents or legal guardians of the adolescents. The questionnaires were subsequently administered to the participants in person. The researcher remained present throughout the administration process to provide the necessary guidance in the event of any ambiguity. To comply with ethical principles, the participants' names and personal information were not

recorded, and each respondent was assigned a unique identification code. The data-collection process commenced on January 24, 2024, and continued until May 1, 2024. Participants in the control group, consisting of non-working male adolescents, were also selected through simple random sampling from secondary schools in Khorramabad. After informed consent had been obtained, these participants were assessed using the same procedure. The questionnaires were distributed and completed in a quiet environment free from distracting factors to preserve the accuracy of the responses. After the fieldwork stage had been completed, the collected data were entered into SPSS for statistical analysis. All stages of the study were conducted in accordance with ethical guidelines for research in the humanities and social sciences.

2.2. Measures

Snyder's Hope Scale is a 30-item measure designed for children and adolescents by Snyder (2006). The scale consists of the Children's Hope Scale and the domains of schoolwork, family, safety, and recreation and play. Responses to the Children's Hope subscale are rated on a continuum ranging from 1 (*never*) to 6 (*always*). Responses to the other subscales are rated on a continuum ranging from 1 (*completely false*) to 6 (*completely true*). The total hope score is calculated by summing the scores for the four subscales. Therefore, total scores range from 36 to 180. The Children's Hope Scale is a six-item instrument that measures agency, pathways, and overall hope among children and adolescents. Some researchers have stated that it is currently one of the most widely used measures of adolescent hope and has clearly defined operational components of pathways thinking and agency thinking. The scale was initially developed for children aged 7–16 years; however, subsequent validation studies indicated that it is also appropriate for young people up to 19 years of age. In a study conducted by Golzareh (2007) among 660 female students in Tehran Province, the reliability of Snyder's Hope Scale was evaluated using internal consistency, and a Cronbach's alpha coefficient of .89 was obtained. In the present study, Cronbach's alpha coefficients for the overall Hope Scale and the agency-thinking and pathways-thinking subscales were .877, .823, and .724, respectively. Because all these coefficients exceeded .70, the Hope Scale and its subscales were considered to possess adequate reliability and validity.

The Emotion Regulation Questionnaire for Children and Adolescents (CA-ERQ) was developed by Gross in 2003.

The questionnaire consists of 10 items that measure two general emotion-regulation strategies: cognitive reappraisal and expressive suppression. Six items assess the cognitive-reappraisal strategy, whereas four items assess the expressive-suppression strategy. Each item is rated on a seven-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Gross reported satisfactory validity and reliability for the questionnaire, with an internal consistency coefficient of .73 and a test–retest reliability coefficient of .69 for both strategies. The questionnaire was standardized for Iranian samples by Lotfi et al. (2019). The calculated Cronbach's alpha coefficients were .81 for the total questionnaire and .79 and .68 for the cognitive-reappraisal and expressive-suppression factors, respectively. In the present study, Cronbach's alpha coefficients for the overall Cognitive Emotion Regulation Questionnaire and the expressive-suppression and cognitive-reappraisal subscales were .888, .843, and .839, respectively. Because all these values exceeded .70, the Cognitive Emotion Regulation Questionnaire and its subscales were considered to have adequate reliability and validity.

The Psychological Flexibility Questionnaire was developed by Bond et al. (2011) and consists of seven items. The items are scored on a seven-point Likert scale, with higher scores indicating greater psychological flexibility. Previous studies have demonstrated that the instrument possesses satisfactory reliability, validity, and construct validity. The developers of the scale reported a Cronbach's alpha coefficient of .84 and test–retest reliability coefficients of .81 and .79 over intervals of 3 and 12 months, respectively. In Iran, the questionnaire was translated and standardized, and its reliability was evaluated using Cronbach's alpha. Its validity was also confirmed through exploratory factor analysis (Imani, 2019). Data were analyzed using an independent-samples *t* test. In the present study, the Cronbach's alpha coefficient for the Psychological Flexibility Scale was .872. Because this value exceeded .70, the Psychological Flexibility Scale was considered to possess adequate reliability and validity.

