


RESEARCH ARTICLE

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The mental health needs of youth involved in the juvenile justice system in Jordan

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Abstract

Background Existing evidence elucidates the psychological dimensions of juvenile delinquency, yet the need for cross-cultural validation remains critical to deepen and diversify our understanding of delinquency across different settings. Properly assessing and addressing the mental health needs of youth involved in the justice system (YIJS) is a strategic step that can help design and implement comprehensive responses to produce healthier youth who are less likely to act out and commit crimes. To this aim, this study explored several key mental health dimensions among YIJS who were incarcerated in rehabilitation centers located in Jordan.

Methods A paper survey was used to collect data from YIJS who were incarcerated in five rehabilitation centers located in three major provinces in Jordan [Amman ($n=89$, 59%), Irbid ($n=50$, 33%), and Zarqa ($n=12$, 8%)]. A total of 158 YIJS (98% boys) completed the study questionnaire, which included sociodemographic and health measures, as well as measures assessing adolescent depression, anxiety, self-esteem, academic stress, and family relationships.

Results Among the surveyed Jordanian YIJS, 36% reported frequent suicide ideation, 57% experienced moderate to severe depressive symptoms, and 13% displayed elevated anxiety levels, while 47% faced high stress levels primarily due to academic pressures. Further, 7% had a family member who attempted suicide, and 5% had a family member who died by suicide. Poor family dynamics were also revealed among YIJS, with about 41% feeling a lack of cohesion, 60.3% encountering frequent conflicts, and 32.8% feeling restricted in expressing themselves openly within their families. Almost 82% reported scores indicating normal self-esteem, 10% low self-esteem, and 8% high self-esteem. Participants with high self-esteem exclusively reported theft, whereas drug use was the most common offense among those with low self-esteem. Depression scores were significantly related to self-esteem and educational stress scores.

Conclusions Jordanian YIJS are particularly vulnerable and under studied population. This study assists with addressing a critical evidence gap concerning the mental health needs of incarcerated youth residing outside the regularly studied context of high-income countries. The findings call for a comprehensive, culturally adapted approach that includes enhancing the juvenile justice system's focus on mental health services, educational support, and family engagement. Our study supports the adoption of the National Strategy for Juvenile Justice (2024–2028), which aims to foster a more rehabilitative and child-friendly justice system in Jordan. This approach not only aligns

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with global human rights standards but also addresses the specific needs and circumstances of Jordanian youth, promoting their overall well-being and reducing recidivism.

Keywords Culture, Incarceration, Juvenile delinquency, Recidivism

Introduction

Juveniles who commit delinquent acts enter the juvenile justice system with a paucity of protective factors and an accumulation of risk factors which predispose them to significant psychological and behavioral disruption. In fact, more than 70% of youth involved in the juvenile justice system (YIJS) have mental health problems that often go unseen and untreated (Barnert et al., 2016; Bronsard et al., 2016; Gretton & Clift, 2011; Jozefiak et al., 2016; Luna et al., 2024; Underwood & Washington, 2016; Yonek et al., 2019). Specifically, depression is notably pervasive with nearly half of YIJS meet the criteria for depressive disorders (Wakefield et al., 2019). Anxiety has also been linked to delinquency and offending. In fact, the few past decades of research have highlighted a complex, intertwined relationship among depression, anxiety and delinquency, with several studies suggesting a reciprocal influence. However, the longitudinal findings from Pittsburgh youth study (Jolliffe et al., 2019) present a clearer narrative, emphasizing that delinquency often precedes and potentially contributes to subsequent increases in depression and anxiety. Overall, although it remains unclear whether internalizing disorders such as depression and anxiety are causes, correlates, or consequences of delinquency, it is evident that a significant relationship exists between these psychological issues and delinquent behavior. This is a critical public health issue as without proper interventions, those juveniles may continue on the path of delinquency and eventually adult crime.

Stress is a primary risk factor for juvenile delinquency, with youth facing numerous challenges across different aspects of their lives, including academic pressures, career uncertainties, and complex relationships with family and peers. However, a significant portion of their stress can be attributed to school life (Jeon & Chun, 2017). Experiences such as being mocked at school or disliked by the peer group may be extremely stressful for children and adolescents (Lereya et al., 2015). Juvenile delinquency has been found to rise in association with low academic achievement. Previous studies have connected this relationship to several key factors, such as an unsupportive school environment, strained student-teacher interactions, truancy, negative peer influences, and early school dropout (Assink et al., 2015; Jeon & Chun, 2017).

