

# Insights from Inside: Addressing mental health, well-being and healthcare needs of young prisoners in Cambodia

Puthy Pat<sup>1,2\*</sup>

<sup>1</sup>Department of Epidemiology and Global Health, Umeå University, Umeå, Sweden

<sup>2</sup>Center for Child and Adolescent Mental Health (Caritas-CCAMH), Takhmau, Cambodia

\*Corresponding author: [puthy.pat@caritascambodia.org](mailto:puthy.pat@caritascambodia.org)

Received: 15 September 2024; Accepted: 30 September 2024; Published: 16 October 2024.

## ABSTRACT

**Introduction:** Globally, studies show that young prisoners experience higher rates of mental health disorders and suicidal behaviors than adult prisoners and the general population. In Cambodia, there is a lack of information on the mental health situation of young prisoners and the response of the prison system to that reality. This thesis aimed to explore the mental health, well-being, and healthcare needs of young Cambodian prisoners by examining their mental health status, evaluating life skills interventions, identifying coping mechanisms, and proposing strategies to strengthen the prison health system based on insider perspectives.

**Methods:** Conducted in four selected prisons, the thesis used both quantitative and qualitative methods. The quantitative studies assessed mental health and evaluated the impact of a Life Skills Education (LSE) intervention. The qualitative approach explored the perspectives of young prisoners and staff regarding mental health, coping mechanisms, and prison healthcare challenges.

**Results:** The findings revealed high levels of mental health problems but low suicidal behaviors. Younger age, lower education, and drug use were linked to higher ill-mental health. While the LSE intervention improved mental health, the differences with the control group were not statistically significant. Qualitative insights revealed loneliness, lack of family support, and unmet basic needs as young prisoners' concerns. Staff noted the limited healthcare services available and stressed the need for reforms, including mental health awareness, staff training, and governance improvements.

**Conclusion:** The thesis highlights high levels of mental health problems among young prisoners in Cambodia and calls for contextualized mental health interventions. Future efforts should focus on strengthening mental health services, staff training, and prison reforms to better support young prisoners' well-being.

**Keywords:** Young prisoners, mental health, health care, interventions, Cambodia

## Abstract in Español at the end of the article

## INTRODUCTION

Mental health among young people is an increasing public health challenge worldwide [1]. Mental health can be described as a state of emotional and psychological wellness that enables individuals to effectively manage challenges in life, fulfil their potential, succeed in education and work, and positively contribute to their communities [2]. Prisoners, especially young individu-

als, are a particularly vulnerable group at a heightened risk of experiencing mental health problems [3]; however, the response of prison health system is often limited [4].

### Mental health of young prisoners

The high susceptibility to mental health problems by young prisoners has been evidenced by numerous

international studies across both high-income countries (HICs) [5, 6] and low- and middle-income countries (LMICs) [7, 8]. In HICs, findings from a multi-center study across 36 European countries revealed that one in three prisoners had a mental health disorder [9]. Particularly, young prisoners often encounter higher risks of compromised mental well-being compared to both older prisoners, and to young people in the general community. A study among Portuguese young offenders under 25 reported up to five times more mental health problems than older prisoners [10], while Swiss young prisoners reported three times higher rates of mental disorders compared to their non-incarcerated peers [11]. Similarly, in the USA, juvenile offenders experience mental disorders at about 70%, contrasting sharply with the 20% rate in the community [12].

In LMICs, mental health problems among prisoners are more prevalent compared to both HICs and the general population [13]. However, there is a substantial knowledge gap regarding the mental health of young prisoners [14], which results in a limited understanding of their situation, causes, and implications compared to adult prisoners and adolescents in general [15]. A study on juvenile offenders in Malaysia found that 93.3% of respondents had at least one psychiatric diagnosis, with 76.2% having two or more diagnoses [16]. Additionally, research from Cuba revealed common experiences of guilt, tension, and frustration among juvenile prisoners [17]. Suicidal behaviours also pose a significant risk for young prisoners, with rates ranging from 4% to 43% [18], and those with mental health issues exhibiting suicide rates 30 times higher than other prisoners [19].

Mental health problems among young prisoners have far-reaching consequences, affecting their overall wellbeing, their families and society. [20]. Individually, these challenges may lead to emotional distress, disrupted daily functioning, decreased mental well-being, and increased risks of self-harm, suicide, and recidivism [21, 22]. Families of young prisoners with mental health problems struggle to navigate healthcare systems and experience negative emotions [23]. Societally, young prisoners with mental illness require significant support both in prison and upon reintegration into the community [24]. Understanding and addressing these challenges is crucial for timely and effective interventions to improve their quality of life during and after incarceration [25].

### The healthcare system in prisons

Research from HICs highlights significant disparities in healthcare quality between the general population and prisons, where prisoners are less likely to receive treatment for mental illness [26]. The quality of healthcare in prisons fluctuates not just among different nations but also within countries, mainly due to insufficient resources, unequal access to medical personnel and facilities, and varying strategies for managing inmate healthcare [27].

In LMICs, the challenges in prison healthcare are even greater due to inadequate investment in infrastructure, staff, equipment, and medication. Services are often delivered through collaborations with external healthcare providers, emphasizing the need for effective referral systems [28]. For instance, studies from Bangladesh, Nigeria and Zimbabwe have revealed deficiencies in mental health provision, with prisoners often referred to external facilities for treatment [28-30]. Staff shortages, heavy workloads, and psychosocial challenges further compound the issue, emphasizing the need for system reforms globally [31].

Strengthening the prison health system is crucial for addressing prisoners' mental health needs and could lead to broader health improvements in the general population [32]. However, there is a lack of research and evidence in this area, particularly in LMICs like Cambodia, highlighting the need for localized understanding and interventions to strengthen the system.

### The prison health system in Cambodia

There is limited published information available about the prisons and prison healthcare system in Cambodia. However, in 2018, I and the research team were allowed to visit two prisons prior to data collection. During these visits, we gathered information on prisons and prisoners' situation through observations and conversations with the prisons staff. Cambodia has a total of 29 prison facilities, housing 5,552 young inmates aged 15 to 24 [33]. These prisons typically have separate buildings for male and female prisoners and offer amenities such as garden spaces, rooms for spiritual activities, and access to libraries. Prisoners have daytime freedom for activities like exercise, work, and socializing, with opportunities to participate in traditional ceremonies and national holiday commemorations. Family visits are allowed, with schedules varying across prisons. Overcrowding is a significant challenge, with shared rooms accommodating around 50 prisoners.

In most prisons, a single healthcare facility, commonly known as a health post, is operational. These health posts are typically staffed by nurses, auxiliary nurses, or individuals with limited healthcare training and experience. Their primary role is to provide basic healthcare services to all prisoners and refer those with serious health issues to nearby public hospitals. Currently, mental health services are not included under their responsibilities, although some healthcare staff offer emotional support to prisoners with mental health challenges. These health services face numerous challenges, including staff shortages, inadequate skills and experience, insufficient medicines and medical supplies, and limited space. However, some prisons collaborate with NGOs to offer a variety of services to prisoners, including health check-ups, treatment, distribution of medical supplies, and health education.

### Justification, aim and objectives

Despite the significant vulnerability of young prisoners to mental health problems and its substantial negative consequences, there is a noticeable lack of research in this field in Southeast Asia [34], particularly in Cambodia. To improve the mental health of young prisoners, it is crucial to first assess their mental health situation and their needs to be able to provide timely support and intervention [35]. Improving the prison healthcare system is also essential for better catering to these needs and alleviating the burden on families and society [36]. This requires comprehensive reforms and considerations of the perspectives from both prisoners [37] and staff [38].

