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Qualitative systematic review on attitudes and beliefs around the development of drug misuse

Technical report

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Trawsnewid **data** a **thystiolaeth** i **ddeallusrwydd iechyd cyhoeddus**

Transforming **data** and **evidence** into **public health intelligence**

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1 Key findings

Illicit drug use

We identified several themes from the literature which explored the reasons why people decide to use illicit drugs. These themes spanned several levels of the socioecological model. They were not mutually exclusive and often overlapped.

We found that individuals often turned to drugs as a **coping strategy**. Reasons given included:

- Self-protection and to cope with the emotional pain of bad situations, life circumstances or internal feelings
- To cope with stress such as unemployment, homelessness or bereavement
- To cope with exclusion or rejection from society (for example, sexual identity)
- To gain a sense of freedom, or as rebellion
- To cope with mental health problems such as depression or anxiety.

Our analysis also identified that drug initiation was often **influenced by others.** This might be directly initiating use with others, or being influenced by those within their social network. Influences included:

- Introduction by family, often in the context of a dysfunctional childhood. This was usually voluntary but occasionally initiation was forced
- Introduced by peers, sometimes in the form of peer pressure.

We also found that the decision to try drugs was often a **conscious choice**, resulting from curiosity or having witnessed perceived positive impacts from drug use in others (such as increased confidence). Access and availability of drugs in people's environments, social networks and/or communities may also have helped arouse curiosity.

Our analysis revealed that for some **drug use was seen as normal**, which may have made them more susceptible to use. Examples of environments where drugs were normalised included:

- In their immediate family environment
- In their immediate social network
- Beyond their immediate networks, in their wider communities.

Some drugs were more acceptable and normalised than others within their immediate networks.

We also found that the first use of illicit drugs was often identified as being for **recreational use**. This was usually as part of a social event, for "fun", or out of boredom, and was often related to individual's interpersonal relationships.

Finally, in some cases, illicit drug use was identified as being initiated as a **self-treatment**, for example:

- As a fix for pain
- To overcome side effects from another medication
- As a perceived way of helping people overcome stigma associated with their illness.

Only two studies looked at reasons why people decide not to use illegal drugs. They identified the following as possible protective factors:

- Awareness of the harms associated with drug use
- Witnessing negative impacts of drugs
- Drug use not considered socially acceptable in a person's network
- Personal aspirations and personal responsibilities not compatible with drug use
- Family honour or religious beliefs.

Prescription or OTC medicine misuse

We identified several themes from the literature that explored why people misused prescription or over the counter (OTC) medicines for non-prescribed purposes. As with our analysis of illicit drug misuse, these themes spanned several levels of the socioecological model, were not mutually exclusive and often overlapped.

Our analysis suggests that how **health professionals** manage the prescription of opioids appears to have an impact on the likelihood of subsequent misuse of these medicines. Some participants voiced concerns about GP failure to educate them about the potential for addiction, the dismissal of their concerns and a lack of non-pharmacological pain management therapies. Others reported being able to access repeat opioid prescriptions easily without restrictions on the amount or frequency.

As with illicit drug use, our analysis identified that prescription or OTC medication misuse was often reported to be **influenced by others,** including family members and peers.

Misusing medicines as a **coping strategy** was also identified as a theme. Reasons given for this type of initiation included:

- Coping with bereavement, or problems associated with family, work or relationships
- Obtaining relief from physical pain or depression
- Coping with academic pressure (in college students).

Sometimes, misuse was seen as a way of producing **desired effects**, such as increasing confidence, allowing a person to stay awake longer or supressing appetite.

As with illegal drug use, the decision to misuse prescription or OTC medication was often a **conscious choice**.

Recreational use was also identified in our analysis, with some participants viewing medication misuse as fun or enjoyable and a social activity.

Finally, the **readily available nature** of the medicines was mentioned by some participants. In student populations, **prescription stimulant use was seen as widespread and the norm.**

Figures 3 to 5 in this report outline where each of the themes identified sit within the socioecological model of health. This shows graphically the often complex and intertwined nature of substance misuse.

At an interpersonal level, people's knowledge, attitudes and behaviours have an influence, but intrapersonal factors such as social networks and even some institutional or policy level factors can also play a role in people's decision making.

This suggests that strategies to address initiation of drug use, or misuse of medication, should target multiple areas of the socioecological model.

2 Background

Illicit drug use[1] and the use of prescription medication for non-prescribed purposes remains a problem in Wales. The England & Wales Crime Survey found that 9.4% adults aged 16-59 years had taken illicit drugs in 2018/19 (Home Office, 2019). The number of deaths attributable to drug misuse is also increasing in Wales, with 208 drug misuse deaths registered in 2018, up 12.4% from the previous year (Public Health Wales, 2018).

In England and Wales, more than a third (34.2%) of adults have taken illicit drugs or misused prescription medications at some point during their lifetime (Home office, 2019). Understanding the reasons why people may or may not decide to try drugs could be valuable when designing interventions to help prevent or dissuade them from doing so.

This systematic review was commissioned by the Substance Misuse Programme Board within Public Health Wales (PHW). The Board provides cross-organisational oversight and direction for the coordination and implementation of PHW activity in relation to substance misuse. Its remit includes the development of evidence-based services and systems to prevent, identify and reduce harms, and promote engagement in relation to substance misuse.

The Observatory Evidence Service has undertaken two reviews for the Substance Misuse Programme Board, the first being a quantitative review examining risk and protective factors for drug use (detailed elsewhere) and the second being, this qualitative review. This review explores the views, attitudes and beliefs related to why people do or do not decide to use illicit drugs (including novel psychoactive substances), or misuse prescription medication.

3 Methods

3.1 Review questions

This qualitative systematic review aims to address two questions:

What views, attitudes or beliefs are expressed about the reasons why people use illicit drugs or prescription medication for non-prescribed purposes?

[1] The England and Wales Crime Survey defines 'illicit drugs' as the following substances: amphetamines, anabolic steroids, cannabis, powder cocaine, crack cocaine, ecstasy, heroin, ketamine, LSD, magic mushrooms, mephedrone, methadone, methamphetamine, tranquillisers, 'unknown pills or powders', 'something unknown smoked', or 'any other drug'. Currently new psychoactive substances are reported separately in the Survey.

What views, attitudes or beliefs are expressed about what may protect people from using illicit drugs or prescription medication for non-prescribed purposes?

3.2 Source identification, selection and data extraction

A protocol for this systematic review was registered on PROSPERO (CRD42019141005).

Searching

We were interested in studies that focused on reasons, explanations, views, attitudes, beliefs or perceptions about the development or non-development of drug misuse, therefore, we searched for studies that included data on reasons for *initiation of* illegal drugs, novel psychoactive substances or misuse of prescription medications.

We developed a search in Ovid Medline using a mix of indexed terms and free text keywords [See Appendix 1 for search strategy]. It was designed to identify qualitative studies plus cross-sectional and longitudinal cohort studies using open ended questions. The search was run in the following databases:

- MEDLINE
- Embase
- PsycINFO
- ETHoS
- Criminal Justice Database
- CINAHL
- Social Care Online

Searches were limited to studies published in the English language between 2000 and July 2019. Where we identified systematic reviews relevant to our questions, we checked the lists of included studies to identify any additional primary studies that our search may have missed.

Screening

We imported the search results into an Endnote database and the titles were screened by one reviewer to eliminate duplicates and clearly irrelevant citations. Two reviewers (independently in duplicate) then screened the titles and abstracts of the remaining citations against the pre-defined inclusion and exclusion criteria (Table 1). Disagreements were resolved through discussion and, where agreement could not be reached, a third reviewer was consulted to make the final decision. Where the reviewers

were unsure about the relevance of the paper, the study was retained for screening at full text.

All papers included at title/abstract were screened independently by two reviewers at full text. Where possible disagreements were resolved through discussion. Where agreement could not be reached, a third reviewer made the final decision.

Table 1: Inclusion and Exclusion Criteria

	Include:	Exclude:
Study type:	Qualitative studies (any design), cross-sectional and longitudinal cohort studies *using open ended questions* that report the attitudes and beliefs of participants	Secondary designs (after checking them for relevant primary studies), other quantitative study designs
Source type:	Published and grey literature in the English language	Other types of sources, conference abstracts, presentations and posters
Setting:	Studies conducted in pre-1974 OECD countries[2]	Studies conducted in other countries
Population/ Perspective:	All perspectives	Studies of indigenous population groups that are not generalisable to a Welsh setting
Phenomenon of Interest:	Initial use of illicit drugs (other than anabolic steroids) including new psychoactive substances (previously known as 'legal highs') that are now illegal, but which may have been legal at time of study publication. Misuse of prescription medications	Other substance misuse (e.g. alcohol and tobacco) Misuse of anabolic steroids as the culture associated with these substances is markedly different from that of other illicit substances
Exploration:	Studies looking at reasons, explanations, views, attitudes, beliefs or perceptions about the development or non-	

[2] Limiting to the pre 1974 OECD countries will increase relevance to the Wales context. These countries are; Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Luxemburg, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, UK and USA.

	development of drug misuse	

Critical appraisal and data extraction:

One reviewer extracted data for all the included studies into a data extraction table. To ensure consistency, this was checked by a second reviewer. The data extraction table included the following:

- Study reference
- Study design
- Setting (location, dates)
- Study participants (including number, demographic data, method of recruitment, inclusion/exclusion criteria for recruitment)
- Research question(s)/aims(s)
- Theoretical approach taken (if specified)
- Data collection method (including by whom, setting, period during which data collected) & data analysis method
- Author limitations

The data extraction tables can be found in Appendix 2.

One reviewer critically appraised all the included studies using either the Specialist Unit for Review Evidence (SURE) checklist for qualitative studies (SURE, 2018a), or cross-sectional studies (SURE, 2018b). A second reviewer undertook a consistency check for approximately 10% of included papers which were discussed to establish inter-rater reliability. Any concerns about the methodological quality of the studies were noted under 'reviewer comments' in the data extraction table. Where concerns about the methodological quality of the study were significant enough to warrant exclusion, this was discussed by the review team and reasons for exclusion were recorded in the EndNote database for transparency.

Analysis:

We undertook thematic analysis using the methods outlined by Braun and Clarke (2013), and utilising ATLAS.ti qualitative software. Reflexivity (awareness of the way in which our subjective perceptions affect our analysis and interpretation of data), is integral to conducting good qualitative research (Dowling, 2006). Therefore, the process of analysis was conducted iteratively with a mix of independent work and team discussion. Two reviewers independently coded relevant sections of text and participant quotes from a set of five papers. The codes were then discussed by the team and refined to create an initial coding framework which was used to code the remaining papers. The review team met regularly to discuss and refine the framework as coding progressed. Once the coding was complete

related codes were grouped to construct themes for analysis. As the work progressed, discussions were also held with the wider Observatory Evidence Service team.

During the analysis, it became clear to us that whilst the studies included some data on initiation of drug use, often it was not the primary focus of the research. Instead, research usually explored the trajectory of misuse of illegal drugs or prescription medications. Therefore, we only coded the sections of the included studies that were most relevant to our research questions.

We also originally planned to analyse and synthesise data for UK and non-UK studies separately. However, as the themes across both sets of the studies were very similar, the analyses were combined to produce a richer data synthesis. For each theme, we have highlighted where the evidence comes from the UK studies by bolding the citations of their quotes.

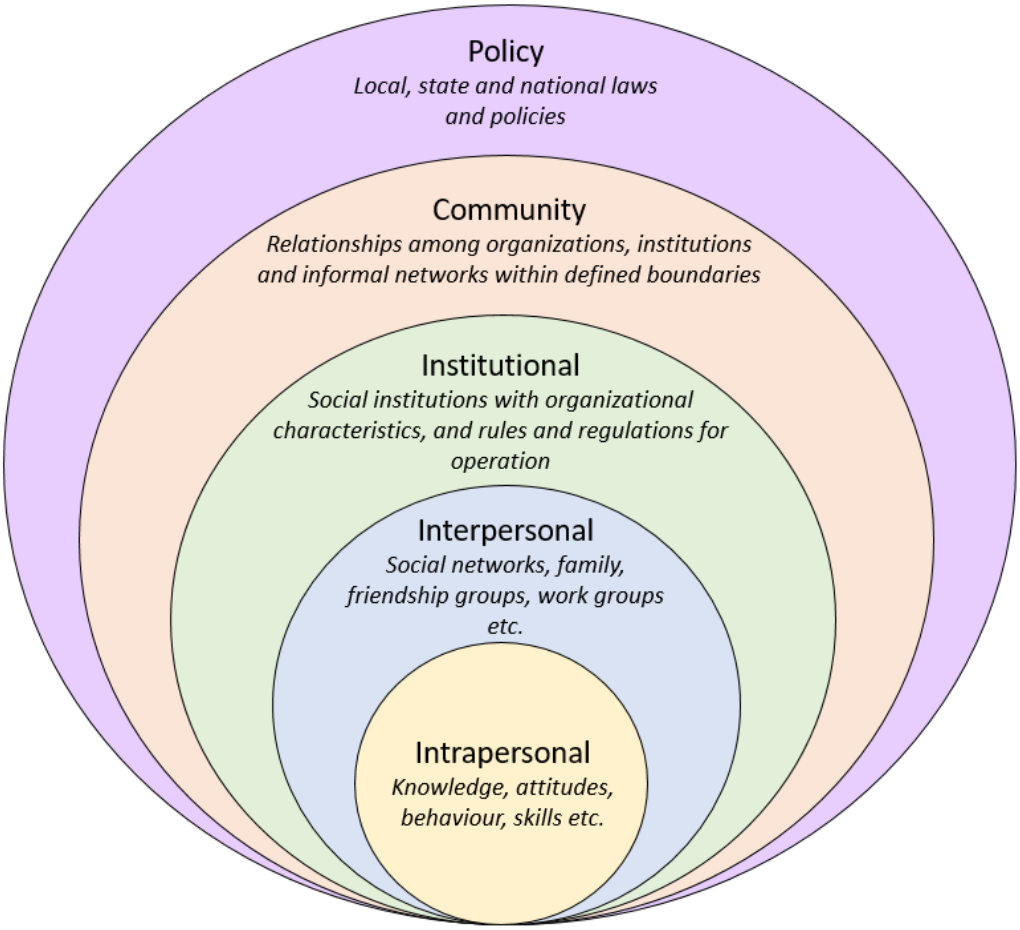
Where quotations are taken from studies of specific populations (for example those suffering from psychosis) and it is not made clear in the text, this is indicated.

Socioecological model:

As part of our analysis we explored how our themes correspond with or cross over different levels of a socioecological model of health, to help demonstrate how different factors may influence an individual's decision to use or not use drugs at multiple levels. A similar framework was used by Connell (2012) to support an understanding of substance misuse in adolescents.

Several similar socioecological models for health exist. We used the model in the figure 1, developed by McLeroy, et al. (1988), which views an individual's behaviour as being determined by a mix of intrapersonal, interpersonal, institutional, community and public policy factors.

Figure 1: Socioecological model from McLeroy et al (1988)

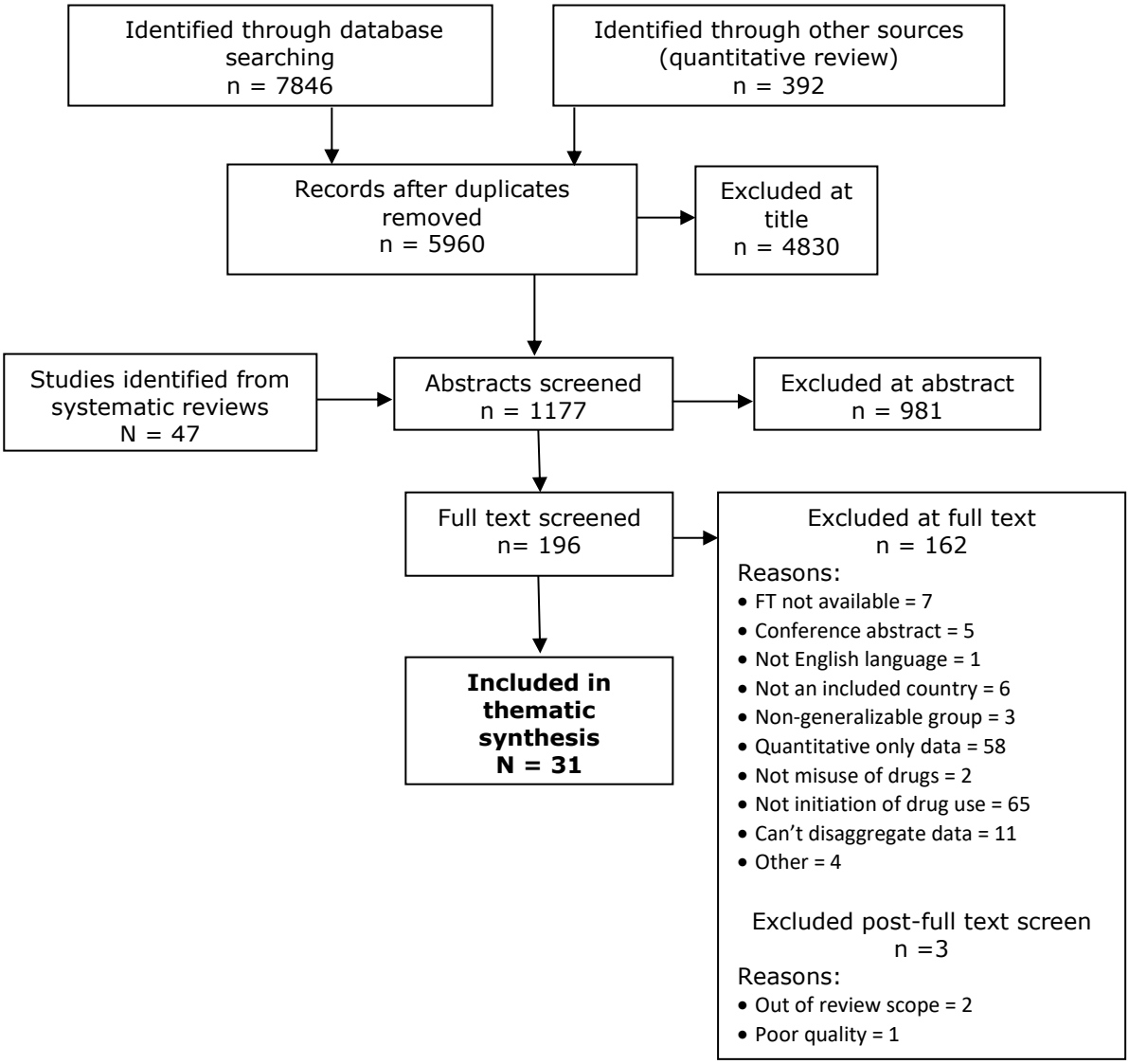


4 Results

4.1 Study selection

Figure 2 shows the flow of information through the review process. The search identified 7,846 citations, with a further 392 references identified as possibly relevant from the companion review of risk and protective factors. After de-duplication, 5,960 references were screened at title, where 4,830 clearly irrelevant titles were excluded. At abstract stage 1,177 abstracts were reviewed, with 981 being excluded, leaving 196 papers to be screened at full text stage. Of these, 162 did not meet our inclusion criteria. We excluded a further three studies during critical appraisal and data extraction due to their low methodological quality or because they were beyond the scope of this review. The remaining 31 studies were included in the thematic synthesis.