The Pediatric Quality of Life Inventory (PedsQL) was developed by Varni et al. in 2003. The purpose of the questionnaire is to assess children's quality of life. The instrument used in the present study was the fourth version of the questionnaire and is appropriate for individuals aged 2–16 years. Varni's Pediatric Quality of Life Inventory consists of 23 items and four components: physical functioning, emotional functioning, social functioning, and school functioning. In a study by Boustani (2013), face

validity was used to evaluate the validity of the questionnaire. The questionnaire's face validity was confirmed by experienced academic specialists in the social sciences, including the study supervisor and advisor. In the present study, Cronbach's alpha coefficients for the overall Quality of Life Questionnaire, physical functioning, emotional functioning, social functioning, school functioning, the overall psychosocial health subscale, and the overall physical health subscale were .917, .838, .843, .783, .802, .888, and .838, respectively. Because all these coefficients exceeded .70, the Quality of Life Questionnaire and its subscales were considered to possess adequate reliability and validity.

2.3. Data Analysis

The raw data were analyzed using SPSS version 23 and descriptive and inferential statistical methods. Descriptive statistical procedures were used to calculate indices such as the mean, standard deviation, median, and variance.

Multivariate analysis of variance was used to examine differences between the groups. Independent-samples *t* tests were also employed to compare each of the study variables separately between the two groups.

3. Findings and Results

The results of the statistical analyses indicated that the frequency of participants was equal across the two groups. Thirty participants (50%) were non-working adolescents, and 30 participants (50%) were working adolescents.

The findings concerning age indicated that the overall mean age of participants was 14.7436 years. The mean age of the non-working adolescent group (15.2941 years) was higher than that of the working adolescent group (14.3182 years). The oldest adolescent in each group was 18 years old, whereas the youngest adolescent in each group was 12 years old.

The statistical findings concerning the participants' educational status indicated that 90% of the participants ($n = 54$) were attending school. Of these participants, 50% of the total sample ($n = 30$) were non-working adolescents, and 40% ($n = 24$) were working adolescents. Furthermore, 10% of the total participants ($n = 6$) were deprived of education, all of whom belonged to the working-adolescent group.

The findings also indicated that 81.66% of the participants ($n = 49$) were healthy adolescents. Of the total sample, 43.33% ($n = 26$) were healthy non-working adolescents, whereas 38.33% ($n = 23$) were healthy working

adolescents. In addition, 18.33% of all participants ($n = 11$) had an illness or disability. Of the total sample, 6.66% ($n = 4$) were non-working adolescents with an illness or

disability, whereas 11.66% ($n = 7$) were working adolescents with an illness or disability.

Table 1

Descriptive Statistics for the Study Variables Among Working and Non-Working Adolescents

Variable	Participant Group	Mean	Standard Deviation	Maximum	Minimum	Range	Skewness/SE	Kurtosis/SE	<i>n</i>
Quality of life	Working adolescents	76.8000	1.61296	99.00	36.00	63.00	-0.644	-0.144	30
Quality of life	Non-working adolescents	92.8000	1.6539	100.00	36.00	64.00	-1.266	1.88	30
Quality of life	Total	89.8000	16.476	100.00	36.00	64.00	-0.881	0.090	60
Hope	Working adolescents	37.6000	1.79109	63.00	10.00	53.00	-0.237	-1.413	30
Hope	Non-working adolescents	49.7586	1.21763	64.00	26.00	38.00	-0.689	-0.761	30
Hope	Total	43.6833	16.29962	66.00	10.00	54.00	-0.731	-0.662	60
Psychological flexibility	Working adolescents	35.2333	1.20593	47.00	7.00	40.00	0.433	-0.834	30
Psychological flexibility	Non-working adolescents	21.2333	1.17552	47.00	7.00	40.00	0.568	-0.989	30
Psychological flexibility	Total	45.5333	11.97790	47.00	7.00	40.00	0.477	-0.909	60
Cognitive emotion regulation	Working adolescents	14.66665	1.83258	66.00	11.00	55.00	-0.262	-1.19	30
Cognitive emotion regulation	Non-working adolescents	33.5667	1.17172	62.00	12.00	50.00	-0.153	-0.176	30
Cognitive emotion regulation	Total	24.10175	15.26308	66.00	11.00	55.00	-0.302	—	—