The overall aim of this thesis was to gain a comprehensive understanding of the mental health situation of young prisoners, evaluate the impact of a life skills education program and explore coping mechanisms and strategies for the improvement of the young prisoners' well-being. To achieve this, four specific objectives were considered:

To investigate the mental health and suicidal expressions and to determine the risk factors associated to them in young prisoners (sub-study 1)

To assess the effectiveness of the intervention on the mental health and life skills competencies of young prisoners (sub-study 2)

To explore young prisoners' experiences and perceptions of mental health and well-being, their perceived determinants, as well as their coping strategies (sub-study 3)

To understand the perceptions of prison officials and healthcare staff on the challenges in addressing prisoners' mental health and well-being, as well as to explore strategies to improve the Cambodian prison healthcare system (sub-study 4).

### Conceptual frameworks

This thesis is inspired by two frameworks: an adapted social determinants of health (SDH) [39] framework for prisons and the WHO prison health framework [40]. The SDH framework delves into structural and intermediary components in prison settings, emphasizing how social positions affect health outcomes. Complementary, the WHO prison health framework focuses on the healthcare system and service delivery within prisons, addressing the consequences of inadequate mental health services and staffing issues on prisoners' mental health and well-being. Both frameworks advocate for structural reforms in prison healthcare, providing a comprehensive approach to understanding the factors influencing mental health and well-being in prisons. All four sub-studies within this thesis were structured to encompass elements from both frameworks (Figure 1). Sub-studies 1 and 3 specifically focused on evaluating the overall mental health outcomes among young prisoners while sub-study 2 aimed to implement and assess interventions to improve these outcomes.

In the adapted SDH framework for the prison context,

pre-incarceration and incarceration factors interacted with one another. Prior to incarceration, variables such as poverty and substance abuse contribute to vulnerability, while traumatic experiences prior to imprisonment exacerbate mental health problems [41, 42]. Incarcerated factors, including overcrowding and loss of autonomy, further impact well-being, alongside stigma and limited access to healthcare [43, 44]. Sub-studies 1, 3, and 4 examined all of these interacting elements in detail.

The WHO prison health framework comprises health system, service delivery, and health outcomes components. Despite efforts, prison healthcare systems face limitations, particularly in LMICs, where investments are insufficient. Healthcare services in these settings are basic and often rely on external providers, with mental healthcare being especially limited. This situation exacerbates poor health and mental health outcomes among prisoners, highlighting the urgent need for global prison healthcare reforms. These influencing factors on the mental health of young prisoners were the focus of sub-studies 3 and 4.

## METHODS

The thesis utilized a combination of quantitative and qualitative approaches, to achieve the overall aim and specific objectives. Four prisons were selected for the study (Figure 2). The quantitative component assessed the mental health situations of young prisoners and evaluated the impact of a Life Skills Education intervention. The qualitative studies aimed to delve into the perspectives of both young prisoners and prison staff regarding the mental health status, coping mechanisms, and strategies for enhancing mental well-being.

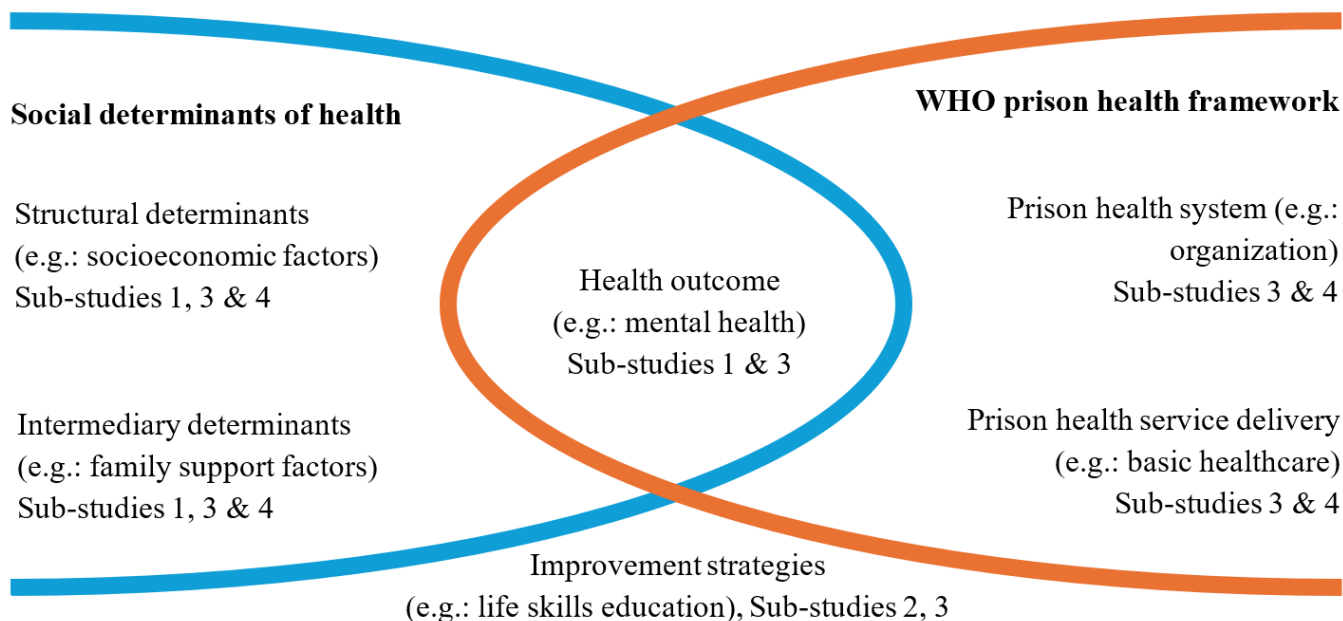
Before beginning data collection, permission was obtained from prison directors to visit two prisons. At one prison, questionnaires designed for sub-studies 1 and 2 underwent field-testing, facilitating contextual adjustments. Meanwhile, informal interviews with two staff members were conducted at the second prison, leading to the preliminary testing and improvement of discussion guides for sub-studies 3 and 4.

### A. Quantitative studies

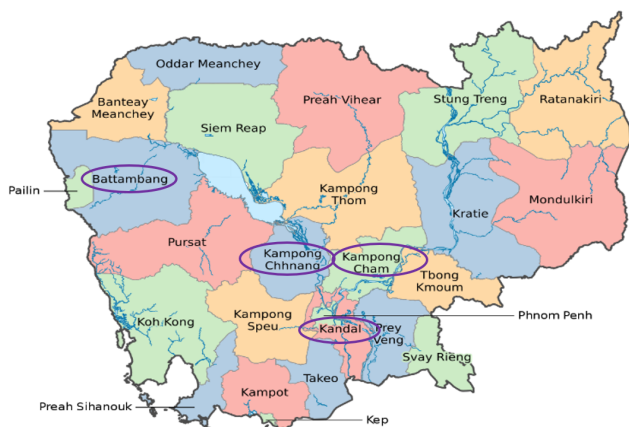
This part incorporated sub-studies 1 and 2. Sub-study 1 provided a nuanced understanding of the mental health situation within the prison setting while sub-study 2 evaluated the impact of life skills education, a structured intervention program.

### Study design and setting

In sub-study 1, a cross-sectional approach was utilised in three selected prisons from different geographic regions in Cambodia: one in the northwest, one in the central region, and another in the southeast. Meanwhile, an intervention study design was employed in sub-study 2, expanding the scope by including a fourth prison located in the western region to ensure a broader representation of locations.



**Figure 1.** The interlink between the two frameworks and the sub-studies.



**Figure 2.** Map of Cambodia and the participating prisons.

**Participants**

Eligibility criteria for both sub-studies included young male prisoners either appealing their convictions or already convicted and aged between 15 and 24 years. Due to the low number of eligible female prisoners (less than 1%), they were excluded to maintain statistical power. In sub-study 1, 572 individuals from the list of 739 young male prisoners participated.

