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ORIGINAL ARTICLE

Cognitive Processes Underlying Drug-Related Recidivism: A Qualitative Study

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Abstract

Drug-related recidivism is a persistent challenge shaped not only by structural and social conditions but also by individual cognitive processes. This study explored how incarcerated male drug offenders in Malaysia interpret and rationalize their repeated involvement in drug-related crimes. Using interpretative phenomenological analysis (IPA) of in-depth interviews with 25 participants, two overarching cognitive patterns were identified: poor long-term thinking and optimism bias. Participants frequently described impulsive decision-making, limited metacognition, and a preference for immediate rewards, often acknowledging risks yet disregarding them in favor of short-term gratification. Optimism bias manifested as expectations of lenient punishment, confidence in avoiding detection, and a belief in remaining "innocent" so long as one was not caught. These patterns collectively reduced the perceived need for behavioral change and sustained cycles of reoffending. The findings highlight the limitations of deterrence-based approaches that assume rational cost-benefit calculations, as many participants' decisions were shaped by distorted thinking and impaired executive control. Instead, interventions targeting cognitive restructuring, decision-making skills, and metacognitive awareness may offer greater potential in reducing relapses into criminal behavior. By centering the lived experiences of repeat offenders, this study underscores the importance of integrating cognitive and neuropsychological insights into rehabilitation policy, moving beyond punitive responses toward approaches that address underlying cognitive vulnerabilities.

Keywords Recidivism · Drug-related crime · Cognitive process · Poor long-term thinking · Optimism bias · Metacognition

Introduction

Recidivism, the tendency of individuals to reoffend following earlier experiences with the justice system, has remained a widespread and significant issue across the world (Baffour, 2021; Syasyila et al., 2025). The cycle of offending behavior places a great deal of strain on correctional facilities, overburdens the legal and law enforcement systems, and jeopardizes larger initiatives for effective social reintegration (Lin et al., 2023). Recidivism is more than just a legal or legislative issue; it is a systemic inability to effectively break the cycle of crime, imprisonment, and reoffending.

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Although a variety of criminal behaviors can lead to reoffending, drug-related offenses are particularly relevant due to such offenses being multifaceted, cyclical, and deeply ingrained for those involved (Syasyila et al., 2024). Importantly, drug offenses frequently occur as part of chronic patterns of drug abuse, financial difficulties, psychological susceptibility, and social exclusion (Ismail et al., 2024; Maloisane & Mia, 2024; O'Mahony, 2023). Ongoing drug use can make behavioral change increasingly challenging due to the associated changes in brain function, including its inhibitory impact on decision-making (Volkow & Blanco, 2023). Additionally, the effects of chronic drug use are rarely restricted to legal violations; they also include impaired relationships, chronic relapse, and health deterioration (Fauziah et al., 2021; Manurung, 2024; Takahashi et al., 2021; Vafaie & Kober, 2022). These interrelated elements complicate attempts at prevention and rehabilitation by producing a feedback loop in which drug use and crime support one another.

Research indicates that drug use may start as early as age 12, especially in young people living in high-risk situations because of peer pressure, unstable families, and insufficient supervision (Amin et al., 2024; Bitsko et al., 2022). Early drug use is seldom a coincidence; rather, it frequently reflects more serious systemic issues such as neglect, trauma, and economic strain (Grummitt et al., 2021). It is important to note that early drug use creates chronic cycles of crime, punishment, and relapse, hence increasing vulnerability to future criminal participation (Saladino et al., 2021). What begins as exploration typically turns into prolonged usage, especially if left unaddressed. Drug use over time can alter neurodevelopment and impair fundamental cognitive abilities such as emotional regulation, impulse control, and executive decision-making throughout crucial phases of brain maturation (Brockhagen, 2025; Sulaiman et al., 2021). These neurocognitive abnormalities, especially combined with inadequate access to mental health treatment and social support, could reinforce maladaptive behavioral patterns (Ekhtiari et al., 2020). Early drug use has therefore been repeatedly associated with an increased likelihood of subsequent criminal conduct, such as drug trafficking, property offenses, and violence motivated by the desire to maintain an addiction (Jakupi, 2024).

According to data from the National Anti-Drugs Agency (NADA, 2024), drug users in Malaysia rose from 128,911 in early 2023 to 169,691 in early 2024, a 31.6% rise. Approximately 0.5% of the nation's 35 million residents make up this statistic, and 15.3% of them are repeat offenders (Ministry of Home Affairs, 2024). As such, this recurrence highlights the difficulties in disrupting the behavioral cycle that drives drug-related crimes, which often resists conventional deterrence and rehabilitation measures. Apart from its detrimental impact on the users, drug recidivism jeopardizes public safety, contributes to the financial burden on penal institutions, and impedes national advancement by exhausting human resources (Western & Harding, 2022). Additionally, the long-term societal cost is exacerbated in areas that are disproportionately affected by illicit drug use, which often have worse social cohesion and higher intergenerational risks (Jones, 2024).

While structural and socioeconomic factors, such as poverty, unemployment, illiteracy, and limited access to healthcare, have been studied extensively (Cohen et al., 2024), less is known about the cognitive mechanisms underpinning persistent reoffending. Several nations have adopted restorative justice frameworks and community-centered approaches to address these external concerns. For instance, Portugal's decriminalization strategy stresses extensive intervention by increasing access to detoxification, psychotherapy, and methadone, backed by medical personnel trained in addiction care (Quintas & Arana, 2017). On the other hand, Singapore's Yellow Ribbon Project prioritizes reintegration through family and community assistance (Tay et al., 2020). Nevertheless, the continued prevalence of drug-related crime indicates that structural changes might not be enough to address the psychological factors that support criminal conduct.

