EJSBS
The European Journal of Social & Behavioural Science
ISSN: 2301-2218 (ONLINE)
OPEN ACCESS

The European Journal of Social and Behavioural Sciences
EJSBS Volume 31, Issue 3 (eISSN: 2301-2218)

KNOWING ADDICTS WELL CAN LEAD TO BETTER PREVENTION STRATEGIES

Teyfide Tecel Hatipoğlu[a]*, Kültegin Ögel[b]

[a]*Anti Drug Commission, North Cyprus, Adiguzel Apartmani, Bakanliklar Yolu, Nicosia, 9001, Cyprus*
[b]*Psychology Department, Istanbul Kent Universitesi, Istanbul, Turkey*

Abstract

Abuse of illegal substances impoverishes thousands of lives every year. The present study aims to glean an in-depth understanding of the demographic characteristics of substance abusers in Cyprus. The data were collected from prisoner and non-prisoner addicts and analyzed using the chi squire statistical procedure. The results showed that prisoner addicts had dysfunctional familial relationships, while lower socio-economic status was shown to have an adverse effect exacerbating illegal drug use. Moreover, easy access to drugs was shown to be a causal factor for imprisonment of addicts. These findings suggest a need for more effective interventions to help addicts avoid illegal drugs and to live a productive life. It can be concluded that the involvement of government services in intervention strategies is vital, and socio demographic factors is a significant consideration for prevention strategies to help addicts enhance the quality of their lives.

Keywords: Addiction, prevention strategies, prisoner, non prisoner, Cyprus

*Corresponding author.
E-mail address: teyfidetremeseli@gmail.com

doi: 10.15405/ejsbs.322

https://doi.org/10.15405/ejsbs.322
eISSN: 2301-2218 / Corresponding Author: Teyfide Tecel Hatipoğlu
Selection & Peer-review under responsibility of the Editors

1. Introduction

Addiction can be described as an excessive drug-seeking and reoccurring cycle of binging, withdrawal, and craving for the substance (Koob & Volkow, 2010). According to neuroscientists, addiction is characterized by a kind of neuro-adaptation that produces negative consequences (Dunbar et al., 2010). Addiction research has biological, social and psychological aspects meaning that one single domain cannot explain the entire phenomenon. From a social perspective, substance abuse is a major problem in societies ruining thousands of lives and its resulting functional impairments contribute to the use of excessive use of national resources to fight addiction.

From a biological perspective, addiction may affect several brain pathways, related to learning and memory, reward, and motivation, including the regulation of inhibitory behaviour (Mohamed et al., 2021) and reduced attention system functioning (Beck et al., 2012). Moreover, addiction includes elements of both compulsivity and impulsivity (Zhang et al., 2014). The addiction cycle involves three stages comprising intoxication, withdrawal, and preoccupation (Eddie et al., 2022) all of which could interfere with compliance with treatment, help-seeking, independent living, and maintaining a healthy social life.

The severity of interference is directly related to genetic influences, age of exposure to drugs, and several other environmental factors. When the genetic factors are considered, it appears that certain people are more vulnerable to being addicted than others (Dager et al., 2015). Those who are more vulnerable to addiction may have altered brain morphology. Studies in the literature have reported some brain abnormalities such as lower cortical thickness, and decreased volume in the amygdala, thalamus and hippocampus. The literature suggests that some abnormalities in brain morphology can be detected even before the addiction occurs (Ersche et al., 2012; Henderson et al., 2018). These results suggest that some individuals could have a higher tendency towards addiction than others.

Addiction could disrupt optimal neuronal functioning and result in inefficient connectivity between several brain areas (Tolomeo & Yu, 2022). Studies that investigated the neurobiology of addiction have generally focused on the abnormal reward processes, executive dysfunction, learning, and memory (Tolomeo et al., 2020; Zilverstand et al., 2018). Findings in the literature demonstrate that drug addiction results in abnormal brain functioning which directly reflects on the individuals' behaviour emerging as cognitive inefficiency and functional impairment.

The literature provides evidence that the mesocortical pathways related to reward processing are over-sensitized in addicted individuals. This sensitized domain-specific system is different from the ordinary "wanting" behaviour and the overactivity of these brain regions have been proposed as related to craving behaviour (Rutherford & Milton, 2021). A variety of factors could affect the severity of addiction and every addicted individual can be placed on a spectrum from mild to very severe. This continual approach to addiction helps in devising and tailoring intervention methods that have the potential to optimise benefits for such individuals.

For instance, deep brain stimulation is being implemented for severely affected individuals (Kuhn et al., 2014; Müller et al., 2013; Pierce & Vassoler, 2013). On the other hand, psychological support and interventions are being used for individuals with relatively milder addiction problems. For example, positive psychology has been found to be one of the valuable approaches to addiction-related problems.

This approach emphasizes human flourishing and tries to shift the perspective from a pathology-based perception to a recovery-oriented improvement of human abilities (Haidt, 2003; Krentzman, 2013).

Positive psychology aims to repair abnormalities and deficits by cultivating character strengths, and processes that make life worth living by increasing the sense of well-being (Ujhelyi Gomez et al., 2020). Low expectations and pessimism in therapeutic intervention may negatively affect clients (Horowitz, 2008). Despite the support from positive psychology, the life challenges addicted individuals have to face can negatively affect the treatment. Financial difficulties and complications in family bonds are only some of the factors that would interfere with successful reintegration after imprisonment (Liu & Visher, 2021).