According to the statistical results presented in Table 1, the ratios of the skewness and kurtosis coefficients to their standard errors ranged between -2 and $+2$ for quality of life,

psychological flexibility, hope, and cognitive emotion regulation. Therefore, the distributions of the data for these variables can be considered approximately normal.

Table 2

Levene's Test and Box's M Test for Examining the Homogeneity of Variances and Covariance Matrices

Variable	Levene's <i>F</i>	<i>df1</i>	<i>df2</i>	<i>p</i>	Box's <i>M</i>	<i>F</i>	<i>df1</i>	<i>df2</i>	<i>p</i>
Cognitive emotion regulation	7.676	1	58	.080	16.988	1.572	10	1.608	.108
Psychological flexibility	0.001	1	58	.981	—	—	—	—	—
Hope	9.977	1	58	.340	—	—	—	—	—
Quality of life	0.005	1	58	.946	—	—	—	—	—

According to the results presented in Table 2, the significance levels of Levene's tests were greater than .05. Therefore, the variances of the dependent variables could be regarded as sufficiently homogeneous.

The results of Box's M test also indicated that its significance level was greater than .001. Therefore, Pillai's trace was used to interpret the results of the multivariate analysis of variance.

Table 3

Results of the Multivariate Tests Examining Differences Between the Groups in the Study Variables

Effect	Multivariate Statistic	Value	<i>F</i>	Hypothesis <i>df</i>	Error <i>df</i>	<i>p</i>	Effect-Size Index
Intercept	Pillai's trace	0.991	1.524	4.000	55.000	< .001	0.991
Intercept	Wilks' lambda	0.009	1.524	4.000	55.000	< .001	0.991
Intercept	Hotelling's trace	110.862	1.524	4.000	55.000	< .001	0.991
Intercept	Roy's largest root	110.862	1.524	4.000	55.000	< .001	0.991
Participant group: working and non-working adolescents	Pillai's trace	0.166	2.732	4.000	55.000	< .001	0.166
Participant group: working and non-working adolescents	Wilks' lambda	0.834	2.732	4.000	55.000	< .001	0.166
Participant group: working and non-working adolescents	Hotelling's trace	0.199	2.732	4.000	55.000	< .001	0.166
Participant group: working and non-working adolescents	Roy's largest root	0.199	2.732	4.000	55.000	< .001	0.166

As shown in both the intercept section and the section concerning the effect of the independent variable on the dependent variables in Table 3, the significance levels associated with all multivariate statistics were less than .001.

Therefore, significant differences existed between male working adolescents and non-working male adolescents in quality of life, psychological flexibility, hope, and cognitive emotion regulation.

Table 4

Results of the Tests of the Effects of the Independent Variable on the Dependent Variables

Source	Dependent Variable	Type III Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>	Reported Variance-Explanation Index
Corrected model	Cognitive emotion regulation	24.067	1	24.067	102.000	< .001	.954
Corrected model	Psychological flexibility	240.000	1	240.000	1.692	< .001	.879
Corrected model	Hope	2220.417	1	2220.417	9.572	< .001	.979
Corrected model	Quality of life	540.000	1	540.000	2.024	< .001	.938
Intercept	Cognitive emotion regulation	92355.267	1	92355.267	390.404	< .001	.871
Intercept	Psychological flexibility	32387.267	1	32387.267	228.392	< .001	.797
Intercept	Hope	114494.017	1	114494.017	493.561	< .001	.895
Intercept	Quality of life	382082.400	1	382082.400	1.432	< .001	.961
Participant group: working and non-working adolescents	Cognitive emotion regulation	24.067	1	24.067	102.000	< .001	.763
Participant group: working and non-working adolescents	Psychological flexibility	240.000	1	240.000	1.692	< .001	.985
Participant group: working and non-working adolescents	Hope	2220.417	1	2220.417	9.572	< .001	.764
Participant group: working and non-working adolescents	Quality of life	540.000	1	540.000	2.024	< .001	.854

The statistical results presented in Table 4 indicate that the significance level for all dependent variables was less

than .001. Therefore, the proposed model demonstrated an acceptable fit for all dependent variables.