In sub-study 2, 412 young male prisoners participated in the pre-assessment prior to the intervention program, of which 151 were randomly assigned to the intervention group, and 261 to the control group. In the post-assessment, 370 participants completed the questionnaire after the exclusion of 42 individuals released during the study period.

**Measures**

Both sub-studies included sociodemographic information and the Youth Self-Report (YSR) tool. Variables such as age, marital status, education, employment, religion, types of criminality, previous conviction, duration of imprisonment, previous history of alcohol consumption and drug use were collected. The YSR, a part of the Achenbach system, assesses various mental health problems including anxiety-depression, withdrawal depression, somatic complaints, thought problems, social problems, rule-breaking behaviour, aggression, and attention problems. These are coalesced into internalising (anxiety-depression, withdrawal depression and somatic complaints) and externalising problems (rule-breaking and aggressive behaviour) [45].

Additionally, the Attitude towards Suicide (ATTS) tool was also utilized in sub-study 1 to estimate suicidal expressions. In sub-study 2, the Life Skills Development – Adolescent Form (LSD-AF) was incorporated to assess life skills proficiency including human relationships/interpersonal skills, decision-making/problem-solving skills, health maintenance/physical fitness skills, and one’s sense of purpose in life [46]. These tools were selected because of their prior use in similar studies, including those conducted in Cambodia [47].

**Data collection**

To ensure consistency, trained psychology students conducted face-to-face interviews for data collection in both sub-studies. In sub-study 1, the process lasted from January 2018 to August 2019. In sub-study 2, data collection occurred in two phases: the pre-assessment one week before the intervention program began and the post-assessment three months after the program’s conclusion, spanning from August 2019 to July 2020.

### Data analysis

Descriptive statistics were utilized to analyse the data in both sub-studies, calculating means and frequencies. Regression analyses were employed to assess the association between risk factors and mental health outcomes (sub-study 1). In sub-study 2, the difference-in-difference method (DiD) was used to estimate the effect size using linear regression models. The significance level was set at 0.05, with adjustments made for contextual variations in the prison type.

### Intervention program

In sub-study 2, young participating prisoners in both the intervention and control group received a 45-minute stress-reducing session to mitigate the stress linked with incarceration. Additionally, the Life Skills Education (LSE) program was implemented for those in the intervention group, covering essential life skills over six weeks. Modules focused on coping with stress, self-awareness, relationships, self-esteem, and addressing peer pressure related to drugs, tobacco, and suicidal thoughts. Adaptations made to accommodate lower literacy levels included extending sessions' duration to 90 minutes and emphasizing interactive activities over writing. Each session followed a structured format involving introduction, activities, discussion, summary, and assignments to reinforce learning. These interventions aimed to enhance mental well-being and equip young prisoners with valuable skills for coping with their circumstances.

### B. Qualitative studies

This qualitative part aimed to enrich the understanding of mental health and well-being within the prison setting. Sub-study 3 focused on gathering perspectives from young prisoners, while sub-study 4 involved prison staff. The inclusion of both prisoner and staff perspectives aimed to provide comprehensive insights and potentially inform strategies for improving mental health services within the prison system.

### Study design

Focus group discussions (FGDs) were utilized in both sub-studies to delve into experiences and perceptions related to mental health and well-being. FGDs were conducted in the same three prisons as in sub-study 1 to capture diverse experiences and perspectives.

### Participants

In sub-study 3, six FGDs were conducted with 48 young prisoners aged 15–24 who were randomly selected from a list provided by prison authorities, with an equal gender distribution. In sub-study 4, a purposive sampling approach was employed to invite prison officials and healthcare staff based on their expertise and experience in the prison health system. In total, 15 participants, including prison healthcare staff and officials, took part in three FGDs.

### Data collection

Six FGDs were conducted for sub-study 3, with two in each prison, while three FGDs were conducted for sub-study 4, one in each chosen prison. Audio recordings were obtained with consent from participants and prison authorities to ensure accurate preservation of conversations while maintaining privacy and security. The FGDs were conducted from November 2018 to September 2019 for sub-study 3 and from June to December 2019 for sub-study 4. Semi-structured discussion guides were developed separately for both sub-studies. These guides facilitated the exploration of participants' experiences, insights, and observations, fostering a comprehensive understanding of their mental health situations.

### Data analysis

Thematic, inductive analysis, following Braun and Clarke [48], was utilized in sub-study 3. The data underwent line-by-line analysis to generate initial codes, which were then grouped into potential sub-themes. These sub-themes were consolidated into new potential themes. Through iterative refinement and renaming, final themes were established. Qualitative content analysis, guided by Graneheim and Lundman [49], was utilized in sub-study 4. Initially, the focus was on manifest content, involving transcript interpretation, condensing meaning units, and coding. Later, a latent approach was applied to uncover underlying meanings and generate categories and themes. The process included manual transcription, translation into English, familiarization with the data, extracting meaning units, labelling with codes, sorting into subcategories and categories, and formulating themes.

### Ethical clearance

Ethical clearance was obtained from the National Ethics Committee for Health Research, Ministry of Health, Royal Government of Cambodia (reference number N33NGCHR). Permission to conduct the study in prisons, including data collection, interventions, and focus group discussions with audio recordings, was granted by the General Department of Prisons.

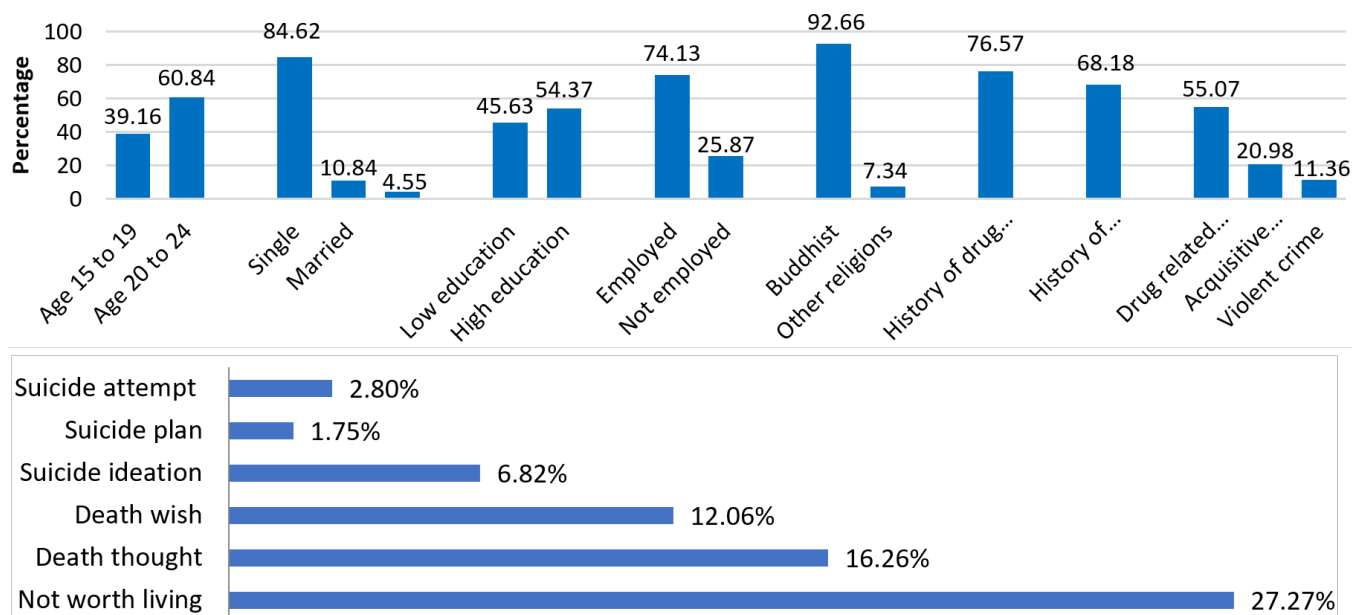
Individual participants provided oral and written consent. For participants under 18, consent was obtained from authorities as their guardians. Emphasis was placed on voluntary participation, confidentiality, data security, anonymity, and the option to withdraw without repercussions.