Given these constraints, an increasing amount of study has turned inward to the individual, concentrating on the mental and affective aspects of criminal decision-making. However, lingering questions remain, including how people who commit crimes again view themselves, their decisions, and their potential for change, and what presumptions and mental models influence how they perceive risk, time, and consequence. Understanding the mental factors that contribute to repeat crimes, particularly from a cognitive standpoint, offers a comprehensive grasp of how these people make sense of their actions, motives, and futures based on their lived experiences.

Thus, this study aims to fill a gap in the literature by exploring, qualitatively, how recurrent drug offenders interpret their continued engagement in drug-related crimes. The subjects within this study were recidivists with past drug convictions, providing direct knowledge of their cognitive processes that might contribute to persistent criminal behavior. By focusing on the perspectives of people who are frequently pathologized or marginalized in mainstream discussion, this study seeks to shed light on the lived experiences of recidivist drug offenders, informing more sympathetic, psychologically sensitive rehabilitation efforts.

Methods and Data

Participants

Twenty-five male participants who were serving drug-related sentences in Malaysian prison institutions were

recruited for this study in 2025. Purposive sampling was used to choose participants who met specific inclusion criteria, such as being a Malaysian national, having at least one prior drug conviction, and being able to understand and converse in Malay. To ensure reflective involvement during the interview process, those with significant cognitive impairment, mental health issues, or persistent withdrawal symptoms were excluded from the study. Table 1 presents an overview of the participants' demographic information.

Semi-structured Interviews

Semi-structured interviews were used to gather data, using an interview protocol constructed to explore participants' viewpoints on drug use, decision-making, risk perception, and change readiness. Field experts reviewed the interview guide's material for clarity and practicality after it had been developed using existing literature on cognitive processes in addiction and recidivism.

Procedure

Following the Research Ethics Committee of The National University of Malaysia (RECUKM) ethical approval with reference number: JEP-2024-617, the researchers coordinated with the Malaysian Prison Department to enable participant access and assure institutional compliance. The department designated a liaison officer to assist with logistics, such as participant recruiting and interview scheduling. In compliance with correctional facility standards, the liaison officer's presence was additionally mandatory during the data gathering process for safety and procedural monitoring.

Table 1 Participant demographic information

Participant no.	Age	Ethnicity	Marital status	Education level	Employment	Sentence	Incarceration no.	Age (first use)
1	51	Chinese	Single	Primary education	Construction contractor	5 years	7	20
2	47	Chinese	Divorced	Primary education	Restaurant worker	5 years	4	17
3	46	Malay	Single	Primary education	Warehouse worker	5 years	3	25
4	47	Malay	Married	Upper secondary education	Pusher	15 years	4	15
5	41	Malay	Single	Primary education	Security guard	6 years	36	15
6	37	Indian	Married	No formal education	Mechanic	5 years	10	12
7	54	Malay	Single	Upper secondary education	Security guard	6 years	6	20
8	52	Malay	Divorced	Primary education	Trash collector	5 years	20	21
9	43	Indian	Single	Primary education	Scrap metal worker	5 years	20	18
10	45	Kadazandusun	Single	Primary education	Used shoe seller	5 years	6	16
11	54	Malay	Divorced	Primary education	Lorry driver	5 years	4	19
12	46	Malay	Widower	Primary education	Driver	5 years	3	32
13	27	Malay	Divorced	Primary education	Night market vendor	5 years	2	13
14	40	Malay	Single	Primary education	Security guard	5 years	6	28
15	46	Malay	Divorced	Primary education	Security guard	5 years	14	15
16	50	Indian	Single	Primary education	Plumber	5 years	8	17
17	36	Malay	Single	No formal education	Fisherman	5 years	7	22
18	32	Indian	Single	Upper secondary education	Transportation worker	7 years	1	18
19	42	Indian	Married	Primary education	Lorry driver	6 years	5	18
20	59	Malay	Divorced	Primary education	Factory worker	5 years	9	30
21	48	Malay	Single	Primary education	Snack vendor	5 years	7	18
22	31	Indian	Single	Upper secondary education	Field officer	10 years	1	23
23	28	Malay	Single	Upper secondary education	Delivery rider	5 years	2~	24
24	49	Indian	Single	No formal education	Truck assistant	12 years	14	21
25	45	Malay	Married	Primary education	Mechanic	5 years	4	21

Participants were informed about the nature and goal of the study before each interview, as well as their voluntary involvement and their right to withdraw at any time without consequence. They were given assurances of confidentiality and that their remarks would have no legal or institutional repercussions. All participants gave their written informed consent.

A specific private space within the prison was used for data collecting, providing a setting that encouraged candid and open communication. Institutional restrictions forbade audio recording. As a result, researchers documented the participants' nonverbal clues and made thorough notes during the interviews. In order to ensure accuracy, transparency, and participant validation, interviewers repeated important aspects from each participant's remarks during the session as part of member verification. As a token of appreciation, participants were given a small honorarium, which was arranged with the liaison officer and was used for food purchases from the prison cafeteria.

Data Analysis

Interpretative phenomenological analysis (IPA), a qualitative technique that seeks to investigate how people interpret their lived experiences, was used to analyze the data. This approach was chosen because it emphasizes capturing the depth and variety of participants' subjective experiences, which is especially important given this study's nature.

All interviews were transcribed, and the transcripts were read several times to verify that the material was well understood. Initial notes were taken to document the descriptive, linguistic, and conceptual aspects of each narrative. Emergent themes were then found within each distinct case, upholding the IPA's idiographic approach. These themes were then analyzed across instances to find patterns of convergence and divergence, while preserving the integrity of each participant's distinct experience.