People with addiction generally need to make an extra effort to reengage with their daily practices. However, certain environmental factors could hinder the transition adversely. For this reason, one of the most complicated issues for practitioners, researchers, and policy-makers is how to successfully integrate these individuals back into their families and society (Liu & Visher, 2021). Based on study findings in the literature and observed high relapse rates, it can be argued that environmental factors need to be improved for a smoother transition into society. Some of the adverse environmental factors for relapse and repeated substance abuse include trauma (Basedow et al., 2020), stress (Fronk et al., 2020), and peer pressure (Gallegos et al., 2021).

Drug addiction can increase the risk of reentering prison and released prisoners are more vulnerable to being rearrested (Liu & Visher, 2021). Environmental factors such as diminished support from family, and friends, emotional instability, and the public perception of substance addiction could impair the readjustment of these individuals (Kizilkurt & Gıynaş, 2020). Imprisonment could hinder future employment opportunities (Silver et al., 2021) which could also adversely affect the reintegration. Hence, it is imperative that intervention programmes enable released addicts to successfully reintegrate into their families, establish and sustain meaningful relationships, be accepted by society by using the designated social support services to be productive in their society.

Multiple factors play a role in the possible illegal substance use of a released addict. The social disorganization model is a framework that tries to bridge environmental and individual level factors to predict the risk levels of imprisonment (Liu, 2020). This model posits certain variables such as residential mobility, poverty, and racial heterogeneity as centralized and proposes that beneficial social institutions and meaningful and useful networks can help such individuals stay out of prison and be productive in society. This model further suggests that disorganized social institutions and networks exacerbate the risk of inappropriate and deviant behaviours. This model appears to be important in terms of emphasizing the critical role of social organization and support in rehabilitating addicted prisoners.

Protective environmental-level factors could be helpful if a community is well organized and the governmental agencies provide adequate resources for people with addiction. Accordingly, the more the residents work together, the more likely it is that the community will acquire health-related resources to effectively curtail drug activities. A community that is well-informed about the needs of addicts can provide a protective environment for released prisoners with a history of substance use, enabling their rehabilitation into the community and society.

Protective individual level factors will function well if reentry programs or therapies are in place for the released prisoners. The first individual level step focuses on families. Arguably, the family unit is the integral structure that can prevent relapse (Adegunju, 2020). Hence, individuals with supportive families

and children would be motivated to sustain their network of relationships. They would be more reluctant to reuse substances. Moreover, they may not be willing to endanger their jobs because of their family responsibilities (Zeng & Tan, 2021). Complicated, dysfunctional relationships have been found to promote drug use (Liu & Visher, 2021). Family conflict, disruption, family tension and parental neglect have been associated with increased levels of drug addiction (Mowen & Visher, 2015). Therefore, diminished, or dysfunctional family bonds are less likely to be a protective factor. It can be reasoned that well-organized families, governmental facilities and social support are positioned to help addicts to better adapt to society.

2. Purpose of the Study

The present study aims to glean an in-depth understanding of the demographic characteristics of substance abusers in Cyprus to enable the authorities and interested groups to generate specially tailored intervention programmes to rehabilitate addicted individuals back into society.

3. Research Question

Based on the presented evidence, it can be hypothesized that investigating the demographic features and tendencies of addicts who have been or not been imprisoned can help the relevant stakeholders to devise better help strategies and facilities in Cyprus.

4. Research Method

4.1. Research Design

A quantitative design was employed to gather the data required for this study. As the aim of the study is to gather data about the demographic features of the sample, it was reasoned that a quantitative approach would best fit the aims of the study.

4.2. Participants

The present study included 101 male addicts aged between 18 - 65. Convenience sampling method was used for collecting the data. 66 participants were prisoners, and 35 participants were non-prisoners at the time of the study. All the participants were the beneficiaries of counselling services provided by the Drug Prevention Agency (DPA) of the Turkish Republic of Northern Cyprus TRNC's Prime Ministry of Cyprus.

4.3. Instrument

Following the quantitative nature of the research design, data were collected using a questionnaire survey that contained 22 items covering different aspects of addiction, substance use and general demographics. The questions were targeted at producing information about multiple domains of addicts' lives such as social, cultural, physiological, and psychological occurrences.

Relying on the extensive literature review and the country’s (Cyprus) socio-cultural and socio-economic specifics, the instrument was designed to gather information about the lifestyle, the preferred substance, family background, history of addiction in the family, and the psychological state of the participants. Items covered demographic information such as number of children, level of education, free

https://doi.org/10.15405/ejsbs.322
eISSN: 2301-2218 / Corresponding Author: Teyfide Tecel Hatipoğlu
Selection & Peer-review under responsibility of the Editors

time, occupation and place of residence. Social factors were covered by items on peer usage of drugs and alcohol, and relationship with spouse and parents while psychological state was covered by items on suicidal and self-harm tendencies.

4.4. Data Collection Procedure

All the participants were initially informed about the nature of the study, after which they signed an informed consent form. The information was collected by the specialist psychologists and addiction councilors affiliated at the DPA. Some participants were in the prison, and they were approached in the prison to answer the questionnaire. On the other hand, for those addicts who were not in prison, the data was collected at the premises of the DPA, during their regular visits for counselling.

4.5. Statistical analysis

The aim of the study is to produce descriptive information about the relationships between the variables of interest and investigate the possible group differences (prisoner or non-prisoner) in terms of the various aspects of the addicts' lives. The collected data were categorical; hence, the Chi square test was used to investigate the significant or non-significant relationships between the variables and additionally, to observe any group differences in terms of the percentages.