## RESULTS

### A. Quantitative studies

#### Mental health and suicidal expressions

Sub-study 1 included participants aged 15 to 19 (39.16%), and 20 to 24 (60.84%). About 46% had little or no formal education, and most reported prior drug use (76.57%) and alcohol consumption (68.18%). The primary reason for imprisonment was drug-related crimes (55.07%) (Figure 3, top).



**Figure 3.** Top: Participant profile for sub-study 1. Bottom: Prevalence of suicidal expressions among young prisoners.

The YSR (Table 1) showed mean scores of 11.88 for anxiety /depression and 9.97 for aggressive behaviours. Social problems, attention problems, and rule-breaking behaviours ranged from 8.10 to 8.49. Somatic complaints scored 7.53, while withdrawal depression and thought problems scored 6.55 and 6.66, respectively. Internalizing and externalizing problems had mean scores of 25.97 and 18.12, while the total YSR score was 67.3.

**Table 1.** Mean scores (standard deviation) of mental health problems in YSR.

	Total (N=572)
	Mean scores (SD)
Total YSR scores	67.34 (28.40)
Anxiety/depression	11.88 (5.11)
Withdrawal depression	6.55 (3.25)
Somatic complaints	7.53 (4.70)
Social problems	8.49 (4.41)
Thought problems	6.66 (4.33)
Attention problems	8.10 (3.76)
Rule breaking behaviour	8.15 (4.67)
Aggressive behaviours	9.97 (6.34)
Internalizing problems	25.97 (10.92)
Externalizing problems	18.12 (10.33)

The ATTS (Figure 3, bottom) revealed that around 16% of participants disclosed thoughts about their own death, while 12% expressed a wish to die. Additionally, almost 7% reported experiencing suicidal ideation, with 2% indicating planning and 3% reporting a suicide attempt. Participants who were younger, had lower educational backgrounds, and had spent less time incarcerated (less than 12 months) reported notably higher levels of mental health problems compared to their counterparts. Prior drug users showed higher thoughts of death, while those with higher education had lower suicide ideation rates (Table 2).

**Impacts of the LSE intervention**

Three months post-intervention, both control and intervention groups of young prisoners exhibited reduced mental health problems, as the total YSR mean scores decreased from 61.91 to 50.59 and 64.80 to 57.83, respectively. However, these changes were not statistically significant (DiD=3.78, p=0.34). Likewise, the total LSD-AF scores for both groups showed minimal changes, with no significant differences observed between control and intervention groups pre- and post-intervention (DiD=0.39, p=0.80). Similar non-significant differences were observed across various YSR dimensions and sub-domains (Table 3).

**Table 2.** Factors associated with YSR and suicidal expressions among young participating male prisoners.

	Total YSR scores		Dead thoughts	Suicide ideation	Suicide attempts
	Crude	Adjusted	Crude	Crude	Crude
	Coef (95% CI)	Coef (95% CI)	Coef (95% CI)	Coef (95% CI)	Coef (95% CI)
Age					
15-19	Ref.	Ref.	Ref.	Ref.	Ref.
20-24	-0.1 (-0.2, -0.0)	-0.1 (-0.2, -0.0)	1.6 (0.2, 2.6)	1.0 (0.5, 2.0)	1.1 (0.4, 3.0)
Education					
Low	Ref.	Ref.	Ref.	Ref.	Ref.
Higher	-1.2 (-0.2, -0.0)	-0.2 (-0.2, -0.1)	0.9 (0.6, 1.4)	0.5 (0.3, 0.9)	0.5 (0.2, 1.4)
Time spent					
< one year	Ref.	Ref.	Ref.	Ref.	Ref.
≥ one year	-0.1 (-0.2, -0.0)	-0.1 (-0.2, -0.1)	1.2 (0.8, 1.9)	0.9 (0.4, 1.8)	0.8 (0.2, 2.4)
Drug use					
No	Ref.		Ref.	Ref.	Ref.
Yes	0.0 (-0.0, 0.1)		2.1 (1.1, 3.9)	1.2 (0.5, 2.6)	1.3 (0.4, 4.8)

**B. Qualitative studies**  
**Mental health situations and challenges**

Overcrowding emerged as a prevalent and significant concern among participants in sub-study 3. Despite being surrounded by numerous fellow prisoners, they frequently described feelings of loneliness due to a sense

of psychological and emotional detachment from others within the overcrowded setting. These overwhelming conditions not only adversely affected prisoners mentally and physically, along with interpersonal relationships, but also strained the capacity of the prison health system to respond to the prisoners’ needs.

**Table 3.** The outcomes of life skills intervention, adjusted for prison type.

	Type of group	Pre-assessment	Post-assessment	DiD	P-value
Total YSR <sup>1</sup>	Control	61.91	50.59	3.78	0.34
	Intervention	64.80	57.83		
Total LSD-AF <sup>2</sup>	Control	112.89	113.48	0.39	0.80
	Intervention	112.14	113.15		

<sup>1</sup>: In YSR, lower values indicate fewer mental health problems, <sup>2</sup>: In LSD-AF, higher values indicate higher life skills competencies

*“There are too many people, and I have no place to sleep or walk around, but I am alone here. They are different from me, and I can’t talk about my problems [...]”* (FGD 3, man prisoner)

*“Both prisoners and staff have mental health problems [...]”* (FGD 2, with staff)

Both young prisoners and prison staff shared their perspectives on the multifaceted experiences of mental health and well-being within the prison setting. While some young prisoners reported experiencing improved health and well-being, the majority expressed facing challenges and felt their well-being to be compromised. Additionally, both prisoners and prison staff suffered from mental health problems, highlighting the need for support.

Young male prisoners predominantly expressed concerns about physical health issues such as skin or stomach problems, alongside interpersonal challenges. Conversely, female prisoners showed more concern about emotional problems and reproductive health issues. Despite this, they perceived themselves to be in better overall health and mental well-being compared to their male counterparts due to the solidarity among female prisoners and the perceived better support from prison staff.

*“The health is not good, my energy is low, and I am tired, have stomach problems [...] and scabies. It is very uncomfortable and difficult to live [...] I am feeling nausea and keep losing weight.”* (FGD 1, man prisoner)

*“All the time, I keep thinking of everything useless, especially thinking about bad things. It come automatically and all the time. I can do nothing about it, but I can’t stop it. I can’t sleep because of such worries.”* (FGD 4, woman prisoner)

*“I think that women are doing better than men [...] a lot of people living here, and it is crowded.”*

*Women share food with each other.” (FGD 6, woman prisoner)*

*“If the health problem is not so serious, we will manage the problem in the room by coining, giving medicines, and massaging each other [...].” (FGD 1, man prisoner)*

*“[...] some families sent money or food to prisoners here, and they look healthier, but who are not [those not receiving financial support from outside] always get sick or upset [...].” (FGD 6, woman prisoner)*

The participating staff perceived themselves as highly dedicated and compassionate individuals committed to aiding prisoners. However, they encountered numerous challenges, both within and outside the prison system. Internal challenges included inadequate staffing, limited skills, and insufficient medical equipment. Externally, they faced issues such as poor collaboration with the health system. Despite these challenges, prison staff reported providing emotional support to prisoners with mental health issues, along with basic healthcare and referral services.