Reflexivity was upheld throughout the procedure to take into consideration the researcher's own views and biases. Analytic notes and decision trails were preserved to track how interpretations changed during the analysis. The final set of sub-themes was created through iterative comparison and abstraction, with a strong foundation in the participants' verbatim narratives and a reflection of the researcher's interpretive interaction with the material.

Results

From the data analysis, two themes with varying numbers of sub-themes emerged. The themes and sub-themes are covered in further depth below and are presented in Table 2.

Theme 1: Poor Long-Term Thinking

A recurring theme in the participant narratives was a propensity for making snap decisions, especially when it came to their drug usage. When reflecting on the circumstances leading up to their offenses, many participants recognized the risks, yet their reflections showed a recurring pattern of cognitive shortcuts, inadequate self-monitoring, and delayed judgment. Participants frequently talked about behaving impulsively without giving long-term effects much thought, as opposed to thinking consciously or reflectively. The sub-themes that follow provide more evidence of how these cognitive tendencies appeared at various phases of their decision-making and thinking processes.

Sub-theme 1.1: Curiosity About Drug Effects Transcends Cognitive Dissonance

Across participants' narratives, early drug use was frequently driven by a persistent curiosity that outweighed moral misgivings or understanding of legal ramifications. Some participants talked about an internal pull, a need to "feel what they felt," that prompted them to start using drugs, even though they acknowledged the hazards to their personal safety, their religion, and their legal status.

Table 2 List of themes and sub-themes

Themes	Sub-themes
Poor long-term thinking	a. Curiosity about drug effects transcends cognitive dissonance
	b. Heuristic thinking
	c. Low metacognition
	d. Delayed cognitive appraisal
	e. Immediate reward driven thinking
Optimism bias	a. Expectation of lenient punishment
	b. Believing punishment can be avoided
	c. Increased courage after almost being caught
	d. Belief that one remains innocent as long as they are not caught

Participant 4 recounted how his interest was heightened by the obvious drug use in his neighborhood:

> I know it's haram (forbidden)… but I took it anyway and brought it to my friend to explore. I mean I was only 15 years old. We did it out of curiosity because we always see brothers out in the neighborhood getting steamed. So I wanted to feel what that felt like… I didn't think long like, 'what if I was caught,' like what just happened to the addicts in front of our eyes… I thought I'd try once and stop because I know it's wrong, but here I am. (P4)

The contrast between knowing it is forbidden and deciding to use drugs regardless highlights a cognitive dissonance that was purposefully ignored in favor of curiosity. Participant 29 mirrored this, describing a similar disengagement from risk when faced with fascination:

> Not for a moment did it strike my mind 'what if I'm caught?' Even though I always saw the narcotics authorities catch addicts. I always think, ah, I'm just going to smoke a bit, I can't be caught for it… I thought after smoking I could forget about it. But I was wrong. (P29)

Despite the fact that participants were repeatedly and directly exposed to the legal ramifications of drug use in their communities, participants deliberately chose to disregard forward thinking. For participant 10, the need to "know" appeared to take precedence above both perceived risk and religious values:

> I know it's a wrong path but that question lingers… Why do people hype drugs up so much? I've seen people fight, even manslaughter, under the influence. But I still wanted to try and I thought to myself, whatever happens, I'll deal with it later. (P10)

Participants acknowledged inner turmoil, but this was always overshadowed by the drive to find answers concerning the true experience of drug use.

Sub-theme 1.2: Heuristic Thinking

Participants often reported a tendency to use impulsive, experience-based thinking while committing crimes or participating in drug-related conduct. Many turned to gut instincts and instinctual answers, which can be characterized as heuristic thinking, instead of foreseeing or assessing the repercussions. Prioritizing these mental shortcuts above rational or future-focused reasoning was frequently due to feelings of urgency (particularly during withdrawal) or familiarity with dangerous situations.

Participant 5 thought about how impulsive he was, especially while he was experiencing withdrawal symptoms:

> If I'm already in withdrawal, I'll just start my bike, hit the road and look for a target. I usually go to KLCC, it's the city area. I just do it casually. If I see someone being careless, I'll snatch their bag. If someone is driving with a bag on the passenger seat, I'll break the windshield at a traffic light, grab the bag, and escape. No planning…just whatever comes to mind. (P5)

There is minimal room for contemplation in this situation; instead, action is prompted by immediate environmental stimuli. Similarly, despite using drugs often, participant 6 admitted to repeatedly failing to plan for withdrawal crises:

> By right, I should already have a plan for when withdrawal hits, but I never learn. I don't like thinking long term…it's my weakness. If I can do something on the spot to get money for drugs, I'll do it. Usually it's stealing. I'm chill like that. No need to think much. I'm used to this. (P6)

Minimizing planning is often the result of a deep-rooted reliance on trial-and-error solutions rather than a lack of knowledge. Following a high-stakes interaction with the police, participant 14 described how hasty judgments were made at the expense of safety or rationality:

> One time, I was chased at my flat around 6 a.m. Narcotics officers had surrounded me and I decided to jump into the river nearby. I had no time to think about crocodiles or monitor lizards. I know police are smart, sometimes undercover, but I still wasn't alert. I've been through this so many times, but my brain just goes: 'I'll cross the bridge when I get there.' Just follow my gut. (P14)

Additionally, participant 26 emphasized that, despite advice from experienced peers, he preferred immediate responses over thoughtful preparation:

> Some of my friends are pros and they always advise me to plan my next move carefully. But I don't know… I don't like to think too much. I'd rather deal with it when it happens. This is something I always do anyway. (P26)

These narratives point to a consistent pattern of relying on quick decisions and prior knowledge, frequently in situations that carry significant risk or involve illegal activity. Participants regularly resorted to short-term, reactive thinking regardless of their knowledge of hazards and past experiences.