Figure 2: Flow of information through the review process



4.2 Critical appraisal

The main methodological issues identified from critical appraisal of the included studies were poor reporting of recruitment strategies, researcher reflexivity and data analysis methods. It is important to consider how different aspects of study methodology may influence who participates and what they disclose. For example, nine studies report providing monetary incentives for participants (Fast et al, 2009; Cheney et al, 2018; Stumbo et al, 2017; Rigg & Murphy 2013; Mateu-Gilbert et al, 2017; Hunt et al, 2005; Hildt et al, 2014; Carbone-Lopez et al, 2012) . Many of the included studies failed to provide adequate information on the location of data collection, the

background of the interviewer, any possible power relationship between interviewer and interviewee. It was notable that only a few studies provided adequate information on how reflexivity was managed. See comments in the data extraction tables in Appendix 2 for details.

We excluded MacLeod, et al. 2014 after critical appraisal because of concerns about its lack of reporting of data analysis, reflexivity, and ethical considerations, and the lack of richness of participants' data.

4.3 Findings

Characteristics of included studies:

Of 31 primary studies included in this review, 14 were conducted in the UK and 17 in other pre-1974 OECD countries. Twenty-seven studies were of qualitative design, three were mixed methods with a qualitative element, and one was mixed methods with a cross-sectional survey element. No longitudinal cohort studies met our inclusion criteria. Study sample sizes ranged from six to 175. Comprehensive data extraction tables are provided in Appendix 2.

Illicit drug use:

Twenty-one studies focused on illicit drug use. Table 1 shows the characteristics of these studies. Twelve of these studies were undertaken in the UK and nine were in other pre-1974 OECD countries.

Thirteen studies took place in general populations, of which six were undertaken in the UK. The other eight studies (six undertaken in the UK) were in specific sub-population groups including populations with mental health conditions including schizophrenia and psychosis (N=4), youths in foster care (N=1), British Bangladeshis living in London (N=1), Latinos (N=1), and street-entrenched youth in downtown Vancouver (N=1).

Only two studies, (one UK), included information on what may protect people from using illicit drugs.

Prescription medicine misuse:

Ten studies focused on misuse of prescription or 'over the counter' (OTC) medicines. Table 2 shows the characteristics of these studies. Two studies were undertaken in the UK and eight in other pre-1974 OECD countries.

Seven studies (2 UK) took place in general populations. The other three (all non-UK) took place in student populations and focused mainly on misuse of stimulants. The two sets of studies were analysed separately.

We did not find any studies addressing what may protect people from misusing prescription or OTC medicines.

Table 1: Characteristics of included studies focusing on illicit drug misuse

First author/ Year	Study design	Country	Population	Number	Participant Characteristics	Data collection method	Theoretical approach
Allen 2003	MM: Cross sectional survey	UK	General	47	Age range: 13-29 Sex (n): M=24, F=23 Ethnicity (%): W or WB = 53.8, ME: 46.2	Questionnaire (closed & open Qs)	TA
Asher 2010	Qualitative	UK	Sub pop (Schizophrenia)	17	Age range: 16-40 Sex (n): M=16, F=1 Ethnicity: W=13, AF=2, AC=1, AS=1	Semi-structured interviews	GT
Bansal 2016	Qualitative	UK	General	6	Age range: 24-52 Sex (n): M=6 Ethnicity: NS	Semi-structured interviews	IPA
Barn 2015	MM: with qualitative element	UK	Sub pop (Youth in foster care)	56 (qual sample)	Age range: 16-23 Sex (n): M=16, F=22, NS=18 Ethnicity: NS (For qualitative subsample)	Focus groups and one-to-one interviews	TA
Carbone-Lopez 2012	Qualitative	USA	General	40	Age range: 20-58 Sex (n): F=40 Ethnicity: W=39, NW=1	Semi-structured interviews	GT
Charles 2010	Qualitative	UK	Sub pop (Psychotic patients)	14	Age range: 27-55 Sex (n): M=12, F=2 Ethnicity: W=6, BC/B=4, BA=3, I=1	Interviews	TA (Realist interpretation)
Cheney 2018	Qualitative	USA	Sub pop (young Latinos)	19	Age: >18 Sex (n): F=19 Ethnicity: L=17, BR=2	Participant observation with interviews	UEF

First author/ Year	Study design	Country	Population	Number	Participant Characteristics	Data collection method	Theoretical approach
Childs 2011	Qualitative	UK	Sub pop (people with psychosis)	7	Age range: 16-30 Sex (n): NS Ethnicity: WB=6, WBI = 1	Interviews	IPA
Facchin 2016	Qualitative	Italy	General	25	Age range: 26-68 Sex (n): M=25 Ethnicity: NS	Interviews	PH
Fast 2009	Qualitative	USA	Sub pop (street-entrenched young people)	38	Age: 16-26 Sex (n): M=18, F=18, TR=2 Ethnicity (%): W=67, AB=28, AFCN=5	Interviews	NS
Harling 2007	Qualitative	UK	General	6	Age range: 25-37 Sex (n): M=6, F=2 Ethnicity: NS	Semi-structured interviews	PH
Hunt 2005	Qualitative	USA	General	56	Age range: 17-29 Sex (n): M=28, F=28 Ethnicity: AS	Interviews	NS
Kreis 2016	Qualitative	UK	General	7	Age range: 26-40 Sex (n): F=7 Ethnicity: NS	Semi-structured interviews	GT
Lobbana 2010	Qualitative	UK	Sub pop (Young people with psychosis)	19	Age range: 18-35 Sex (n): M=15, F=4 Ethnicity: WB=17, ME=1, P=1	Interviews	TA
Mantovani 2019	Qualitative	UK	Sub pop (British Bangladeshis in London)	15	Age range: 26-41 Sex (n): NS Ethnicity: BB	Interviews	TA
Melin 2017	Qualitative	Sweden	General	13	Age: 27-51 Sex (n): M=6, F=7 Ethnicity: NS	Narrative Interviews	QCA
O'Brien, 2008	Qualitative	USA	General	13	Age range: 20-58 Sex (n): M=7, F=6	Interviews	TA

First author/ Year	Study design	Country	Population	Number	Participant Characteristics	Data collection method	Theoretical approach
					Ethnicity (%): AFAM=15, H=46, non-HW=31, Other=8		
Orsi, 2014	Qualitative	Canada	General	27	Age range: 14-18 Sex (n): M=27 Ethnicity: NS	Semi-structured interviews	TA
Payne, 2006	Qualitative	UK	General	30	Age range: 17-42 Sex (n): F=30 Ethnicity: WB=29, NWB=1.	Semi-structured interviews	GT
Shildrick, 2002	Qualitative	UK	General	76	Age range: 16-26 Sex (n): M=45, F=31 Ethnicity: NS	Semi-structured interviews	NS
Skarner, 2008	Qualitative	Sweden	General	20	Age range: 18-26 Sex (n): M=8, F=12 Ethnicity: NS	Semi-structured interviews	IP

*MM = Mixed methods, M = Male, F = Female, TR = Transgender, W = White, WB = White British, WBI = White British-Irish, B = British, NW = Non-white, NWB= non-white British, ME = Mixed ethnicity, BR = Bi-racial, AB = Aboriginal, AF = African, BL = Black, BA = Black African, AC = African-Caribbean, AFCN = African-Canadian, AS = Asian, I = Indian, P = Pakistani, BC = Black-Caribbean, BB = British Bangladeshi, AFAM = African-American, NAM = Native American, CAU = Caucasian, H = Hispanic, non-HW = non-hispanic white, L = Latina, TA = Thematic analysis, STA = Semantic thematic analysis, IPA = Interpretative phenomenological analysis, P= Phenomenology, GT = Grounded theory, IP = Interactionalist perspective, UEF = Urban ethnographic framework, QCA = Qualitative content analysis, NS = Not stated.

Table 2: Characteristics of included studies focusing on prescription medication misuse

First author/ Year	Study design	Country	Population	Number	Participant Characteristics	Data collection method	Theoretical approach
Cooper 2013	Qualitative	UK	General	25	Age range: 20-70 Sex (n): M=12, F=13 Ethnicity: NS	Semi-structured interviews (telephone)	NS
Desantis 2010	Qualitative	USA	Students	79	Age range: NS Sex (n): M=79 Ethnicity: NS	Interviews	TA (though NS by authors)
Desantis 2008	MM: with qualitative element	USA	Students	175 (qual sample)	Age range: NS Sex (n): NS Ethnicity: NS	Interviews	NS
Hildt 2014	Qualitative	Germany	Students	18	Age (mean): 25 Sex (n): M=12, F=6 Ethnicity: NS	Semi-structured Interviews	NS (but references to GT)
Kinnaird 2019	Qualitative	UK	General	16	Age (mean): 32.7 Sex (n): M=3, F=13 Ethnicity: NS	Interviews	NS
Marie 2014	Qualitative	USA	General	34	Age Range: 22-63 Sex (n): M=20, F=14 Ethnicity: AFAM=17, CAU=12	Semi-structured interviews, participant observation & questionnaire	NS
Mateu-Gelabert 2017	MM: with qualitative element	USA	General	46 (qual sample)	Age range: 18-32 Sex (n): M=27, F=18, TR=1 Ethnicity: W/CAU=32, AFAM/BL=3, H/L=9, AS/PI=2	Semi-structured interviews	STA
Rigg 2013	Qualitative	USA	General	90	Age range: 18-51 Sex (n): M=52, F=38 Ethnicity: B/AFAM=9, W=70, H/L=11	Semi-structured interviews	TA

First author/ Year	Study design	Country	Population	Number	Participant Characteristics	Data collection method	Theoretical approach
Stumbo 2017	Qualitative	USA	General	121	Age (mean): 39 Sex (n): M=55, F=66 Ethnicity: H=10, Non-W=18, NS=93	Semi-structured interviews	GT (modified approach)
Wilson 2018	Qualitative	USA	General	10	Age range: 23-61 Sex (n): M=4, F=6 Ethnicity: W=5, NAM=3, H/L=1, BL/AFAM=1	Semi-structured interviews	GT

*MM = Mixed methods, M = Male, F = Female, TR = Transgender, W = White, WB = White British, WBI = White British-Irish, B = British, NW = Non-white, NWB= non-white British, ME = Mixed ethnicity, BR = Bi-racial, AB = Aboriginal, AF = African, BL = Black, BA = Black African, AC = African-Caribbean, AFCN = African-Canadian, AS = Asian, I = Indian, P = Pakistani, BC = Black-Caribbean, BB = British Bangladeshi, AFAM = African-American, NAM = Native American, CAU = Caucasian, H = Hispanic, non-HW = non-Hispanic white, L = Latina, TA = Thematic analysis, STA = Semantic thematic analysis, IPA = Interpretative phenomenological analysis, P= Phenomenology, GT = Grounded theory, IP = Interactionalist perspective, UEF = Urban ethnographic framework, QCA = Qualitative content analysis, NS = Not stated.

4.4 Synthesis

Our thematic analysis has been split into two sections; reasons why people do/do not initiate illegal drug use and reasons why people do/do not misuse prescription medicines.

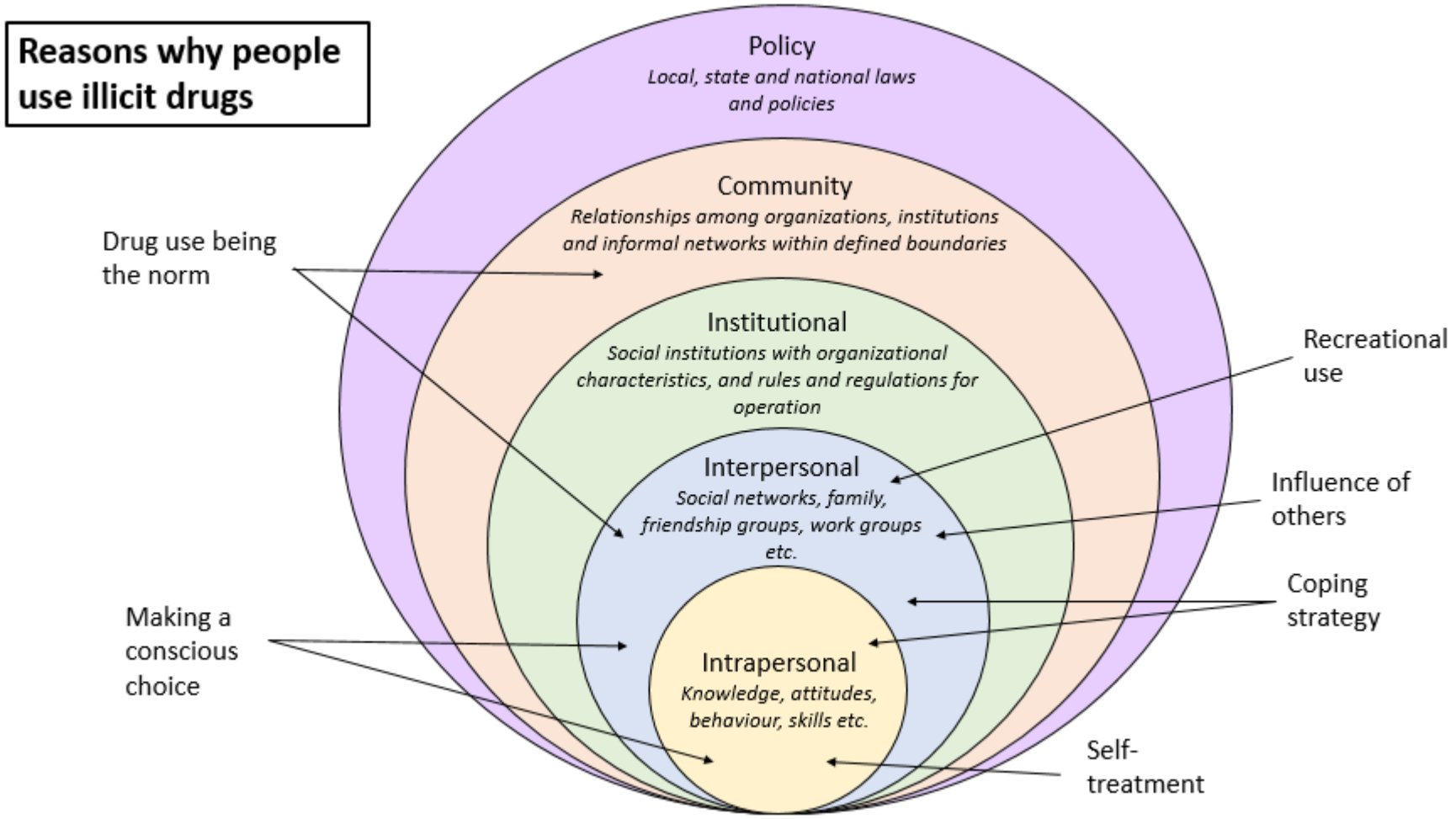
Illicit drug use:

Reasons why people decide to use illicit drugs:

Figure 3 shows the themes that emerged from our analysis of reasons for initiating illegal drug use and the parts of the socioecological model to which they correspond. A number of themes with multiple sub-codes emerged from our analysis. These spanned several levels of the socioecological model. Full details of themes and associated sub-codes can be found in Appendix 3.

Themes were not mutually exclusive and often overlapped, with individuals offering multiple reasons for their initial decision to use. Each theme is explored in more detail below.

Figure 3: Reasons why people decide to use illicit drugs and where these fit on a socioecological model:



Coping strategy:

Respondents reported turning to drugs as a coping strategy, for self-protection and to cope with the pain of bad situations, life circumstances or internal feelings. Fifteen studies (**Asher & Gask, 2010**[3]; **Bansal, 2016**; **Barn et al, 2015**; **Charles & Weaver, 2010**; Cheney et al, 2018, Carbone-Lopez et al, 2012; Facchin et al, 2016; Fast et al, 2009; **Kreis et al, 2016**; **Lobbana et al, 2010**; **Mantovani & Evans, 2019**; Melin et al, 2017; O'Brien et al, 2008; Orsi et al. 2014; **Payne, 2006**) contributed information to this theme (8 UK, 7 Non-UK).

There was a wide array of different circumstances that resulted in participants initiating drug use as a coping strategy. For some, it was a way to cope with specific circumstances and relationships on an interpersonal level, for example, a dysfunctional childhood filled with abuse, neglect and instability:

> She began using marijuana and her father's beer at the age of 13. Her parents, who she described as "never home," were unaware of her substance use. To escape the dysfunction and abuse, one of her four sisters committed suicide, and Socoro entered a gang and began using:
> *"I used because I wanted to get away from the situations at home. I was tired of having a controlling father, a mother that never cared, never gave a hoot about me—and she would always be sending me away. So, I guess, I wanted a family and I chose gang life*." (Cheney et al, 2018; young Latinos)

> Barbara, for example, began using meth at age 12 when she became involved with an older boyfriend who used. When describing her first use, she explained, *"My childhood was not very good."* She then went on to disclose that her uncle, who lived with her family, molested her from age 6 to 12. When she revealed the abuse to her boyfriend, he suggested that meth would enable her to cope with the "things that were going on" with her. She stated, *"I wanted to hide the pain. I wanted something to cope with the things that were going on with me when I was a kid. A way to hide my feelings, to numb myself."* (Carbone-Lopez et al, 2012)

Others began using drugs to cope with the stress generated from other difficult circumstances such as unemployment, bereavement or homelessness:

> Robert explained that he arrived in the UK from Brazil and at the time he was unemployed while being faced with the responsibility of

[3] UK studies are indicated in **bold**

> providing for his family. Due to "*little prospect*" (p.8, L80), Robert became depressed and felt "*out of control*" (p.3, L26) or unsettled, feelings that may have manifested themselves because of the identity distress experienced while he transitioned between two different cultures. To manage his feelings of depression, instability, hopelessness and identity distress, Robert used mephedrone as a naïve quick-fix to the enduring process of acculturative stress. (**Bansal, 2016**)
>
> In some cases traumatic life events provided a powerful impetus for drug use and accelerated the participant's trajectory into heavy drug use. For example, one participant explained how he used drugs to block the emotional pain of his father's death. Another participant suffered physical and mental abuse from his stepfather and left home at 13. He became homeless and found using heroin alleviated his psychological pain: "*. . . about the third time I used it (heroin) I had the best night sleep of my life . . . so yeah I knew it was something I wanted to do because it takes away all pain . . .*" (**Charles & Weaver, 2010**; psychotic patients)

For some, drugs filled a void, meeting otherwise unmet emotional needs or helping them to escape their current reality.