5. Findings and Discussion

The results are presented in tabular format to facilitate quick comprehension. The visuals are followed by discussion of the results. The p value was set at <.05

In terms of having children, Table 1 below reveals a significant difference between the prisoner and non-prisoner addicts as the majority of both groups reported that they did not have children.

Table 1. Children

	Prisoners		Non-prisoners		Total			
Do you have children?	N	%	N	%	N	%	x^2	p
No	44	66.7%	26	74.3%	70	69.3%	1.23	0.26
Yes	22	33.3%	9	25.7%	31	30.7%		

In terms of educational level, the majority of both groups had secondary and high school education as seen in Table 2.

Table 2. Educational level

	Prisoners		Non-prisoners		Total			
Education level	N	%	N	%	N	%	x^2	p
I can read and write	5	7.5%	3	8.6%	8	7.9%	5.28	0.26
Primary school	12	18.2%	5	14.3%	17	16.8%		
Secondary school	12	18.2%	11	31.4%	23	22.8%		
High School	29	43.9%	9	25.7%	38	37.6%		
University	8	12.1%	7	20%	15	14.9%		

https://doi.org/10.15405/ejsbs.322
eISSN: 2301-2218 / Corresponding Author: Teyfide Tecel Hatipoğlu
Selection & Peer-review under responsibility of the Editors

With regard to the amount of free time that addicts had during a usual day, Table 3, reveals, as expected, that addicts in prison had more free time when compared to non-prisoners. This, of course, is to be expected as prisoners are incarcerated and do not have a job like non-prisoners and hence, will naturally have a lot of free time.

Table 3. Free time

	Prisoners		Non-prisoners		Total			
How much free time do you have in a day?	N	%	N	%	N	%	x^2	p
None	1	1.5%	2	5.7%	3	3%	5.49	0.24
Rarely	8	12.1%	7	20%	15	14.9%		
Sometime	9	13.6%	4	11.4%	13	12.9%		
Most of the day	16	24.2%	8	22.9%	24	23.8%		
Entire day	34	51.5%	14	40%	48	47.5%		

Regarding accommodation, Table 4 shows that majority of addicts were in the prison during the last six months prior to the study compared to the non-prisoners.

Table 4. Accommodation for the last six months

	Prisoners		Non-prisoners		Total			
Where do you stay for the last six months?	N	%	N	%	N	%	x^2	p
In a flat	9	13.6%	21	60%	30	29.7%	32.92	0.0
Street	0	0%	1	2.9%	1	1%		
Prison	57	86.4%	10	28.6%	67	66.3%		
Other	0	0%	1	2.9%	1	1%		

As for substance abuse among peers, Table 5 shows a high rate of substance abuse among the peers of the majority of both the prisoner and non-prisoner addicts.

Table 5. Friends' drug and alcohol use

	Prisoners		Non-prisoners		Total			
How many of your friends use drugs or alcohol?	N	%	N	%	N	%	x^2	p
None	13	19.7%	4	11.4%	17	16.8%	1.96	0.74
Few	11	16.7%	4	11.4%	15	14.9%		
Half of them	11	16.7%	6	17.1%	17	16.8%		
Most of them	10	15.2%	7	20%	17	16.8%		
Almost all of them	21	31.8%	14	40%	35	34.7%		

In terms of easy access to drugs, Table 6 shows that more than half the respondents claim that they have easy access to drugs.

https://doi.org/10.15405/ejsbs.322
eISSN: 2301-2218 / Corresponding Author: Teyfide Tecel Hatipoğlu
Selection & Peer-review under responsibility of the Editors

Table 6. Access to drugs

	Prisoners		Non-prisoners		Total			
Can you easily access drugs?	N	%	N	%	N	%	x^2	p
No	22	33.3%	8	22.9%	30	29.7%	2.96	0.22
Sometimes	10	15.2%	10	28.6%	20	19.8%		
Yes	34	51.5%	17	48.6%	51	50.5%		

Who the addicts lived with reveals a significant difference as seen in Table 7. More addicts were living with their friends prior to their imprisonment.

Table 7. Residing with others in the last six months

	Prisoners		Non-prisoners		Total			
Who did you live with?	N	%	N	%	N	%	x^2	p
Spouse	6	9.1%	18	51.4%	24	23.8%	35.89	0.0
Close family	0	0%	3	8.6%	3	3.0%		
Friends	30	45.5%	9	25.7%	39	38.6%		
Alone	5	7.6%	5	14.3%	10	9.9%		
Other	25	37.9%	0	0%	25	24.8%		

In terms of relationship with specific family members, Tables 8 reveals that the majority of the addicts reported having very good relationships with their partners. About a third of the addicts were not married and did not respond to this item. As for their relationship with their parents, Tables 9 and 10 reveal that the majority have very good relationships with their parents.

