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Assessment of the Physical and Mental Health Needs of Juvenile Detainees in the Kirkuk Juvenile Detention Center, Iraq

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ABSTRACT:

Background & Objective: Juvenile Detainees face unique and often overlooked health challenges during institutionalization. In Kirkuk City, Iraq, the juvenile detention system houses under conditions that fail to meet their physical and mental health needs. This study aims to assess these health needs among juveniles at Kirkuk Juvenile Detention Center.

Methods: A cross-sectional study was conducted between September 2024 and March 2025 at the Kirkuk Juvenile Detention Center. All eligible adolescents aged 12-18 (n=40) participated in structured interviews. A constructed questionnaire to collect data on socio-demographic, physical health needs, and mental health needs. Data entry and analysis were performed using SPSS. Categorical variables were summarized using frequencies and percentages. The Chi-square or Fisher's exact test was applied. A p-value < 0.05 was considered statistically significant.

Results: The study found that 42.5% of participants reported unmet physical health needs, and 47.5% unmet mental health needs. Only 2.5% had met their physical health needs, while 52.5% teenagers indicated that the requirements for mental health were partially addressed. No statistically significant association was found between health needs of detainees and the socio-demographic factors, and type of offenses. However, the only significant statistical association was found between geographical origin and health needs (p-value = 0.03, Cramer's V = 0.419).

Conclusion: Kirkuk's Juvenile prisoners require improved healthcare, including preventive services and mental health needs. Politicians must prioritize health reforms in young people's detention facilities to enhance fitness results and aid in the rehabilitation of younger criminals.

INTRODUCTION

Juvenile delinquency, often described as illegal behavior by minors, is recognized as a major public health problem around the world (1). Adolescent delinquency is a major social problem which could undermine the prosperity of cities and communities (2). Rehabilitation of adolescent is therefore a priority for governments and societies (3). The juvenile detention center has had many names throughout history (e.g. reformatories, juvenile prisons, and youth detention centers) (4).

Juvenile detention, in essence, refers to a facility designated by law or regulation for the care of juveniles who have been alleged or have been found to have committed a delinquent act (5). While a substantial body of literature focuses on adolescent populations, the health needs of juvenile delinquents remain unclear (6), indicating a research gap in understanding their unique health requirements compared to the general population, which impedes effective policy development (7,8).

The World Health Organization estimates that one in five children has unmet developmental needs, a situation significantly worse in detention centers, where up to 74% of youth experience mental health disorders (9,10). In contrast to Western practices, in some Middle Eastern contexts, juvenile detention centers have faced challenges such as exposure to extremist influences and increased violence following regional unrest like the Arab Spring, leading to radicalization and harsh environments characterized by bullying and violence (11,12). In Iraq, juvenile delinquency remains a major concern, where 44% of the population is under 19 (13). While juvenile delinquents are recognized as a vulnerable group needing specific healthcare globally, this is not adequately provided in Kirkuk, where their health status remains poorly understood (14). In Kirkuk's Juvenile Detention Center, which detains adult males aged 9–18, 39 styles of antisocial cases have been recorded since 2010, particularly robbery (38.5%) and drug-associated crimes (10.3%) (15).

Despite the increasing trend of juvenile delinquency in Kirkuk, comprehensive research specifically addressing the health needs of this population remains scarce. While Kirkuk, a multiethnic city experiencing instability since 2003, has witnessed a discernible increase in youth violence and abuse (16), and police reports from 2003–2007 documented 210 juvenile arrests, primarily for violent crimes, a previous study assessed the perceived health needs of 20 juveniles in Kirkuk's central detention facility through interviews and administrative data. The findings of that study revealed significant unmet healthcare needs and a lack of psychological services, despite reported behavioral problems (17). The research advocated for the implementation of institutional health service interventions.

This study aims to identify the (physical, and mental) health needs of juvenile delinquents in Kirkuk City, providing valuable insights that can inform stakeholders and contribute to developing more effective health policies and programs, ultimately promoting a safer and healthier community.

METHODS:

Study Design and Setting

A cross-sectional study was conducted from September 1, 2024, to March 31, 2025, at the Kirkuk Juvenile Prison, which is under the administration of the Iraqi Ministry of Interior and has established protection policies and healthcare provisions.

Participants and sampling

The study includes all juvenile delinquents aged 12–18 years (N=40) housed at the Kirkuk Detention Center. Newly admitted juveniles were excluded to avoid data inconsistencies. Additionally, juveniles unwilling to participate or those undergoing intensive medical or psychological treatment that may interfere with their responses were also excluded.