> Daniel proposed that in the mephedrone-using community he got his *"feelings and…your worries answered, so [laughs] you are gonna gravitate towards people like that, that are actually listening to you"* (p.12, L78), which mirrored the qualities of a quasi-support group or surrogate "family" (p.11, L76). (**Bansal, 2016**)
>
> … having left her husband, at the age of 21, Mariah was overwhelmed by the responsibilities of caring for her own children as well as taking care of her younger siblings. When her younger sister offered her some meth, though she had never before used drugs, she agreed. She recalled her decision: *"I thought I had been tied down for a long time with all these kids and my husband. And so I wanted a little bit of freedom."* (Carbone-Lopez et al, 2012)

For others, turning to drugs was a way to cope with rejection, or exclusion from society:

> Josh's family rejected him when he disclosed his sexual identity as being "gay" (p.8, L64). Consequently, Josh used mephedrone to facilitate chemsex, which promoted feelings of belonging and the acceptance of his sexual identity. (**Bansal, 2016**)

The sense of freedom, mentioned by Carbone-Lopez et al (2012), was another explanation voiced by participants. For some, drug use offered a sense of freedom, independence from or rebellion against, their circumstances:

Rainbow recalled how drugs, and meth, in particular, fulfilled this desire for independence from her parents:
"*There used to be a commercial I remember [that] said "nobody ever says, when I grow up I want to be a junkie." But I did, pretty much. The first time I got high, smoked weed, it was on. I went from weed to acid to, I wanted to get as high as quick as fast as possible. 'Cause I was just such an angry, resentful, hurt child . . . Even when I found drugs, it was easy crap to fit into and I felt comfortable with it and plus I got my cheap thrills. So I just, balls to the wall, I just wanted to get high."* (Carbone-Lopez et al, 2012).

P3: "*I had quite a bad upbringing with my mum (…) my mum tried to get me put in a home but because there were no behavioural difficulties and that at the time, the social work wouldn't do that. She had started drinking and that so (…) she'd always been good for lifting her hands and that for as far back as I can remember. More nastiness from her mouth like telling me she'd be happy if I hadn't come into her life (…) I kind of rebelled when I got to 14 (…) I started going to under-18 raves kind of thing and I started taking amphetamines and acid and stuff."* (**Kreis et al, 2016**).

On an intrapersonal level, some participants used drugs to cope with mental health problems such as depression and anxiety:

"A: Basically I started it so I could get to sleep at nights, 'cause I never used to sleep really.
G: I was depressed and I'd just go out and take a line 'cause I wanted to get in a different mood.
J: That's probably one of the reasons why cannabis worked for me so well, 'cause that just wipes out anxiety, you don't worry about anything, erm, if I could use it in moderation I probably still would use it, er to deal with anxiety as a sort of self-medication." (**Lobbana et al, 2010**; young people with psychosis)

"I tend to worry about things that it's not worth worrying about … and it makes me want to light up … I smoke weed, just to relax my head so that I start to think about whatever. Until when it has come up again … smoking weed is … making me sort of forget things" (**Barn & Tan, 2015** – youths in foster care)

E: "I saw it as a way of curing depression like at the time and, it was really stupid.
Did it work?
E: "No. Well maybe for that night but, the next day obviously it came back tenfold, the depression, so erm, It obviously turned into manic depression when I'd had like, when I took two more ecstasy pills to try and make myself feel better, it just made me a bit manic for a little bit and crazy." (**Lobbana et al, 2010**; young people with

psychosis)

Influence of others:

A second theme that emerged during our analysis was that drug use is often *influenced by others*, whether directly initiated with others, or just influenced by the actions of others within their social network. Twelve studies (**Asher & Gask, 2010**; Carbone-Lopez et al, 2012; **Charles & Weaver 2010**; **Childs et al 2011**; Facchin & Margola, 2016; Fast et al, 2009; **Harling 2007**; Hunt et al, 2005; **Kreis et al, 2016**; **Lobbana et al, 2010**; **Mantovani & Evans 2019**; O'Brien et al, 2008) included information for this theme (7 UK, 5 non-UK). Initiation of drug use could take place in many contexts among multiple interpersonal social networks.

Some were introduced to drugs by family members, often as part of the dysfunctional childhood discussed above:

> Cristina began using marijuana and cocaine at age 11 with her mother. At the time, Cristina thought, *"whoa, your mom's cool . . . you can do this . . . you can do that. . . that was so wrong."* However, now she thinks her mom was a *"shitty mother"* who would *"leave us home alone*." Cristina explains that, when she was *"probably five, six,"* her mom, because of her drug use, *"would be gone and I'd be home with my little brother, who was a year younger, my baby sister in diapers, and there'd be no food in the house. . . . I remember to this day, climbing in the back of the cupboard looking for powdered eggs to feed the kids."* (O'Brien et al, 2008)
>
> *"I was first introduced to it by me brother, who was using… I didn't know an awful lot other than what I was hearing in the press, didn't know anyone who was using. Never met anyone and then quite to my surprise I found out my brother had been using little bits, every now and then."* (**Harling, 2007**)
>
> *"One time [my mum] had to be admitted into hospital, so for three weeks my brother was looking after us in the house. So we had all these friends in and, I remember my brother was really protective of us then and he had his friends smoking buckets [cannabis apparatus], smoking cannabis in the house. And he wouldn't let me go near it. But on other instances they had a couple of joints [cannabis cigarettes] and they used to save me some cos I was [his] little brother. Look after me that way."* (**Asher & Gask, 2010**; people with schizophrenia)

In some instances, the initiation was forced:

> Geri too described her initiation into meth use as related to a sexual assault, yet in her case, her first use was not by choice. Instead, she

was forced to use meth the first time. At age 11, her father's best friend raped her and in the process, injected her with meth. A few months later, the same man attacked her and, again, injected her with meth. Geri said, *"It took all the pain away. And I didn't even care anymore. It just took all my worries away and made me feel good."* (Carbone-Lopez et al, 2012)

"My mother, she was putting Diazepam in my sandwiches (…) crushing it down (…) I was still going to high school at the time. And when she stopped doing it I started feeling funny, eh, my dad knew nothing of this and still doesn't (…) and she told me what she had done, and my mother actually went away out and scored drugs for me (…) and that was the beginning of my drug problem, my mother" (**Kreis et al, 2016**)

For others their first drug use was influenced by peers. Sometimes this came in the form of pressure:

(I) "What had you heard about ecstasy before you tried it?"
(R) "It was my cousins' fault. They pressured me. They really like it. They're like "oh, it's so fun" and they're the ones that took me to my first rave. And they're the ones that gave me the E ... I got it from them. And my boyfriend was there too, so we shared only half a pill the first time." (Hunt et al, 2005)

Rabia, for instance, told us that she had started using drugs because her *'brother was using and then (she) started'* but also because her *'boyfriend was a drug user'*. Being in a trustworthy circle of friends, with a boyfriend and his friendship networks was key to women initiating drug use and transitioning to dangerous drugs. For instance, Badia told us she had been *'experimenting with a bit of drugs and alcohol but it wasn't that extreme'* and that *'eventually (she) fell in love with him and let him do it'*, explaining: *'The drugs that I was doing were given to me by my ex-boyfriend. I never had to do anything for it'*. (**Mantovani & Evans, 2019**; UK Bangladeshis)

I tried drugs for the first time when I was 14 with older friends who used cocaine. (41-year-old participant) (Facchin & Margola, 2016)

Fleur described how she first tried cannabis with other children in her neighborhood: *''it was just like my friends at home, kids, who got really giggly, it was like that, because I smoked it, other people, with people on my road I (..)..this guy at the end of my road was like, do you want to go and smoke some weed and I was yeah, okay."* (**Childs et al, 2011**; people with psychosis)

Gareth stated, *''I were at school, because everyone smoked it at school and I did.''* (**Childs et al, 2011**; people with pyschosis)

Making a conscious choice:

In some instances, drug use was *a conscious choice* resulting from a person's curiosity or from witnessing positive impacts that drug use had on others in their social circle. Thirteen studies (Carbone-Lopez et al, 2012; **Charles & Weaver 2010**; **Childs et al, 2011**; Facchin & Margola, 2016; Fast et al, 2009; **Harling 2007**; Hunt et al, 2005; **Lobbana et al, 2010**; **Mantovani & Evans, 2019**; Melin et al, 2017; O'Brien et al, 2008; **Payne 2006**; **Shildrick 2002**) included information relevant to this theme (7 UK, 6 Non-UK).

> Jade, 18 years: *"Well, I've used heroin since I was 12. One day, me and my friend just decided we'd get a bag of it (heroin) between us. We'd seen other people doing it, so we knew what to do and it just went on from there. She was older than me, and it was easier for her to get hold of it."* (**Payne, 2006**)
>
> Claire was one of the few 'ordinary' young people who had tried a wider range of illicit drugs: *"I've tried acid, cannabis, ecstasy and speed. It's not like a regular thing. I wouldn't take them very often but it is alright to try as I am a curious person. If you don't try you wouldn't know … you take a quarter as an experiment. Me and me boyfriend we got one [ecstasy tablet]. We knew we wanted to try it … it was purely out of curiosity that we took a quarter."* (**Shildrick, 2002**)
>
> Moreover, watching family members use made women curious as adolescents about meth's effects. Wendy saw how happy her family seemed when they used and she made the decision to try it. She recalled, *"I just wanted to try it, we seen everyone else doin' it, so we thought it was okay."* (Carbone-Lopez et al, 2012)
>
> *"On Hastings [in the Downtown Eastside] . . . There's a lot of active drug use, out in the open. And young girls see that, and think that it's glamorous, or they think it's cool, and they'll start to get into it. (Tanya, 23 years old)"* (Fast et al, 2009; street-entrenched young people)
>
> *"I started smoking crack, nobody forced me into it I wanted to try it out. I am not going to lie about it, I looked into it and thought I had a good understanding about what it is about, socialising and that. In them days it was about getting high and I was brought up sort of like a tomboy. I was always hanging out with the boys and I wanted to try it, I never stole off anyone just always had a good time…So, I started smoking crack when I was about 15 years old, has been about 14 years now (Maliha)."* (**Mantovani & Evans, 2019**; UK Bangladeshis)

For some respondents, access to and availability of drugs in their immediate environments/social networks/communities may have helped arouse their curiosity. Those who were more drug naïve may also have made the choice to try drugs because they had little knowledge of the effects or dangers:

> "Repeatedly, participants noted how drug dealers approached young people in public spaces offering *'free drugs'* to those they *'knew were not users'* and *'had money'* (Danish). Similarly, Jabbar said:
> *"What happened was the older Pakistani boys got me onto the drugs 'cos some of them got me onto heroin. I never knew what it was, I was 13. I used to be playing football and they used to say: 'Come over here, try some of this'. I used to say: 'What is it?' They would say: 'Just try it' and I just had one line. When we used to play football they used be in the garages smoking drugs, so from then on (I started using) (Jabbar)."* (**Mantovani & Evans, 2019**; UK Bangladeshis)

> In moving to downtown Vancouver, Drew recalled in hindsight that he was totally clueless as to what he was 'getting himself into.' He vividly described his first day in town:
> *"I got introduced to a crowd that was a gong-show [wild, out of control] . . . I was looking for a hostel or whatever, and someone said, 'Look, I can take you downtown' . . . So he shows me where this hostel is . . . And he ends up taking me to his place, Nelson Park [in the Downtown South], and that's when I got introduced to crystal meth. And that's when I got hooked on crystal meth."* (Drew, age 23) (Fast et al, 2009; street-entrenched young people)

Others decided to use drugs because they had witnessed the perceived benefits a drug could provide and desired these benefits. For example, increasing their confidence, or making them more sociable:

> For instance a 22-year-old Filipino male described how ecstasy had helped him to become more social: *"I'm a shy person. That's when I first started. I was really, really shy where ... I couldn't talk to anyone. I was just like one of those people who's shy in general. But like E helped me out to be more social. And I took the use of the drug to become social to other people. And I took the use of the drug to actually have ... just like have conversations, actually give speeches. I actually could do that now because it gave me confidence that time. And now I use ... I picked up E throughout my everyday life just to be happy, to think in the positive state wherever I'm in. Even though something bad happens to me, I always try to think of the good things. And I always believe that everything happens for a reason. (034)"* (Hunt et al, 2005)

Or they desired a specific identity which they saw in those who used:

> For some people, the ''cannabis culture'' seemed attractive and

exciting and provided a desirable identity. For example, Jed talked about the influence of a group of older kids, and his account reflected a certain inevitability about using cannabis as part of the music culture he enjoyed: *"the cooler kids did it and, well, it was kind of like, there was always that kind of chicness about it."* (**Childs et al, 2011**; people with psychosis)

Drug use being the norm (drug normalisation):

Drug use was often seen as *normal,* whether at an interpersonal level within a person's social networks, or more widely within the local community/area. This "normalisation" of drugs may have made people more susceptible to use. It was identified in 12 studies (**Asher 2003**; **Barn & Tan, 2015**; Carbone-Lopez et al, 2012; **Charles & Weaver 2010**; Cheney et al, 2018; **Childs et al, 2011**; Facchin & Margola 2016; Fast et al, 2009; **Harling 2007**; **Lobbana et al, 2010**; Melin et al, 2017; **Shildrick 2002**) (7 UK, 5 Non-UK).

For some participants, drug use was normalised within their immediate family environment:

> Drug and alcohol abuse by parents, brothers, or relatives was the most common family problem, followed by the presence of physical violence in the family:
> *"My father used to take drugs in our apartment, locked in his bedroom . . . My mother started drinking several years later to bear her relationship with my father."* (40-year-old participant)" (Facchin & Margola, 2016)

> Amy told us that she was "*raised in that environment, so my parents use, my grandparents use."* By the age of 14, she was assisting her parents by selling the meth they made. When first asked about her meth initiation, Amy simply stated, *"One night, some of my parents' friends came over and I did a shot of dope. And that was the beginning." Despite her ready access to meth, until that particular night, she had never used any drugs."* (Carbone-Lopez et al, 2012)

Sometimes the 'norm' extended beyond immediate social networks, with drug use being seen as normal in people's wider communities and the areas in which they lived:

> Their accounts of when and how they were initiated into the social-spatial networks, income generation strategies and problematic drug use that characterize this neighbourhood indicated that they were immersed in the local scene from an extremely early age: *"Well, my parents grew up down here . . . and they're drug addicts so therefore I watched my parents do it all my life, and I started doing drugs when*

> *I was like 10 years old . . . Whatever. I've always been involved in the Downtown Eastside."* (Fast et al, 2009; street-entrenched young people).

For one participant drug use was all about subverting their own non-using social norm and becoming part of something more exciting:

> For other participants, drug taking was not about being part of 'normal' culture but about subverting perceived social norms. They described how drug taking offered them a way out of 'normative worlds' and into a more exciting life:
> *"A: I'd rather live this life than fucking do nothing all my life, to be honest. At least I've done sommat (laughs)."* (**Lobbana et al, 2010**; young people with psychosis).

For others, drug use felt inevitable, because of their life conditions and experiences:

> *"You have it genetically. You can always discuss what's what, if you have chosen it by yourself and what is innate but … I have …, for me, it feels like I had one foot in this from the beginning. (P8)"* (Melin et al, 2017)

Some researchers commented that participants had distinguished between drugs that were considered 'acceptable' or normalised within their peer groups and those that were not. However, they did not provide participant comments to support this.

> All but three interviewees clearly described a hierarchy of acceptability of substances, including one patient who had been dependent upon heroin. In this hierarchy, cannabis was seen as acceptable, whilst crack cocaine and heroin were least acceptable. Cannabis use was sometimes seen as protective against use of other substances. (**Asher & Gask, 2010**; people with schizophrenia)

> The boundaries between acceptable and unacceptable drug use were clear and relatively rigid within this 'ordinary' group of young people, who for the most part only accepted the use of cannabis. Cannabis use was deemed to be relatively harmless (by both users and non-users), although the acceptance of the use of other drugs such as amphetamines was apparent in the accounts of a much smaller number of 'ordinary' youth. Heroin was, perhaps predictably, perceived as a drug to be avoided at all costs. (**Shildrick, 2002**)

Recreational use:

Nine studies (**Asher & Gask, 2010**; **Barn & Tan 2015**; Facchin & Margola, 2016; **Harling 2007**; Hunt et al, 2005; **Lobbana et al, 2010**; **Mantovani & Evans, 2019**; Orsi et al, 2014; **Shildrick 2002**) identified that first use of illicit drugs was associated with recreation, e.g. as a social activity, for fun, or out of boredom (6 UK, 3 non-UK). As identified in participant comments illustrating other themes, drug use was often initiated recreationally, through interpersonal relationships.

Many participants reported that their first experiences of illicit drug use were linked to some form of social event.

> When asked 'when did you first start using drugs?' participant 6 commented:
> *"When I started going down town. I was just mixing with the sort of people who would, who took drugs."* (**Harling, 2007**)

> Michael explained how he started using solvents at around 12 years old:
> *"When you're fucking bored yeah nowt to do on the streets, It's when you can't and your mates and you have no money, no nowt and you see a tin of Lynx [deodorant] up on the top [bathroom shelf] and you just do it … you just take the top off and wrap a tea-towel up and sniff it and all the butane it comes up—it's a right one."* (**Shildrick, 2002**)

Self-treatment:

Finally, self-treatment was identified as a theme in one UK study of a population with schizophrenia (**Asher & Gask, 2010**). Illicit drugs were used to manage a variety of physical or mental ailments experienced by participants. This could be directly as a fix for pain, to overcome side effects from another medication, or to help participants overcome stigma associated with their illness:

> He also explained how he had used cannabis as an inpatient:
> *"While I were in here cos I was slavering [dribbling saliva], and just kept getting the slobbers [dribbles] all the time, all over my top, it was horrible. So I started smoking cannabis because cannabis gives you dry mouth [laughs]. It worked too well, but they weren't too pleased, they took me off the cannabis and gave me tablets instead, they weren't too pleased I'd used it. But it stopped my slavering."* (Participant 6) (**Asher & Gask, 2010**)

> *"Just the shaking and the way I was in myself, introvert in myself, very light spoken. The reason I started taking a lot of crack was because when I didn't have a stimulant in me I couldn't be forceful, I couldn't put myself out, I couldn't put myself across to people, very*

'like that' [whispering] because I didn't have the confidence it just dampened; when I was on depixol [antipsychotic depot medication] it just stopped me, it just zonked [sedated] me. It was like having a wall in front of you every morning know with having to get through that wall before I could get to living and it was, oh it was horrible. Really, really horrible". (Participant 17)" (**Asher & Gask, 2010**)

Participants said they had been urged to use drugs by friends or, more usually, that patients sought substance using peers. However all had persistent difficulties with social interaction. Reasons included being distracted by hearing voices or experiences of their thoughts being interfered with, having lack of drive to socialise, anxiety or low/irritable mood, feeling stigmatised and being preoccupied with unusual interests or experiences. Eleven out of 17 interviewees described how drugs helped them to mix and talk to others. (**Asher & Gask, 2010**).