Table 8. Quality of relationship with spouse

	Prisoners		Non-prisoners		Total			
How is your relationship with your wife?	N	%	N	%	N	%	x^2	p
Very good	12	18.2%	5	14.3%	17	16.8%	3.50	0.47
Good	3	4.5%	1	2.9%	4	4%		
Moderate	3	4.5%	2	5.7%	5	5%		
Bad	0	0%	1	2.9%	1	1%		
Very bad	2	3%	3	25%	5	5%		
Not married	44	66.7%	23	65.7%	67	66.3%		

Table 9. Relationship with the mother

	Prisoners		Non-prisoners		Total			
How is your relationship with your mother?	N	%	N	%	N	%	x^2	p
Very good	39	59.1%	18	51.4%	57	56.4%	3.39	0.63
Good	11	16.7%	7	20%	18	17.8%		
Moderate	8	12.1%	7	20%	15	14.9%		
Bad	2	3%	2	5.7%	4	4%		
Very bad	4	6.1%	1	2.9%	5	5%		
No mother or father	2	3%	0	0%	2	2%		

https://doi.org/10.15405/ejsbs.322
eISSN: 2301-2218 / Corresponding Author: Teyfide Tecel Hatipoğlu
Selection & Peer-review under responsibility of the Editors

Table 10. Relationship with the father

	Prisoners		Non-prisoners		Total			
How is your relationship with your father?	N	%	N	%	N	%	x^2	p
Very good	18	27.3%	4	11.4%	22	21.8%	9.40	0.09
Good	20	30.3%	8	22.9%	28	27.7%		
Moderate	7	10.6%	8	22.9%	15	14.9%		
Bad	8	12.1%	3	8.6%	11	10.9%		
Very bad	5	7.6%	8	22.9%	13	12.9%		
No mother or father	8	12.1%	4	11.4%	12	11.9%		

Responses to a work and economy related question revealed a significant relationship between being unemployed and imprisonment. The analysis in Table 11 reveals that the majority of both groups were gainfully employed during the year prior to the study.

In terms of a stable occupation, Table 12 shows that the majority of both groups had a stable occupation. However, unsurprisingly, the majority reported not having enough money to meet basic financial needs according to Table 13. Surprisingly though, Table 14 showed that the majority of both groups reported a high to middle socio-economic status.

Table 11. Occupational status

	Prisoners		Non-prisoners		Total			
Did you work last year?	N	%	N	%	N	%	x^2	p
I had a regular job	24	36.4%	20	57.1%	44	43.6%	5.34	0.25
I had an irregular job	8	12.1%	1	2.9%	9	8.9%		
I was studying	5	7.6%	2	5.7%	7	6.9%		
I have a disability	1	1.5%	0	0%	1	1%		
I did not work	28	42.4%	12	34.3%	39	38.6%		

Table 12. Stable occupational status

	Prisoners		Non-prisoners		Total			
Do you have a stable job?	N	%	N	%	N	%	x^2	p
No	24	36.4%	12	34.3%	36	35.6%	5.04	0.83
Yes	42	63.6%	23	65.7%	65	64.4%		

Table 13. Meeting basic financial needs

	Prisoners		Non-prisoners		Total			
Can you meet your basic needs?	N	%	N	%	N	%	x^2	p
Never	20	30.3%	15	42.9%	35	34.7%	1.89	0.75
Rarely	6	9.1%	3	8.6%	9	8.9%		
Sometimes	25	37.9%	10	28.6%	35	34.7%		
Mostly	8	12.1%	3	8.6%	11	10.9%		
Always	7	10.6%	4	11.4%	11	10.9%		

https://doi.org/10.15405/ejsbs.322
eISSN: 2301-2218 / Corresponding Author: Teyfide Tecel Hatipoğlu
Selection & Peer-review under responsibility of the Editors

Table 14. Socio-economic status

	Prisoners		Non-prisoners		Total			
What is your socio- economic status?	N	%	N	%	N	%	x^2	p
High	18	27.3%	12	34.3%	30	29.7%	1.21	0.75
Middle	35	53%	16	45.7%	51	50.5%		
Low	7	10.6%	5	14.3%	12	11.9%		
Very low	6	9.1%	2	5.7%	8	7.9%		

Tables 15 – 20 display the analysis of items related to physical well-being, medication, psychiatric treatment, suicide and self-harm attempts. Table 15 shows a relationship between the health level and imprisonment. Unsurprisingly, prisoner addicts reported better health levels when compared to non-prisoner addicts. This can be explained by the fact that in prison, addicts have no access to drugs, regular meals and a more disciplined routine which results in overall better physical health. In terms of taking prescribed medicines and treatment, Tables 16, 17 and 19 show that the majority of both groups did not regularly take prescribed medication, receive psychiatric treatment or take psychiatric medication respectively which is shown to have no adverse consequences on their mental health as seen in Tables 18 and 20 where the majority report that they have never attempted suicide or self-harm.

Table 15. Physical health

	Prisoners		Non-prisoners		Total			
How is your physical health?	N	%	N	%	N	%	x^2	p
Very good	17	25.8%	4	11.4%	21	20.8%	10.32	0.01
Good	36	54.5%	14	40%	50	49.5%		
Moderate	8	12.1%	8	22.9%	16	15.8%		
Bad	5	7.6%	9	25.7%	14	13.9%		

Table 16. Using regular prescribed medication

	Prisoners		Non-prisoners		Total			
Do you regularly use prescribed medication?	N	%	N	%	N	%	x^2	p
No	51	77.3%	29	82.9%	80	79.2%	00.43	0.51
Yes	15	22.7%	6	17.1%	21	20.8%		

Table 17. Previously received psychiatric treatment

	Prisoners		Non-prisoners		Total			
How many times did you receive psychiatric treatment?	N	%	N	%	N	%	x^2	p
None	43	65.2%	11	31.4%	54	53.5%	37.31	0.04
Once	5	7.6%	8	22.9%	13	12.9%		
More than once	15	22.7%	16	45.7%	31	30.7%		
No response	3	4.5%	0	0%	3	3%		

https://doi.org/10.15405/ejsbs.322
eISSN: 2301-2218 / Corresponding Author: Teyfide Tecel Hatipoğlu
Selection & Peer-review under responsibility of the Editors