The independent variable of participant group reportedly explained 95.4%, 87.9%, 97.9%, and 93.8% of the variance

in cognitive emotion regulation, psychological flexibility, hope, and quality of life, respectively.

Table 5

Results of the Regression Diagnostic Test for Determining the Predictability of the Study Variables

Criterion Variable	Predictor Variable	Unstandardized Coefficients, <i>B</i>	Standard Error	Standardized Coefficient, β	<i>t</i>	<i>p</i>	Model <i>F</i>	Explained Variance
Psychological flexibility	Participant groups	73.593 0.781	13.24745	.554	20.576 9.274	< .001 < .001	86.006, <i>p</i> < .001	$R^2 = .307$ Adjusted $R^2 = .304$
Quality of life	Participant groups	12.043 0.746	9.06200	.597	4.203 10.357	< .001 < .001	107.274, <i>p</i> < .001	$R^2 = .397$ Adjusted $R^2 = .353$
Hope	Participant groups	58.028 1.227	11.42142	.696	13.517	< .001 < .001	192.697, <i>p</i> < .001	$R^2 = .696$ Adjusted $R^2 = .485$
Cognitive emotion regulation	Participant groups	52.469 0.974	9.63289	.647	12.792	< .001 < .001	162.857, <i>p</i> < .001	$R^2 = .647$ Adjusted $R^2 = .439$

The statistical results of the regression diagnostic analysis presented in Table 5 indicate that, among the variables examined in the study, hope had the highest predictability, with an adjusted explained-variance percentage of 48.5%.

4. Discussion and Conclusion

The present study compared cognitive emotion regulation, hope, psychological flexibility, and quality of life between male working adolescents and non-working male adolescents. The findings indicated statistically significant differences between the two groups across all four psychological and well-being variables. Non-working adolescents obtained higher scores in quality of life, hope, and cognitive emotion regulation than working adolescents. The groups also differed significantly in psychological flexibility, indicating that participation in child labor and the broader conditions associated with it are related to adolescents' capacity to adaptively manage internal experiences and respond to environmental demands. Taken together, these findings suggest that working adolescents constitute a psychologically vulnerable group whose daily exposure to economic pressure, occupational demands, educational disruption, social marginalization, and reduced developmental opportunities may undermine important personal resources. The multivariate findings further showed that group membership was associated with the combined pattern of the dependent variables, supporting the assumption that working status is not related to only one

isolated psychological outcome but corresponds to a broader profile of emotional, motivational, adaptive, and quality-of-life differences.

The lower quality of life observed among working adolescents is consistent with studies emphasizing the multidimensional consequences of child labor and socioeconomic deprivation. Quality of life in adolescence encompasses physical functioning, emotional well-being, social relationships, and school functioning; therefore, the lower scores of working adolescents may reflect simultaneous difficulties across several areas of daily life. Working adolescents may experience physical fatigue, occupational injuries, limited access to recreation, reduced school participation, family financial strain, and social stigma. Jayawardana et al. showed that child labor has long-term adverse associations with adolescent mental health and that these consequences are particularly pronounced among young people exposed to socioeconomic disadvantage (Jayawardana et al., 2023). Similarly, hazardous child labor has been associated with poorer psychosocial functioning and a higher likelihood of school dropout, both of which can directly reduce adolescents' perceived quality of life (Thi et al., 2023). The present findings also agree with evidence indicating that poverty restricts access to safe housing, education, health care, nutrition, and developmentally appropriate opportunities (Oppenheim, 2024). Because these resources are central components of well-being, their absence can negatively affect adolescents' satisfaction with

their physical, emotional, social, and educational circumstances.