Sub-theme 1.3: Low Metacognition

The inability of participants to practice reflective self-awareness and higher-order thinking, a pattern suggestive of inadequate metacognitive ability, was a recurring theme in their narratives. Despite multiple incarcerations and facing legal repercussions, participants frequently spoke about not being able to think critically about their choices, comprehend the effects of their acts, or grow from their mistakes.

Participant 10 linked his inability to make decisions to both intellectual delays and a lack of supervision, dating back to his early years:

> It's hard for me to plan my actions because there's no one to guide me or support me… Since young, I've been very slow…maybe because I didn't go to school. My folks just let me be like that. I couldn't think through things. I've been caught six times now, but I still haven't learned my mistakes. (P10)

The description of metacognitive gaps in this context went beyond human failings to include institutional neglect and cognitive underdevelopment. Similar to participant 11, he was frustrated by his incapacity to control his conduct and think critically:

> I really can't think about things very deeply… If I was smart enough, maybe I wouldn't get caught or get into drugs or crime in the first place. Or maybe I could've done it professionally, until the authorities couldn't trace me. But that's not the case, I always end up in prison anyway. (P11)

In both cases, participants see an internal barrier that they are unable to overcome—the apparent inability to access or apply rational thinking as the reason for their lack of contemplation and foresight, rather than a complete absence of awareness. Participant 16 echoed this, describing recurrent offenses in spite of many arrests and criticism from family members:

> Even though I've been caught many times, I didn't learn my lesson… My mom always scolds me, but it's just for the sake of it. There's no proper guidance. My thoughts are always all over the place… I don't understand my own way of thinking. (P16)

The profound depth of this cognitive conflict was also noted by participant 17, who had encountered almost ten convictions:

> It's hard for me to change the way I think… If I were to rely on my own thinking pattern, it feels hopeless. I don't know why I can't learn or why I don't have the wisdom to do better. I'm always getting caught. I am not knowledgeable. (P17)

These accounts exhibit a lack of metacognitive control, where people are not only unable to understand the reasoning behind their acts but also are unable to critically examine those patterns even after failing repeatedly.

Sub-theme 1.4: Delayed Cognitive Appraisal

The delayed commencement of self-reflection, which frequently happens only after repeated imprisonment or the passing of important life milestones, was a recurring theme among participants. Even though the participants were warned about the implications and cautions earlier in life, many of them reported they were unable to internalize them until much later, usually in later adulthood. In many instances, this late cognitive awakening seems to result from a natural acceptance of aging, loss, and compounded consequences.

According to participant 7, he only gradually realized how serious his activities were after serving a lengthy sentence later in life, rather than when he was convicted for a shorter period earlier:

> When I was caught during my younger days, I didn't feel much regret… but now that I'm wearing this green uniform [long term sentences of >15 months], I feel deep regret. My family doesn't want to keep in touch anymore. I'm 54, with no wife or kids. Drugs and crime only bring bad stuff, even though I used to think it helped with work. Actually, I could've worked without it. The harms are severe health wise…overdose (OD)… I've had many friends die from OD. But the realization of it all only comes now. (P7)

Many individuals acknowledged how the early-onset of impulsivity had previously impaired their judgment and linked this cognitive change to age itself. Participant 14 reflected:

> People used to advise me, but I had a young soul. I didn't realize what I was doing…didn't learn from my mistakes. I'm slow like that. Not good at thinking well. Only now, being in and out of prison, I reflect…when will this end? (P14)

Participant 20 had similar views, explaining that it was not until years of compounding consequences that awareness finally dawned:

> Time is ticking… such a waste. I'm 59 this year. If I were out there, I could've made money for retirement. Only lately it struck me that if I'm released, I'll have nothing but the clothes on me. I'm on my ninth sentence, and only now am I having that awakening. Even in other things, I have to fall many times before I slowly realize what it's all about. (P20)

Participant 24 mirrored this, expressing a sense of hopelessness and finality related to aging in prison:

> Now that I'm old, I feel like it's time to change. Time's just going to waste in here… I got 12 years sentence… it feels like my life is done. Only now it's striking me, if we want to use drugs, we should know the law and punishment. But you know… I didn't have the wisdom back then. (P24)

For many, realization came only when they were unable to overlook the long-term consequences of a life that had been recurrently molded by drug use and incarceration.

Sub-theme 1.5: Immediate Reward Driven Thinking

The urge for instant gratification was regularly shown by the participants, who frequently made decisions that produced immediate benefits even when they were aware of possible long-term or legal repercussions. Any thought of potential hazards or delayed rewards was eclipsed by this emphasis on immediate gratification, whether via monetary gain or the euphoric effects of illicit substances. Their drug use patterns and criminal decision-making seemed to be profoundly influenced by the need for immediate results.