Table 18. Suicidal tendency

	Prisoners		Non-prisoners		Total			
Have you ever attempted suicide before?	N	%	N	%	N	%	x^2	p
Never	54	81.8%	24	68.6%	78	77.2%	2.54	0.28
Once	3	4.5%	4	11.4%	7	6.9%		
More than once	9	13.6%	7	20%	16	15.8%		

Table 19. Using psychiatric medication

	Prisoners		Non-prisoners		Total			
Do you use any prescribed psychiatric medication?	N	%	N	%	N	%	x^2	p
No	52	78.8%	26	74.3%	78	77.2%	21.42	0.25
Yes	8	12.1%	8	22.9%	16	15.8%		
No response	6	9.1%	1	2.9%	7	6.9%		

Table 20. Self-harm

	Prisoners		Non-prisoners		Total			
Have you ever harmed yourself intentionally?	N	%	N	%	N	%	x^2	p
Never	50	75.8%	21	60%	71	70.3%	6.17	0.04
1-2 times	6	9.1%	10	28.6%	16	15.8%		
More than 3 times	10	15.2%	4	11.4%	14	13.9%		

To a final question regarding imprisonment, Table 21 reveals that the majority of both groups have been in prison for drug related offences.

6. Conclusion

In relation to the abuse of psychoactive substances, geopolitical factors influence their availability, trafficking, and demand for specific drugs by region. These trends can be examined in terms of the context of risk factors associated with drug production, routes of administration, and the intersection with drug policy, regional status, and public health. In terms of geopolitical factors, Cyprus can be considered a favorable environment as a transit point for the trafficking of psychoactive substances (Çakıcı & Çakıcı, 2000). As a strategic transit point, Cyprus is known as an "intersection point" of east and west (Boyiadjis, 2004). Hence, the geopolitical factor plays a vital role in psychoactive substances being easily available for substance abusers. This aligns with the finding where more than half of the respondents in this current study claimed that they had easy access to drugs. Hence, the authorities responsible for transport security need to be more vigilant and strictly enforce the law to ensure that Cyprus is no longer a strategic transit point for psychoactive substances which would then cut off the supplies of these substances from the public.

Obviously, abuse of psychoactive substances has sociological reasons as well. It is stated in the literature that the two main influences on substance abusers are their parents and their peers. Parental influence includes the role parents play on their teenage children where parents either encourage or discourage substance abuse by their own behaviour and perception towards such substances. There is no doubt that a father who is an alcoholic, chain smoker or a drug addict would be subtly encouraging that

habit in his children. Siblings and the extended family may play similar roles, either encouraging substance abuse among younger siblings or protecting them from use.

Research has confirmed that parental substance abuse has an impact on their children's substance. Kandel et al. (1978) found that parental use of psychoactive drugs predicted later use by their children of illicit drugs. Newcomb et al. (1983) also confirmed that mothers' marijuana use led to their children's marijuana use, irrespective of the gender of the children. Research has also confirmed that parental relationship affects their teenage children's substance abuse. Lack of closeness between parents and their teenage children has been reported to influence initiation to marijuana and especially to illicit drugs other than marijuana (Kandel et al., 1978). Lack of closeness to their fathers has been found to influence sons' marijuana use (Brook et al., 1983). Additionally, parental attitudes to drugs have been reported to influence their children's initiation to marijuana but not to illicit drugs other than marijuana (Kandel et al, 1978). Parental tolerance of marijuana and their belief in the harmlessness of various drugs were predictive of subsequent use by their children (Kandel, 1980; Kandel et al., 1978) as parental attitudes which favoured drug use were passed on to their children.

In contrast to the literature, this study has found that the majority of respondents reported a favourable relationship with both parents which could mean that parental influence may have no connection with children's substance abuse tendencies. It can be assumed that parents and children can have a loving relationship and yet, children may abuse substances. This tendency may be attributed to other environmental factors such as peer or even media influence. Previous research has established peers as a factor affecting substance abuse (Nkansah-Amankra, 2020). This aligns with the present study where the majority of the respondents reported that their friends consume substantial amount of alcohol and also use drugs. Media which is an overwhelming environmental factor nowadays may also be attributable to addiction; but this aspect was not investigated in this study. It would be interesting to investigate this aspect to ascertain the extent of the role that media plays in causing addiction.

Although the results of this study reveal addicts reporting a good relationship with their parents, it is important to note that interventions by fathers of addicts can help alleviate the problem of substance abuse (Snell et al, 2014). Teaching both parents' skills like problem solving, communication, emotional control via psychological counseling can help decrease the substance abuse (Griffith, 2010). Moreover, in this study most of the prisoner addicts described their relationship with their mothers as very good. It cannot be disputed that, parents who display good behaviour and the proper perceptions towards illegal substances, and who have a good relationship with their children can play a vital role in preventing substance abuse among their children. The level of information the parents possess related to substance abuse and effective interventions is an important factor in the healthy fulfillment of family function. Therefore, providing psychoeducation and possible interventions for parents about addiction can strengthen positive ties and strengthen the fight against substance abuse.

Scant attention has been devoted to the social and environmental factors that influence drug use, vulnerability and resiliency. Research conducted in Cyprus concludes that psychoactive substance (OPS) use rates were found to be high in primary schools in isolated regions like Surlariçi (Walled City) and Famagusta/Maraş regions (İskender et al., 2019). This implies that the sociodemographic characteristics of

the environment such as low socioeconomic level, low level of family education (Dodge et al., 2009). and migration of the family (Borges et al., 2007) have an adverse effect on children resulting in substance abuse.

