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OVER THE COUNTER CODEINE DEPENDENCE
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“I didn’t even know about it, that you could become addicted to them. It sort of never occurred to me.” (Female, 54 yrs)

"I knew and by that stage, when I was having that many... I mean I kind of, when I started to feel really sick, trying to get them down, I got back down to 36 in one go and even that was pretty difficult because you’d retch trying to get them down but you just knew you needed to get them in there to make you feel OK again." (Female, 42 yrs)

"...after between 20 and 24 tablets a day I started getting a little bit of euphoria and a little bit of “gee this is alright, this is feeling good,” and uh I even, it wasn’t until probably in the 40s (tablets per day) that I started getting the nods, as to what they now term as the nods. I didn’t even know the term back then, I had no idea (laughs) and ah um, and I loved it, I just absolutely loved it at that stage and there was no going back." (Male, 42 yrs)

"I can’t believe they sold them to me, they sold me three packets at once of Nurofen Plus." (Male, 35 yrs)

The only thing that concerns me sometimes is that I have to line up with the methadone people, or the other heroin users at the clinic, the pharmacy to get my medication and I am not really one of those sort of guys, but obviously I am, I am just another drug addicted person just as they are as well." (Male, 42 yrs)
CHAPTER 1: EXECUTIVE SUMMARY

Background
There have been growing numbers of reports of serious harms in relation to over the counter (OTC or non‐prescription) codeine use. These are supplemented by further cases presented at professional pharmacy and addiction conferences and anecdotal reports of serious morbidity and mortality by addiction medicine specialists and other concerned professionals in Australia.

Given these growing concerns, it is timely that this research should be conducted with the aim of better understanding the nature of dependence to over the counter codeine, which in turn may inform treatment, prevention and harm reduction strategies.

Method
This project was conducted in three phases:

1. A web survey, designed to understand how people use OTC codeine (n = 800) and to compare dependent and non‐dependent codeine using populations

2. In depth qualitative interviews with codeine dependent people (n = 20) to understand pathways to codeine dependence and to gain a deeper understanding of the nature of OTC codeine dependence

3. Key Expert Interviews to understand current treatment approaches for codeine dependence and experiences of working with people who use OTC Codeine at potentially dependent levels.

This study involved qualitative, semi‐structured interviews with primary healthcare practitioners and other ‘key experts’ as well as qualitative interviews with codeine dependent people. Sampling for both groups was purposive. This approach seeks to select individuals based on their knowledge, experience or specific characteristics (Patton, 1990).

Findings

Web survey
The 800 responses to the web survey were included in the analysis; 138 (17%) were classified using the Severity of Dependence Scale (SDS) as likely to meet criteria for codeine dependence and these cases were compared to the remaining 83% who were below the cut‐off for that may indicate codeine dependence.

Participants classified as codeine dependent were found to be more likely to report chronic pain, have higher ratings of psychological distress, have experienced alcohol and drug treatment and have used doses higher than the maximum dose. A group of dependent codeine users were identified that were using over 10 times the maximum recommended dose, and had been doing so for extended periods of time. This group would be considered to be at high risk of serious adverse events.

The population identified through the web survey different on a number of characteristics from populations of opioid dependent people currently in treatment and in other opioid dependence research. The web survey was effective in engaging and describing a population of codeine dependent people who are not currently described in the literature. The population that responded to the survey was largely well educated and are employed with considerable physical and mental health
co-morbidity. The majority of OTC codeine dependent people (74%) had not sought help for their codeine dependence.

**Participant Interviews**

Twenty people who met DSM IV criteria for codeine dependence were interviewed. Out of these in-depth interviews, three types of codeine users were identified:

1. Therapeutic dependence; characterised by not exceeding therapeutic doses but still demonstrating features of codeine dependence and often having a picture of worsening pain. Some cases were consistent with descriptions in the literature of medication overuse headache.

2. Non-medical/recreational users; characterised by use specifically for the euphoric effects of codeine. This group were generally seeking and sharing knowledge to reduce harms.

3. High dose dependence; characterised by the use of high doses (multiple packets per day) and experiencing serious adverse effects from their use. Use almost always stemmed from therapeutic use with participants often having limited insight into dependence for an extended period of time. In some cases use began for therapeutic use and escalated rapidly once euphoric effects of codeine were experienced.