Participant 9 openly expressed his frustration and propensity to put speed ahead of security:

> I don't like to wait long. If I work a month, I know I'll get a salary and can get what I want, but I still prefer doing things that give me quick rewards. I'll do it until I get that reward then and there…it makes me feel satisfied. But honestly, I don't think about what comes after, especially if I got it illegally. That's my weakness. (P9)

Similarly, participant 19 connected his dissatisfaction with delayed results to his history of drug use and criminal activity:

> I do not like to wait a long time and committing crimes usually give fast results. Even with drugs, I like it when it hits me fast, so I take it intravenously. I get steamed quicker. I'm hot headed if I have to wait for something too long. But now that I'm back in prison again, I'm thinking if I had planned better, maybe I wouldn't end up here again. (P19)

The need for immediate gratification expanded beyond illicit substances to include risky financial endeavors. In search of a more profitable but unlawful opportunity, participant 18 recounted leaving behind legal job prospects:

> I had two jobs and earned RM3,000 a month. I was exhausted. Then I heard a friend talking about this [drug] business and how profitable it was. I became desperate. I agreed without thinking much. At 21, I bought a Honda; by 24, I had three lorries. My life became luxurious…always changing phones. I didn't think long term. Even after getting caught, I didn't learn. I was high on that luxury life. (P18)

Participant 22 mirrored this pattern, attributing his transgressions to a desire for financial gain:

> I saw others living lavishly, and I wanted to upgrade my life. I didn't want to wait for a monthly salary from a regular job. Selling and using drugs gave me fast money, and I could enjoy it on the spot. I didn't think about getting caught. Honestly, the money blinded me. I'd never seen or held that much cash so quickly. (P22)

These narratives illustrate how impulsive decision-making and reward sensitivity fuel persistent criminal activity. Many found that the temptation of quick money or instantaneous drug-induced comfort always exceeded the importance of stability or long-term planning. Even while some participants eventually realized the effects of their actions, their initial choices were mostly influenced by short-term satisfaction and little consideration for the future.

Theme 2: Optimism Bias

Another recurring theme in participants' narratives was an underlying optimism bias, which seemed to impact how they perceived danger and punishment. Many reported a feeling of psychological detachment from the potential of getting caught again or facing severe penalties, even in the face of past convictions or close run-ins with the law. Even after several legal interventions, this supposed invulnerability frequently remained. This bias seemed to act as a cognitive buffer that permitted recurrent offenses in spite of previous setbacks. The following sub-themes show how participants exhibited this optimism bias in both their expectations for results and their justifications for previous actions.

Sub-theme 2.1: Expectation of Lenient Punishment

Several participants considered how their prior encounters with light sentencing influenced their perceptions of potential outcomes, which in turn encouraged them to commit crimes again. It seemed to reduce the perceived dangers of their activities, perpetuating a cycle of illegal conduct because they expected punishment to remain light. Some even compared prior brief sentences to "breaks" from their way of life rather than effective deterrents.

This outlook was demonstrated by participant 8, who said how his light sentences in the past created a deceptive sense of security:

> Before this, when I got caught, I'd get out quickly. I've been incarcerated a dozen times and I only get 2 to 3 months each time, so I was brave to do it again and again. This time, when I got 5 years, on God I was shocked and speechless. Now I regret it, now I can clearly use my brain to think. Maybe this is the wisdom I needed to change…because I'm certain if the sentence was short again, I would've repeated the same mistake. I used to treat prison like a much-needed break from my criminality…like a career break. (P8)

Other participants also reinforced the idea that incarceration is a temporary break rather than a deterrence. Participant 14 acknowledged:

> This cycle of crime was on repeat, nonstop. If this time the sentence was short too, I reckon 100% I'd repeat the same mistake. I used to think, 'Ah, I get caught? Great, it's just a short break from my drug activities, and when I'm released, I'll just resume.' Prison was like a holiday break for me. (P14)

Participant 7 admitted that previous brief terms had lessened the gravity of his perception about imprisonment:

> Before, my sentences were short and I'd be released quickly. That's why I didn't think much before committing crimes again. Now that I'm serving my longest sentence, I realize I could live normally, drug-free. The only thing is, there's no freedom in here. I mean, I knew that, but I didn't care before because I'd be released soon. Alhamdulillah, thank God I got a long sentence this time so I could really learn my lesson. (P7)

Some participants saw a significant shift in their previously uncritical views about incarceration after being shocked by a lengthy sentence. As stated by participant 12:

> Before this, I went to prison for a short while… in just a blink, I was out. But now I got 5 years and I regret it because all this time is just going to waste. (P12)

For some, such as participant 13, this sudden change in punishment was an awakening to his recurrent involvement in crime:

> My sentence this time is longer. That's when it got me thinking…is this all worth it? Now I realize that life without drugs is much better and peaceful. I used to live in fear, always afraid of being caught. Now that I'm not doing anything illegal, I feel calmer. Thank God my sentence is longer this time so I could have this awakening to not be involved again. (P13)

In all of these accounts, it seemed that previous sentences that were lenient enough had unintentionally created a false sense of immunity, which caused participants to downplay the seriousness of repeated violations. Participants only reported a true cognitive and emotional transformation, marked by regret, reflective thinking, and an unexpected desire to change, after getting a lengthier sentence.

Sub-theme 2.2: Believing Punishment Can Be Avoided

Several participants expressed a profound confidence that they might avoid legal penalties even when engaged in recurrent illegal actions. A common basis for this sense of invincibility was past experience evading authorities, their deceptive tactics, or an exaggerated belief in their persuasive skills. This notion served as a psychological buffer, reducing their fear of being apprehended and enabling them to continue engaging in risky activity.