Since the 1950s, with the emergence of interactionist social psychological theories, researchers have integrated studies of self-concept and similar constructs with traditional sociological approaches to better understand

deviant behavior. Significant attention has been given to the role of self-esteem in determining variations in human behavior, particularly in relation to maladaptive behaviors and psychological problems (Leary & Baumeister, 2000). Rosenberg (1979) theorized that self-esteem is a powerful causal factor of delinquency, even when initial levels of delinquency are held constant. This focus has deepened insights into how personal perceptions of self-worth interact with wider societal factors to influence behavior. A meta-analytic review of 25 years of evidence including 71,130 individuals confirmed that self-esteem is negatively associated with crime and delinquency (Mier & Ladny, 2018).

A global scoping review was recently published in the *Lancet* on the health of juveniles in detention (Borschmann et al., 2020). Synthesizing evidence from 245 studies, the review revealed that various mental health problems and disorder and health-risk behaviors are more common among adolescents in detention than among their peers who have not been detained. However, authors acknowledged a major limitation in the review that most retrieved studies (90% of original research studies and 100% of reviews) came from high-income countries, highlighting an urgent need for robust research examining the health of detained adolescents in low- and middle-income countries.

Contextualizing juvenile delinquency in Jordan

Jordan, as part of the Arab world, is deeply influenced by Arab cultural values and traditions, which shape various aspects of social life, including family, community, and individual behavior. The dominant religion in Jordan is Islam, practiced by the majority of the population, which further reinforces values of community cohesion, respect for authority, and support for social welfare. Jordan has a population of approximately 10 million, with a notably youthful demographic profile: 35% of the population is under the age of 14, 61% falls between the ages of 15 and 59, and only 4% is aged 60 or older (Jordan Department of Statistics, 2020).

The juvenile justice system in Jordan started in the early fifties; with the first juvenile law released in 1951. The term 'juvenile offender', also referred to as a 'child in conflict with the law', is used by the Jordanian law to refer to any individual below the age of eighteen who is alleged as, accused of, or recognized as having infringed the criminal law (AL-Tarawneh & Al-Maraziq, 2013). The Jordanian Juvenile Police Department, with 11 branches distributed around the country, was established in 2011.

In 2014, Jordan has made substantial reforms to its juvenile justice system, reflecting a commitment to align with international standards and to better protect the rights of children in conflict with the law. Key components of this reform include raising the minimum age of criminal responsibility to 12 years, and the provision of specialized juvenile courts and the appointment of trained professionals skilled in dealing with young offenders (UNICEF, 2018). The revised law introduced new roles such as a 'conciliation judge' to address disputes using alternative sanctions and an 'implementation judge' to oversee the enforcement of these alternatives. Despite these legal advancements, there have been some concerns about the effectiveness and fairness of the juvenile justice system in Jordan. Critics have raised concerns about the use of pre-trial detention, the lack of access to legal representation and counseling, and the need to improve rehabilitation services and reintegration programs for YIJS (UNICEF, 2018). The absence of robust juvenile justice frameworks and equitable access to justice often compels youth to seek resolution through informal justice mechanisms, which are predominantly utilized for family or personal matters (Hiil, 2017).

National reports indicated that the prevalence of YIJS recidivating and returning to the justice system is alarming. According to the Jordanian Ministry of Social Development, which governs the juvenile justice system, there is an increase in the number of offences recorded among Jordanians aged 12–18, with the vast majority being committed by male delinquents (98%) (Cited in UNICEF Jordan, 2018, p. 18). While no studies have been specifically conducted to explain these trends, earlier research provides some insights. Al-Matalka and Hussainat (2012) highlight that factors such as family size, economic hardship, lack of parental presence, familial discipline, the quality of the relationship between parents, and the relationship between children and parents significantly impact the social behavior and delinquency risk among Jordanian youth. It should be noted though that rising recidivism is not unique to Jordan juvenile system. In the United States, for example, almost half of youth released from juvenile justice facilities are found to re-enter confinement within three years of their release (United States Department of Education, 2016), and the rate is constantly increasing over years (Skustad, 2020). In Western Europe, the increase in incarceration rates has been less pronounced yet remains significant (Hayden, 2023).