*“We are fully committed staff; we work here because of compassion, not because of money...we cannot work here if no such compassion [...].” (FGD 2 with staff)*

*“[...] it is difficult to collaborate with the hospital, and I have tried to explain to them that we don't have enough staff for security, but we still have to wait for a very long time [...] the health centre kept complaining about us, saying that our reports were wrong and always late, they informed their boss and blamed us [...] they didn't look at our reports and requests, so we never get the right medicines or enough medicines.” (FGD 3 with staff)*

### **Strategies for improvement**

The participants highlighted the critical need for significant reforms within the prison health system to improve the mental health and overall well-being of prisoners. They advocated for several key initiatives, including raising awareness about mental health and providing vocational training to all prisoners and room leaders. Additionally, they emphasized the importance of implementing an intensive capacity-building program for prison healthcare staff.

*“I think it is important to make them aware and train their minds, control themselves, and regulate their emotions because it is difficult to live here and they are bored, confused and have uncertainty about their future [...].” (FGD 3 with staff)*

Furthermore, improving the governance of the prison healthcare system was identified as crucial. This involves strengthening management and leadership skills, clarifying job assignments and responsibilities for all staff members, and addressing staff shortages to ensure efficient operation. Moreover, participants emphasized the importance of securing external support from government institutions and non-government organisations (NGOs).

*“All service providers should cooperate with each other and have a meeting to discuss some issues. Prison health posts, the health district offices, health centres, provincial health departments and NGOs like you should meet to find some solutions [...].” (FGD 3 with staff)*

## **DISCUSSION**

This thesis employed both quantitative and qualitative approaches. Quantitative findings showed high mental health problems, with a Life Skills Education program having some impact though the effects were not statistically significant. The qualitative findings highlighted multifaceted experiences of mental health and well-being as well as numerous challenges faced by prisoners and staff, emphasizing the need for reforms. These findings emphasize the importance of adopting the social determinants of mental health and WHO prison health frameworks to better understand and improve the well-being of prisoners in Cambodian prisons. These frameworks have been used to guide the discussion section of this study.

### **The social determinants of prisoners' mental health Structural and intermediary determinants**

Sub-studies 1, 3, and 4 uncovered various structural determinants, interacting together, impacting mental health in the prisons. Socio-economic factors, particularly prisoners' family income and prisoners' education, emerged as crucial determinants identified by both prisoners and staff. Studies from the USA and Chile have shown that a low socio-economic status of prisoners' families can lead to a lack of family support, contributing to deteriorating their mental health [50, 51]. Moreover, higher education levels among prisoners were associated with fewer mental health problems and lower suicide ideations. This aligns with research from the USA highlighting the significant impact of education on mental well-being in correctional settings [52].

Sub-studies 3 and 4 shed light on the intermediary determinants influencing the mental health and well-being of young prisoners. Family support emerged as a key factor, with emotional support significantly linked to better well-being. Conversely, limited or absent family support, including financial assistance, correlated with poorer mental health, confirming findings from studies conducted for instance in the context of Iranian prisons [53].



Similarly, psychosocial factors like loneliness in overcrowded prisons were found to adversely impact mental health, aligning with research from China, England, Wales, and Norway [54, 55]. Sub-study 1 revealed several factors associated with mental health problems, including younger age, lower education levels, and shorter periods of incarceration, consistent with the international literature [56-58]. Furthermore, overcrowding was identified as a significant contributor to poor well-being, corresponding with findings from Zambia, Spain, and Latin America [59-61]. These results highlight the complex interplay of social and individual factors shaping the mental health landscape in prison settings.

### *Mental health outcomes*

Sub-study 1 examined the mental health and suicidal expressions among young prisoners, revealing consistently higher YSR scores compared to a previous study of school students in Cambodia [62]. This is in line with international research indicating elevated mental health problems among incarcerated individuals compared to the general population [13]. Additionally, the findings of this study revealed that mean scores for internalizing problems and anxiety/depression were slightly higher than in Jordanian detained youths, but externalizing problems such as rule-breaking and aggressive behaviours, were slightly lower [63]. Furthermore, young prisoners in this study reported higher mental health problems (YSR - 67.34) when compared to their counterparts in the USA (YSR - 51.1) [64].

This sub-study also found a lower prevalence of suicidal expressions, except for suicide attempts, compared to a previous school study conducted in Cambodia [62]. Additionally, compared to juvenile populations in other countries, our study found a lower prevalence of suicidal expressions. For example, approximately 7% of participants in this study reported having suicidal thoughts, whereas studies in Pakistan and the USA have reported rates of 22% and 42%, respectively [65, 66]. The lower prevalence of suicidal expressions reported by participants may result from prisoners' fear of being isolated and monitored due to prison regulations aimed at preventing suicides. Furthermore, predominantly Buddhist religious beliefs, which condemn suicide, may have also contributed to the lower reporting of suicidal expressions.

In sub-study 2, LSE did not show any significant change in the mental health of those exposed to the intervention. Similarly, research on US adolescent female prisoners did not either show impacts of this program on various outcomes such as misconduct behaviours, self-esteem, anger management, well-being, and reduced recidivism rates [67-69]. However, a study conducted among young prisoners in South Africa found a notable improvement in social support and positive decision-making skills three months after the intervention; yet, these effects diminished after six months [70].

The lack of impact of the LSE intervention in this study may be attributed to several factors. Firstly, the

absence of a validated LSE program tailored to prison settings may have limited its effectiveness, emphasizing the need for further customized studies. Secondly, unmeasured positive effects, such as stress management and emotional regulation, may have occurred but were not captured. Thirdly, the effects were assessed while participants were still incarcerated, potentially limiting their opportunity to apply the acquired skills, which may become evident post-release [67]. Fourthly, overcrowded conditions within the prison setting might have hindered the opportunity for young prisoners to practice these skills individually. Lastly, a potential spillover effect on the control groups may have occurred, as participants shared living space and potentially acquired skills through interaction.

In the qualitative sub-study 3, participants' mental health and well-being experiences varied widely, with some reporting improvements while others facing significant challenges. While many studies have noted high levels of mental health problems among incarcerated individuals, some research suggests that youths in prison may find a sense of safety in the structured environment, offering respite from external chaos [71]. These findings underscore the complexity of mental health experiences in prison, emphasizing the importance of considering individual perspectives and contextual factors.

### **The WHO framework for prison health**

Participants in sub-studies 3 and 4 highlighted significant challenges within the prison healthcare system, particularly regarding mental health services, which were deemed underdeveloped due to resource shortages. Similar issues have been observed in other LMICs such as Bangladesh [28], Zimbabwe [30], and Nigeria [29], highlighting the complexity of addressing such challenges also in Cambodia. The absence of mental health services led young prisoners to perceive healthcare as primarily focusing on physical health, resulting in a lack of trust in the system's ability to address their mental health needs, a finding consistent with a report from a U.S. study on prisons healthcare [72]. Consequently, prisoners relied on self-help strategies, family support, and assistance from fellow prisoners, which has also been reported in the international literature [73]. Family visits and peer support systems were identified as crucial for enhancing well-being, emphasizing the importance of holistic interventions involving professionals to address mental health challenges in the prisons settings [74].

Prison staff demonstrated a strong commitment and recommended strategies such as capacity building and reform of the health system to improve mental health and well-being in their settings (sub-study 4). These recommendations align with international findings emphasizing the importance of education and training for both prisoners and staff in mental health literacy and preventive skills [75]. Additionally, participants suggested enhancing the governance and external collaboration to improve the coordination and delivery of mental health-

care services in prisons, aligning with the guidance from organizations like the WHO [76].