Instrumentation

A survey-based questionnaire was utilized to assess the physical and mental health needs of young prisoners. In order to ensure the contents validity of the tool, it underwent a panel of five public health experts, which was also tested for reliability. A pilot study on October 4, 2024, refined the questionnaire and improved time and readability, with alpha values of 0.847 for physical health and 0.753 for mental health, indicating internal stability and reliability. Data on 40 prisoners were collected through face-to-face interviews. The responses were always classified as (3 points), and show that the health requirement is fully met and services are continuously available; Sometimes (2 points), which show that the health requirement is partially met, but the services are inconsistent; And never (1 point), reflecting an unmet need and a severe deficiency in the health care system. The collected scores classify health needs in a fully met need (FMN: 2.35–3.00), which reflect adequate health services, partially met need (PMN: 1.68–2.34), indicating incompatible or ineffective services, and substantive, and unmet need (UMN: ≤1.67), denoting a significant health needs gaps requiring urgent intervention and confidentiality and consent were secured.

Ethical approval:

Permission was obtained from the government for achieving the juvenile individuals, together with the Kirkuk Police Command and the director of a detention police Center. Also, the judge granted permission to interview prisoners, ensuring the researcher's safety through coordination with the Kirkuk Health Directorate. Following informed consent from each participant. Before data collection, all participants provided their informed consent to participate in the study.

Statistical analysis and data management:

Data was recorded and analyzed using SPSS version 23.0, to explore the relationship between sociological and crime-related factors and health needs. Fisher's exact test was used to determine statistical significance (P-value), while Cramér's V measured the strength of the association. Fisher's exact test was preferred due to small sample sizes in some categories, offering more accurate results than traditional Chi-Square tests. A p -value ≤ 0.05 was considered statistically significant, indicating a meaningful relationship between variables and health needs.

RESULTS

The study sample consisted of 40 participants. Among the participants, 30 (75%) were males and 10 (25%) were females. The mean age $\pm$ SD of the sample was 15.5 ± 1.71 years, ranging from 13 to 18 years.

A substantial proportion of the participants, 17 (42.5%), reported unmet physical health needs. The majority of the sample, 22 (55.0%), indicated partially met physical health needs. Only 1 (2.5%), reported having their physical health needs fully met. As of mental health services, nearly half of the juvenile delinquents, 19 (47.5%), reported unmet mental health needs. Slightly more than half of the sample, 21 (52.5%), indicated partially met mental health needs, and none (0%) of the participants reported having their mental health needs fully met. (Table 1)

Associations between overall health needs across socio-demographic characteristics and offense-related factors were analyzed using Fisher exact test and Cramér's V for the strength of the association. No statistically significant association was found between age group and the level of health needs ($p = 0.622$, Cramér's $V = 0.086$). Males and females did not show a statistically significant association ($p = 0.256$, Cramér's $V = 0.192$). However, a higher percentage of females (20.0%) experienced unmet needs compared to males (6.7%). Although all juveniles with higher levels of education (Secondary School) reported partially met needs, the association was not statistically significant ($p = 0.311$, Cramér's $V = 0.264$). Likewise, a higher percentage of married juveniles (33.3%) reported unmet needs compared to single juveniles (8.1%), but the association did not reach statistical significance ($p = 0.277$, Cramér's $V = 0.221$). No statistically significant association was found between the type of offense and the level of health needs ($p = 0.213$, Cramér's $V = 0.418$). The only statistically significant association was found between the juvenile delinquents' place of residence and the level of health needs ($p = 0.030$, Cramér's $V = 0.419$). Juveniles residing outside of Kirkuk had a much higher percentage of unmet needs (33.3%) compared to those residing in Kirkuk (3.2%). The Cramér's V of 0.419 indicates a moderate effect size for this association. (Table 2).

DISCUSSION

The findings from this study emphasize important deficiencies of physical and mental health needs provided to youth prisoners at the Kirkuk detention Center. These results reflect patterns observed globally in youth legal systems, where disorganized youth often face many obstacles to reaching wider health care, leading to health requirements (18). In particular, the study found that 42.5% of participants reported physical health needs, while 55.0% indicated that their physical health needs were only partially addressed, a condition that postpone significant intervals in medical treatment in detention functions (19). Only 2.5% of prisoners reported that their physical health needs were completely met, indicating the delay in getting the right and timely medical treatment (20). This inadequate access to health services not only affects the general welfare of adolescents, but also increases their weaknesses, increasing the chances of long-term physical and psychological problems (21).

When it comes to mental health, the findings are related to a similar way. The study found that 47.5% of teenagers at Kirkuk detention center demanded mental health services, and 52.5% indicated that their mental health needs were only partially addressed. These results are in line with global studies reporting high frequencies of untreated mental health disorders in young prisoners has previously discussed how mental health problems in the youth arrested are often uncontrolled or untreated, leading to an extension of behavior and psychological issues, which can significantly interfere with the rehabilitation process (22). Mental health disorders, such as depression and anxiety, are widespread among adolescents' criminals and contribute to

difficulties in behavioral management, drug addiction and repetition (23). Inadequate mental health care not only disrupts the personal development of these young individuals, but also reduces efforts to reduce interest rates again (24).