A recent study on the characteristics of YIJS in Jordan (Dardas et al. 2022) highlights critical aspects of their daily lives and mental health. Notably, about 52% of these juveniles were not regularly attending school, and a significant portion engaged in substance use—70% were smokers, 26% consumed alcohol, and 15% used drugs. The study also sheds light on the influence of peers and

educational institutions, revealing that 42% of the juveniles reported that their peer groups encouraged them to engage in troublesome behaviors, while 74% believed that their schools had neither a positive nor a negative impact on their behavior. A range of behavioral issues have also been detected, including emotional lability, impulsivity, hyperactivity, inattention, and social problems, which are often critical markers of underlying psychological challenges. Despite these concerning health profiles, a striking 91% of those YIJS reported that they had never sought or received any psychological support (Dardas et al., 2022).

While the existing evidence elucidates the psychological dimensions of juvenile delinquency, the need for cross-cultural validation remains critical to deepen and diversify our understanding of delinquency across different settings. This is especially pertinent within Arab cultures, where familial expectations and the impact of a child's success or failure extend significantly to the family's reputation and parenting practices (Ahmad et al., 2013). In such context, acknowledging psychosocial issues related to a child's capabilities can attract social stigma and may adversely affect critical future life events, such as employment opportunities and marital prospects (Hijiawi et al., 2013). Furthermore, Arab adolescents who experience mental health problems have limited opportunities to receive proper care with minimal budget allocations for mental health services that remain significantly lower than what is necessary to promote mental wellness (Dardas et al., 2016; Okasha et al., 2012). Properly assessing and addressing the mental health needs of YIJS is a strategic step that can help design and implement comprehensive responses to produce healthier youth who are less likely to act out and commit crimes. To this aim, this study explored several key mental health dimensions among YIJS who were incarcerated in rehabilitation centers located in Jordan. This study comes in line with recommendations made by experts in the field (Nijdam-Jones et al., 2023; Ogunwale, Ndegwa, & Shepherd, n.d.; Shepherd, 2022) calling for a shift towards more inclusive research practices that better reflect the diversity of the populations served by mental health professionals. This involves urging professionals to integrate culturally informed perspectives into their research and practice. Such integration helps to bridge the gaps in mental health problems knowledge and practice across different cultural contexts and promotes a deeper understanding of phenomenological issues, unique manifestations of psychopathologies, and the impact of historical injustices on help-seeking behaviors.

Methods

Design

A paper survey was used to collect data from YIJS who were incarcerated in five rehabilitation centers located in three major provinces in Jordan [Amman ($n=89$, 59%), Irbid ($n=50$, 33%), and Zarqa ($n=12$, 8%)]. The psychologist and/or social worker in each selected center was required to collect the data from the juveniles and hand the completed questionnaires to the researcher at the end of collection. Parental consents were first obtained. Juveniles for whom parents provided informed consents received an envelope including (a) a cover page detailing the study's aims and procedures and participation rights; (b) contact information card for the researcher; (c) assent form, and (d) the questionnaires battery. They were asked to fill in the questionnaire and return it sealed to the psychologist. No names or personal identifiers were required. For juveniles who needed assistance with reading, the option to complete the survey via an interview was made available, ensuring that all participants could understand and engage fully with the questions. Those who did not wish to participate could either not receive the package, or return it later empty and sealed to the psychologists. All methods and procedures were reviewed and approved by (a) the Academic Research Committee at the University of Jordan.

Measures

Sociodemographic measures

The questionnaire gathered information related to participants' gender (male, female), age (years), number of siblings (numeric), family socioeconomic status (low, middle, high income), household members (numeric), parental marital status (married, separated, divorced, never married), school grade (numeric or educational stage), presence of a psychiatric disorder (yes, no; with a follow-up on type), presence of a medical health problem (yes, no; with a follow-up on type), family history of any psychiatric disorder (yes, no), previous personal suicidal attempts (yes, no), and previous suicidal attempts by a family member or friend (yes, no).

Reynolds adolescent depression scale-second edition (RADRS-2; Reynolds, 2004)

The RADRS-2 is a self-administered tool designed to evaluate depressive symptoms among adolescents aged 11 to 20. While it assesses the frequency of specific depressive symptoms, it does not serve as a diagnostic tool. The RADRS-2 includes 30 items divided into four subscales: Dysphoric Mood, Anhedonia/Negative Affect, Negative Self-Evaluation, and Somatic Complaints. Responses are given on a four-point Likert scale ranging from "1: almost never" to "4: most of the time." Total scores range from 33 to 120, with a threshold score of 77 indicating

elevated depressive symptoms. The instrument can typically be completed in about five minutes. Among a sample of adolescents, the scale demonstrated high internal consistency ($\alpha=0.93$; Reynolds, 2004). Subscale reliability was also robust, with coefficients between 0.80 and 0.87. The overall test-retest reliability was 0.85, with subscale values between 0.77 and 0.84, the lowest being for Somatic Complaints (Reynolds, 2004). A translated version has been tested with Jordanian youth in the general population (Qaddoura et al., 2022). In this study, the scale achieved a Cronbach's alpha of 0.88.