Blurring between therapeutic and problematic use was also a feature where participants described being in a viscous cycle of medicating opioid withdrawal thinking they were medicating pain. ‘Chemical coping’ or using codeine for stress and mental health was also reported.

OTC codeine users generally perceived codeine to be different (milder, legal, and more respectable) than other types of drug use and OTC codeine users generally perceived themself to be different to other substance users. This was reflected in part by a reluctance to seek treatment with other substance users. Other forms of help such as online forums were identified to be valuable for support and information.

Serious harms were reported including physical harms (stomach bleeds, liver and kidney damage), road accidents and social costs for the OTC codeine user.

The interface between OTC codeine users and pharmacists was identified to have a number of challenges, with much scope to improve identification and responses to codeine dependence. OTC codeine users described that presenting with good attire was linked to easy supply of codeine with limited information or advice about the risks of dependence.

**Key Expert Interviews**

Key experts were interviewed from a range of professional backgrounds (including addiction medicine and pharmacy). Those from alcohol and drug backgrounds described a population that were generally older, with chronic pain and mental health co-morbidities, with more females identified. These characteristics were consistent with findings from the other data sources in the study and also with published literature, validating these findings.

Pharmacist’s descriptions were based more on appearance than other characteristics, consistent with descriptions of OTC codeine users reporting appearance being related to codeine supply. Pharmacists also highlighted the challenges in responding to codeine dependence with information available with current systems. It appears pharmacists are currently in a difficult position to respond.
Descriptions of codeine users not recognising their dependence and medicating opioid withdrawal thinking it was pain were consistent with reports from the OTC codeine users themselves.

Common treatment approaches that were most consistently identified to be effective for codeine dependence were pharmacotherapy (methadone and buprenorphine). Barriers to treatment included the codeine users’ lack of recognition and acceptance of their dependence.
Recommendations

Three key recommendation areas were identified.

1) Raising awareness

- Key messages need to be developed for the general public around
  - the risks from exceeding therapeutic doses and this being a red flag for referral,
  - the signs of opioid dependence and withdrawal
  - and other harm reduction information such as the risks of using codeine when driving

- There is a key role for pharmacists to use a systematic approach with every codeine sale to ensure people are aware that codeine has a dependence liability rather than responding to customers selectively based on appearance

- High dose dependency can be missed in hospital admissions and other health settings, raising the importance of all health professionals asking about prescription and non-prescription medications

2) Identify and address barriers to treatment

- OTC codeine dependent people appeared reluctant to try evidence based treatments

- Current treatments services were not attractive to OTC codeine users

- OTC codeine users often were unaware they were dependent to codeine, delaying their help seeking

3) Enable Pharmacists to respond effectively

- Pharmacists need better information to be able to respond to codeine dependence including
  - supply information (e.g. real time monitoring systems)
  - training around identifying and responding appropriately to potential codeine dependence

The pharmacist can play an important role in raising general awareness regarding potential OTC codeine dependence and harms. The new legislation which requires a greater interaction between the pharmacist and the public for OTC codeine purchases may go a long way towards improving the effectiveness of pharmacy responses to OTC codeine dependence.
“I don’t know, maybe I just thought you know it’s not like heroin or speed so I thought this is fine, it’s just pain killers.” (Male, 21 yrs)

"In the beginning (information about risks of opioid dependence) would have (been valuable), it would have in the beginning, but when I was addicted I wouldn’t have been interested.... it would have to be early in the piece." (Male, 42 yrs)

"I guess I thought I can’t continue on like this. Like I think it was the stress of going to each, you know different pharmacy every day and planning my whole day around getting a packet of codeine every day because I used to go almost every day to get a pack." (Male, 21 yrs)

“I didn’t think I would get addicted to it no...Obviously I realised later, but it’s quite insidious. It really does creep up on you.” (Female, 50 yrs)

"I was just addicted to them....Yeah I think just psychologically I just didn’t think I could get through the day without them." (Female, 44 yrs)
CHAPTER 2: BACKGROUND

Background

The misuse of pharmaceuticals has become an increasing global problem over the past decade. In the United States, pharmaceutical use and harms have become more prevalent than use and harms relating to cocaine and heroin.