The study also discovered regional inequalities in health access among young prisoners. Kirkuk's teens had a significant health requirement (3.2%) than persons from other areas (33.3%). This regional interior may reflect inequalities in local health care, as it may explain the necessary speeds for low unamplified in Kirkuk (25). Similar findings have been seen globally, where regional variations in the availability of health services affect the general health results of young people. These findings outline the importance of addressing regional inequalities by improving access to low resources (26). In addition, this regional comparison emphasizes the need to standardize health services in youth detention centers to ensure that all prisoners, regardless of their location, get equal to care.

Despite these regional differences, the study found no significant connection between health needs and demographic factors such as age, sex and educational level. These findings are contrary to other studies that have shown a significant relationship between teenage criminals (27) between demographic variables and health needs. For example, age and educational levels have been identified as important predictions of health consequences in the youth population, and often show access to better health awareness and care with older and more educated teens (28). However, a lack of significant findings in this study suggests that other factors, such as institutional policies and available resources, may play a more important role in determining health services for youth (29) taken in custody.

The results of this study emphasize immediate need for extensive improvements in the health care system in youth prevention centers. Political decision makers should focus on improving access to both physical and mental health services, especially preventive care, which is important to reduce the long-term health results facing the internal youth. As clarified by previous research (18,21), lack of preventive care in custody functions to both physical and mental health problems contribute, which leads to an obstacle in the rehabilitation of these young individuals. In addition, the study emphasizes the importance of addressing regional inequalities in access to health services, suggests that areas with low health services must be allocated more resources. Targeted intervention that focuses on improving the health care distribution in youth detention centers, reducing repetition and can play an important role in improving the overall results for youth (30).

CONCLUSION

The study identified significant intervals in physical and mental health services for young prisoners at the Kirkuk detention center, with 42.5% reporting physical health needs and 47.5% requiring mental health services. Regional inequalities were also seen in health services, where teens from Kirkuk reported fewer unmet needs than in other areas. These findings outline the immediate requirement for extensive health services, including the implementing of preventive care programs and the improving of mental health services and also research is necessary to detect the underlying factors that contribute to health inequalities.

Limitations of the study

The study included only 40 participants, which may affect the generalizability of the findings to a broader population of youth detainees. Reliance on self-reported information which can also introduce bias because of personal perceptions and the ability for underreporting. The research was conducted in a single penitentiary facility. This restricts the applicability of the results to other regions or detention centers, as conditions and services may vary elsewhere. Furthermore, acquiring consent for the research was difficult, as these facilities are affiliated with protection and judicial institutions.

Table 3.1 physical and Mental health needs distribution of study sample (N=40).

Items	Un met need		Partially met need		Fully met need	
	f	%	f	%	f	%
Physical health needs	17	42.5%	22	55.0%	2	2.5%
Mental health needs	19	47.5%	21	52.5%	0	0%

FMN=Fully met need (2.35–3), PMN=Partially met need (1.68–2.34), UMN=Met need (under 1.67)

Table 3.2 Sociodemographic, Offense-Related Factors and Their Association with Health Needs Among Juvenile Delinquents in detention center distribution of study sample (N=40).

Variables	Un met need		Partially met need		P-value	Cramer's V	
	f.	%	f.	%			
Age							
13-15	2	13.3%	13	86.7%	0.622	0.086	
16-18	2	8.0%	23	92.0%			
Sex							
Male	2	6.7%	28	93.3%	0.256	0.192	
Female	2	20.0%	8	80.0%			
Education level							
Illiterate	0	0.0%	14	100.0%	0.311	0.264	
Primary school	1	20.0%	4	80.0%			
Intermediate School	3	15.0%	17	85.0%			
Secondary School	0	0.0%	1	100.0%			
Marital state							
Married	1	33.30%	2	66.70%	0.277	0.221	
Single	3	8.10%	34	91.90%			
Residence							
Kirkuk	1	3.2%	30	96.8%	0.03	0.419	
Other	3	33.3%	6	66.7%			
Type of offense							
Homicide	2	33.3%	4	66.7%	0.213	0.418	
Theft	0	0.0%	17	100%			
Robbery	0	0.0%	1	100%			
Four Terrorism	0	0.0%	1	100%			
Contravention	2	18.2%	9	81.8%			
Perjury	0	0.0%	2	100%			
Sexual Offenses	0	0.0%	2	100%			

P value = Fisher's Exact Test; Cramér-v used for measuring the effect size

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