Spence children's anxiety scale (Spence, 1997)

The SCAS is comprised of 44 items plus one open-ended question. Of these, 38 items specifically relate to anxiety symptoms, while six are filler items to mitigate response bias. The scale captures seven dimensions of anxiety: separation anxiety, social anxiety, obsessive-compulsive symptoms, panic disorder, agoraphobia, generalized anxiety, and fear of physical harm. Responses are rated on a four-point Likert scale, with options ranging from "1: never" to "4: always." Psychometric evaluations have shown a high internal consistency for the SCAS (Spence, 1998; Stahlschmidt et al., 2019). This study used a validated Arabic version of the SCAS (<https://www.scaswebsite.com/>), with Cronbach's alpha for this study being 0.91.

Educational stress scale for adolescents (ESSA; Sun et al., 2011)

The ESSA assesses academic stress in adolescents in grades 7 through 12, consisting of 16 items covering five latent factors: Pressure from Study, Workload, Worry about Grades, Self-expectation, and Despondency. Responses are captured on a five-point Likert scale, from "1: strongly disagree" to "5: strongly agree," with higher scores indicating greater levels of stress. The ESSA has an internal consistency of 0.81 (Sun et al., 2011) and has shown predictive validity for mental health outcomes like depression and suicidality (Sun et al., 2011). The Arabic version, used with a Jordanian adolescent sample, demonstrated similar validity (Qaddoura et al., 2022). In the current study, Cronbach's alpha was 0.87.

Rosenberg self-esteem scale (SES; Rosenberg, 1965)

The SES is a 10-item measure assessing self-worth and self-acceptance, using a four-point response format from "1: strongly agree" to "4: strongly disagree." Total scores range from 10 to 40, with higher values reflecting higher self-esteem. The scale's internal consistency is reported at 0.89, and its test-retest reliability ranges between 0.85 (over one week) and 0.88 (over two weeks; Zaidi et al., 2015). In studies with Arabic-speaking populations, internal consistency has ranged from 0.71 (Kazarian,

2009) to 0.72 (Zaidi et al., 2015). In this study, the SES achieved a Cronbach's alpha of 0.65.

The brief family relationship scale (BFRS; Moos & Moos, 1994)
The BFRS is an adaptation of the 90-item Family Environment Scale (Moos & Moos, 1994) and includes three subscales—Cohesion, Expressiveness, and Conflict—each comprising 9 items. These subscales assess family support, openness in expressing opinions, and instances of conflict or anger. The BFRS has demonstrated strong psychometric properties in studies involving youth (Kiani Chelmardi et al., 2018; Fok et al., 2014). In this study, the scale achieved a Cronbach's alpha of 0.61.

Participants

Of the total accessible population of YIJS, 158 completed the study questionnaires (response rate = 87%). Of them, 13% were sentenced while the rest were remanded, with theft being the most frequently reported misdemeanor ($n = 29$, 18%). Other reported misdemeanors included drug dealing, violence and assaults. The vast majority of participants (98%) were boys, which representative of the current justice-involved youth population (UNICEF, 2018). Nearly half of the study participants (52%) were 17 years old, with a median age of 16 and age range from 12 to 17 years. The majority came from the central region of Jordan (58%). About 48% of these adolescents had an average GPA below 60%, which is a measure of poor academic performance. Additionally, 18% came from homes with divorced parents, and 40% were part of families with a monthly income between 151 and 300 Jordanian Dinars (\$212–420). Of note, the World Bank has set the poverty line per capita in Jordan at \$240 per month. Over half (52%) lived in large families, consisting of seven or more members. Mental health issues (primarily depression and anxiety) or chronic medical problems (e.g., Asthma, DM) were reported by 15–18% of the participants.