One other study (Wilson et al, 2018), that looked at prescription opioid misuse and was therefore primarily analysed for the second section of this review, mentioned that for some, addiction to prescription medication acted as gateway to illicit drug use. Illegal substances were sought to supplement prescription medication or as the primary means of self-medication

For example, It was just like, um, one of the hamster wheels…it seemed to never stop—my brain would tell me, you know, this pain can stop if you just go get pain pills. (Wilson et al, 2018)

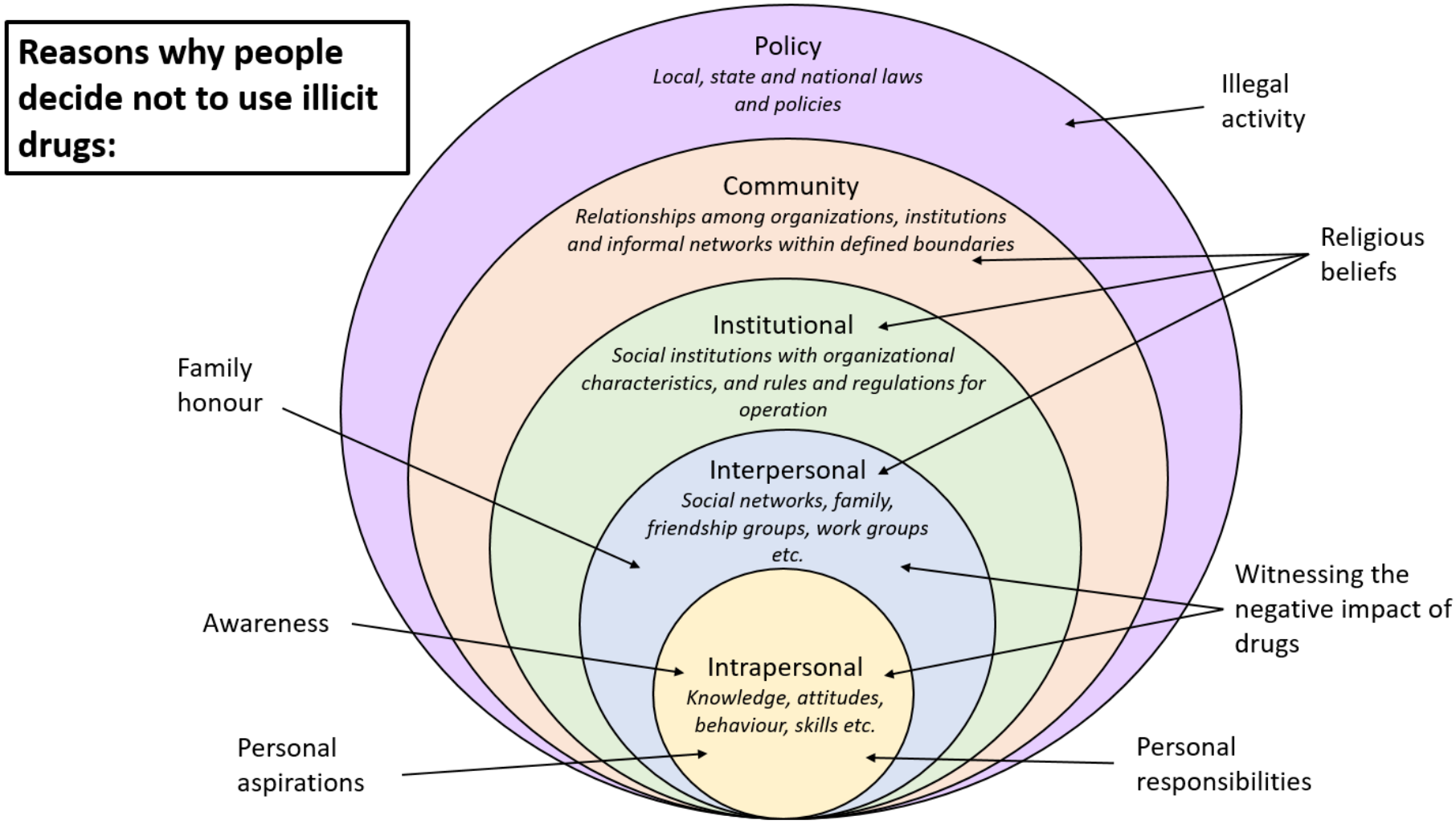
My…pain first began shortly after a car wreck in my neck. And during that time, I was being prescribed, ah, different opioid medications and I started to abuse them. And then I was cut off and started doing illicit drugs on the street to micromanage my pain. (Wilson et al, 2018)

The themes that emerged from our analysis are generally closely inter-linked. Most participants did not have just one reason why they began to use. Often there were multiple reasons that acted together to lead to their initiation. This suggests that action needs to be taken on multiple levels and in multiple areas to prevent the initial use of drugs.

Reasons why people decide not to use illegal drugs:

We identified a lot less research for our systematic review that explored the reasons people gave for why they do not use drugs, however a few brief quotes were identified from 2 of the included studies (**Allen, 2003;** Skarner & Mansson, 2008;) (1 UK, 1 Non-UK). Figure 4 shows the codes that emerged from our analysis and to which parts of the socioecological model these correspond. Full details of the codes including descriptions can be found in Appendix 3.

Figure 4: Reasons why people decide not to use illicit drugs and where these fit on a socioecological model



On an intrapersonal level, an *awareness of the harms* that can be associated with drug use was one reason why some participants decided not to use drugs. Sometimes this awareness came from sources such as TV or reading about drugs in newspapers/magazines/books:

> *"For me it has always been a given to not get myself mixed up with drugs. I have never been curious or anything like that. You see so much stuff on TV and read about all sorts of misery, so I figure, why even try? I don't think it sounds particularly exciting either, just distasteful."* (Skarner & Mansson, 2008)

Other times, witnessing negative impacts first hand that have happened to friends or family members can influence people's decisions. As **Allen (2003)** reported: One 14 year old male stated that his "*relative is an addict and fucked up (+ don't want to be like that)"*. Another 17-year old stated that he had *"seen what it can do especially to my uncle and that"*, and a further 16 year old female stated that her *"dad died of drugs O.D. heroin"*.

The influence of a person's social network could also be a factor on an interpersonal level. One participant from Sweden explained that for him, drug use is not socially acceptable, whereas alcohol is, so that's what his social group chooses to do:

> *"I don't think there is any major physical difference between marijuana and alcohol. I don't think my lifestyle is so much healthier than that of someone who smokes pot once a week; my friends and I go out and get good and drunk at least once a week. That is not healthy either, but it is legal and socially accepted so that is what we do"* (Skarner & Mansson, 2008).

This participant also alludes to drugs as being illegal, suggesting that at a policy level, the difference between a substance being illegal or legal may also have an influence on which he decides to use.

Another theme that emerged from our analysis was to do with people's *personal aspirations or personal responsibilities*. Some participants were put off using drugs because they had aspirations for life that they did not feel were compatible with drug use. For example, one 17 year old female responded that she didn't use drugs because she *"want[ed] to get on with my life and A levels"* (**Allen, 2003**). Another (14 year old female) stated that "*drugs can be a terrible thing – really dangerous and mess up our life. I want to go to university"* (**Allen, 2003**).

A final quote from **Allen** (**2003**) identified family honour and religious beliefs as being a reason for not using drugs; suggesting that where something is not socially or culturally acceptable, this may act as a protective factor for some:

"Disrespectful to family. Religion" (**Allen, 2003**).

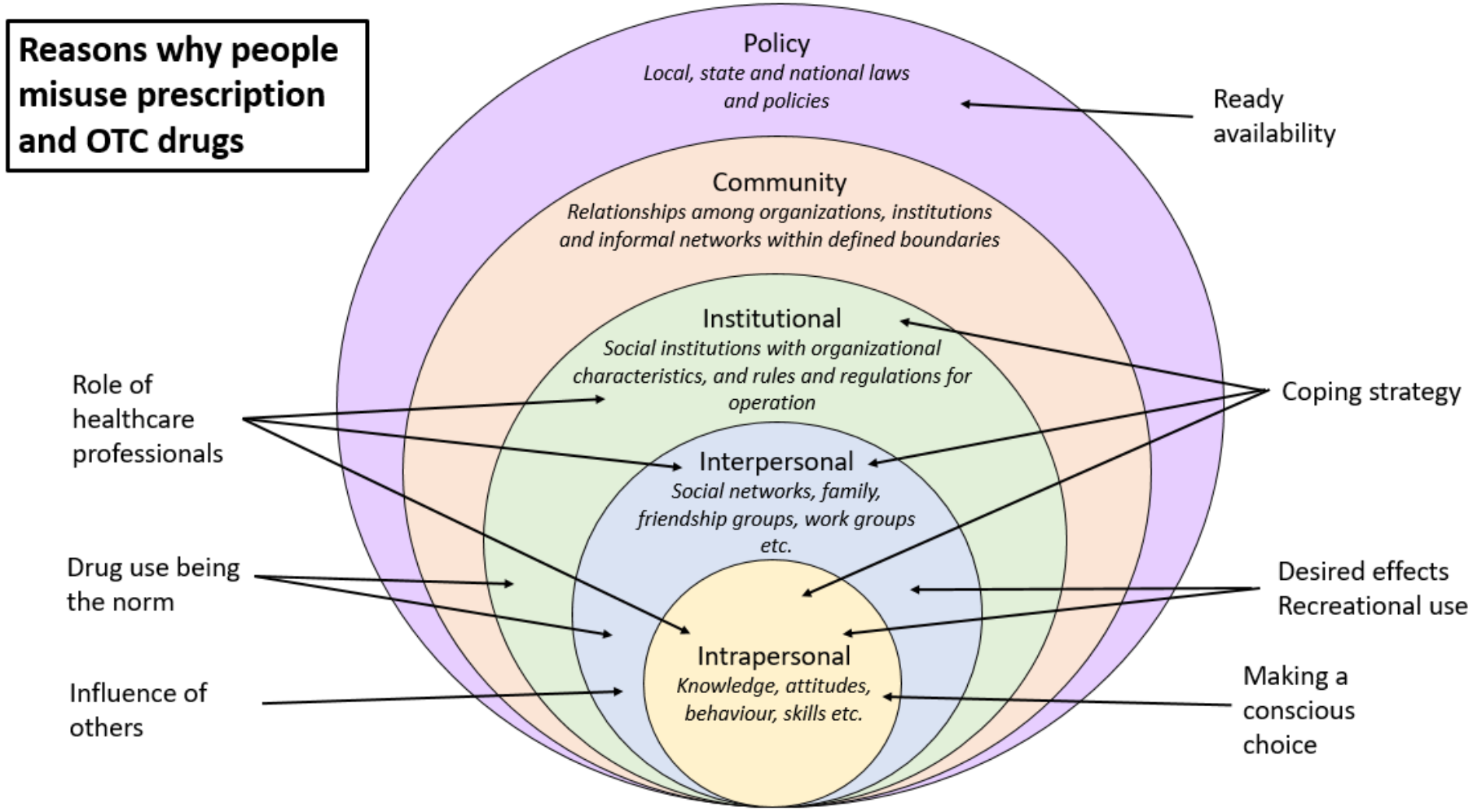
Prescription/OTC medicine misuse

Reasons why people misuse prescription or OTC medicines for non-prescribed purposes:

We found ten studies exploring the misuse of prescription medication for non-prescribed purposes. Two studies conducted in the UK explored the misuse of over the counter (OTC) and prescription opioids (**Cooper, 2013; Kinnaird et al, 2019**). The remaining studies were conducted in the US and explored the misuse of prescription stimulants (DeSantis et al, 2008/2010) and opioid medications (Hildt et al, 2014; Marie, 2014; Mateu-Gilbert et al, 2017 Rigg & Murphy 2013; Stumbo et al, 2017; Wilson et al, 2014). No studies were identified that explored other medications such as barbiturates and benzodiazepines.

Figure 5 shows the overarching themes that emerged from our analysis and locates them within the socioecological model. Full details of the coding and themes, including descriptions can be found in Appendix 3.

Figure 5: Reasons why people decide to misuse prescription or OTC medicine and where these fit on the socioecological model



Role of health professionals:

How health professionals managed the prescription of opioid medications appeared to have an impact on the likelihood of subsequent misuse of these medications. Participants in five studies (**Cooper,** 2013; **Kinnaird et al, 2019**; Wilson et al, 2014; Stumbo et al, 2017; Marie, 2014) voiced concerns about the way in which their general practitioners (GP) had prescribed opioids. Among participants' concerns was the GP's failure to educate them about the potential for addiction, dismissal of their concerns and a lack of non-pharmacological pain management therapies.

> *If I had had a doctor who possibly just had a little bit more time to say here's what I'm giving you, here's what it is, here's what it does, here's the risks to it. If I had just been a little bit more educated, perhaps it wouldn't have happened [use in excessive doses].* **(Kinnaird et al, 2019**)

> *…the doctor prescribed me OxyContin for my sinus infection…I didn't know what this strong medication was and I'm like, Oh wow, they're actually promoting this stuff.* (Wilson et al, 2018)

On a policy level, several participants reported receiving repeat prescriptions of opioid medications with few restrictions on amount and frequency. Participants indicated that this facilitated misuse.

> *It wasn't just once a month for my periods, like I went through a period of having really bad back ache, so I took it for that. Then for when I twisted my ankle like four or five times, so I'd take it for that. I started running two years ago, now I've got a knee injury, so I'd take it for that. It was just whatever niggles and pains there were, I'll just pop some tablets because I had them on a repeat prescription and they were basically on tap. That's when it started to really get a grip, because I was taking them for other things on a more or less daily basis.* **(Kinnaird et al, 2019**)

> *And he (provider) had a reputation of prescribing heavy amounts of opiate narcotic-type medicines. And so when I started with him, ah, he started me on morphine right off the bat. No one ever really told me the whole story as far as how addictive that stuff is and, um, all of the side effects that go along with it.* (Wilson et al, 2018)

Marie (2014) reported that one participant said her addiction had begun at 5 or 6 years of age, when she was prescribed opioids for an ear infection. The researcher reported that "As an adult, she felt he was a wonderful man, but stated he did not understand addiction in her life."

Where participants were aware of the potential side-effects, they sometimes felt that their concerns were dismissed by health professionals with false

reassurance and/or subsequent dose escalation. This dismissal by healthcare professionals was reported to have led to loss of participant trust and subsequent disengagement.

> *I kind of had to battle to get my GP to do or say anything about my lower back pain, because they're just like, it's lower back pain, what can you do? They just kind of send you away, say carry on, take the painkillers… It didn't seem like anyone was taking any care in the fact that I could get addicted to this; I didn't bother to go back.* **(Kinnaird et al, 2019**)

> *I remember going to the pharmacy…and after talking to the doctor and knowing that fibromyalgia isn't something that can be cured or is gonna go away, thinking to myself…I can't do this for the rest of my life…Oh, my god! And I'm crying and the pharmacist walks over and says to me, 'Don't worry. The doctors know what they're doing. They are not gonna make you get addicted to this stuff, no matter what. They are experts'…I was still in pain. So they switched that to oxycodone and [extended release oxycodone]…I was totally depressed because of my pain… but I [didn't] want to be on these pills forever. So I called and arranged to get put into a detox…* (Stumbo et al, 2017)

On an intrapersonal level, participants reported that, where dose escalation was not closely supervised, they were more likely to increase the dosage as a self-management strategy, without consulting their doctor.

> *After being on [oxycodone/acetaminophen] a year and a half, I felt like it wasn't working anymore. [Doctor] said 'No, no, don't lose [hope] - OK, you take eight'…I was still taking that amount, but I couldn't make that pain go away, so I began to take more, thinking I could cure myself, instead I land up here [treatment] …I would never wish that on anybody.* (Stumbo et al, 2017)

Participants in Cooper (2013) reported using strategies to avoid being challenged including visiting multiple pharmacies or visiting at different times.

> *I had to go to different pharmacies and I didn't want to get knocked back. I would go in and I would make out that I had a toothache, so I didn't know the best thing. I wouldn't directly ask for the product, because I know that was suspicious.* **(Cooper, 2013**)

However, the same study found that challenging by pharmacists may have an impact. The author reported that "several participants considered these challenges to have influenced their attempts to seek help":

> *I knew it would come sometime but you know to actually face it, that she had actually confronted me with it and that was really a wakeup*

call for me. (**Cooper, 2013**)

Another theme that surfaced was a lack of other therapies offered to those suffering severe pain. Participants expressed their concern at the lack of therapies offered for pain management. They complained of not being offered a non-pharmacological alternative or having their request dismissed.

> *I was in a car accident. And I got set up with a doctor and he started giving me, ah, pain pills for it…. I think it was like a year-and-a-half later I was still on those pain pills. I wasn't really given any other options than, ah, chronic pain pills and opioids for it.* (Wilson et al, 2018)

> *I went and said I need another bout of physio for my back because it's starting to hurt again. And they [GP] said: 'oh, you've got to be in constant pain for six weeks'. And I said: 'I've been in constant pain for six weeks already, and it's a recurring problem, so please just refer me.' And the doctor said: 'no, go and take these pain medicines [codeine] and come back in six weeks'. And I said: 'I think it's really dangerous that you're telling me to go away and take a pain med that I know is really highly addictive constantly for six weeks, for a problem that you already know exists.' And they said: 'well, that's just the way it works, I'm sorry.* **(Kinnaird et al, 2019**)

Where non-pharmacological therapy was offered, a participant described being able to manage their pain without medication. This suggests that access to other therapies might mitigate the potential of misuse.

> *Through the doctor they referred me to a hydrotherapy thing, because I just hadn't had any physiotherapy before for the pain. So, I had six sessions with them and they gave me exercises to do at home. I've been trying to keep up with that, which has I guess lessened the pain. I no longer think that I'm going to get dependent on codeine because it's been that long that I don't wake up in the morning and think I have to take a pill.* **(Kinnaird et al, 2019**)

Influence of others:

As with illegal drugs, our analysis identified multiple interpersonal social networks to which participants belonged including family members and peers, as an influence on their initiating misuse of medications. Six studies contributed to this theme (**Kinnaird et al, 2019;** DeSantis et al, 2008/2010; Marie, 2014; Mateu-Gilbert et al, 2017; Rigg & Murphy, 2013).

One participant described how watching his mother under the influence of drugs led him to try opioids:

> *I saw her having a good time and I wanted to try having a good time like her. Some of the times, I didn't even know what they were doing. I just remember hearing her talk about them or seeing someone do it [drugs], and I said maybe I should try it.* (Rigg & Murphy, 2013)

Peers were identified as an influence by a number of those misusing medications.

> A female participant explained her initiation of benzodiazepines, prescription opioids, alcohol and marijuana all around the same time with her friends: *'So my first time with drugs I was fourteen… [I used] weed, alcohol, and then pills, so like Xanax … I started smoking weed, I started drinking… and then I started taking Xanax and codeine… with friends...'* (Mateu-Gilbert et al, 2017)

> *"The first time I took it was a really busy week. I didn't think that I could get through it. So my roommate had some and we did it. He didn't even need it [laughter]. It worked. I did good."* (DeSantis et al, 2010; male fraternity undergraduates)

Most studies reported on the ways in which peers were associated with the initiation of drug misuse. However, one highlighted how peers could serve as a source of information about the side-effects of prescription medication and might potentially act as a protective factor.