Participant 2 expressed how, at first, his trust in his discretion allayed his fears of being discovered:

> I see other people get arrested because they're not good at covering their act. I was very careful. I only took drugs at my workplace. I mean…it's not like the police are going to raid my restaurant, right? Well, I thought wrong. They did. Twice. And here I am. (P2)

Participant 10 shared this sense of control over danger, putting his reliance in interpersonal skills rather than legalities:

> I thought if I ever get stopped by the police, I could just talk my way out of it. I know I'm good at that. I was confident I'd get off easy. Even if they arrested me, I figured I could post bail. I've done that before. But I was wrong, they were really strict this time. (P10)

Others used calculated deceit to uphold an illusion of security. Participant 23 explained how he was able to conduct trafficking activities for a while without being caught by posing as a food delivery rider:

> After I was released the first time, I started going undercover as a delivery rider. I borrowed a bag from a friend who does that job. I did many trafficking like that. I thought if I ever got caught, I could just say it was the customer's parcel and I was just doing my job. I was overly positive… and now I'm here. (P23)

Participant confidence in evading law enforcement was also present in more structured activities. Participant 28

explained being a member of a covert organization that offered strategic planning and safety measures:

> I often traveled up to 400+ km to traffic drug supplies. I got paid a lot for it. We had a whole production team where we'd have table talks before each operation. One car would drive ahead of us to check for roadblocks and signal us. They were professional like that. It was a secret society and they promised to look after us if anything happened. So I wasn't skeptical at all. That's why I kept doing the same crime again and again. (P28)

Participant 30 also described how his prior achievements of evading the law gave him the confidence to keep taking chances without considering the repercussions:

> I was confident traveling long distances while high and carrying drugs. I've never been caught, so I didn't think I would be. And even if I did get stopped, I thought I could just bribe the police. But I was wrong, they were really strict and did their jobs with integrity. (P30)

The interviewees highlighted cognitive rationalizations that enabled them to overcome both internal uncertainty and external risk, whether through impersonation, manipulation, or dependence on structured systems. These hopeful presumptions eventually proved untenable, but not before they made a substantial contribution to recidivism cycles.

Sub-theme 2.3: Increased Courage After Almost Being Caught

Numerous participants discussed the counterintuitive link between fear and boldness, arguing that narrowly avoiding police enforcement enhanced feelings of excitement, control, and invincibility rather than discouraging future criminal activity. A developing emotional tolerance for danger and even a desire for the adrenaline it produced seem to be fostered by these "near miss" events.

Participant 4 recounted an early event that changed his mindset:

> There was a time my friends and I were having a good time, until we got word that there was going to be a police raid. We were almost caught, but we had time to run away. After that, I felt a little heroic… like I wanted to do it again just for the thrill. (P4)

Participant 7 also repeated this psychological boost after evasion, describing a sequence of anxiety followed by boldness:

> Every time I took drugs, I'd feel really scared, even though I had already been caught so many times. But not every raid ended in arrest. When I did manage to get away, I felt proud… like, 'ugh, let's do this again.' (P7)

Participant 8, who described escaping detention during a police sting operation, provided a striking example of the story of escape that buffers empowerment:

> I was busted once when I went to the pusher's house. The narcotic officers were already there. They had set a trap. But I saw them and ran. It was like a movie... they were chasing me left and right but I knew the area so well I slipped through. After that, the rush made me feel really brave. (P8)

Others believed they could outwit the system since they had been exposed to danger repeatedly and had managed to get away. Participant 10 revealed:

> It's actually really frightening to go through the day… always watching your back. But I'd tell myself…it's okay, I almost got caught yesterday, but they didn't catch me. So, I can keep going. (P10)

Similarly, participant 15 expressed:

> I was chased by police after a massive robbery. But I got away. I felt like a hero. I wanted to do it again. (P15)

Participant 20 said how he became less afraid and more in control after several near misses:

> It's scary to think about the police, but after a while of always getting away, I started feeling brave. I was raided many times with my friends, they'd chase us like mad but I always escaped. After that, I'd feel one kind of greatness. Getting away from authority just made me braver. (P20)

A strengthened sense of impunity was also explained by a couple of participants as a result of consecutive escapes:

> I got away plenty of times. Almost every time, actually. After a few failed attempts from the police to catch me, I started feeling like I could always get away with my crime. (P24)
>
> I was chased by the police once while I was hanging out taking drugs with my friends. We jumped into a nearby irrigation canal to escape. I nearly drowned, and that time, the police got to me. Before that, I used to always run and get away. But this time, I was caught. (P29)

Frequent exposure to close apprehension strengthens bravery and encourages dangerous conduct, particularly when those initial experiences result in escape. These near misses were not deterrents; rather, they were moments

of self-affirmation that fueled a skewed confidence that strengthened participants' adherence to illegal behavior.

Sub-theme 2.4: Belief That One Remains Innocent as Long as They Are Not Caught

Participants often described confusing legality with morality, interpreting the lack of immediate penalty or imprisonment as an indication that their actions were either acceptable or not exactly unacceptable. This idea seems to support ongoing illegal action by fostering the illusion of innocence based on avoiding detection.

Participant 6 explained this cognitive perspective as such:

> I used to think using drugs is not wrong because it makes me strong. It's only wrong in the eyes of the law. I believe that as long as I'm not caught, it means whatever it is that I'm doing is not all that serious. (P6)

Rather than recognizing the harm or internalizing wrongdoing, this argument externalized the notion of guilt, shifting the weight of 'wrongness' to enforcement. Similar trends were shown by participant 28, especially in the manner in which he resolved moral tension:

> I always think about my parents and that I'm embarrassing them, but I always counter that thinking by saying it's okay, as long as I can control it and I don't get caught, that means it's not wrong yet, and I'm still good. (P28)

Avoiding detection in this case acted as a psychological buffer, enabling the individual to carry on with his action without fully facing the repercussions. This notion permeated risk-reward calculations for some, as demonstrated by participant 14:

> If I do small crimes and get busted, isn't it such a waste? So it's best if go big when committing a crime. And, if the police didn't catch me, then it's still not that big of a deal to warrant an arrest. (P14)

When there was no arrest, it was interpreted as a sign of approval and permission to continue. The reflection of participant 22 shows how this reasoning influenced his sense of identity:

> Out there, I'm not a bad person. My family has a temple, and the crime I do is only trafficking, it's not that dangerous. The police would've gotten to me sooner if that's the case. So whenever I'm doing the business, I believe that continue with what I do as long as I'm not caught or on the radar. (P22)

Participants took this as implicit approval to carry on as long as their behavior remained unpunished, disregarding or ignoring any moral responsibility.