While there are no official statistics detailing all the variables for the exact same age group in the general population of Jordan, we could draw comparisons using available national surveys conducted on a similar

demographic (AlAzzam et al., 2021; Dardas et al., 2018a, b). Comparatively, our study sample of youth involved in the justice system exhibits certain distinct characteristics when contrasted with their peers in the broader community. For instance, our sample tends to have lower GPAs, lower family monthly incomes, and lower parental education levels. Additionally, the family size and the number of household members are generally larger than those observed in the general population of the same age.

Results

Participants' reports on study variables

The mean score for the depression was 65.96 (SD = 17.14), ranging from 3 to 103. Based on the RADS classification of depression severity, 46% of the YIJS reported severe depressive symptoms, 11% reported mild symptoms, and 11% reported moderate symptoms. The prevalence of moderate to severe depressive symptoms was 57% (Table 1). It should be noted that one item on the RADS assesses the presence of suicide ideation. Analyzing this item response showed that 36% of the YIJS reported having suicide ideation most of the time.

The study also collected data regarding suicide behavior among the juveniles' family and friends. Results revealed that a concerning percentage of juveniles reported exposure to suicide attempts and deaths: 7% had a family member who attempted suicide, and 5% had a family member who died by suicide. Furthermore, the incidence of suicide among friends was even higher, with 8% reporting that a friend attempted suicide and 10% experiencing a friend's death by suicide.

The mean score for anxiety was 37.77 (SD = 18.02), ranging from 0 to 89. Based on the SCAS scoring manual, T-scores were calculated. Accordingly, 13% of the participants had a T-score of 60 or more (top 15% or more) suggesting higher than normal anxiety, but not necessarily in the clinical range. For this reason, the term "elevated" anxiety is recommended by the SCAS authors. Standardized percentage scores for the six subscales showed that anxiety with obsessive-compulsive features had the highest scores at 36.75%, followed closely by generalized anxiety worries at 35%. Separation anxiety and panic agoraphobia are also significant, with 33.5% and 33.2% respectively (Fig. 1).

The mean score for educational stress was 42.51 (SD = 12.54), ranging from 6 to 80. About half of the sample (47%) had high stress scores. As per the distinct aspects of stress, pressure from study has the highest mean score at 11.49, indicating that students experience the most stress from academic demands compared to other areas, such as worrying about grades, self-expectation and despondency. Finally, the mean score for self-esteem was 20.62 (SD = 4.63), ranging from 1 to 32. Almost 82% reported scores indicating

Table 1 Depressive symptoms severity among Jordanian youth involved in the justice system ($n = 158$)

RADS scale and subscales Scores	(M ± SD)	Median	Range
Depression Total Scores	65.96 ± 17.14	66	3–103
Dysphoric Mood Scores	18.48 ± 5.07	18	2–32
Anhedonia-Negative Affect Scores	16.10 ± 4.88	17	1–27
Negative Self Evaluation Scores	16.10 ± 5.24	16	1–32
Somatic Complaint Scores	15.67 ± 4.80	16	1–26
Depression Severity	n (%)		
Mild	18 (11%)		
Moderate	18 (11%)		
Severe	74 (46%)		

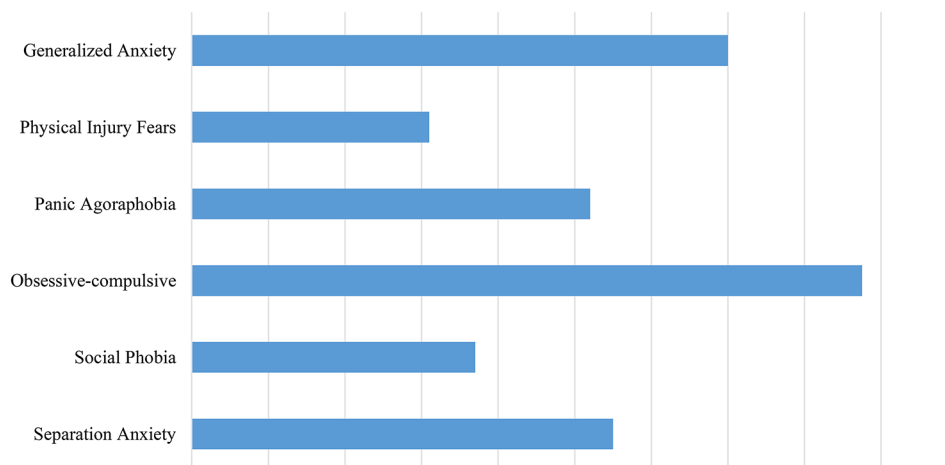


Fig. 1 Standardized percentage scores for the six subscales of the Spence Children's Anxiety Scale