> *"One of my best friends was going for a job interview and I said to her: 'do you want to take a codeine like an hour before you leave the house? You'll feel so very relaxed.' And although she took the tablets, she said to me: 'I don't feel comfortable with this and I don't think that I should' A few months later she asked me if I used to take them for reasons other than pain, and I said to her no, but in my heart, I knew that I did. I asked her why. She said: 'because it's a very addictive drug…it's something that can basically change the chemicals in your brain and you'll be addicted forever.' She suggested a few articles for me to read, which I did, and then I was very worried because then I learned that codeine was connected to morphine."* **(Kinnaird et al, 2019**)

Coping strategy:

Four studies (**Cooper, 2013**; DeSantis et al, 2008/2010; Stumbo et al, 2017) identified that participants misused prescription and OTC medications as a coping mechanism in a variety of ways.

For some, this was a way to cope with specific circumstances and relationships on an interpersonal level, for example, **Cooper (2013)** reported that study participants misused codeine as a means for "coping

with significant life events such as bereavements, work or relationship problems."

This was echoed in accounts of participants from another study, where traumatic life events like loss of a relative/loved one, was stated as a motivation to escalate the prescribed dose to help cope with the current reality.

> A male participant with a prescription for hydrocodone/ acetaminophen to treat migraines and musculoskeletal pain, explained how he decided to escalate his prescribed dose to help cope with the loss of his son: *"…after my son died [unexpectedly], I hit the [hydrocodone/acetaminophen] pretty hard…the prescription was for four a day…for pain. And, I was taking quite a bit more than that…You know, I was self-medicating…it just kind of numbed me to what was going on around me. I was able to kind of deal with my wife and her problems, and everything else."* (Stumbo et.al, 2017)

Others began misusing prescription and OTC medicines to obtain relief from physical pain or depression, and an overall sense of feeling good, energised and better about themselves.

> *"I was taking care of my dad during the day, and my mom, and working the night shift as a nurse. And I hurt my back, and it seemed like at that point…my body just went through this chronic pain thing…I found that the pain medication made me feel better; not just relieved the pain, made me feel better, like it treated the depression, or whatever. And so then I would take them and, of course, you have to take more and more and more, you know."* (Stumbo et al, 2017)

By contrast, student narratives focused on coping with the demands of academic performance, especially when they had competing deadlines or exams.

> *"I didn't want to try it. I was even a little scared, … But I had 2 other tests besides that one [her biology exam], so it was 3 tests on 1 day."* (DeSantis et al, 2008; undergraduate students)

> *It's always finals I think…. That was mine. You just have to keep running like a marathon."* (DeSantis et al, 2010; male fraternity undergraduates)

Desired effects:

Three studies included information for this theme (DeSantis et al, 2008; Stumbo et al, 2016 and Wilson et al, 2018). Some participants perceived significant social advantages resulting from illicit stimulant use. These

included increased confidence, staying awake for longer periods, feeling energised and suppressing appetite. These advantages tend to have been observed amongst their peers and prompted their own decision to take stimulants.

> *The first time I used it, was because one of my sorority sisters told me how great it was. She said you don't want to eat, and it is safe and everything.* (DeSantis et al, 2008; undergraduates)

> *I was 17, senior year, and everyone was gonna stay up all night after prom. So, some of us took it. It was a pretty cool night.* (DeSantis et al, 2008; undergraduates)

Participants described how they escalated their dose and experimented with various routes of administration to prolong the desired effects of the medication.

> *"I was 18, I got my [wisdom] teeth pulled then I got a script for [hydrocodone/acetaminophen] and then just pretty much fell in love with it…my first reaction [was to] take more than…two, I'd take six, you know, that's just my mentality at the time. So, I did and [it] felt great for a minute; from that point…something clicked inside of me and that's how I wanted to feel all the time."* (Stumbo et al, 2017)

> *"What I started finding was that if I took a little bit more than my prescribed amount, it gave me a euphoric feeling that helped me relax, ah, helped me deal with stress. I started finding that at work before I had to make a stressful phone call—I would, you know, take extra medicine to—to help numb myself. And, ah, from there, um, I started crushin' 'em up and snortin' 'em because it can get in your system faster."* (Wilson et al, 2018)

Making a conscious choice:

As with illegal drug use, some participants commented that their stimulant and prescription drug misuse was a conscious choice. This was reported in four studies: (Rigg et al, 2013; Stumbo et al, 2017; DeSantis et al, 2008 and 2010). For some this stemmed from their curiosity to test the effects of the drugs.

> *I ended up finding out, one day many months later, that I…really like the [hydrocodone/acetaminophen]…It really wasn't working to treat that pain…I just had a horrible day and I had the [opioid], and I actually had a drink on top of it… You know, that's when I first realized…this is something I like.* (Stumbo et al, 2017)

[It was] an emergency. I was stressed, overwhelmed, exhausted because I had to do a lot and there was no way I could do it. So I decided to see if it was like what everyone was saying. (DeSantis et al, 2008; undergraduates)

It was crazy. I had like three things due and I was just spent. So I decided to do it just to help get through. It was either that or crash and burn. (DeSantis et al, 2010- male fraternity undergraduates)

Recreational use:

Four studies identified that participants' first use of illicit drugs whether amphetamines (Hildt et al, 2014; De Santis et al, 2008) or opioids (Marie, 2014; Stumbo et al, 2017) was associated with recreational use. As such they were viewed as fun and enjoyable and seen as a social activity through interpersonal relationships.

Primarily I started taking it as a party drug. I didn't become aware of the positive effect in other parts (like studying) until later. (Hildt et al, 2014)

Beginning of my senior year… I found [my mother's] prescription of extra strength [hydrocodone/acetaminophen], in her purse. And I took four of them after a football game…I was on top of the world… (Stumbo et al, 2017)

Ready availability:

Three studies reported on how easy it was to obtain the medications. Two studies identified ineffective implementation of UK pharmacy OTC restrictions at policy level (**Cooper, 2013; Kinnaird et al, 2019**) whilst the third highlighted how easy it was for students to procure prescription stimulants on campuses (DeSantis et al, 2010).

"I mean my story started by being on painkillers for gynaecological problems and that was when I first took codeine [...] Then I found when I couldn't get codeine on prescription any longer it was readily available over the counter." (**Cooper, 2013**)

"Ha, it was crazy. I'm from a small town, so I was not really sure a lot about it. It was big here. Especially, during finals, as if it was just a Coke, no big deal." (DeSantis et al, 2010; male fraternity undergraduates)

Drug normalisation/drug use being the norm:

For student participants in two linked studies, prescription stimulant use was widespread and seen as normal on an interpersonal level (DeSantis et al, 2008 and DeSantis et al, 2010). As such, the researchers suggest it made students more likely to initiate use.

> *"everyone was taking it. It was just normal, you know, common."* (DeSantis et al, 2008; undergraduates)

> "*When I moved into the house [sophomore year], it was just always around. I think like five guys in the house had it…"* (DeSantis et al, 2010; male fraternity undergraduates)

5 Discussion

We found 31 studies exploring the misuse of a range of illicit and prescription/OTC medicine in the general population and in specific groups.

The evidence from our systematic review suggests there are many reasons why people decide to use illicit drugs or misuse prescription medications, and that these are often intertwined. Reasons were identified across socioecological levels, with intrapersonal and interpersonal factors most at play, but with some wider institutional, community or policy level factors involved.

Illicit drug use

At the intrapersonal level, people's knowledge, attitudes and behaviours have an influence on their reasoning. Here, we found that drug use was sometimes initiated to cope with internal feelings such as depression and anxiety, or as a way of self-treating perceived ailments. Drug misuse was sometimes a conscious choice made by participants. This might be because participants had witnessed positive effects of drug use in others, or perceived benefits of drug use such as increased levels of confidence. Other times, naivety about drugs and drug use was evident, with participants indicating little or no real knowledge of drugs or the benefits/harms associated with their use.

Those who decided not to use drugs did so for one or more of the highlighted reasons. Some were deterred by the potential impact to their personal aspirations or responsibilities. Others were dissuaded by their knowledge and awareness of the harms of drug use. Such understanding might come from sources such as newspapers, magazines and books. It might also arise from witnessing the negative effects of drug use first-hand.

At an interpersonal level, where social networks such as family, friendship and work groups may influence people's decisions to try drugs, in some of these networks drug use was seen as the "norm". Participants were often influenced by others, and either directly initiated drugs with members of their networks or decided to use after seeing others doing so, sometimes during a social event. On occasion, initial drug use was the result of pressure or coercion. The other significant factor was the use of drugs as a means of coping with specific circumstances, such as unemployment, bereavement, or childhood experiences of abuse and neglect.

When drug use was not seen as the norm or acceptable within people's networks, this was sometimes indicated as influencing their decisions not to use.

Organisational, community and policy levels featured less when participants discussed their reasons for illicit drug misuse. However, there was some

suggestion that drug use being the norm within an individual's wider community or the area in which they lived, also contributed to initial drug misuse.

A few participants who decided not to use drugs suggested that factors at these wider levels had an influence on their decisions. Examples included the fact that the drugs in question were illegal or culturally and/or religiously unacceptable.

Prescription/OTC medication misuse

We identified some differences between the misuse of stimulants compared with opioid medications. Whilst there were a few reports of recreational use and experimentation with opioids, most participants said that their misuse of these medicines followed initial prescription use for pain relief. On the other hand, those reporting misuse of prescription stimulants often obtained these drugs from their peers and used them for non-medical reasons from the outset. Nonetheless, our analysis revealed a range of similar and overlapping themes.

Our findings suggest that managing pain with prescribed or OTC opioids, created potential pathways to prescription misuse and opioid addiction, but not necessarily in that order. The evidence from this review indicates that a number of those who were prescribed opioids went on to misuse them because they had become addicted. This made it more difficult to identify the initiation of misuse in this population when compared with those misusing prescription stimulants. The latter generally had not obtained legitimate prescriptions in the first instance.

Multiple contributory factors may come into play when an individual begins to misuse drugs. These factors are evident despite variations in demographics, methods of data collection, data analysis and types of drug. Placing them in the context of the socioecological model (McLeroy et al, 1988) added clarity to this. The ten studies examining prescription and OTC medicine misuse identified intrapersonal, interpersonal, institutional and policy level factors likely to lead to or potentially prevent misuse.

At an intrapersonal level, participants identified perceived limitations of pain therapy in primary care resulting in over-reliance on prescribed opioids. Some participants who were prescribed opioids for pain reported that the drugs also alleviated emotional distress and helped them cope with challenging life situations, potentially reinforcing misuse. The same was true for participants who misused prescription stimulants to manage academic performance. However, there were instances where, as with illicit drug use, the decision to misuse prescription and OTC medicines was a conscious choice related to curiosity or taking medicines to enhance academic progress. Additionally, some participants with or without prescriptions,

initiated misuse of prescription and OTC medicines solely for recreational purposes.

At an interpersonal level, unsupervised, long-term opioid prescribing and ineffective implementation of OTC opioid sale regulations was problematic. Also, as with illicit drug use, social networks such as family and peers, could be an influence on participants initiating misuse and enable access to prescription medications. Interventions focusing on limiting opioid and stimulant prescription and educating patients about not sharing medications, may help mitigate this.

At an institutional level, time and performance pressures were reported to be key factors in uptake of prescription stimulants. Examination periods appeared to make students particularly vulnerable to the potential of misusing stimulants. For those prescribed opioids, a lack of psychological, community and pain specialist resource, including physiotherapists and occupational therapists, was identified as problematic.

Finally, at a policy level, the prescription and pharmacy-only designations of the medicines did not appear to be a significant barrier to access and usage. Participants reported multiple instances of extended prescribing for chronic pain, a lack of challenge in some pharmacies and ease of availability of prescription stimulants. NICE guidance (NG64, 2017) recommends that prescribers assess potential vulnerability to drug misuse and offer non-judgemental tailored advice and/or referral to specialist services where needed. Similarly, advice from NICE (KTT21, 2017) included better pain treatment and awareness of effective non-pharmacological interventions, along with regular review and optimisation of opioid prescribing. In relation to OTC opioids, The Faculty of Pain Medicine at the Royal College of Anaesthetists (FPA-RCA, ND) states that "Pharmacists should ensure that analgesics available 'over the counter' (OTC) containing codeine or dihydrocodeine are only used for acute pain of short duration (less than three days)." and recommends regular Medicine Use Reviews to assist in identifying problems associated with medicines.

Our qualitative analysis compliments the quantitative analysis undertaken by other team members which aimed to identify the risks and protective factors associated with drug misuse. That review found a number of risk factors associated with drug misuse. It found strong evidence from multiple studies supporting the role of substance using peers and childhood maltreatment (sexual abuse, physical neglect, and physical abuse) as risk factors for illicit drug use. These findings correspond with our analysis, where two clear themes were initiation with others (which included the influence of peers) and coping (which included coping with a dysfunctional childhood of abuse/neglect).

Our review also aligns with other research published in this area. A literature review of observational research (mainly cross-sectional designs) found that

the desire to improve academic performance was strongly associated with stimulant use (Drazdowski, 2016). The review also found that common motivations for the non-medical use of opioids were to relax or "have fun" or for self-treatment (Drazdowski, 2016).

A systematic review by Cicero & Ellis (2017) identified legitimate prescription leading to addiction as a significant pathway to opioid misuse. This is in line with the findings of our review. A further systematic review by Guise et al (2017), that examined initiation of intravenous drug use, also reported themes such as social networks, social interactions and coping with pain or traumatic experiences.

We found little research exploring the reasons why people decide not to use drugs. Further primary research in this area could be beneficial to inform programme and policy development.

5.1 Limitations and strengths

As noted in the results section, some flaws were identified during critical appraisal of the included studies; in particular, we noted a lack of consideration of reflexivity or discussion of power relationships. Also, authors often failed to report clearly the processes they used to analyse the data.

There are specific issues when conducting research into substance misuse which is generally illegal and/or considered socially aberrant. Participants may have significant concerns about confidentiality and being judged and stigmatised. (Grant, 2014; Nichter et al, 2004)

Also, many of the studies offered some sort of monetary incentive to participants, but there is little discussion of any potential implications. This is surprising, given the significant literature on the potential positives and negatives of paying participants resulting in part from issues raised during the ethical approval process (Anderson & McNair, 2018; Greer et al, 2019).

In these contexts, the lack of any discussion of their reflexive process by the researchers is particularly problematic.

In addition to the limitations and strengths identified in the included studies during critical appraisal, we acknowledge others that are specific to this systematic review.

Given the high cost of translation and the potential to lose nuance, only studies published in English were included. However, extensive database and grey literature searches were undertaken. Despite the large body of literature on substance misuse, a limited number of qualitative studies were identified. Of those studies identified, it was not always clear when and how

participants started to misuse, resulting in further narrowing of the evidence base. Even in studies where initiation was reported, often it was not the focus of the research. The lack of evidence was particularly notable for prescription stimulant misuse, where only three studies were identified. All three were conducted in the USA, and two had overlapping populations.

Whilst similar themes emerged across the evidence as a whole, and the studies we identified appear consistent and credible, it was not possible to look at potential differences between specific demographic groups and the wider population.

As we did not have access to the full interview transcripts of the included studies, our analysis is based on participant quotations selected by researchers to illustrate their interpretations. As such, it may not entirely reflect the intended meaning or context. Inevitably, reflexivity becomes harder to manage when synthesising data that has already been mediated by authors of primary research. Consequently, we felt it was particularly important to critically examine the ways in which we interacted with and influenced findings. To facilitate this, independent and iterative thematic development was interspersed with regular discussion and questioning of similar and contradictory findings. This took place within the review team and with members of the wider Observatory Evidence Service team.

A strength of the review is the robust methodology used to conduct it. Although the initial screening to remove duplicates and clearly irrelevant citations was conducted by one researcher, where there was any possibility of relevance the citation was retained for review at title/abstract. Beyond this point screening was undertaken independently by two reviewers. The process of coding and analysis was conducted independently and iteratively by two researchers with frequent discussions with the third reviewer to challenge the emerging thematic synthesis. Our review team varies considerably in age, experience and background, which we feel enriched the analysis.

6 Conclusions

To the best of our knowledge, this is the first systematic review to synthesise qualitative evidence of risk and protective factors for the initiation of substance misuse. Whilst the review was conducted to identify evidence applicable to the UK, the congruence between themes from the UK and other pre-1974 OECD countries suggests wider applicability.

We have found that across drug types (whether illegal or misused prescription medication) there are often multiple intertwined factors and reasons why people initially do or do not decide to misuse them. Such reasons cross the breadth of the socioecological model for health with

intrapersonal, interpersonal, institutional, community and policy factors all having the potential to influence a person's decision making.

For illegal drug use, intra and interpersonal factors such as coping with internal feelings of depression or anxiety, coping with external circumstances such as bereavement or a dysfunctional childhood, or drug use being seen as "the norm" within the persons social network are often given as reasons for initiation of drug use, with some wider community and policy level factors also at play.

Similarly intra and interpersonal reasons were also given for the misuse of prescription medications, such as perceived limitations of pain therapy in primary care resulting in over-reliance on prescribed opioids, or using prescription medications to help cope with life difficult circumstances, ranging from things like bereavement in the case of opioids, to initiating stimulant use to cope with the demands of academic pressure. Wider institutional and policy level factors were also discussed by some participants.

The intertwined nature of people's reasons for initiation across all levels of the socioecological model suggest that any interventions aimed at discouraging the initial use of illegal drugs or stopping the likelihood of misuse of prescription medications should include multiple components that address these intertwined reasons.

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Appendix 1: Medline Search (2000 to 15 July 2019)

1	((substance or drug) adj2 (user* or using or misus* or non-medical or nonmedical or abus* or dependen* or addict*)).tw.	92450
2	drug users/	2789
3	drug misuse/	93
4	or/1-3	93468
5	(barbiturate* or opioid* or psychoactive* or legal high*).tw.	100785
6	Methadone/	11929
7	exp Barbiturates/	53460
8	exp amphetamines/	36959
9	exp opioids/	110753
10	exp street drugs/	11946
11	exp designer drugs/	1525
12	or/5-11	260728
13	4 and 12	16053
14	(qualitative or ethnograph* or grounded theory or audio-recorded or transcribed or framework analysis or thematic analysis or content analysis or narrative analysis).tw.	285186
15	(interview* or survey* or questionnaire* or "semi-structured" or informal or unstructured or semistructured or "in-depth" or indepth or "face-to-face" or cohort or longitudinal).tw.	1823523
16	Qualitative Research/	47102
17	Cohort studies/	242480
18	Cross-sectional studies/	298562
19	Longitudinal studies/	124796
20	or/14-19	2265467
21	(motivation* or perception* or experience* or attitude* or views or views or viewpoint* or mediat* or moderator* or promot* or deter* or uptake or "up-take").tw.	6554434
22	13 and 20 and 21	1747
23	limit 22 to (english language and humans and yr="2000 -Current")	1231

Appendix 2: Data extraction tables

1. Studies in UK General population:

Study Reference(s)	Study design:	Geographical location & dates	Study participants (Including number, demographic data, method of recruitment, inclusion/exclusion criteria etc)	Research Question(s)/ Aim(s)	Theoretical approach taken (if specified)	Data collection method (including by whom, setting, period during which data collected etc.) & Data analysis method	Author limitations	Reviewer comments (limitations/quality/ generalisability etc)
Allen D. (2003). Treating the cause not the problem: vulnerable young people and substance misuse. *Journal of Substance Use.* 8(1): pp.47-54.	Mixed method: Cross-sectional survey	UK: Inner city (city not stated) 3 week period.	N=47: M=24, F=23; Age=13-20yrs; Eth: W or WB=53.8%, ME= 46.2%; Used illicit drugs: 26 Not used illicit drugs: 21 R: Stratified purposeful Inc/Exc: not stated	To explore motivational factors and patterns of illicit drug use among young people from different socio-economic backgrounds and role of health education/ promotion in meeting these needs.	Thematic analysis	Questionnaire (Closed and open-ended questions): Researcher or qualified youth worker Set: Youth Club Period: Not stated DA: Thematic analysis	Small sample size so limited generalisability. Participants with poor literacy skills.	Small sample size for survey. Unclear how sample size was calculated. Despite piloting questionnaire participants found it difficult to understand. Potentially generalisable study - conducted in UK and reflects make-up of equiv Welsh population. Includes participants with illicit drug use and non-drug use. Include/Exc criteria not stated.