### Methodological considerations

This study has several limitations to consider when interpreting the results. Firstly, findings from the four selected prisons may not fully represent prison conditions nationwide, affecting their generalizability. However, we tried to minimize this by selecting geographically diverse prisons, potentially capturing variations in conditions.

In the quantitative studies (sub-studies 1 and 2), the exclusion of women and prisoners over 24, further impacting their generalizability. Also, a three-month gap between the intervention and outcome measurements may have been insufficient to capture changes. Additionally, face-to-face interviews, instead of self-administered, were employed to collect the data due to low literacy levels, which could have introduced respondent bias. Some measures were taken to minimize these issues: voluntariness, confidentiality, and freedom of response were emphasised during the interviews.

In the qualitative studies (sub-studies 3 and 4), the use of FGDs may pose challenges to confidentiality, potentially inhibiting participants from sharing personal experiences. However, several measures were implemented to enhance trustworthiness. Notably, officials were seated away from the discussions to promote openness and create a comfortable atmosphere for participants to freely express themselves. Additionally, the emphasis on voluntary participation and confidentiality further fostered a trustworthy environment. Meticulous documentation throughout the research process ensured dependability, enhancing the reliability of the findings. This comprehensive documentation may also aid readers in assessing the transferability of the findings to other contexts or settings.

### Conclusion

The thesis findings reveal the concerning high level of mental health problems among young prisoners in Cambodia, emphasizing the urgent need for mental health services that account for age, education, length of incarceration, and substance use history. While the LSE program showed limited effectiveness, its implementation provided valuable insights for future improvements. Perspectives from both young prisoners and staff underscored the importance of self-help strategies and comprehensive staff training to tackle mental health challenges effectively.

Addressing the identified social determinants and implementing comprehensive mental health services involving various stakeholders is essential. This requires multifaceted interventions, promoting family support and self-care, initiatives such as peer solidarity programs, and improving spatial accommodation. Contextualized interventions, health system reforms, routine assessments, and collaborative partnerships between

governmental institutions and NGOs are vital steps toward enhancing mental health and overall well-being in prison settings.

### Findings dissemination

Several dissemination efforts have been made nationally and internationally to share the thesis findings to have a far-reaching benefit for the prison population and healthcare system in Cambodia, and potentially other LMICs.



**Image 1.** Presentations of the findings to high prison officials.

Nationally, the findings were shared in a collaborative workshop organized jointly by the Center for Child and Adolescent Mental Health (Caritas-CCAMH), the General Department of Prisons (GDP) and the Department of Epidemiology and Global Health at Umeå University in January 2024 (Image 1). A diverse group of 116 participants including directors of all prisons across the country, representing prison staff, the GDP management team members, and mental health professionals and policymakers from various ministries, universities and NGOs attended the workshop.



**Image 2.** Presentations of the findings at ASCAPAP conference, Japan.

Internationally, the findings were shared at three conferences, including the International Association for

Child and Adolescent Psychiatry and Allied Professions (IACAPAP) congress in 2020, the Global Health Research System (HRS) conference in 2020, and the Asian Society for Child and Adolescent Psychiatry and Allied Professions (ASCAPAP) conference in 2023 (Image 2). This collaboration efforts and publications with colleagues from Zambia, India, Sweden, and Japan, further extend the impact of the research beyond national borders.

## DECLARATIONS

### Publication Consent

Not applicable.

### Competing interests

The author declares no conflict of interest.

### Funding

This work was partly funded by the Swedish Research Council.

### Author contributions

Not applicable.

### Data availability

Not applicable.

### Acknowledgements

I thank the staff of the Center for Child and Adolescent Mental Health (Caritas-CCAMH) and the psychology students for their valuable contribution for data collection. I would also like to express my gratitude to the prison authorities for allowing access to young prisoners and to all the participants for their voluntary participation and collaboration.

### ORCID

Puthy Pat  0000-0001-6459-0052

## Perspectivas desde dentro: Salud mental, bienestar y necesidades sanitarias de los reclusos jóvenes en Camboya

### RESUMEN

**Introducción:** En todo el mundo, los estudios muestran que los presos jóvenes experimentan tasas más altas de trastornos de salud mental y comportamientos suicidas que los presos adultos y la población general. En Camboya, se carece de información sobre la situación de la salud mental de los jóvenes reclusos y la respuesta del sistema penitenciario a esa realidad. Esta tesis pretende explorar la salud mental, el bienestar y las necesidades sanitarias de los jóvenes presos camboyanos examinando su estado de salud mental, evaluando la intervención de "habilidades para la vida", identificando mecanismos de superación y proponiendo estrategias para reforzar el sistema sanitario de las prisiones basadas en perspectivas desde el interior.

**Métodos:** La tesis, realizada en cuatro prisiones, utilizó métodos cuantitativos y cualitativos. Los estudios cuantitativos evaluaron la salud mental y el impacto de una intervención educativa basada en habilidades para la vida (Life Skills Education, LSE). El enfoque cualitativo exploró las perspectivas de los jóvenes y del personal de las prisiones en relación con la salud mental, los mecanismos de superación y los retos de la atención sanitaria en las prisiones.

**Resultados:** Los hallazgos revelaron altos niveles de problemas de salud mental pero bajos comportamientos suicidas. Ser más joven, un bajo nivel educativo y el consumo de drogas se relacionaron con una peor salud mental. Aunque la intervención mejoró la salud mental, las diferencias con el grupo de control no fueron estadísticamente significativas. Las percepciones cualitativas revelaron que la soledad, la falta de apoyo familiar y las necesidades básicas insatisfechas eran las principales preocupaciones de los jóvenes. El personal penitenciario señaló los limitados servicios sanitarios disponibles y subrayó la necesidad de reformas, con relación a la concienciación sobre la salud mental, la formación del personal y la mejora de la gobernanza.

**Conclusiones:** La tesis pone de relieve los elevados niveles de problemas de salud mental entre los jóvenes reclusos de Camboya y reclama intervenciones de salud mental contextualizadas. Los esfuerzos futuros deberían centrarse en reforzar los servicios de salud mental, la formación del personal e implementar reformas penitenciarias así para mejorar el bienestar de los jóvenes reclusos.