However, the present study's findings do not concur with the previous findings in terms of the effect of the social life i.e., family relationships, levels of education and socio-economic status, and being gainfully employed. The majority of the participants in this study responded positively to all these factors. Hence, these findings have uncovered a unique phenomenon where substance abuse can occur in any demographic; even among the highly educated, and economically and socially fortunate.

This study's findings show that the majority of respondents were gainfully employed during the year prior to the study but reported not having enough money to meet their basic needs. Be that as it may, there were a minority who reported not being gainfully employed; hence, it cannot be denied that addicts especially prisoners, should be trained with skills that can enable them to live productive lives. Working productively may raise their self-esteem which can facilitate the integration of these individuals into society and prevent them from returning to substance abuse. Prisoners especially who reported having a lot of free time as the case in this study, should be offered vocational training during their incarceration. These vocational training courses would provide the opportunity for these individuals to be professionally qualified thus increasing their self-confidence and psychological resilience to correct their negative habits, embark on their own to sustain themselves and their families, and become responsible members of society.

The current study also revealed that the majority of the respondents reporting that they could easily access drugs either in prison or where they lived. The fact that prisoners can still access drugs while in prison is a damning indictment of the prison system in Cyprus. This shows that the relevant authorities are not enforcing the law as expected in order to rehabilitate the addicts in prison. It is a known fact that the presence of illegal substances and addicts in an environment will exacerbate the addiction tendencies of individuals who are inclined to such habits. It is therefore highly imperative that the government agencies in charge of prison tighten security and enforce the regulations related to presence and distribution of illegal substances in prison.

In terms of their psychological state, more than half of the respondents reported that they have never received psychiatric treatment and the majority reported not taking any psychiatric medication. Additionally, the majority perceived themselves to be in good health and not having suicidal or self-harm tendencies. Hence, it may be concluded that this particular group, even those in prison, does not display the usual psychological tendencies associated with most individuals with addiction issues. They seem to be well-adjusted psychologically despite being addicts and in prison. This anomaly could be explained by their strong family bonds with their loved ones which provides them the essential positive psychological support needed to overcome the ravages of substance abuse. This is of course, an extremely heartening scenario for this group of addicts; but what about those deprived of such a strong family bond which is usually the case? In such circumstances, the failure to diagnose underlying psychiatric or psychological disorders and the resultant delay in their effective treatment could irrevocably damage personal and social functionality resulting in increased substance abuse. The fact that mental health and addiction treatment services are dependent on different service systems may cause discontinuity of treatments due to a lack of communication between the various agencies. Therefore, having a well-equipped one-stop rehabilitation center is of great importance for both the addicted person and the specialists. Such centers must be open to

all individuals, not just prisoners as members of the public may find it difficult to access much-needed treatments and medications.

To come up with focused prevention and intervention programmes to prevent the initiation to and relapses of individuals to drug abuse, it is necessary to evaluate important factors related to personality such as sociodemographic characteristics and personality traits foreshadowing substance abuse from a broad perspective. In addition, it is recommended to work with larger sample groups to examine risk factors in other psychiatric diseases comorbid with substance abuse.

Public institutions/organizations should be tasked to prepare programmes to combat substance abuse in institutions hosting a large collection of individuals like prison, military service, schools, universities dormitories, and crowded workplaces. Within these programmes, trainings covering social competence skills, anger and stress coping mechanisms, and sports-hobby training should be included. Universities can provide the scientific support necessary to draw up programmes based on empirical research findings. Families and educators have been established as crucial factors within the scope of environmental and personality factors in the initiation and continuation of substance abuse. Since the family is the closest providing protection, guidance and social support, it should be considered a valuable resource that should be handled carefully. Parents should be provided with accurate information about substance addiction and be sensitised to the fact that they are a model of behaviour for their children about substance abuse.

The public health policies for the prevention of substance abuse in particularly high-risk areas need to be strengthened by the state or government agencies. Awareness of issues related to substance abuse should be created among the families of young people, which implies implementing prevention programs starting as early as primary school years. Prevention studies should be carried out with a multidisciplinary approach within the framework of cooperation of all relevant institutions, including schools, colleges and universities.

It is imperative that the prevention programme designers take into account individual social and psychological risk factors when planning such programmes. The programmes should be research-based with clear, cogent and easily comprehended criteria for recognition of individual addiction tendencies coupled with timely, focused interventions suited to various categories of individuals with addiction tendencies such as displayed in this current study. This study was conducted to provide important information regarding such individual characteristics to enable effective prevention programme planning and implementation in Cyprus.

Acknowledgements

The author(s) declare that there is no conflict of interest.

References

Adegunju, K. A. (2020). Influence of parental monitoring on adolescents' deviant behaviors as expressed by married adults in ilorin metropolis. *Mimbar sekolah dasar, 7*(3), 269-283. https://doi.org/10.17509/mimbar-sd.v7i2.27425

Basedow, L. A., Kuitunen-Paul, S., Roessner, V., & Golub, Y. (2020). Traumatic events and substance use disorders in adolescents. *Frontiers in Psychiatry, 11*, 559. https://doi.org/10.3389/fpsyt.2020.00559

Beck, A., Wüstenberg, T., Genauck, A., Wrase, J., Schlagenhauf, F., Smolka, M. N., Mann, K., & Heinz, A. (2012). Effect of brain structure, brain function, and brain connectivity on relapse in alcohol-dependent patients. *Archives of general psychiatry, 69*(8), 842-852. https://doi.org/10.1001/archgenpsychiatry.2011.2026

Borges, G., Medina-Mora, M. E., Breslau, J., & Aguilar-Gaxiola, S. (2007). The effect of migration to the United States on substance use disorders among returned Mexican migrants and families of migrants. *American Journal of Public Health, 97*(10), 1847-1851.