Table 2 Incarcerated juveniles' report on anxiety, educational stress and self-esteem levels ($n = 158$)

Study Measure	(M ± SD)	Q1	Median	Q3	Range
Total Anxiety Score	52.80 ± 11.83	40	52	62	34–96
Separation Anxiety	8.04 ± 2.33	6	8	10	2–15
Social Phobia	7.61 ± 2.19	6	7	9	1–16
Obsessive-compulsive	8.82 ± 2.97	6	8	10	3–18
Panic Agoraphobia	11.96 ± 3.46	9	11	15	7–24
Physical Injury Fears	6.22 ± 1.91	5	5	7	3–13
Generalized Anxiety	8.41 ± 2.75	6	8	10	5–18
Educational Stress Total Score	42.51 ± 12.54	36	44	50	6–80
Pressure from study	11.49 ± 3.49	9	11	13	3–20
Workload	7.85 ± 2.88	6	8	10	2–15
Worry about grades	8.26 ± 3.01	6	8	10	1–15
Self-expectation	7.82 ± 3.03	6	8	10	1–15
Despondency	7.58 ± 2.72	6	8	9	1–15
Self-Esteem Total Score	20.62 ± 4.63	18	22	24	1–32

normal self-esteem, 10% low self-esteem, and 8% high self-esteem. Table 2 details the results for all scales and subscale.

Based on the BFR scale which yields scores ranging from 0 to 27, YIJS reported a mean score of 15.06 ($SD = 2.73$), ranging from 5 to 21. Nearly 41% of respondents indicated a lack of cohesion in their families. Over 60% reported experiencing frequent conflicts, while 32% reported a poor sense of open self-expression within their families.

Correlation between study variables among YIJS

Depression scores showed a significant and medium relationship with their self-esteem scores ($r = -.375$) and educational stress scores ($r = .407$). Total anxiety scores were not significantly related to the juveniles' depression, self-esteem, or educational stress scores (all $p > .05$). However, correlation analysis between the subscales showed

Table 3 Correlation between mental health variables among youth involved in the Jordanian juvenile system

Variable	<i>n</i>	Self-esteem	Educational stressors	Anxiety
Depression	160	−0.375**	0.407**	0.120
Self-esteem	159		−0.380**	−0.129
Educational stressors	156			0.131

Cohen's categorization related to the strength of association for both: "small" = .1–.3; and "medium" = .3–.5; and "large" = .5–1.0; and "very large" = 1.0–1.0. $p^* < .05$, $p^{**} < .01$

that self-esteem scores were significantly and negatively related to separation anxiety symptoms ($r = -.26$, $p < .001$). Table 3 presents the correlation matrix. In a separate correlational analysis, we examined the types of offenses committed by participants with high versus low self-esteem. Participants with high self-esteem exclusively reported theft, whereas drug use was the most common offense among those with low self-esteem.

Discussion

Culture can play an important role in shaping juvenile delinquency, both in terms of the risk factors that contribute to delinquent behavior (Bobbio et al., 2020) and the cultural factors that influence how delinquent behavior is perceived and addressed (Shepherd, 2022). The purpose of this study was to assess the mental health needs of YIJS who were incarcerated in rehabilitation centers in the context of Jordan. This investigation revealed some alarming findings. More than one third of the sample (36%) reported having suicide ideation most of the time, 57% reported moderate to severe depressive symptoms, 13% had elevated levels of anxiety, and 47% experienced high levels of stress emerging from academic sources. These findings are in line with previous studies reporting that juveniles ending in the justice system are at higher risk of developing depressive and anxiety symptoms, as

well as being diagnosed with depression and anxiety as a disorder (Alfonso, 2022; Jolliffe et al., 2019; Wakefield et al., 2019). There are numerous potential predisposing factors for depression and anxiety among YIJS, often stemming from complex and challenging backgrounds. Many of these young individuals come from turbulent home environments, have histories of trauma or abuse, or grapple with socioeconomic hardships that can predispose them to mental health struggles (Bobbio et al., 2020; Rathinabalan & Naaraayan, 2017). Adding to these realities, this study reports a significant prevalence of issues related to family dynamics within the sample, including a perceived sense of disconnection among family members, frequent conflicts and tension, and the inability to freely express personal thoughts and feelings. These issues can contribute to a less supportive and nurturing family environment, potentially affecting youth mental health and conduct. On the other hand, engaging in delinquent behavior frequently results in severe repercussions, including legal issues, social rejection, and academic setbacks, compounding their psychological burdens (Clark et al., 2003; Duran-Bonavila et al., 2017). These adverse experiences can heighten feelings of hopelessness and anxiety, and deepen depressive symptoms, creating a cyclical pattern of distress and behavioral problems.