Discussion: Key Insights

The aim of this study was to explore how incarcerated individuals with drug-related convictions understand their recurring criminal conduct, especially in light of their drug usage and thought patterns. Based on the findings, a pattern of recidivism among people with long-standing drug use histories appears to be shaped and maintained by a number of cognitive processes, including poor long-term thinking and optimism bias. This study demonstrates how individuals internalize, justify, and emotionally make meaning of their unlawful actions and ongoing drug use.

Early adolescence was a common time for participants to start using drugs; some did so as early as age eight. This is consistent with other studies that found high rates of chronic offending and adult imprisonment are significantly predicted by early-onset drug use (Loughran et al., 2022; Skinner et al., 2021). According to Friedman and Robbins (2021), this early exposure takes place during a delicate stage of neurodevelopment, namely prior to the maturation of the prefrontal cortex, which is the area of the brain in charge of executive processes like impulse control, foresight, and decision-making. Neuroscientific research indicates that this area continues to grow until the mid-20s (Sundly et al., 2023), rendering the adolescents more prone to impulsive and short-sighted decisions. Thus, it is not unexpected that a large number of participants attributed early drug use and criminal activity to curiosity or the urge for instant gratification. Over time, these habits were deeply embedded and persisted into adulthood since they were never effectively broken by intervention, support, or education. Adolescents' maladaptive cognitive schemas, which were reinforced by their surroundings and lacked corrective feedback, essentially became ingrained behavior (Saladino et al., 2021). From the perspective of cognitive psychology, early heuristics and skewed beliefs were practiced and repeated so frequently that they became automatic, which is a component of an individual's interpretative schema for interacting with the environment (Gilbert, 1998).

Additionally, many participants came from drug-infested environments where criminality was not only accepted as normal but, in certain situations, even modeled as a means of survival. Many reported never having completed high school, and the majority had little to no formal education. Research has long emphasized the role that education plays in promoting metacognitive awareness and cognitive flexibility (Fuchs et al., 2024; Messick, 1996). According to Kuhn (2000), metacognition and education are strongly intertwined, and a person may find it more difficult to regulate their behavior, analyze thoughts, or assess past choices if they lack the fundamental abilities. Given that several participants had served more than 30 prison sentences, this

may help to explain why so many of them voiced confusion or even hopelessness about their incapacity to "learn" from imprisonment. This is in line with research by Maracic and Moeller (2021), who contend that drug-dependent individuals have fundamental deficiencies in mentalization and self-awareness that restrict their receptivity to therapy or rehabilitation. This recurrence could be an example of cognitive stagnation, in which social and neurological constraints structurally impede reflection and evolution. This result is in line with other studies that show that among people involved in the legal system, lower educational attainment is linked to a higher risk of making maladaptive decisions (Cardona-Isaza et al., 2021).

Another notable finding was that participants' optimism bias persisted, with them consistently overestimating their odds of being identified or penalized. This was often reinforced by prior experiences with short sentences in prison or successful escapes from the law, which paradoxically bolstered a sense of invincibility. Some specifically referred to their prior incarcerations as "breaks" or brief setbacks that did not intimidate or discourage them. This supports the results of Lightning and Polage (2022), who observe that those to engage in recidivist offending frequently calculate risk in light of their own experiences, contributing to a skewed perception of control. A more somber assessment only surfaced when lengthier sentences were imposed, typically following many prior offenses. Individuals in their fifties often reported a shift in outlook, regretting squandered time and wishing for stability. This delayed cognitive appraisal might be caused by developmental maturity as well as the cumulative effects of recurrent imprisonment. Previous studies have shown that older people in prison are more inclined to contemplate and reevaluate their criminal trajectory, particularly when faced with existential concerns such as mortality, isolation from family, or missed possibilities in life (Konagai, 2024; Maier & Ricciardelli, 2021). As a result, the realization may be existential as well as cognitive awakening where they experience a late and highly individualized reorientation toward meaning and future identity.

These findings counter the widely accepted deterrence theory (Becker, 1968), which posits that if the costs (i.e., punishment) of committing a crime are higher than the benefits, individuals would abstain from doing so. In reality, distorted thinking, drug use, or deeply rooted thought patterns often led to individuals continuing to conduct crimes even if they were aware of the risks. The theory holds that if there was no risk of punishment, more individuals would commit crimes, and raising the risk would reduce crime. The primary approaches to raising risk are by making it more likely that they will be penalized or by raising the possibility of punishment. Both elements are necessary, but proponents of the theory contend that making punishment more definite is preferable to making a violation more severe (Johnson, 2019). Applying deterrence theory to populations with impaired cognitive functioning seems to be inadequate since it presumes that people are rational who make well-considered decisions based on risk and reward (Piliavin et al., 1986). However, the way drug use impairs rational decision-making is not taken into consideration by deterrence theory. This criticism is supported by the current research, which demonstrates that compulsion-driven and cognitively impaired conduct is unlikely to respond favorably to punitive threats alone.