Boyiadjis, G. (2004). *Step for Prevention of Drug Abuse: Findings of Pancyprian General Population Survey*. Kenthea Publication.

Brook, J. S., Whiteman, M., Gordon, A. S., & Brook, D. W. (1983). Parental correlates of adolescent marijuana use in the context of the mother-son and parental dyads. *Genetic Psychology Monographs, 108*, 197-21.

Çakıcı, M., & Çakıcı, E. (2000). *KKTC Lise Gençliğinde Uyuşturucu Madde Kullanım Yaygınlığı 1999.* KKTC Başbakanlık Devlet Basımevi. https://doi.org/10.5455/apd.293192

Dager, A. D., McKay, D. R., Kent, J. W., Curran, J. E., Knowles, E., Sprooten, E., Göring, H. H. H., Dyer, T. D., Pearlson, G. D., Olvera, R. L., Fox, P. T., Lovallo, W. R., Duggirala, R., Almasy, L., Blangero, J., & Glahn, D. C. (2015). Shared genetic factors influence amygdala volumes and risk for alcoholism. *Neuropsychopharmacology, 40*(2), 412-420. https://doi.org/10.1038/npp.2014.187

Dodge, K. A., Malone, P. S., Lansford, J. E., Miller, S., Pettit, G. S., & Bates, J. E. (2009). A dynamic cascade model of the development of substance-use onset. *Monographs of the Society for Research in Child Development, 74*(3), vii-119. https://doi.org/10.1111/j.1540-5834.2009.00528.x

Dunbar, D., Kushner, H. I., & Vrecko, S. (2010). Drugs, addiction and society. *BioSocieties, 5*(1), 2-7. https://doi.org/10.1057/biosoc.2009.10

Eddie, D., Bates, M. E., & Buckman, J. F. (2022). Closing the brain–heart loop: towards more holistic models of addiction and addiction recovery. *Addiction biology, 27*(1), e12958. https://doi.org/10.1111/adb.12958

Ersche, K. D., Jones, P. S., Williams, G. B., Turton, A. J., Robbins, T. W., & Bullmore, E. T. (2012). Abnormal brain structure implicated in stimulant drug addiction. *Science, 335*(6068), 601-604. https://doi.org/10.1126/science.1214463

Fronk, G. E., Sant'Ana, S. J., Kaye, J. T., & Curtin, J. J. (2020). Stress allostasis in substance use disorders: promise, progress, and emerging priorities in clinical research. *Annual review of clinical psychology, 16*, 401-430. https://doi.org/10.1146/annurev-clinpsy-102419-125016

Gallegos, M. I., Zaring-Hinkle, B., Wang, N., & Bray, J. H. (2021). Detachment, peer pressure, and age of first substance use as gateways to later substance use. *Drug and Alcohol Dependence, 218*(10), 108-352. https://doi.org/10.1016/j.drugalcdep.2020.108352

Griffith, A. K. (2010). The use of a behavioural parent training program for parents of adolescents. *Journal of At-Risk Issues, 15*(2), 1-8.

Haidt, J. (2003). Elevation and the positive psychology of morality. In C. L. M. Keyes & J. Haidt (Eds.), *Flourishing: Positive psychology and the life well-lived* (pp. 275–289). American Psychological Association. https://doi.org/10.1037/10594-012

Henderson, K. E., Vaidya, J. G., Kramer, J. R., Kuperman, S., Langbehn, D. R., & O'Leary, D. S. (2018). Cortical thickness in adolescents with a family history of alcohol use disorder. *Alcoholism: Clinical and Experimental Research, 42*(1), 89-99. https://doi.org/10.1111/acer.13543

Horowitz, R. (2008). Hope and expectation in the psychotherapy of the long-term mentally ill. *Bulletin of the Menninger Clinic, 72*(4), 237–258. https://doi.org/10.1521/bumc.2008.72.4.237

İskender, C., Çakıcı, M., Dirisu, G. Y., & Babayiğit, A. (2019). KKTC riskli bölgelerde psikoaktif madde kullanım profili ve risk etkenleri: KKTC Surlariçi ve Maraş ilkokul örneklemi [Psychoactive substance use profile and risk factors in TRNC risky regions: Surlarici ve Maras primary school sample]. *Anadolu Psikiyatri Dergisi, 20*(1), 25-29. https://doi.org/10.5455/apd.302644851

Kandel, D. B. (1980). Drug and drinking behavior among youth. *Annual review of sociology, 6*, 235-285. https://doi.org/10.1146/annurev.so.06.080180.001315

Kandel, D. B., Kessler, R. C., & Margulies, R. Z. (1978). Antecedents of adolescent initiation into stages of drug use: A developmental analysis. *Journal of Youth and adolescence, 7*(1), 13-40. https://doi.org/10.1007/BF01538684

Kizilkurt, O. K., & Gıynaş, F. F. (2020). Factors affecting treatment motivation among Turkish patients receiving inpatient treatment due to alcohol/substance use disorder. *Journal of Ethnicity in Substance Abuse, 19*(4), 594 609. https://doi.org/10.1080/15332640.2018.1548324