The quality-of-life difference between the groups may also be explained by the interaction of family conditions, social support, and socioeconomic status. Research has demonstrated that family structure and socioeconomic resources are associated with children's and adolescents' mental health, particularly when economic hardship reduces parental availability and increases household stress (Gruning Parache et al., 2024). Working adolescents often enter the labor market because of family poverty, parental unemployment, family disruption, or the need to contribute to household income. Although their work may be perceived as necessary, the responsibilities imposed on them may be incompatible with their developmental needs. Iranian findings have also indicated a positive relationship between social support and quality of life among working children, suggesting that the availability of emotional and instrumental support can mitigate some of the negative effects of labor and deprivation (Nazoktabar & Behbahani, 2022). The lower quality-of-life scores found in the present study may therefore reflect not merely employment itself but a cumulative pattern of limited social protection, restricted educational opportunity, unstable family conditions, and inadequate access to recreational and health-promoting resources. This interpretation is consistent with evidence that quality of life among adolescents is shaped by age, mental well-being, social context, and the structure of relationships surrounding the adolescent (Cilar Budler & Stiglic, 2023; Magiera & Pac, 2022).

The findings concerning hope showed that working adolescents had significantly lower hope than non-working adolescents. Hope is a goal-directed capacity involving both agency, or the motivation to pursue goals, and pathways, or the perceived ability to identify routes toward achieving them. The lower level of hope among working adolescents may be attributed to repeated exposure to blocked opportunities. Adolescents who must work may experience interrupted schooling, limited occupational mobility, restricted social participation, and uncertainty regarding their future. These conditions may weaken their belief that personal effort can lead to meaningful outcomes and reduce the number of pathways they perceive as available. The result is consistent with the literature showing that hope promotes resilience, educational engagement, positive youth development, and adaptive functioning in culturally diverse contexts (Bowers & Bowers, 2023). Adolescents with higher hope are more likely to set realistic goals, persist when

difficulties arise, and generate alternative strategies when their initial plans are obstructed. In contrast, working adolescents may repeatedly encounter structural barriers that cannot easily be overcome through individual effort, thereby weakening both agency and pathways thinking.

The lower hope of working adolescents can also be understood in light of studies conducted among socially vulnerable groups. Research among adolescents and youth from refugee backgrounds has shown that hope is strongly connected to safety, belonging, education, family stability, and the perceived possibility of constructing a better future (Dimoski et al., 2025). Similar findings indicate that hope for the future among adolescents is associated with family support, educational access, social conditions, and perceived opportunity (Osman et al., 2024). These studies support the view that hope is not exclusively an internal personality characteristic; rather, it is partly produced and sustained by the opportunities available within the adolescent's environment. Working adolescents who encounter poverty, occupational exploitation, unstable schooling, and limited social mobility may find it difficult to maintain a strong future orientation. The present finding is particularly important because longitudinal research has shown that hope during adolescence predicts better health, psychological well-being, social functioning, and life satisfaction in adulthood (Long et al., 2024). Consequently, reduced hope among working adolescents may represent not only a current emotional difficulty but also a risk factor for subsequent developmental disadvantage. At the same time, evidence that hope can be strengthened through structured interventions suggests that this vulnerability is potentially modifiable (Scioli et al., 2025).

The finding that non-working adolescents had more favorable cognitive emotion-regulation scores is also consistent with developmental and environmental explanations. Cognitive emotion regulation involves the strategies individuals use to understand, reinterpret, and manage emotional experiences. Adolescence is a period in which these capacities continue to develop alongside executive control, social cognition, and emotional awareness (Fombouchet et al., 2023). Adaptive strategies, such as cognitive reappraisal, positive refocusing, and planning, require sufficient cognitive resources, emotional safety, and opportunities for reflective problem-solving. Working adolescents, however, may be exposed to chronic stressors that encourage immediate survival-oriented responses rather than reflective regulation. Occupational pressure, conflict with employers or customers, financial responsibility, social

humiliation, physical fatigue, and fear of job loss may increase reliance on suppression, avoidance, rumination, or catastrophizing. Daily-life evidence has shown that cognitive control and affective inhibition are closely related to emotion-regulation dynamics during adolescence (Debra et al., 2024). When stress is persistent and opportunities for recovery are limited, adolescents may have greater difficulty inhibiting automatic reactions and reframing negative events.