**Palabras clave:** Prisoneros jóvenes, salud mental, sistema de salud, intervenciones, Camboya

## REFERENCES

- [1] Berger S. New Evidence of Rising Youth Mental Health Concerns: <https://www.publichealth.columbia.edu/news/new-evidence-rising-youth-mental-health-concerns>. Mailman School of Public Health, Columbia University 2023.
- [2] WHO. Mental health: strengthening our response. <https://www.who.int/news-room/fact-sheets/detail/mental-health-strengthening-our-response>. 2022
- [3] Gonçalves, Leonel, Endrass J, Rossegger A, Dirkwager AJ. A longitudinal study of mental health symptoms in young prisoners: exploring the influence of personal factors and the correctional climate. *BMC Psychiatry*. 2016;16(1):1-11.
- [4] Kothari R, White D, Craster L, Vicianova E, Dennard S, Bailey F, et al. The impact of integrating mental health services within a prison setting. *MHRJ*. 2022;27(2):146-57.
- [5] Chow K, Chan O, Yu M, Lo C, Tang D, Chow D, et al. Prevalence and screening of mental illness among remand prisoners in Hong Kong. *East Asian Arch Psychiatry*. 2018;28(4):134-8.
- [6] Tyler N, Miles HL, Karadag B, Rogers G. An updated picture of the mental health needs of male and female prisoners in the UK: prevalence, comorbidity, and gender differences. *Soc Psychiatry Psychiatr Epidemiol*. 2019;54(9):1143-52.
- [7] Forry JB, Ashaba S, Rukundo GZ. Prevalence and associated factors of mental disorders among prisoners in Mbarara municipality, southwestern Uganda: a cross-sectional study. *BMC Psychiatry*. 2019;19(1):1-8.
- [8] Habtamu E, Desalegn D. Suicidal behavior and associated factors among prisoners in Dilla town, Dilla, Ethiopia 2020: An institutional based cross-sectional study. *PloS One*. 2022;17(5):e0267721.
- [9] Mahase E. One in three prisoners in Europe has a mental health disorder, WHO reports. *BMJ*; 2023.
- [10] Gonçalves LC, Dirkwager AJ, Rossegger A, Gonçalves RA, Martins C, Endrass J. Mental and physical health-care utilization among Young prisoners: A longitudinal study. *Int J Forensic Ment Health*. 2017;16(2):139-48.
- [11] Heller P, Morosan L, Badoud D, Laubscher M, Jimenez Olariaga L, Debbané M, et al. Prevalence rates and evolution of psychiatric disorders among incarcerated youths in comparison with non-incarcerated youths. *Front Psychiatry*. 2022;12:784954.
- [12] Riccio S. Mental health treatment in juvenile correctional facilities: utilizing assessment to inform treatment. 2021. Dissertations. 618. <https://digitalcommons.nl.edu/diss/618>.
- [13] Hill K, Wainwright V, Stevenson C, Senior J, Robinson C, Shaw J. Prevalence of mental health and suicide risk in prisons in low-and middle-income countries: a rapid review. *J Forensic Psychiatry Psychol*. 2022;33(1):37-52.
- [14] Baranyi G, Scholl C, Fazel S, Patel V, Priebe S, Mundt AP. Severe mental illness and substance use disorders in prisoners in low-income and middle-income countries: a systematic review and meta-analysis of prevalence studies. *Lancet Glob Health*. 2019;7(4):e461-e71.
- [15] Khelil MB, Zgarni A, Belghith M, Harzallah H, Zhioua M, Hamdoun M. Trends of juvenile and adolescent suicides in North Tunisia: a 12-year study. *Public Health*. 2021;194:223-31.
- [16] Aida S, Aili H, Manveen K, Salwina W, Subash K, Ng C, et al. Prevalence of psychiatric disorders among juvenile offenders in Malaysian prisons and association with socio-demographic and personal factors. *Int J Prison Health*. 2014;10(2):132-43.
- [17] Ruiz Íñiguez R, Carralero Montero A, Martínez González A, Méndez Parra E, Valdés Díaz Y, Sempere J. Interfamily therapy, a multifamily therapy model settled in infant juvenile mental health services of Havana (Cuba): a qualitative study from participants' perspectives. *J Marital Fam Ther*. 2021;47(4):843-63.
- [18] Borschmann R, Janca E, Willoughby M, Fazel S, Hughes N, Patton G, et al. The physical and mental health of young people in detention: A global scoping review. *Int J Integr Care*. 2021;20(S1).
- [19] Serra G, De Crescenzo F, Maisto F, Galante JR, Iannoni ME, Trasolini M, et al. Suicidal behavior in juvenile bipolar disorder and major depressive disorder patients: Systematic review and meta-analysis. *J Affect Disord*. 2022;311:572-81.
- [20] Young S. How incarceration impacts prisoners and their families' mental health, <https://autofintechs.com/how-incarceration-impacts-prisoners-and-their-families-mental-health/>. 2022.
- [21] Quandt KR, Jones A. Research Roundup: Incarceration can cause lasting damage to mental health. Prison policy initiative. 2021. <https://www.prisonpolicy.org/blog/2021/05/13/mentalhealthimpacts/>.
- [22] Robertson AA, Gardner S, Dembo R, Dennis M, Pankow J, Wilson KJ. Impact of implementation interventions to improve substance use service delivery on recidivism among justice-involved youth. *Health Justice*. 2023;11(1):1-10.
- [23] Correa N, Hayes, Angie Bhalakia, Avni, Lopez KK, Cupit T, Kwarteng Amaning V, Keefe RJ, Greeley CS, et al. Parents' Perspectives on the impact of their incarceration on children and families. *Family Relations*. 2021;70(1):162-70.
- [24] Hopkin G, Evans-Lacko S, Forrester A, Shaw J, Thornicroft G. Interventions at the transition from prison to the community for prisoners with mental illness: a systematic review. *Adm Policy Ment Health*. 2018;45:623-34.
- [25] Evans C, Forrester A, Jarrett M, Huddy V, Campbell CA, Byrne M, et al. Early detection and early intervention in prison: Improving outcomes and reducing prison returns. *J. Forensic Psychiatry Psychol*. 2017;28(1):91-107.