Koob, G. F., & Volkow, N. D. (2010). Neurocircuitry of addiction. *Neuropsychopharmacology, 35*(1), 217-238. https://doi.org/10.1038/npp.2009.110

Krentzman, A. R. (2013). Review of the application of positive psychology to substance use, addiction, and recovery research. *Psychology of addictive behaviors, 27*(1), 151-165. https://doi.org/10.1037/a0029897

Kuhn, J., Möller, M., Treppmann, J. F., Bartsch, C., Lenartz, D., Gründler, T. O., & Sturm, V. (2014). Deep brain stimulation of the nucleus accumbens and its usefulness in severe opioid addiction. *Molecular psychiatry, 19*(2), 145-146. https://doi.org/10.1038/mp.2012.196

Liu, L. (2020). Family, parochial, and public levels of social control and recidivism: An extension of the systemic model of social disorganization. *Crime & Delinquency, 66*(6), 864-886. https://doi.org/10.1177/0011128719901106

Liu, L., & Visher, C. A. (2021). The roles of family, community, and services in the prevention of illicit drug use: Findings from a sample of released prisoners. *Journal of drug issues, 51*(2), 358-375. https://doi.org/10.1177/0022042620984770

Mohamed, S. F., Mourad, G. M., & El Hamid Zaki, R. A. (2021). Effect of educational program for reducing self stigma and shame among substance abuser women. *Ilkogretim Online, 20*(5), 2278-2288. https://doi.org/10.17051/ilkonline.2021.05.249

Mowen, T. J., & Visher, C. A. (2015). Drug use and crime after incarceration: The role of family support and family conflict. *Justice Quarterly, 32*(2), 337-359. https://doi.org/10.1080/07418825.2013.771207

Müller, U. J., Voges, J., Steiner, J., Galazky, I., Heinze, H. J., Möller, M., Pisapia, J., Halpern, C., Caplan, A., Bogerts, B., Kuhn, J., & Kuhn, J. (2013). Deep brain stimulation of the nucleus accumbens for the treatment of addiction. *Annals of the New York Academy of Sciences, 1282*(1), 119-128. https://doi.org/10.1111/j.1749-6632.2012.06834.x

Newcomb, M. D., Huba, G. J., & Bentler, P. M. (1983). Mothers' influence on the drug use of their children: Confirmatory tests of direct modeling and mediational theories. *Developmental Psychology, 19*, 714-726. https://doi.org/10.1037/0012-1649.19.5.714

Nkansah-Amankra, S. (2020). Revisiting the association between “gateway hypothesis” of early drug use and drug use progression: A cohort analysis of peer influences on drug use progression among a population cohort. *Substance Use & Misuse, 55*(6), 998-1007. https://doi.org/10.1080/10826084.2020.1720245

Pierce, R. C., & Vassoler, F. M. (2013). Deep brain stimulation for the treatment of addiction: basic and clinical studies and potential mechanisms of action. *Psychopharmacology, 229*(3), 487-491. https://doi.org/10.1007/s00213-013-3214-6

Rutherford, L. G., & Milton, A. L. (2021). Deconstructing and reconstructing behaviour relevant to mental health disorders: The benefits of a psychological approach, with a focus on addiction. *Neuroscience & Biobehavioral Reviews, 133*, e 104514. https://doi.org/10.1016/j.neubiorev.2021.104514

Silver, I. A., D'Amato, C., & Wooldredge, J. (2021). The cycle of reentry and reincarceration: Examining the influence on employment over a period of 18 years. *Journal of Criminal Justice, 74*, 101812. https://doi.org/10.1016/j.jcrimjus.2021.101812

Snell, C., Radosevich, J., & Feit, M. D. (2014). The role of fathers in adolescent substance abuse prevention. *Journal of Human Behaviour in the Social Environment, 24*(5), 565-572. https://doi.org/ 10.1080/10911359.2014.908605

Tolomeo, S., Yaple, Z. A., & Yu, R. (2020). Neural representation of prediction error signals insubstance users. *Addict Biol., 26*(3), e12976.https://doi.org/10.1111/adb.12976

Tolomeo, S., & Yu, R. (2022). Brain network dysfunctions in addiction: a meta-analysis of resting-state functional connectivity. *Translational Psychiatry, 12*(1), 1-11. https://doi.org/10.1038/s41398-022-01792-6.

Ujhelyi Gomez, K., Carson, J., Brown, G., & Holland, M. (2020). Positive psychology in dual diagnosis recovery: a mixed methods study with drug and alcohol workers. *Journal of Substance Use, 25*(6), 663-671. https://doi.org/10.1080/14659891.2020.1760376

Zeng, X., & Tan, C. (2021). The relationship between the family functioning of individuals with drug addiction and relapse tendency: a moderated mediation model. *International Journal of Environmental Research and Public Health, 18*(2), 625. https://doi.org/10.3390/ijerph18020625

Zhang, G., Zhang, Z., Liu, L., Yang, J., Huang, J., Xiong, N., & Wang, T. (2014). Impulsive and compulsive behaviors in Parkinson’s disease. *Frontiers in aging neuroscience, 6*, 318. https://doi.org/10.3389/fnagi.2014.00318

Zilverstand, A., Huang, A. S., Alia-Klein, N., & Goldstein, R. Z. (2018). Review Neuroimaging impaired response inhibition and salience attribution in human drug addiction: a systematic review. *Neuron, 98*(5), 886-903. https://doi.org/10.1016/j.neuron.2018.03.048