Bansal GK. (2016). *How individuals experience and make sense of their problematic mephedrone use: an interpretative phenomenological analysis.* Doctoral dissertation: London Metropolitan University.	Qualitative	UK: North London 26/10/15 - 25/05/16	N=6: M=6; Age=24-52yrs; Heterosexual: 1, Homosexual: 3, Bisexual: 2; eth: not stated R: Purposive sampling Inc: Engaged with a treatment service; irrespective of requirement of psychological treatment; used mephedrone; had stable substance misuse and recovery. Exc: Not fluent in English; did not self-rate own mephedrone use as problematic; had a serious co morbid mental health condition were not recruited.	1) How do participants describe their experiences of mephedrone use? 2) How do participants understand their motivations for their mephedrone use? 3) How do participants make sense of their problematic mephedrone use?	IPA	Semi-structured interviews: Researcher Set: Primary care service for substance misuse, NHS in North London Period:26/10/15 - 25/05/16 DA: IPA	Only males, predominantly LGBT. Possible limited participant disclosure due to requirement to break confidentiality by Derby NHS. Subject-expectancy effects: more responses about treatment due to interviews in treatment setting	Theoretical saturation achieved. Participants identified by Service Manager All men and LGBT. Used Yardley's four principles for assessing quality to establish validity. Reported reflexive statement. Generalisability: Limited to LGBT men in UK.
Cooper RJ. (2013). 'I can't be an addict. I am.' Over-the-counter medicine abuse: A qualitative study. *BMJ Open.* 3(6): pp.e002913.	Qualitative	UK: 2 internet support groups- 'Overcount' and 'Codeinefree' 18 months (2009-2010)	N=25: M=12, F=13; Age=20-70yrs; Eth: not stated R:Purposive sampling Inc: not stated Ex: Individuals describingonly prescribed medicines	Aim: To explore the views and experiences of individuals who considered themselves affected by OTC medicine addiction in	Not stated. Themes from available literature and interview schedule used for coding.	Semi-structured interviews over telephone= 23, one to one= 2 Researcher Set: two internet support groups - 'Overcount' and 'Codeinefree' Period: 18months (2009-2010) DA: Open-coding (deductive), constant	Sample reflects only individuals who had internet access and recognised that they had a problem. Those who had not engaged with these support groups were not represented.	Author limitations plus: No reflexive account. Generalisability limited to study specific OTC users.

				the UK, to understand how itarose, what medicines were implicated and how they were obtained and what forms of treatment and support were used.		comparison and axial coding	Dominance of codeine among participants may be related to one of the internet support groups targeting only those affected by opiates. Analysis by researcher.	
Harling MR. (2007). The place and meaning of 'controlled', illicit substance use in the private lives of a group of individuals. *Journal of Substance Use.* 12(1): pp.1-12.	Qualitative	UK	N=6: M=4, F=2; Age=25-37yrs; Eth: not stated R: Purposive sampling and snowballing Inc: Fit description of 'controlled drug user'; full-time employment. Exc: not stated	Aim: To explore the thoughts and feelings of a group of individuals who use illicit substances on a 'controlled' or 'moderated' basis,	Phenomenology	Semi-structured interviews Author Set: Mutually acceptable setting Period: not stated DA: Phenomenological approach	One researcher for collection of data (pg.4). No limitations section.	Mentions importance of reflexivity to limit interviewer bias, though reflexive statement not reported. Analysis by the author, however, member checking used to establish credibility. Generalisability: unclear

Kinnaird E, Kimergard A, Jennings S, Drummond C and Deluca P. (2019). From pain treatment to opioid dependence: A qualitative study of the environmental influence on codeine use in UK adults. *BMJ Open.* 9(4): pp.e025331.	Qualitative	UKMay 2015-Apr 2016	N=16: M=3, F=13; Mean age 32.7 (±10.1) yrs; Eth: not stated R: Online survey (n=14) and residential rehabilitation service (n=2) Inc: Any individual aged ≥18yrs who used codeine other than as directed or as indicated, whether wilful or unintentional, and whether it resulted in harm or not. Exc: not stated. However, 11 participants were excluded as codeine was predominantly sourced as substitution for illicit opioids.	Aim: To explore the risk environment that influences codeine harm from the perspectiveo f people who use or have used codeine recently forpain treatment.	Not stated.	By 1st author. Set: Residential rehab service or location chosen by participant or over phone.Period: May 2015 to April 2016 DA: Deductive and inductive analysis	Small sample size, predominantly women.Cannot be generalised to all of UK. As such, a reduction or production of harm related codeine-containing medicine will depend on many factors, such as the nature and funding of local primary care. Inclusion criteria hindered exploration of protective factors. The risk environment approach has limited ability to understand codeine-related risks.	£20 gift voucher to participants. Theoretical saturation not reported. Patients not involved in design and conduct of the study. Analysis by 3 researchers, however, it is not clear if the analysis was conducted independently and how discrepancies or differences were resolved. Analysed using Framework. No triangulation. Funding status of the explained. No reflexivity statement or exploration of possible power relationships.
Kreis MKF, Gillings K, Svanberg J and Schwannauer M. (2016). Relational Pathways to Substance Misuse and	Qualitative	Scotland. Nov 2012-Jun 2013.	N=7: M=0, F=7: Age: 26-40yrs; Eth: WS=7 R: not stated but appears to be purposive. Community substance misuse treatment services within Scottish National	Aim: To explore a sample of Scottish women offenders' experiences of close interpersona	Charmaz's (2006) social construct version of grounded theory	Semi-structured interviews First author. Set: Community substance misuse treatment services within Scottish National Health Board. Period: Nov 2012-June2013	Small explorative study of a hard to access population, limited by time and resource constraints. Findings are necessarily	Dey's notion of theoretical sufficiency used instead of theoretical saturation. Reflective memos written during data collection and analysis. Only 4th transcript cross-coded by 3rd

Drug-Related Offending in Women: The Role of Trauma, Insecure Attachment, and Shame. *International Journal of Forensic Mental Health.* 15(1): pp.35-47.			Health Board, primarily from court ordered drug treatment programs. Inc: Women with prev criminal convictions, min. 18yrs old, English proficiency. Exc: Learning disability, acute psychosis, and intoxicationat consent or interview stage. Eligible participants identified by clinical treatment staff.	l relationships in relation to their substance misuse and offending behaviour, and underlying psychological processes involved.		DA: Charmaz's (2006) social construct version of grounded theory.	tentative, broad generalisations or firm conclusions from the results to all women offenders with substance misuse problems cannot be made. Despite use of procedures to ensure rigour, data analysis, interpretation, and model construction was unavoidably filtered through the researcher as is a central tenet of social constructivist grounded theory. Participants may differ from excluded women and those who declined to participate. The hypothesized model is provisional and needs further exploration, replication,and empirical validation using both qualitative	author (clinical supervisor of 1st author). Themes: cross-validated through 2nd lit review Generalisability limited to study specific population. Unclear if 1st researcher (interviewer) was a trainee clinical psychologist at one of the substance misuse treatment services. States she was transparent with participants and none were or had been seen for psychological therapy by any of the author team.

							and quantitative methodologies	
Payne J. (2006). *Women drug users in North Cumbria: What are the influences upon their problem drug use.* Doctoral thesis: University of Glasgow.	Qualitative	North Cumbria 2002-2004	N=30; M=0, F=30; Age: 17-42yrs; Eth: WB=29, NWB=1 R: Theoretical sampling and snowballing Inc: Women, >16yrs, resident in North Cumbria, were or had recently been problem drug users. Exc: not stated.	Aim: To provide a descriptive and analytic account of influences upon women's problem drug use in North Cumbria and to provide and explanation for the initiation of heroin use, as well as the pattern and progression of developing drug dependence.	Grounded theory	Semi-structured interviews. By: researcher. Theoretical saturation achieved. Set: agency premises, residential rehabilitation unit, GP surgeries and participant's residence. Period: 2002-2004 DA: Grounded theory	Methodological issues regarding recruitment have been mentioned. Generalisability: Small sample size and demographic make-up. Recruitment through treatment agencies or social care organisations: women who seek treatment can differ from community-based samples. Recruitment methods employed could have missed possible participants. Retrospective recollection of experiences: recall bias.	De-briefing session after interviews to clarify any misunderstandings. Money not given, box of chocolate offered. Refreshments offered and accepted when interviewing at participants' premises. Efforts were made to establish rapport with the participants while also maintaining a detachment by minimising over-engagement to maintain an objective stance. Generalisability to UK females: Limited due to sample demographics. Power dynamic discussed, but no reflexive statement.

Shildrick T. (2002). Young people illicit drug use and the question of normalisation. *Journal of Youth Studies*. 5(1): pp.35-48.	Qualitative	Northeast England May 1996-Jan 1998	N= 76: M=45, F=31; Age=16-26yrs; Eth: not stated; Used illicit drugs: <50% sample; Not used illicit drugs: >50% sample Inc/exc: not stated R: not stated	Aim: To explore nature of youth cultural identification and experience; to examine the potential relationship between such experiences and the use of illicit drugs; and to explore how young people's broader socioeconomic positions may, or may not, be linked to such experiences. Examines the notion that drug use has become normalised among young people.	Not stated	semi-structured interviews (n=49) + participant observations Author Set: Northeast England May 1996-Jan 1998 DA: not stated	Not stated	Efforts made to build rapport with participants to improve validity of responses. Setting of data collection not explained. Quant questionnaire prior to interviews allowed cross-validation of interview data. Inconsistent data was discarded. 2nd interviews allowed consistency of gathered data and reliability. Methods: not stated. No information on recruitment. Limitations/strengths: not stated Generalisability: Yes to young UK pop. No reflexivity statement.

2. Studies in UK sub-populations:

Study Reference (s)	Study design	Geographic location & dates	Study participants (Including number, demographic data, method of recruitment, exclusion criteria etc.)	Research Question(s)/ Aim(s)	Theoretical approach taken (if specified)	Data collection method (including by whom, setting, period during which data collected etc.) & Data analysis method	Author limitations	Reviewer comments (limitations/quality/generalisability etc)
Asher CJ and Gask L. (2010). Reasons for illicit drug use in people with schizophrenia: Qualitative study. *BMC psychiatry*. 10pp.94.	Qualitative	Greater Manchester Date: not stated	Clinical diagnosis of schizophrenia N=17: M=16, F=1; Age: 16->40yrs; eth: W=13, Af=2, AC=1, As=1. R: Purposive sampling Inc: Female or of BME group. White males recruited to achieve theoretical saturation. Ex: not stated.	Aim: To elicit reasons why some people who have a diagnosis of schizophrenia repeatedly use any street drugs, using qualitative methodology so novel reasons could emerge and existing concepts may be examined in the light of participant's experiences.	Grounded theory	Semi-structured interviews 1st author. Set/Period: not stated DA: Grounded theory	Generalisability: small sample size, ethnically not diverse and only 1 female.	Small sample size, however, theoretical saturation achieved. No monetary incentive to participants who were provided with snacks and breaks during interviews. Interviews: Only 1st author, however, reflexivity statement included for both authors. Analysis: 2 researchers Attempts made to purposively recruit a diverse sample, though not very successful. Findings validated by service users. Member checking. Generalisability to UK drug abusing males with clinical diagnosis of schizophrenia: Yes, not females. Inclusion criteria is not stated very clearly

Barn R and Tan J-P. (2015). Foster youth and drug use: exploring risk and protective factors. *Children and Youth Services Review.* 56, pp.107-115.	Mixed methods	Six local authorities in England Date: not stated	Youth in foster care N=56: M=16, F=22; NS=18 Age: 16-23yrs; eth: not stated for qualitative sub-sample R: Self-completion questionnaire + purposive sampling inc/exc: not stated	Aim: To explore experiences and outcomes of young people transitioning from foster care to independence in 6 local authorities; to understand nature and extent of reported drug use among foster youth and the impact of in/post care experiences.	Thematic analysis mirroring the quantitative findings	Focus groups (n=8 with 38 participants) and one-to-one interviews (n=18). By: Researcher. Set: Social service agency locations. Period: not stated. Thematic analysis	Self-reported data could have resulted in over- or under-reporting of drug use. Self-identified participants so participants may not be representative of entire target pop. Legal and illegal drug use was measured during the last 30days, not currently and lifetime. Causal inferences cannot be made as cross-sectional study. Not generalisable to all foster youth or non-foster youth across UK due to nature of sample, sampling techniques and low response rate.	Interviews by only 1 researcher. Reflexivity not stated. Unclear if an interview guide was used for the interviews. How the analysis was conducted is not stated other than use of Atlas.ti. Generalisability unclear as no demographic data for the qualitative sub-sample used in this study (56/261 who participated in focus groups and 1-1 interviews). Recruitment for quantitative survey not explained. Incentive for participation in the study: not stated
Charles V and Weaver T. (2010). A qualitative study of illicit	Qualitative	Brent, and Hammers mith & Fulham.	Psychotic patients N=14: M=12, F=2; Age: 27-55yrs; eth: W=6,	Aims were to investigate the drug using	Thematic analysis (Realist interpretation)	Interviews by Researcher Set: not stated Period: Jan 2001-Feb 2002.	Limited generalisability to all psychotic patients with comorbid drug use	Independent data analysis by two researchers of the first four transcripts using Nvivo. Subsequent coding by first author. Over-representation of

and non-prescribed drug use amongst people with psychotic disorders. *Journal of Mental Health.* 19(1): pp.99-106.		Jan 2001-Feb 2002	BC/B=4, BA=3, I=1 R: Purposive sub-sample of Community Mental Health Team (CMHT) patients. Inc: Past month illicit or non-prescribed drug use, met DSM-IV criteria for drug misuse, had a current psychotic disorder, and were able to complete an interview.	''careers'' of people with psychosis and chronic drug use to: (i) identify factors implicated in initiation and maintenance of drug use (ii) investigate the temporal relationship between drug use initiation and onset of psychosis, and (iii) examine the perceptions regarding casual relationships between drug use, onset and progression of psychosis		DA: Thematic analysis	due as purposive sampling was employed. Study conducted in inner London areas so findings might be different for other locations. Size and composition of sample: limited opportunity to investigate gender or ethnic differences in drug use behaviour.	poly-drug users in the sample. Reflexive approach: continuous reviewing and refining of topic guide and coding framework as interviews were conducted. Incentive for participation in study: not stated. Ethical approval not stated. The setting of the interviews not stated. Limited use of participant voice to support findings. Discussion section has little comparison of findings with other studies.
Childs HE, Mccarthy-Jones S,	Qualitative	North West England	People with psychosisN=7, M/F= unclear,	Aim: To develop the literature on	IPA	Face-to-face flexible interviews.	Not generalisable as participants were British,	Male/Female numbers unclear. Participants received £10 retail voucher.

Rowse G and Turpin G. (2011). The Journey Through Cannabis Use: A qualitative study of the experiences of young adults with psychosis. *Journal of Nervous and Mental Disease.* 199(9): pp.703-708.		Date: not stated	Age= 16-30yrs, eth: WB=6, WBI=1 R: Purposive sampling Inc: Minimum 3months involvement with mental health team, aged 16 to 30yrs and either currently experiencing an episode of psychosis or had experienced symptoms of psychosis within the past 12months. Exc: not sated.	the experiences of young adults with psychosis who use cannabis by focusing on a number of specific questions. Also, to gain a better understanding of the meanings and reasons for cannabis use in young adults		By: Researcher. Set: Local community mental health base. Period: not stated. DA: IPA	White and predominantly Male, engaged with services and felt confident in speaking about their experiences. As participants differed in use, current or past, examining similarities and differences across their accounts was difficult.	Interview schedule developed based on existing IPA guidelines, consultation with academic colleagues and an individual with personal experience of psychosis and mental health services.Reports using trustworthiness measures. Only one transcript coded by both researchers (unclear if analysis was independent); and 2nd researcher audited an analysed transcript by 1st author. Independent peer researcher was consulted on the use of IPA. Reflexive diary maintained. Respondent validation themes undertaken with 4 participants in person and 3 via telephone call.
Lobbana F and Et A. (2010). Understanding factors influencing substance use in people with recent onset psychosis: a qualitative study. *Social Science and Medicine.*	Qualitative	North West England Jan-Sep 2008	Young people with recent onset psychosis and substance misuse N=19: M=15, F=4; Age= 18-35yrs; eth: WB=17, ME=1, P=1 R: Purposive sampling Inc/exc: not stated, however,	Aim: To identify factors influencing the use of substances in young people with recent onset psychosis.	Thematic analysis	Interviews by Researcher. Set: Place chosen by the participants. Period: Jan-Sep 2008 DA: Thematic analysis.	Small sample size. Participants in active contact with an early intervention service, therefore, tells little about individuals not accessing treatment. Findings should only be interpreted within the context of the	Demographic data extracted from medical notes. Analysis conducted by team of 7, with 2 members independently coding transcripts using Nvivo. One member of team had experience of using mental health services and substance misuse. Members had different levels of expertise including training in CBT and/or MI which could have influenced the analysis

70(8): pp.1141-1147.			stated that participant eligibility was checked using Substance Use Checklist and the substance use modules of the SCID interview				study as some conflicting views have been expressed by the sample. As no attempt was made to compare differences between drugs, the findings cannot be generalised to groups primarily other drugs. Analysis team consisted of different levels of expertise including training in CBT and/or MI, which may have influenced the development of themes.	Sample had high proportion of male participants and is ethnically not diverse. All participants actively involved with an early intervention service, therefore, study does not reflect stories of individual not accessing treatment. There is no reflexivity statement. Incentive for participation in the study: not stated
Mantovani N and Evans C. (2019). Drug use among British Bangladeshis in London: a macro-structural perspective focusing on disadvantages	Qualitative	East End of London 2014	N=15: Age= 26-41yrs; eth: BB R: Convenience purposive sampling Inc: Age (18+), Bangladeshi, literacy and understanding of English, diagnosed according to	Aim: To produce an understanding of factors contributing to drug using trajectories among British Bangladeshi men and	Thematic analysis	Interviews by researcher. Set: Drug services (soundproof room or researcher's office). Period: 2014 DA: thematic analysis Interview guide piloted.	Interviewer worked in a drug treatment service as substance misuse worker, which could have impacted the responses from the participants. Failed to recruit younger service users (18-25yrs)	Sample with low level of educational attainment 6/15 had no qualifications. Recruiter/Interviewer worked in a drug treatment service as substance misuse worker, which could have had an impact on responses from participants. Gender demographic not stated. Incentive for participation in the study: not stated.

contributing to individuals' drug use trajectories and engagement with treatment services. *Drugs: Education, Prevention & Policy.* 26(2): pp.125-132.			Diagnostic and Statistical Manual of Mental Disorders criteria for substance use subcategory.	women living in the East of London. 1. To what extend the socio-economic situation participants found themselves in influenced their relationship to drug use trajectories and seeking treatment for drug use? 2. To what extent continued drug use was a way to mitigate the socially conditioned stigma/shame of a dysfunctional lifestyle induced by drug use?			which might indicate participants' sense anonymity may have been compromised by the research setting.	Generalisability: limited to Bangladeshi men and women of 26-41yrs age range. Data analysis conducted independently by 2 researchers. Measure not undertaken to establish trustworthiness of reporting.