Academic difficulties and stress are also significant factors in juvenile delinquency (Yukse & Solakoglu, 2016). YIJS often have poor school performance, low attachment to school, low literacy levels, and high rates of learning and behavioral disabilities (Assink et al., 2015; Blomberg & Pesta, 2017; Bender, 2012). The current sample of YIJS showed lower academic achievements compared to their peers in the general population, with a significant number having missed extensive periods of schooling. Apparently, the identification of risk factors across various domains underscores the complex interplay influencing juvenile delinquency. Particularly within the domain of school, stresses related to academic pressures and uncertainties about future careers are significant (Assink et al., 2015). This aligns with the broader understanding presented by the Risk-Need-Responsivity (RNR) model (Andrews & Bonta, 2010) that school-related stress is a critical component contributing to delinquent behavior. This connection holds particular significance in the context of Jordan, which reports one of the highest rates of youth unemployment in the MENA region. Over the past three decades, Jordan's youth unemployment rate never fell below 25% (OECD, 2018) and surged to 50% in the fourth quarter of 2020, exacerbated by the COVID-19 pandemic (World Bank, 2021). Unemployment is notably high among educated Jordanian youth; for example, in 2018, 26% of male and 77% of female bachelor's degree or higher holders were unemployed (Ministry of Education,

2018). Additionally, the prevalence of young people not in employment, education, or training (NEET) remains high; in 2019, 44% of young women and 29% of young men were categorized as NEETs in Jordan (World Bank, 2019). These education-related stressors are associated with diminished prospects for a decent future, which in turn exacerbate delinquent behaviors and mental health issues among Arab youth (Dardas et al., 2016, 2018a, b). Interestingly, Al-Qudah (2013) conducted a study to determine the perceptions of juveniles regarding care and rehabilitation services in Jordanian juvenile centers. The results indicated that healthcare services were deemed the most crucial, followed by recreational services, while educational services were considered the least important by the juveniles involved in the study.

In Arab mental health literature, constructs related to self-concept such as self-esteem is often overshadowed by more immediate concerns like mental health disorders and environmental stressors (Maalouf et al., 2019). Self-esteem is a critical component that can either mitigate or exacerbate the risk of maladaptive behaviors. However, in our sample, 82% reported scores indicating normal self-esteem. The role of self-esteem in influencing criminal and delinquent behavior is complex and remains inconclusive. Some studies indicate a positive relationship while others suggest a negative relationship. Yet, additional research provides no support for any correlation in either direction (Mier & Ladny, 2018). We support the proposition by some researchers (Jang & Thornberry, 1998) that delinquency could be 'used' as a way to increase self-esteem or keep it consistently normal or high. In other words, self-esteem may be negatively related to delinquency, but delinquency is positively related to later self-esteem. We also support the hypothesis that the relationship between self-esteem and criminal behavior influences the type of crime committed (Baumeister et al., 2003). Specifically, we observed that offenses involving theft combined with violent actions were primarily committed by individuals with high self-esteem, whereas drug use (without dealing) was prevalent among juveniles with low self-esteem.

Where to go from here?

While findings related to the mental health needs of YIJS in Jordan did not come at odds with findings from other regions of the world, it is particularly important to highlight the multifaceted role that culture can play in shaping juvenile delinquency, both in terms of the risk factors that contribute to delinquent behavior and the cultural factors that influence how delinquent behavior is perceived and addressed. For example, high levels of depression and anxiety revealed in this study can be influenced by cultural factors such as social norms, values, and beliefs about parenting, discipline, and social

support (Alshammari et al., 2021; Dardas et al., 2018a, b). Additionally, cultural factors such as religion, language, and ethnicity may impact how youth experience and respond to these risk factors. Culture can also influence how delinquent behavior is perceived and addressed. For example, cultural attitudes toward authority, punishment, and rehabilitation may differ across cultures and impact the way delinquent behavior is treated by the justice system (Graham et al., 2016). Cultural factors may also impact the availability and accessibility of resources and support systems for delinquent youth, including mental health services and community-based programs (Guo et al., 2015). As such, it is important for professionals working with YIJS to be aware of the cultural context in which delinquent behavior occurs and to take these cultural factors into account when developing prevention and intervention strategies.