The brain disease model of addiction (BDMA; Heather et al., 2022), which defines drug use as a chronic brain condition characterized by inadequate decision-making, dysregulated reward processing, and executive control deficiencies (Grassi et al., 2022), is highlighted in this study. A significant number of individuals had executive functioning impairment, which includes trouble delaying pleasure, favoring instant pleasure, and having trouble considering long-term effects. They also showed a lack of metacognitive monitoring in their narratives, whereby drug use had compromised their self-awareness and judgment, which further limited the possibility of behavior modification. Not only does drug use have an effect on the brain, but the same parts of the brain that are impacted by drug use, such as the prefrontal cortex, which controls decision-making and is also essential for controlling behavior related to criminal activity (Ceceli et al., 2021; Gu et al., 2024). As such, making wise decisions, thinking about long-term effects, and postponing gratification all depend on these brain regions. Hence, people may be more inclined to engage in dangerous or illegal behaviors when these functions are disrupted.

These findings demonstrate the need to use psychological and neurocognitive interventions in efforts to rehabilitate incarcerated individuals. Individualized cognitive rehabilitation programs that enhance metacognition, impulse control, and reflective capacity may have greater promise than deterrence-based strategies. Early intervention is also required since many participants reported having no supervision at all during their childhood and adolescence, suggesting that their trajectories were determined by systemic deficiencies in schooling, family support, and mental healthcare. Participants were not merely incarcerated individuals who made poor choices; they were also individuals who had been impacted by prior adversity, poor education, early drug use, and untreated cognitive vulnerabilities. Any significant attempt to reduce recidivism should take these issues into account.

Building on this conceptualization, research on neuroplasticity and cognitive restructuring supports the malleability of certain cognitive processes (Westby, 2020). Weaknesses in long-term planning, consequence evaluation, and metacognitive awareness are not fixed liabilities but skills that can be improved with focused intervention. For individuals

involved in the criminal justice system and drug use, structured intervention such as cognitive-behavioral therapy (CBT) and metacognitive training may enhance future orientation, impulse control, and thoughtful decision-making (Love et al., 2024; Syasyila et al., 2025). Strategies such as cognitive restructuring of criminogenic belief, goal-setting and planning activities, and episodic future thinking may assist individuals in overcoming "present-biased" reasoning and gaining a more cohesive sense of personal autonomy (Bickel et al., 2023; Sapp, 2023). Interventions that specifically teach cognitive abilities, such as assessing evidence, anticipating consequences, and learning from previous outcomes, may be especially beneficial given the participants' inadequate formal education and early reliance on heuristics. Furthermore, motivational interviewing could serve an important preparatory role by resolving ambivalence and increasing understanding, assisting individuals in seeing differences between their current trajectory and anticipated future self without provoking defensiveness. It may be more effective to explicitly enlighten this group of people on how to think, assess probabilities, predict outcomes, and keep an eye on their own reasoning. From a clinical standpoint, this reinterprets rehabilitation as the development of cognitive flexibility and self-regulation skills. These techniques are especially pertinent for those with a history of drug use since the cognitive processes shown are known to lead to relapse and ongoing drug-related offenses (Gu et al., 2024; Syasyila et al. 2024).

The implications are particularly important in settings like Malaysian prisons, where a large number of incarcerated individuals have untreated cognitive vulnerabilities, early drug exposure, and little educational chances. Integrating psychologically informed, skills-based programs into ordinary rehabilitation, without having to rely solely on punitive detention, may provide a more developmentally responsive road to change. As discussed, brief, manualized cognitive and metacognitive interventions could be incorporated into prison rehabilitation programs, drug treatment, and re-entry programs to give this population the guidance scaffold they need to reevaluate deeply held beliefs, identify alternate perspectives, and practice adaptive decision-making prior to release. In this sense, incarceration can serve as a structured opportunity to deliver evidence-based cognitive rehabilitation that targets the cognitive processes underlying recidivism (Reddy, 2025). By recognizing neuroplasticity and treating transformation as an attainable therapeutic goal, this approach connects the justice system with a preventative, capacity-building model of treatment.

Limitations and Future Directions

This study provides an in-depth, idiographic look at the life experiences of people in prison for drug offenses who commit crimes repeatedly. However, it is important to recognize a number of limitations. First, audio recordings were not allowed owing to prison rules. Although several researchers collected comprehensive field notes and combined them for analysis, this approach could restrict the level of interpretive complexity that audio-assisted transcription can typically provide. Second, the study's generalizability to other genders is limited because all participants were male. Despite these limitations, the results substantially contribute to the paucity of qualitative studies on the cognitive abilities of drug users and recidivism in Malaysian prisons. Longitudinal designs that track people after they are released from prison might be useful for future research to see if cognitive changes observed during incarceration result in behavioral changes in the community. Gendered experiences of drug-related recidivism are equally essential, as women may differ greatly in how they express their emotions and frame their thoughts.

Conclusion: Reflections on Recidivism and Rehabilitation

The current study demonstrates that incarcerated individuals' recurrent engagement in drug-related offenses cannot be attributed to deliberate disobedient behavior or a lack of comprehension; rather, it represents a complicated and cumulative interaction between early-life stress, distorted thinking habits, neurocognitive weaknesses, and long-term socioenvironmental instability. These results highlight the shortcomings of deterrence-based strategies for managing drug use–related behaviors and cast doubt on traditional punitive frameworks. Long-standing patterns of crime and recidivism must be addressed by means of cognitive restructuring, psychological education, and institutional support in addition to imprisonment.

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Data Availability The datasets generated and/or analyzed during the current study are not publicly available because the contain information that could compromise the privacy of the research participants. However, they can be obtained from the corresponding author upon request.

Declarations

Competing interests The authors declare no competing interests.

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