3. Studies in non-UK general population:

Study Reference (s)	Study design	Geographic location & dates	Study participants (Including number, demographic data, method of recruitment, inclusion/exclusion criteria etc.)	Research Question(s)/ Aim(s)	Theoretical approach taken (if specified)	Data collection method (including by whom, setting, period during which data collected etc.) & Data analysis method	Author limitations	Reviewer comments (limitations/quality/ generalisability etc)
Carbone-Lopez K, Owens JG and Miller J. (2012). Women's "Storylines" of Methamphetamine Initiation in the Midwest. *Journal of Drug Issues.* 42(3): pp.226-246.	Qualitative	USA, Missouri Dates: not stated	N=40: M=0, F=40; Age: 20-58; eth: W: 39, NW=1. R: Purposive with random selection of 40 participants for interviews Inc: Incarcerated, used meth more than 5 times in the 12 months prior to incarceration, or had ever sold or cooked it. Exc: not stated.	Using qualitative approach, the authors draw on individual women's narratives of their initiation of meth use- their 'storylines'- to provide additional insight into gendered patterns of meth initiation, including factors they attribute to the onset of their meth use.	Grounded theory	Semi-structured interviews By: unclear, use of term 'interviewers' suggests more than 1 interviewer but cannot be sure. Setting: Private rooms at Correctional drug and alcohol treatment program Period: not stated Analysis: Constant comparison	Have reported awareness of the limitation based on methodological approach and sampling strategy and justify it with the goal of their research not to be to generalise or make broad causal claims but to identify social processes and patterns in this population. Sample: racially and geographically homogenous. Participants were extensive poly-drug users with length drug use careers. Because of the	Interviewers informed participants re exceptions to confidentiality during the interviews, (i.e. cases where women disclosed future intent to harm themselves or others), this may have made some participants careful about information disclosed. Each participant paid $20. No Information on when data was collected, number of interviewers, methods used to develop interview guide, if methods were modified during interviews, saturation or triangulation of data.

							nature of the treatment, the participants could have altered their storylines of meth use initiation. As the aim was to focus on initiation, the changing motivations for continued use could not be explored.	Analysis conducted independently by 3 researchers. Relationship between the researchers and participants not explored.
Desantis A, Noar SM and Webb EM. (2010). Speeding through the frat house: a qualitative exploration of nonmedical ADHD stimulant use in fraternities. *J Drug Educ.* 40(2): pp.157-71.	Qualitative	USA	N= 79: M= 79, F=0 (unsure if the sample for this study is 16 or 79) no demographics supplied. R: Convenience sampling Inc/exc: not stated	To examine: factors that led to first use of prescription ADHD medication, motives for continued use of these medications, and where and how male fraternity members access these medications. It is unclear whether this was the aim of this study too or was it of the original DeSantis 2008	Thematic analysis (though not stated by the authors)	InterviewsBy: Author and 2 undergraduate studentsSetting: Public Southeastern research university but exact setting where the interviews were conducted has not been stated. Period: Spring and Summer 2006 (63 interviews from 2008 study) and Summer 2008. Analysis: thematic (however, the authors have not stated this)	Convenience sampling. Limited generalisability. Only explores perspectives of the illegal users and not the suppliers. Does not explore differences between the fraternities	Despite use of convenience sampling, researchers made efforts to interview fraternity members from a wide range of organisations. Analysis conducted by 2 coders, independently. Unclear if data was collected as 1-1 interviews or as focus groups or where interviews took place. Characteristics of participants not provided. Of 79 interviews, 63 conducted for Desantis 2008. Unclear if the current study uses data from all 79 interviews. No reflexivity statements. Not clear

				and the aim was slightly modified for this study as several aims have been reported.				how research was explained to participants Inc/exc criteria not stated.
Desantis AD, Webb EM and Noar SM. (2008). Illicit Use of Prescriptio n ADHD Medication s on a College Campus: A Multimeth odological Approach. *Journal of American College Health.* 57(3): pp.315-324.	Mixed methods (extraction done only for qual part of the study)	USA	N=175: M=?, F=?, Age=?; eth=? R: not stated Inc/exc: not stated	To examine: factors that led to first use of prescription ADHD medication, motives for continued use of these medications, and where and how male fraternity members access these medications.	Not stated	Interviews. By: Author and 6 undergraduate students Setting: Exact interview setting not stated Period: not stated. Analysis: not stated	Only limitations for quant survey have been stated. No limitations for the qual part of the study.	Appears methodologically very weak with significant gaps in information provided Lack of qualitative information limits the application of the study. See appraisal for detailed comments.
Facchin F and Margola D. (2016). Researchin g Lived Experience	Qualitative	Italy Dates: not stated	N=25: M=25, F=0; Age: 26-68yrs; eth=Italian. R: Purposive Inc/exc: not stated clearly	To identify the main components of the lived experience of drugs and crime with	Phenomen ological approach by Lindseth and Norberg (2004)	Setting: Prison interviewed by 2 trained psychologists (not authors), 1 conducted the interviews while 2nd wrote the	Small sample size (data saturation was achieved) and only Italian male participants. The conceptualisation of the drug-crime	Inc/exc criteria unclear. Data saturation reported. No reward for participation. Audio recording of interviews not allowed, so some comments may have

of Drugs and Crime. *Qualitative Health Research.* 26(12): pp.1627-1637.				drug-dependent inmates. What participants' words say about themselves as well as the larger social discourse they are part of, was analysed to gain a better understanding of the drug-crime relationship.		interviewee's speech and made field notes. Setting: Private room Period: not stated Analysis: data-driven approach (Lindseth & Norberg, 2004)	connection as a pathway that almost inevitably leads to substance dependence, is not reflective of findings from epidemiological data. Majority of people follow other pathways through drugs and crime.	been missed. Text reviewed by both psychologists prior to discussion with authors. No reflexive statement by the interviewers to explore and identify/address any possible power relationships. Data analysis conducted by both authors independently.
Hildt E, Lieb K and Franke AG. (2014). Life context of pharmacological academic performance enhancement among university students--a qualitative approach. *BMC Med Ethics.* 15: pp.23.	Qualitative	Germany Dates: not stated	N=18: M=12, F=6; Age: 25±2.88yrs; eth: not stated R: placards on bulletin boards across university campus.Inc: Healthy students without psychiatric disorders and current physicians' prescriptions of psychoactive medicationsExc: All candidates with psychiatric disorder and current physicians' prescription of	To find out the reasons for stimulant use, experienced effects of stimulants and their impact on academic results and the user's life in- and outside university.	Not stated but references to Grounded theory	Semi-structured interviews. By: 4 (1psychologist and 3 interviewers. All interviews conducted by 2 interviewees at once). Setting: Not specified (possibly on University of Mainz campus) Period: not stated Analysis: Inductive category development based on Grounded theory	Not representative to general health population. Small sample size. Self-report data. "Type" of student willing to participate may display the main bias i.e. self-selection. Exclusion of students with psychiatric disorders and current physicians' prescriptions of psychoactive medication lead to	No information re development of interview guide. €30 given as expense allowance. Placards on bulletin boards across campus used for recruitment. 2 interviewers conducted each interview (questioner and note taker).. Analysis was conducted independently by 2 independent reviewers. Only those categories agreed by both were used for final analysis.

			psychoactive medication.				bias implying that the study is not representative for the entirety of students. Even though it was not the aim of the study to explore CE aspects among patients, there is a possibility that potential participants who faked or exaggerated ADHD symptoms for a prescription of stimulants by physicians have been excluded. Possibility of social desirability bias.	Quotes not attributed to with specific participants No reflexive statement or exploration of possible power relationships. Data saturation not reported. Full demographics not supplied.
Hunt G, Evans K, Wu E and Reyes A. (2005). Asian American youth, the dance scene, and club drugs. *Journal of Drug Issues.* 35(4):	Qualitative (Study is part of another study on the San Francisco Bay Area electronic music dance scene and drug users and was published	USA, San Francisco Bay Area	N=56: M=28, F=28; Age: 17 to 29yrs; eth: As. R: Advertisement and referrals Inc: Asian. Exc: not stated.	To study the social context of drug use. To examine the different types of involvement of young Asian Americans in the electronic music dance scene. To examine the role of drugs within their	not stated	In-depth face-to-face interviewsBy: Project manager and 4 interviewers. Setting: not explained. Period: Feb 2002 to Nov 2003. Analysis: not stated.	Treats Asians as a homogenous group and due to the small sample size did not divide the sample by ethno-national origin. Generalisability is not possible due to nature of the research: study of drug using group, the rates of drug use in the sample are likely to be	Methodologically significant issues with this study. Information on recruitment not provided No inc/exc criteria. Only states that study is part of another ongoing study and interviews conducted to date have been used. Very long interviews (3-5 hours) providing opportunity for

pp.695-732.	before the project was completed)			lives and their social groups, by highlighting the ways in which they actively construct and negotiate their identities around these social groupings.			higher than a sample of Asian Americans selected on some other basis.	participants to respond in detail. No information on setting, how interview guide was developed and whether methods/ questions modified during interviews. $45 paid as honorarium. No information re analysis. Text ends abruptly without conclusions. Conflict of interest not stated. No reflexive statement or examination of possible power-relationships.
Marie BS. (2014). Coexisting addiction and pain in people receiving methadone for addiction. Western *Journal of Nursing Research.* 36(4): pp.534-551.	qualitative	US	N=34: M=20, F=14; Age: 22 to 63yrs; eth: Af Am=17, Cau=12 R: purposive sampling inc: ≥18 yrs, conversant in English, experienced pain for most of the time for ≥6 months, currently receiving methadone for opiate addiction, able to get to and from interview location without assistance, willing to tell the story of their	To examine narratives of people who have experience of chronic pain and who were receiving methadone for the treatment of opiate addiction through a methadone clinic.	not specified	Semi-structured interviews, participant observation and demographic questionnaire. By: researcher. Setting: private room next to midwestern metropolitan methadone center Period: not stated. Analysis: thematic and structural analyses.	Findings cannot be generalised beyond the sample with similar life circumstances. Winter weather conditions during data collection were severe and could have kept those in pain from attending the interviews. Within this single interview technique there was no possibility of member	Data collected using semi-structured interviews and field notes. Author reports saturation achieved. Work assessed by dissertation committee. No reflexive statement. Researcher worked at the clinic and though efforts made to ensure participants were not in care for 12 months before/after study, knowledge of author's role could have had an impact on participant responses. Sampling

			experiences with pain and addiction, and not treated by the researcher for pain in the past 12 months and would not be placed in care of the researcher within 12months following the study. exc: not stated				checking or a follow-up interview with participants to establish credibility and authenticity.	ensured gender and ethnicity were representative of clinic population.
Mateu-Gelabert P, et al. (2017). High enhancer, downer, withdrawal helper: Multifunctional nonmedical benzodiazepine use among young adult opioid users in New York City. *International Journal of Drug Policy.* 46: pp.17-27.	Mixed methods (extraction done only for qual part of the study)	USA	N=46: M=27, F=18, Tr=1; Age: 18-32yrs; eth: W/Cau=32, AfAm/Bl=3, H/L=9, As/PI=2. R: not stated Inc: live in one of the five borough of NYC, report lifetime use of prescription opioids for nonmedical reasons, speak English or Spanish and be able to provide informed consent. Exc: not stated	Overall aim of the study: to assess risks associated with opioid use, examine patterns, contexts, motivations for and correlates of benzodiazepine use among New York city young adults who use prescription opioids nonmedically and/or use heroin.Qual study: to explore the contexts, motivations for and	Sematic thematic analysis (Braun & Clark, 2006; Patton, 2002)	Semi-structured interviews. By: not stated. Set: not stated. Period: not stated. Analysis: Atlas.ti used. Sematic thematic analysis (Braun & Clark, 2006; Patton, 2002)	Participants often used 'Xanax' as common street name to refer to any benzodiazepine but there is no way to determine when 'Xanax' was used to refer to specific drug alprozalam or when it was used as a generic reference to any of the multiple benzodiazepines available.Self-reported data: recall bias, social desirability bias.Limited generalisability due to sample characteristics and to non-urban areas.May have	Participants received compensation ($60 for interview participation and $20-$60 for referrals – amount increased with each referral). Some transcriptions 'slightly edited for clarity and readability'. No information re recruitment of participants for qual element of study, setting of interviews or who conducted the interviews. No reflexive statement or exploration of potential power relationships. No info of ethical approval. No information on how data were analysed.

				consequences of participants' nonmedical benzodiazepine use, and to assist in the interpretation of the quantitative data.			been participants with different experiences of benzodiazepine use that were not reported in interviews.	
O'brien AM, Brecht M and Casey C. (2008). Narratives of methamphetamine abuse: a qualitative exploration of social, psychological, and emotional experiences. *Journal of Social Work Practice in the Addictions.* 8(3):	Qualitative (Study part of a longitudinal study of the natural history of MA use and treatment outcomes)	USA	N=13, M=7, F=6; Age: 20-58yrs; Eth: AfAm=15%, H=46%, non-HW=31%, Other=8%. R: Snowballing (via treatment sample of parent study), information notices in locations methamphetamine users frequent and street outreach by community informants.Inc: ≥18yrs, methamphetamine use ≥3days/week during 12months of past 5yrs, never in treatment. Exc: not stated	To discuss the meanings of methamphetamine abuse from the users' perspectives and assumes that biological, mental, and cultural experiences of methamphetamine abuse are ascribed emotionally charged meanings that then become imprinted on the individual's mind and impact the way a person	Thematic analysis	Set: Neutral locations in participant communities Period: not stated By: not stated Analysis: Thematic	Due to length restraints, unable to address the nature and impact of respondents' sexual and intimate relationships. Despite the geographic and ethnic diversity of the sample, it is limited to participants primarily of low education and economic status. The sample size limits generalisability.	Participants paid $30 for interviews. Sub-sample selected to represent/reflect ethnic, gender, age, peer group and geographical location make-up of original sample. Theoretical saturation achieved. No triangulation but multiple interviews conducted with 2 participants to achieve communicative validity. No reflexive account or exploration of potential power relationships. Analysis methods unclear. No comparison with other studies. No CoI statement.

pp.343-366.				internalises future experiences.				
Orsi MM, et al. (2014). Factors associated with the motivation to use psychoactive substances and the motivation to change in adolescents in an authoritarian context. *Children and Youth Services Review*. 39: pp.11-19.	Qualitative	Canada, Montreal	N= 27: M=27, F=0; age: 14-18yrs; Eth: not stated. R: Purposive (though not stated) inc: Fluency in French, Age 14-18yrs, a DEP-ADO score indicating an emerging or clear substance use problem, placement in a CJ under the YPA or YCJA for at least 1 month. Exc: Exhibiting symptoms of psychosis or major depressive episodes	To identify the factors that youth placed in an authoritarian context associated with their motivation to use psychoactive substances and the factors that they associate with their motivation to change.	Thematic analyses of content. Van de Maren's (1996) guidelines	Semi-structured interviews. By: lead researcher. Set: On-site closed rooms. Period: not explained. Analysis: thematic analysis of content.	None identified.	Choice of qualitative study not justified. No monetary remuneration provided. Lack of information on interview process: how questions decided, if interview guide or schedule used. No info on triangulation or whether there was modification of methods during the data collection process. 37% of interviews coded (blind) by 2nd coder to establish inter-rater reliability. Ethnic make-up of the sample not explained. Data are rich, multiple quotes used to support results/themes. No reflexive statement or exploration of possible power relationships. No CoI statement No limitations or strengths identified.
Rigg KK and Murphy JW. (2013). Understand	qualitative	USA, South Florida	N=90: M=52, F=38; age: 18 to 51yrs; Eth: B/AfAm=9, W=70, H/L=11.	To identify and describe the key events, circumstances,	Thematic analysis (Braun &	Semi-structured interviews. By: 1st author.	Self-report data: possible recall bias. Face-to-face interviewing:	Despite the sub-sample for this qual study being selected for diversity: (gender, ethnicity,

ing the etiology of prescription opioid abuse: implications for prevention and treatment. *Qualitative health research.* 23(7): pp.963-75.			R: purposive sampling from SFHS sampleInc: ≥18yrs, reporting prescription drug abuse ≥5 times within last 90 days and had to meet the criteria to determine the drug-group representation.	and conditions leading up to initial POA as interpreted by drug users in treatment.	Clark, 2006)	Set: Participating clinics Period: Sept 2008 to Oct 2010 Analysis: Thematic analysis (Braun & Clark, 2006) using Nvivo 8.	possible interviewer bias and social desirability. Non-probability sampling: limited generalisability. Focus on treatment group: limited applicability to non-treatment groups.	primary prescription drug abused and method of acquisition), sample predominantly white and male. $30 paid on completion of interview. No triangulation or data saturation reported. . Interviews and analysis conducted by single author. No reflexive statement or examination of possible power relationships.
Skarner A and Mansson S-A. (2008). Young people and drugs: on navigation in the drug landspace. *European Journal of Social Work.* 11(2): pp.105-116.	Qualitative	Sweden2003 to 2005	N=20: M=8, F=12; age: 18 to 26yrs; eth: not stated (16 ethnic Swedes, 4 born outside Sweden). R: Snowballing inc/exc: not stated.	To analyse how young people navigate between different messages in the drug landscape, and what kind of knowledge and practical strategies they use and develop in relation to drugs and drug use. How do young people	Interactionist perspective (Berger & Luckamn, 1991)	Semi-structured interviews. By: not stated. Set: University premises. Period: 2003 to 2005. Analysis: Interactionist perspective (Berger & Luckamn, 1991).	Sampling method employed: limited generalisability.	Inc/exc criteria: not stated. Interviews conducted on university premises, but participants given option to suggest a different location. "Some editing took place in order to try to reproduce the interviewees' spoken language in the transcription" (pg 108). No information on who conducted interviews or analysis No triangulation. No reflexive statement. No exploration of