In recent years, Jordan has made significant progress toward establishing a restorative justice system for juveniles, aligning with the Convention on the Rights of the Child (Ministry of Youth in Jordan, 2019). This effort is part of a broader commitment to adapt to the profound political, social, economic, and cultural shifts impacting Jordanian youth aged 12 to 30. The National Youth Strategy (2019–2025) is a critical component of this initiative, aimed at nurturing a generation that is creative, innovative, and highly productive (UNESCWA, 2020). This strategy underscores the necessity for investment in governance structures, including enhancing the Ministry of Youth's institutional capacities, expanding networking and partnerships, and developing physical infrastructures such as youth centers. It also emphasizes the importance of equipping youth center staff with necessary skills and delivering targeted approaches to accommodate the diverse interests, priorities, ages, and geographical backgrounds of the youth. Additionally, the National Strategy for Juvenile Justice (2024–2028) provides a comprehensive plan to reduce juvenile delinquency, increase the efficiency of juvenile justice procedures, and enhance the rehabilitation and care of vulnerable children and youth. In partnership with UNICEF, the Ministry of Social Development, and the National Council for Family Affairs, this strategy aims to develop a child protection and juvenile justice system that is more child-friendly and responsive to the needs of vulnerable children, thus further solidifying Jordan's commitment to improving the lives of its younger population.

However, a comprehensive study on the current status of the juvenile justice system in Jordan (JCLA, 2024) has highlighted several areas in need of immediate action and improvement. These included enhancing the legal frameworks to ensure better protection of juveniles' rights, expanding access to rehabilitation programs, and developing tailored educational initiatives for detained youth.

It also highlighted the importance of training for law enforcement and judicial personnel on juvenile psychology and rights, upgrading facilities to meet international standards, and strengthening family and community support systems. Additionally, the study emphasized the need to increase public awareness about juvenile justice issues, implement preventive programs to reduce juvenile delinquency, and promote research to inform policy and practice, aiming to create a more effective, humane, and rehabilitative system. The insights from our study, which highlight the complex mental health needs and challenging family dynamics of incarcerated youth, align closely with these recommendations, and underscore the urgency of immediate activation.

Limitations of the current study

This study acknowledges psychometric and methodological limitations impacting its findings. Specifically, the low Cronbach's alpha for the Rosenberg Self-Esteem Scale (0.65) and the Brief Family Relationship Scale (0.61), and the cross-sectional design of the research which restricts our ability to infer causality or directional relationships between the studied variables. The study also recognizes a limitation in its sample selection, as it exclusively included incarcerated juveniles. Consequently, the findings may not be generalizable to the broader population of young people who have not experienced incarceration.

Conclusions

Jordanian YIJS are particularly vulnerable and under studied population. This study assists with addressing a critical evidence gap concerning the mental health needs of incarcerated youth residing outside the regularly studied context of high-income countries. The findings reveal significant mental health challenges among incarcerated juveniles in Jordan, including high levels of depression, anxiety, and stress, particularly stemming from academic pressures. These findings call for a comprehensive, culturally adapted approach that includes enhancing the juvenile justice system's focus on mental health services, educational support, and family engagement. Our study supports the adoption of the National Strategy for Juvenile Justice (2024–2028), which aims to foster a more rehabilitative and child-friendly justice system in Jordan. This approach not only aligns with global human rights standards but also addresses the specific needs and circumstances of Jordanian youth, promoting their overall well-being and reducing recidivism.

Acknowledgements

Not applicable.

Author contributions

LD conceptualized and supervised the study and analyzed and interpreted the data. AA, NQ, BA contributed to sample preparation and interpretation of the results. All authors provided critical feedback and helped shape the

research and manuscript. All authors contributed significantly to the writing and have read and approved the final manuscript.

Funding

None.

Data availability

The datasets generated and/or analysed during the current study are not publicly available due to restrictions by the study institutional review board, but are available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate

This study was approved by the University of Jordan School of Nursing IRB. Written informed consents were obtained from all participants as well as parental consents.

Consent for publication

Not applicable.

Conflict of interest

The authors declare that they have no competing interests.

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Received: 28 April 2023 / Accepted: 13 December 2024

Published online: 05 March 2025

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