Family processes may further explain the difference in cognitive emotion regulation between the two groups. Developmental family functions, including emotional responsiveness, communication, role organization, and supportive problem-solving, are closely associated with adolescents' cognitive emotion-regulation patterns (Bakht Shokuhi et al., 2025). Families experiencing severe financial strain may have fewer emotional resources available for supportive parenting, and working adolescents may be required to assume adult-like responsibilities prematurely. Parental psychological flexibility also influences children's behavioral adjustment through children's emotion-regulation capacities (Ren et al., 2022). Therefore, reduced cognitive emotion regulation among working adolescents may partly reflect both direct exposure to stressful work conditions and indirect exposure to family stress, inconsistent caregiving, or limited emotional guidance. Studies conducted during the COVID-19 pandemic similarly showed that maladaptive cognitive emotion regulation was associated with anxiety and psychological disturbance among students and that coping processes mediated some of these relationships (Sadri Damirchi et al., 2023; Sanaei et al., 2023). These findings support the interpretation that cognitive emotion regulation functions as a central mechanism through which stressful environments influence psychological well-being.

The significant difference in psychological flexibility between working and non-working adolescents indicates that the two groups also differ in their broader capacity to adapt to internal and external demands. Psychological flexibility involves remaining aware of present experiences, accepting difficult thoughts and emotions without excessive avoidance, and selecting behavior in accordance with personal values and situational requirements. It is therefore distinct from simply controlling or eliminating negative emotions. Adolescents exposed to repeated uncontrollable stress may develop rigid patterns of avoidance, suppression, withdrawal, or impulsive action. Working adolescents frequently function in environments where they have limited

autonomy and must respond to the immediate expectations of adults, employers, or family members. These circumstances may interfere with the development of flexible, self-directed behavior. Psychological flexibility has been associated with more adaptive cognitive-affective processes in daily life (Westhoff et al., 2024) and with stronger learning engagement among adolescents (Yue & Zhang, 2025). Accordingly, differences in psychological flexibility may contribute to the educational and emotional disadvantages experienced by working adolescents.

The relationship between psychological flexibility and cognitive emotion regulation may also help explain the combined pattern of findings. Psychological flexibility enables individuals to tolerate difficult experiences while continuing to act in accordance with meaningful goals, whereas cognitive emotion regulation provides specific strategies for modifying emotional responses. Research has shown that these two constructs are jointly associated with mental health outcomes (Hussain et al., 2023). A working adolescent who lacks psychological flexibility may respond to distress through avoidance or rigid behavior, while limited adaptive cognitive regulation may make it difficult to reinterpret stressful circumstances or identify effective coping strategies. These difficulties may subsequently reduce hope and quality of life. Conversely, non-working adolescents may have greater access to supportive family and school environments that strengthen emotional learning, flexible problem-solving, goal setting, and social participation. The observed differences across all four variables therefore appear theoretically coherent rather than independent. Lower cognitive emotion regulation and psychological flexibility can weaken the adolescent's ability to manage adversity, reduced hope can undermine persistence and future planning, and these processes can collectively diminish perceived quality of life.

The findings may also be interpreted through the cumulative-adversity framework. Working adolescents are often exposed not to a single risk factor but to multiple interconnected adversities, including poverty, family conflict, nutritional deficiencies, unsafe neighborhoods, interrupted education, and occupational exploitation. Early-life stress can have sustained effects on brain development and emotional functioning (Takatsuru & Miyagawa, 2023), while adverse childhood experiences are associated with long-term mental health problems (Danielsdottir et al., 2024). Expanded models of childhood adversity further recognize poverty, bullying, and environmental disasters as developmentally significant exposures (Sasaki et al., 2024).