				navigate a world of diverse and sometimes contradictory messages about drugs? Can different strategies be discerned and, if so, how do these originate and take shape? How do young people justify their position regarding illicit drug use? What implications do the results of this study have for work with young people?				possible power relationships. No info about informed consent, ethical approval or CoI.
Stumbo SP, et al. (2017). Patient-reported pathways to opioid use disorders and pain-	qualitative (part of a larger mixed-methods study: The Treatment Options Study)	USA, Northwest USA & California	N=121: M=55, F=66; Mean age= 39±13; H=10, non-W=18; 93=not reported Inc: ≥18yrs, ≥2 opioid dependence diagnoses recorded in the electronic medical record in 12 months preceding	To document individuals' explanatory models for how they developed an OUD—and, for some, how these models affected	Modified grounded theory approach (Glaser & Strauss, 1967; Saldaña, 2009; A. Strauss & J.	Semi-structured interviews. By: Master's level trained interviewers. Set: Health plan facility of participants' choice. Analysis: Modified grounded theory. Atlas.ti used.	Retrospective self-report: possible social desirability. Sample may not be representative of individuals receiving care in settings other than participants' centres. Original	Remuneration = $50 gift card to a local one-stop shopping store. Interviews used semi-structured interview guide of open-ended questions and interviewer-administered questionnaire items. No

related barriers to treatment engagement. *Journal of Substance Abuse Treatment.* 73: pp.47-54.			recruitment. Individuals with history of opioid dependence or in remission or with 2 diagnoses but no current or limited treatment were also included. Exc: unable to provide consent due to cognitive impairment, unavailable or condition currently unsuitable for participation (determined by the department chiefs). R: purposive. Letters sent to Addiction medicine department chiefs who selected the potential participants.	treatment engagement.	Corbin, 1998), including constant comparative methods (Glaser & Strauss, 1967)		sample was 287, but due to insufficient data for 162 participants, some information may have been missed. >200 individuals were excluded as ineligible by chiefs of addiction medicine departments. Sample: women>men, as men are more likely users of heroine, additional data could have been achieved through inclusion of more men. Diagnoses of enrolled participants not verified by researchers. Findings are emergent and targeted questions specifically assessing opioid pathways may yield additional info.	info on how guide was generated. Analysis began once 10% interviews completed i.e. interviews and analysis side by side. Unclear who conducted the analysis and how. No triangulation or data saturation reported. No reflexive statement or discussion of possible power relationships. No CoI statement..
Wilson M, Shaw MR	qualitative	USA, Pacific Northwest	N=10: M=4, F=6; age: 23 to 61 yrs; eth:	To better understand	Grounded theory	Semi-structured face-to-face interviews.	A small convenience and	No incentives for participation.

and Roberts MLA. (2018). Opioid initiation to substance use treatment: "They just want to feel normal". *Nursing Research.* 67(5): pp.369-378.			W=5, NAm=3, H/L=1, Bl/AfAm=1. R: Convenience and purposive sampling. Randomly from participants of an RCT, Wilson et al., 2018. Inc for parent study: Adults diagnosed with chronic pain, read and write in English and receiving MAT in an outpatient opioid treatment program. Exc: not stated	the trajectory from pain to addiction, the authors asked adults in MAT who had initiated opioid use for pain to describe their experiences, beginning with their first use of opioids through their current status in an opioid treatment program.	(Corbin & Strauss, 2015)	By: Coinvestigator or trained research assistant. Period: May 2016 to Nov 2016. Set: Secluded room at outpatient MAT facility. Analysis: grounded theory.	purposive sample (data saturation achieved): possible selection bias. All researcher are nurses: resulting theory might be limited by the perspective of one discipline. Conclusions are based on participants' perspectives, thus cannot fully detail transition from pain treatment to addiction. Limited generalisability: cannot be generalised to all patients who are prescribed opioids for pain.	Interview guide developed and revised as themes began to merge and questions arose through constant comparative analysis. Possible that not all participants were asked same questions. No triangulation. No individual reflexive statements, but authors report use of self-reflection by research team involved in the analysis. Unclear if there were any potential power relationships that could have influenced participant responses. Analysis used grounded theory and was conducted by >1 researcher.

4. Studies in non-UK sub-populations:

Study Reference (s)	Study design	Geographic location & dates:	Study participants (Including number, demographic data, method of recruitment, inclusion/exclusion criteria etc.):	Research Question(s)/ Aim(s):	Theoretical approach taken (if specified)	Data collection method (including by whom, setting, period during which data collected etc.) & Data analysis method:	Author limitations:	Reviewer comments (limitations/quality/generalisability etc):
Cheney AM, et al. (2018). Effects of social and spatial contexts on young latinas' methamphetamine use initiation. *J Ethn Subst Abuse.* 17(1): pp.32-49.	Qualitative	USA, Grater Los-Angeles 2006-2007	N=19: M=0, F=19; Age: >18 years; eth: L=17, BR= 2 Purposive sampling Inc: Women >18 years. English speaking. Meth to be primary drug of choice. Been in residential treatment for ≥6months to ensure they had been abstinent for a substantial period and continual access to mental health professionals. Exc: Primary language not English	How institutional inequality disadvantages women of colour, places them in marginal and precarious positions, and increases their vulnerability to childhood sexual assault and adverse life stressors, contributing to poor emotional and psychological health and putting them on the pathway to	Urban ethnographic framework	Participant observation and person-centred interviews. Descriptive field notes. By: PI Setting: 5 women and children only residential substance use treatment centres in Greater LA Period: 2006-2007 Analysis: Inductive analysis (Strauss & Corben, 1990)	Analysis is limited by recall bias. Latinas with Spanish as their primary language were excluded, therefore the findings are likely to reflect experiences of more linguistically accultured Latinas.	$25 Target gift cards for participation. Interviews conducted by 1 researcher. No information on development of interview schedule/guide or how research explained to participants. Theoretical saturation: not stated. No reflexive statement or exploration of potential power relationships. Use of 'We' suggests >1 researcher conducted data analysis, it is not clear how many or the methods used. Minimal report of strengths and limitations of study.

				substance use.				
Fast D, Small W, Wood E and Kerr T. (2009). Coming 'down here': young people's reflections on becoming entrenched in a local drug scene. *Social Science & Medicine.* 69(8): pp.1204-1210.	Qualitative	Vancouver, Canada 2008	N=38: M=18, F=18, Tr=2; Age: 16-26 yrs; eth: W=67%, Ab=28%, AfCn=5% R= A subgroup of ARYS (at-risk youth study) Inc: Aged 14-26 years and self-reported use of illicit drugs other than or in addition to marijuana in the past 30 days.	To explore how young people who were currently street-entrenched characterized and understood their initiation into the local drug scene in downtown Vancouver, Canada.	not stated	By: 3 trained interviewers Period: 2 waves: April-May 2008, and September-October 2008. Setting: not stated. Data analysis: not stated. Atlas.ti was used.	Study sample may not be representative of the local youth population.	$20 honorarium for participation. Interviews conducted by 3 trained interviewers (not clear if together or independently). No info on how study was explained to participants or setting for data collection. Topic guide used for the interviews but unclear how it was developed. Data analysis and collection occurred concurrently, therefore new questions and probes were added to later interviews i.e. not all participants asked same set of questions. No theoretical saturation or triangulation reported. Minimal report of strengths and limitations of study.
Melin Y, Eklund M and Lindgren B-M. (2017). Experiences of living with opioid dependence: An interview study among individuals participating	Qualitative	North Sweden	N=13: M=6, F=7, Age: 27-51 yrs, eth: not stated. R: Advertised in waiting room at a MAT clinic. Interested participants registered interest with the researcher.	To describe the experiences of living with opioid dependence as narrated by people participating in MAT.	qualitative content analysis (Grabeheim & Lundman, 2004)	Narrative interviews. By: 2 researchers. Setting: Participant choice. Period: 2013-2014. Analysis: content analysis.	None reported. There is discussion of methods used under 'Methodological discussion', however, limitations have not been clearly identified or addressed.	Interviews were conducted by 2 researchers. Age for inclusion is unclear as 2 separate age criteria listed on page 10 and 15. Authors report awareness of the possibility of over-interpretation when conducting analysis and stated they took appropriate measures to avoid this. No reflexive

in medication-assisted treatment. *Issues in Mental Health Nursing.* 38(1): pp.9-17.			Inc: Women and men >18years, having participated in MAT for >3yrs, and willing to share their stories.					statements, but authors report using reflection and discussion to achieve consensus in interpretation of data but unclear how many researchers were involved in analysis.

Data extraction Key:

Abbreviations

N	Total number of participants in a study
M	Male
F	Female
TR	Transgender
eth	Ethnicity
W	White
B	British
H	Hispanic
Cau	Caucasian
WB	White British
WS	White Scottish
WBI	White British Irish
NW	Non-White
NWB	Non-White British
Bl	Black
BC	Black-Caribbean
BA	Black African
BR	Bi-racial
L	Latina
C	Caribbean
AC	African-Caribbean
MI	Motivational Interviewing
MAT	Medication-assisted treatment
PO	Participant Observation

Ab	Aboriginal
AfAm	African American
Nam	Native American
AfCn	African Canadian
As	Asian
PI	Pacific Islander
I	Indian
P	Pakistani
BB	British Bangladeshi
Af	African
ME	Multi-ethnic
Homo	Homosexual
Bi	Bisexual
R	Method of recruitment
Inc	Include criteria
Exc	Exclude criteria
Set	Setting
DA	Data Analysis
n	number of
IPA	Interpretative Phenomenological analysis
LGBT	Lesbian, Gay, Bisexual and Transgender
Tr	Transgender
CBT	Cognitive Behavioural Therapy

	Illicit drug use
	Prescription drug misuse

Appendix 3: Themes and codes

1. Themes/Codes(s) for reasons why people decide to use illicit drugs

Theme/Code(s)	Description	Level(s) of the socioecological model
THEME: **Coping strategy**	**Using drugs to protect oneself from having to confront negative perception from self or others, hurtful feelings or negative situations / life circumstances etc.** Using drugs as a way to cope with things such as: stress, negative or distressing life experiences, emotional pain, anger, resentment.	Interpersonal / Intrapersonal
Dysfunctional childhood	Physical or mental abuse & neglect in childhood (by parents/family etc.) leading to trauma/vulnerability which could make them more susceptible to using drugs as a defence/coping mechanism.	Interpersonal
Sexual childhood abuse	Sexual abuse in childhood leading to trauma/vulnerability which could make them more susceptible to using drugs as a defence/coping mechanism.	Interpersonal
Freedom	Drug use as a way of gaining a superficial freedom from ones circumstances.	Interpersonal / Intrapersonal
Rebellion	Drug use as a way of rebelling against ones circumstances.	Interpersonal / Intrapersonal
Unmet emotional needs	Initiating drug use to fill the perceived emotional void and fulfilment of unmet emotional needs.	Interpersonal / Intrapersonal
Escape from circumstances/reality	Using drugs to feel like you are escaping from difficult life circumstances.	Interpersonal / Intrapersonal
Depression	Using drugs to help cope with feelings of depression/anxiety.	Intrapersonal

THEME: Influence of others	**Directly influenced to initiate drug use by others in their social network.**	Interpersonal
Initiation with family/partner	Introduction to drugs and drug use through the family or partner with first use being in the presence of a family member/partner.	Interpersonal
Peer influence	Being around drug using peers can influence drug initiation. Urged by peers to use drugs.	Interpersonal
Forced initiation	Initiation/ first drug use without wilful consent of the person.	Interpersonal
THEME: drug use being the norm (drug normalisation)	**Drug use seen as 'normal' with a person's social group or wider community etc.** Normalised view towards certain drugs due to use by family members or in neighbourhood which reduced or eradicated stigma attached to taking drugs. Initiation of drug use because of the normalised nature of drug use i.e. acceptance towards drug use amongst participants' social circle	Interpersonal / Community
Acceptable and unacceptable drugs	Definition of level of harm from different drugs made participants categorise certain drug use as acceptable while others were unacceptable. The definitions were based on information from a range of sources including drug education at school, media, stories and rumours.	Interpersonal / Community
Inevitable eventuality	Being in close proximity of drug users leading participants to feel drug use was an inevitable eventuality and something they had no control over.	Interpersonal / Community
Subverting social norms	Taking drugs to subvert perceived social norms (counter against drug normalisation).	Interpersonal / Community

THEME: Making a conscious choice (personal choice)	**Active personal choice to take drugs independent of peer pressure and based on conscious decision-making. Often the decision making was characterised with information seeking and weighing up pros and cons.**	Intrapersonal
Curiosity	Seeing/hearing/witnessing others taking drugs leading to curiosity to take drugs themselves to experience/test its effects.	Intrapersonal / Interpersonal
Witnessing impact of drugs	While witnessing negative impact of drug use amongst family members is a protective factor, not witnessing the long term negative impact of drug use amongst drug using family members and friends acted as a risk factor as it contradicted the messages of harm through media.	Intrapersonal / Interpersonal
Desired identity	Use of drugs was seen as attractive and exciting. It provided a desired identity, being considered 'cool'. Use of drugs to overcome anxiety and inhibitions, to help improved perceived social performance by assuming a more desirable and confident personality.	Intrapersonal
Desired benefits	Witnessed positive effects from drugs like increased confidence, feeling attractive, sexual arousal, lowering inhibitions, staying awake for longer hours, feeling energised, suppressing appetite etc. and desired this.	Intrapersonal
Emulating adult behaviour	Initiation to feel more adult like by copying the behaviour of the older friends to feel more self-confident.	Intrapersonal
Drug Naive	Initiation based on lack of knowledge about drugs and its harms.	Intrapersonal
Access and availability	Initiation of drug use because of easy access and availability or as a result of being initially offered drugs for no charge.	Interpersonal

MINOR THEME: Recreational use	**Initiating drug use for relaxation, entertainment and recreation purposes. Socialising, out of boredom etc.**	Interpersonal
Social activity	Using drugs in a social context e.g. when with friends in a club etc.	Interpersonal
Community	Using drugs to join a community, to be part of a group.	Interpersonal
MINOR THEME: Self-treatment	**Using substances to treat symptoms without approval or supervision by healthcare professionals.**	Intrapersonal
Overcoming side effects	Using substances to overcome side-effects from prescribed medication.	Intrapersonal
Overcoming stigma of illness	Patients sought substance using peers to overcome the stigma of symptoms due their illness like hearing voices by hiding it as it could be explained as being due to substance use.	Intrapersonal

2. Themes/Code(s) for reasons why people decide not to use illicit drugs

Theme/Code(s)	Description	Level(s) of the socioecological model
Awareness	Of the potential dangers of drug use which then puts the person off using drugs.	Intrapersonal
Illegal activity	The illegal nature of drug use acts as a deterrent to use.	Policy
Witnessing the negative impact of drugs	Witnessing negative impact of illicit drug use in the lives of relatives and family members who use drugs including death.	Intrapersonal / Interpersonal
Personal aspirations	Having personal ambitions like doing well academically, wanting to go to university and getting on with life has a protective effect against drug use.	Intrapersonal
Personal responsibilities	Having responsibilities like a baby has a protective effect against drug use.	Intrapersonal
Family Honour	Not using illicit drugs because of the disrespect it would bring to the family and not wishing to let parents down.	Interpersonal
Religious beliefs	Against religious beliefs to use illicit drugs.	Interpersonal / Community / Organisational

3. Themes/Code(s) for reasons why people decide to misuse prescription of OTC opioid medications

Theme/Code(s)	Description	Level(s) of the socioecological model
THEME: Role of Healthcare professional	**Interaction between healthcare professional can be a risk factor or protective factor for misuse of prescription medication.**	Interpersonal/ Intrapersonal and Policy
Communication	Lack of communication/patient education about the risk of becoming addicted to prescription medications.	Interpersonal
Unsupervised use	Lack of supervision of prescription medication by HC professionals leading to repeat prescriptions, dose escalation for self-management and/or misuse for non-prescribed purposes.	Interpersonal/ Intrapersonal
Dismissal	Dismissal of concerns by HC professionals leading to a loss of trust from patient and patient disengagement, leading to them becoming vulnerable to addiction/misuse.	Interpersonal
Alternative options not offered	Alternative therapies (Besides medication) not offered to patients leading to long-term use of drugs which then leaves people vulnerable to misuse/addiction. This could be due to rigid procedures needing to be followed by HC professionals, or other reasons.	Policy
Lack of interest	Lack of interest from HC Professionals when patients try to access medications meaning use for non-prescribed purposes can go unnoticed.	Interpersonal
THEME: Coping strategy	**Initiating use of prescription medicine for non-prescribed purposes as a means to deal with demanding situations accompanied with stress and anxiety.** Initiating because of the belief that the drug was needed to be able to deal with the situation.	Intrapersonal / Interpersonal/ Institutional

Escape from circumstances/reality	Using drugs to feel like you are escaping from difficult life circumstances.	Intrapersonal / Interpersonal
Depression	Feeling depressed, leading to drug use as a coping strategy.	Intrapersonal
Academic pressure/academic achievement	Initiating use because of the overbearing demands for performance i.e. academic deadlines, exams etc. Initiating use to deal with the pressure of the tight deadlines and multiple exams on the same day. Feeling desperate and exhausted increases the vulnerability of even those who might not have originally wanted to initiate use.	Intrapersonal/ Institutional
THEME: Ready availability	**Readily available nature of prescription medications leads to easy access and opportunities for misuse i.e. OTC availability from weak and internet pharmacies.** **Where patients were challenged, patients were still able to obtain OTC by changing pharmacies.**	Policy
THEME: Desired effect	**Use OTC and prescription medication for its social advantages and/ or because of the desire to sustain the effect of prescription medication in order to feel great at all times.**	Intrapersonal/ Interpersonal
Desired benefits	Effects like increased confidence, staying awake for longer hours, feeling energised, suppressing appetite etc. may make students vulnerable to initiating illicit stimulant use.	Interpersonal / Intrapersonal
THEME: Influence of others	**Initial introduction to prescription medication from friends and family.**	Interpersonal
Peer influence	Being around drug using peers who promote the benefits of using stimulants can influence drug initiation. Urged by peers to use drugs.	Interpersonal

THEME: Making a conscious choice	**Seeing/hearing/witnessing others taking drugs leading to curiosity to take drugs themselves to experience/test its effects.**	Intrapersonal
THEME: Drug use being the norm	**The normalised nature of misuse of prescription drug in the immediate environment that it becomes part of the culture and is viewed as acceptable, as a norm leading to increased vulnerability/ susceptibility to misuse of prescription drugs.**	Interpersonal
THEME: Recreational use	**Initiating illicit drug use for recreational purposes like having fun, enjoyment, socialising, pleasure, to get high.**	Interpersonal / Intrapersonal