- [26] Georgiou M, Townsend K. Quality Network for Prison Mental Health Services: reviewing the quality of mental health provision in prisons. *J. Forensic Psychiatry Psychol.* 2019;30(5):794-806.
- [27] Davidson F, Clugston B, Perrin M, Williams M, Heffernan E, Kinner SA. Mapping the prison mental health service workforce in Australia. *Australas Psychiatry.* 2020;28(4):442-7.
- [28] Khan AA, Ryland H, Pathan T, Ahmed HU, Hussain A, Forrester A. Mental health services in the prisons of Bangladesh. *BJPsych Int.* 2021;18(4):88-91.
- [29] Olagunju AT, Oluwaniyi SO, Fadipe B, Ogunnubi OP, Oni OD, Aina OF, et al. Mental health services in Nigerian prisons: lessons from a four-year review and the literature. *Int J Law Psychiatry.* 2018 May-Jun;58:79-86.
- [30] Mhlanga-Gunda R, Kewley S, Chivandikwa N, Van Hout M-C. Prison conditions and standards of health care for women and their children incarcerated in Zimbabwean prisons. *Int J Prison Health.* 2020;16(3):319-36.
- [31] Dennard S, Tracy DK, Beeney A, Craster L, Bailey F, Baureek A, et al. Working in a prison: Challenges, rewards, and the impact on mental health and well-being. *J Forensic Pract.* 2021;23(2):132-49.
- [32] Bellass S, Canvin K, McLintock K, Wright N, Farragher T, Foy R, et al. Quality indicators and performance measures for prison healthcare: a scoping review. *Health Justice.* 2022;10(1):1-19.
- [33] GDP. The General Department of Prison (GDP), Ministry of Interior, Royal Government of Cambodia. 2016.
- [34] WHO. Focus on expanding mental health services in the WHO South-East Asia Region 2023 [Available from: <https://www.who.int/southeastasia/news/detail/22-06-2023-focus-on-expanding-mental-health-services-in-the-who-south-east-asia-region>].
- [35] Chappell AT, Maggard SR. The impact of victimization, mental health problems, and disabilities on juvenile justice processing: does gender matter? *Crime Delinq.* 2021;67(2):147-78.
- [36] Givens A, Moeller K, Johnson TL. Prison-based interventions for early adults with mental health needs: a systematic review. *Int J Offender Ther Comp Criminol.* 2021;65(5):613-30.
- [37] Livanou M, Furtado V, Winsper C, Silvester A, Singh SP. Prevalence of mental disorders and symptoms among incarcerated youth: a meta-analysis of 30 studies. *Int J Forensic Ment Health.* 2019;18(4):400-14.
- [38] Ricciardelli R, Carleton R, Gacek J, Groll DL. Understanding needs, breaking down barriers: examining mental health challenges and well-being of correctional staff in Ontario, Canada. *Front Psychol.* 2020;11:1036.
- [39] Solar O, Irwin A. A conceptual framework for action on the social determinants of health. WHO document production services; 2010.
- [40] Alves da Costa F, Verschuuren M, Andersen Y, Stürup-Toft S, Lopez-Acuña D, Ferreira-Borges C. The WHO Prison Health Framework: a framework for assessment of prison health system performance. *Eur J Public Health.* 2022.
- [41] Kim B-KE, Gilman AB, Thompson N, De Leon J. Statewide trends of trauma history, suicidality, and mental health among youth entering the juvenile justice system. *J Adolesc Health.* 2021;68(2):300-7.
- [42] Gonçalves LC, Dirkzwager AJ, Rossegger A, Noll T, Endrass J. Prison visitation and mental health in detained young adults. *Kriminologie - das Online-Journal: KrimOJ. Universität zu Köln, Institut für Kriminologie.* 2020, 2(2), pp. 234-250.
- [43] Zhong S, Senior M, Yu R, Perry A, Hawton K, Shaw J, et al. Risk factors for suicide in prisons: a systematic review and meta-analysis. *Lancet Public Health.* 2021.
- [44] Abdu Z, Kabeta T, Dube L, Tessema W, Abera M. Prevalence and associated factors of depression among prisoners in Jimma Town Prison, South West Ethiopia. *Psychiatry J.* 2018;2018.
- [45] Achenbach TM. Achenbach system of empirically based assessment (ASEBA): Development, findings, theory, and applications: University of Vermont, Research Center of Children, Youth and Families; 2009.
- [46] Darden C, Ginter E, Gazda G. Life-Skills Development Scale-Adolescent Form: The theoretical and therapeutic relevance of life-skills. *J Ment Health Couns.* 1996;18(2):142-63.
- [47] Jegannathan B, Dahlblom K, Kullgren G. Outcome of a school-based intervention to promote life-skills among young people in Cambodia. *Asian J Psychiatr.* 2014;9:78-84.
- [48] Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol.* 2006;3(2):77-101.
- [49] Graneheim UH, Lundman B. Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness. *Nurse Educ Today.* 2004;24(2):105-12.
- [50] Gabrysch C, Sepúlveda C, Bienzobas C, Mundt AP. 'Maybe it is only in prison that I could change like this' The course of severe mental illnesses during imprisonment: A qualitative 3-year follow-up study from Chile. *Front Psychol.* 2020;11:1208.
- [51] Richardson Jr JB, Brakle MV. A qualitative study of relationships among parenting strategies, social capital, the juvenile justice system, and mental health care for at-risk African American male youth. *J Correct Health Care.* 2011;17(4):319-28.
- [52] Dewey S, Codallos K, Barry R, Drenkhahn K, Glover M, Muthig A, et al. Higher education in prison. *J Correct Educ.* 2020;71(1):57-89.
- [53] Ghazanfari H, Miri S, Taebi M, Farokhzadian J. Psychological wellbeing, family cohesion, and purposeful life in male prisoners: A cross-sectional study. *Front Psychiatry.* 2023;13:1054149.

- [54] Zhao X, Shi C. Loneliness of adult and juvenile prisoner influences on psychological affect: Mediation role of control source. *J Investig Psychol Offender Profiling*. 2020;17(2):93-100.
- [55] Schliehe A, Laursen J, Crewe B. Loneliness in prison. *Eur J Criminol*. 2022;19(6):1595-614.
- [56] Kolivoski KM, Shook JJ. Incarcerating juveniles in adult prisons: Examining the relationship between age and prison behavior in transferred juveniles. *Crim Justice Behav*. 2016;43(9):1242-59.
- [57] Rijo D, Brazão N, Barroso R, da Silva DR, Vagos P, Vieira A, et al. Mental health problems in male young offenders in custodial versus community based-programs: implications for juvenile justice interventions. *J Child Psychol Psychiatry*. 2016;10(1):40.
- [58] Gabrysch C, Fritsch R, Priebe S, Mundt AP. Mental disorders and mental health symptoms during imprisonment: A three-year follow-up study. *PloS One*. 2019;14(3):e0213711.
- [59] Topp SM, Moonga CN, Luo N, Kaingu M, Chileshe C, Magwende G, et al. Exploring the drivers of health and healthcare access in Zambian prisons: a health systems approach. *Health Policy Plan*. 2016;31(9):1250-61.
- [60] Calles-Rubiales N, Del Prado CI. Influence of prisoners' mental health on the relational climate of prisons. *Rev Esp Sanid Penit*. 2020;22(3):116.
- [61] Abello C, Pacheco M, Sanhueza GE. Prison officers in Latin America: quality of life, working conditions and main difficulties. *Rev Esp Sanid Penit*. 2023;25(1):20.
- [62] Jegannathan B, Kullgren G. Gender differences in suicidal expressions and their determinants among young people in Cambodia, a post-conflict country. *BMC Psychiatry*. 2011;11(1):1.
- [63] Schwalbe CS, Gearing RE, MacKenzie MJ, Brewer KB, Ibrahim RW. The impact of length of placement on self-reported mental health problems in detained Jordanian youth. *Int J Law Psychiatry*. 2013;36(2):107-12.
- [64] Semel A. Mean score comparisons on the ASEBA youth self-report between a sample of adjudicated delinquent youths evaluated for legal disposition and the normative sample of non-clinically referred male adolescents. *EC Psychol Psychiatry*. 2020;9:01-9.
- [65] Shagufta S, Boduszek D, Dhingra K, Kola-Palmer D. Criminal social identity and suicide ideation among Pakistani young prisoners. *Int J Prison Health*. 2015;11(2):98-107.
- [66] Clark KA, Harvey TD, Hughto JM, Meyer IH. Mental health among sexual and gender minority youth incarcerated in juvenile corrections. *Pediatrics*. 2022;150(6):e2022058158.
- [67] Clark VA, Duwe G. An outcome evaluation of a prison-based life-skills program: The power of people. *Int J Offender Ther Comp Criminol*. 2015;59(4):384-405.
- [68] Hunte RS, Esmail A. Learning to change: Does life skills training lead to reduced incident reports among inmates in a medium/minimum correctional facility? *Race Gender Class*. 2011:291-315.
- [69] Schram PJ, Morash M. Evaluation of a life skills program for women inmates in Michigan. *J Offender Rehabil*. 2002;34(4):47-70.
- [70] Jordaan J, Beukes R, Esterhuysen K. The development and evaluation of a life skills programme for young adult offenders. *Int J Offender Ther Comp Criminol*. 2018;62(10):3077-96.
- [71] Barnert ES, Perry R, Azzi VF, Shetgiri R, Ryan G, Dudovitz R, et al. Incarcerated youths' perspectives on protective factors and risk factors for juvenile offending: A qualitative analysis. *Am J Public Health*. 2015;105(7):1365-71.
- [72] Vandergrift LA, Christopher PP. Do prisoners trust the healthcare system? *Health Justice*. 2021;9(1):1-8.
- [73] Dunlop L, Bennett DM. The use and readability of mental health self-help in Scottish prisons. *J Forensic Psychiatry Psychol*. 2017;28(3):388-99.
- [74] Wang L. The positive impacts of family contact for incarcerated people and their families. *Prison policy initiative*. 2021. [https://www.prisonpolicy.org/blog/2021/12/21/family\\_contact/](https://www.prisonpolicy.org/blog/2021/12/21/family_contact/).
- [75] Holoyda BJ, Scott CL. Psychiatric education in the correctional setting: challenges and opportunities. *Int Rev Psychiatry*. 2017;29(1):11-20.
- [76] World Health Organization. Good governance for prison health in the 21st century: A policy brief on the organization of prison health: World Health Organization. Regional Office for Europe; 2013.