Trauma among street-connected children has also been shown to affect both individual psychological functioning and family relationships (Daniel, 2025). In addition, poverty-related nutritional and environmental conditions may influence cognitive and neurobiological development (Hartjen et al., 2024; Mualem et al., 2024). These findings provide a broader context for the present results: the lower emotional and psychological functioning of working adolescents should not be interpreted as an individual deficiency but as a probable consequence of cumulative structural and developmental disadvantage.

The present results further emphasize the importance of evaluating adolescent work according to its quality and context. Not all forms of adolescent work necessarily produce adverse outcomes. Developmentally appropriate, voluntary, safe, and time-limited work may support responsibility and skill development. However, the quality of work and its compatibility with education are critical determinants of whether employment is beneficial or harmful (Staff & Mortimer, 2024). The adolescents examined in the present study were registered with a welfare organization, suggesting that many may have experienced socioeconomic vulnerability requiring institutional support. Their lower levels of quality of life, hope, and cognitive emotion regulation are therefore likely to reflect the interaction of work with poverty and social disadvantage rather than employment alone. The results also reinforce calls for greater investment in adolescent well-being because psychological resources developed during this stage have consequences extending into adulthood (Ross et al., 2022). Preventive interventions that strengthen emotion regulation, hope, and psychological flexibility may be especially valuable, as systematic evidence indicates that emotional-regulation competencies can be improved through structured programs (Lancastle et al., 2024).

A limitation of the present study was its causal-comparative and cross-sectional design, which does not permit definitive conclusions regarding causal relationships between working status and the psychological variables. The sample was restricted to male adolescents in Khorramabad, which limits the generalizability of the findings to female working adolescents, adolescents in rural communities, and working children from other cultural or socioeconomic contexts. The study also relied on self-report questionnaires, and the responses may have been influenced by social desirability, literacy level, fatigue, misunderstanding of items, or fear regarding the consequences of disclosure. Important contextual variables, including the type of work,

daily working hours, occupational hazards, family income, duration of employment, parental education, school attendance, exposure to violence, and access to social support, were not included in the analyses. Furthermore, the interpretation of psychological-flexibility scores should be made cautiously because different measures and scoring systems may operationalize greater scores as either flexibility or psychological inflexibility.

Future studies should employ longitudinal designs to examine how entry into work, duration of employment, and changes in occupational conditions influence emotion regulation, hope, psychological flexibility, and quality of life over time. Researchers should recruit larger and more diverse samples that include girls, rural adolescents, street-connected children, and adolescents working in different occupational sectors. Future investigations should also distinguish between safe, voluntary adolescent employment and hazardous or exploitative child labor. Mixed-method studies could provide deeper insight into how working adolescents interpret their responsibilities, future prospects, emotional experiences, and family relationships. Structural equation modeling may be used to test whether cognitive emotion regulation and psychological flexibility mediate the relationship between adverse working conditions and quality of life and whether social support, school connectedness, or family functioning moderates these relationships. Intervention studies are also needed to evaluate the effectiveness and durability of programs targeting hope, adaptive emotion regulation, flexibility, resilience, and educational re-engagement.

In practice, welfare organizations, schools, municipalities, health centers, and community-based institutions should establish coordinated support systems for working adolescents and their families. Screening programs should identify adolescents with low hope, poor quality of life, maladaptive emotion regulation, or psychological inflexibility and refer them to appropriate psychological and social services. Group-based interventions can teach cognitive reappraisal, problem-solving, emotional awareness, distress tolerance, values clarification, goal setting, and pathways planning. Educational support, flexible school schedules, vocational protection, nutritional assistance, family counseling, and financial support for vulnerable households should accompany psychological interventions because individual training cannot fully compensate for structural deprivation. Professionals should also involve parents or legal guardians wherever possible, strengthen adolescents' supportive relationships, and ensure

that services are delivered in a non-stigmatizing and developmentally appropriate manner.

Authors' Contributions

All authors significantly contributed to this study.

Declaration

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

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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Declaration of Interest

The authors report no conflict of interest.

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Ethical Considerations

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

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