Misuse of over-the-counter non-prescription analgesics containing codeine and harm resulting from this misuse has recently been identified as a significant problem in Victoria. Codeine is recognised as an addictive opioid, and in OTC products is combined with paracetamol, aspirin or ibuprofen. Both aspirin and ibuprofen are non-steroidal anti-inflammatory drugs. A particular problem has been identified with the codeine/ibuprofen products, with individuals taking large numbers of tablets a day (24, 48, 72 or more a day), usually obtained from multiple pharmacies, and resulting in extraordinarily high doses of ibuprofen that has caused serious life-threatening injury such as gastric perforation or haemorrhage and renal failure, opioid dependence, and at least one death in Victoria (Dobbin & Tobin, 2008).

These indicators of misuse and harm warranted further investigation of misuse of codeine containing analgesics in this jurisdiction. The possibility of fatal outcomes from the side effects of these medications necessitates research to better understand misuse of these products. Misuse of pharmaceuticals has the potential to become a major public health problem in Australia, similar to that seen in the United States.

Over the counter codeine containing analgesics

There has been a growing body of research regarding prescription analgesics. Pharmaceutical opioids abuse is increasing. In Australia, particularly in regions with low availability of heroin, prescription opioids such as morphine have become the main opioids used (Stafford, Sindicich, Burns, Cassar, & Cogger, 2009). Leong (2009) found that the number of prescription opioids supplied in Australia has increased substantially since 1992-2007, particularly low-dose oxycodone since 2000. In the United States considerable changes in drug use problems have been reported. Mortality numbers due to prescription analgesics overdoses have increased, with the number of deaths now exceeding those caused by cocaine and heroin/morphine (Paulozzi, Budnitz, & Xi, 2006). Despite the substantial increase in research and concern regarding prescription opioid use, little work has focussed on the harms associated with opioids that can be purchased without a prescription.

Analgesics containing codeine have long been available without a prescription in many countries including Australia, Canada and the United Kingdom. Recent concerns about the harms associated with these products in both Australia and the UK have prompted a review of the level of pharmacist involvement in the sale of Over The Counter (OTC or non-prescription) codeine based analgesics (Reay, 2008) and there are calls for the establishment of warning labels on these products to clearly identify risk of harm, including dependence (Australian Government Department of Health and Ageing, 2009). In addition, the MHRA in the UK have added pack warnings about risk of addiction. A consumer information leaflet with further description of addiction and the symptoms is available from the British Pain Society (The British Pain Society, 2010).

Pharmacological effects of codeine

Codeine is an opioid in the same family of compounds as opioids such as morphine, methadone and heroin. Although often reported to be a weaker opioids, codeine as with other opioids has a
dependence liability (Australian Government Department of Health and Ageing, 2009). The body converts some of the codeine into morphine, resulting in both an analgesic action and a potential for dependence.

Opioid based products such as codeine products are commonly used as analgesics, to stop coughing and to reduce gastrointestinal motility (such as to treat diarrhoea) (Australian Medicines Handbook, 2008).

It has been discovered that 5 -10% of the population do not have the enzyme to convert codeine to morphine, and for these people codeine is neither effective for pain relief, nor likely to cause dependence (Chew, White, Somogyi, Bochner, & Irvine, 2001). There is also the risk for hypermetabolisers eg the death of a breast fed baby (Willmann, Edginton, Coboeken, Ahr, & Lippert, 2009) and for the remaining 90-95% of the population there is a risk of dependence with ongoing use.

**Paracetamol based products**

Chronic ingestion of high dose paracetamol products has been associated with liver toxicity (Lane, 2002). The risk of liver damage is considerable when large doses of paracetamol (or products containing paracetamol) are taken acutely (Daly, Fountain, Murray, Graudins, & Buckley, 2008).

**Aspirin and Ibuprofen based products**

A recent series of case reports identified considerable harms with some OTC codeine products, specifically ibuprofen-codeine based products (Frei, Nielsen, Tobin, & Dobbin, 2010; Robinson, Robinson, McCarthy, & Cameron). Cases of serious harm typical of non steroidal anti-inflammatory drug complications including gastrointestinal haemorrhage (Cases & Dutch, 2008), perforation and peptic ulcer, renal failure, chronic blood loss anaemia, and low blood potassium (with potential fatal heart and neurological complications) (Chetty et al., 2003).

Similar risks exist due to the effects of aspirin on the gastro-intestinal system if aspirin-codeine combination products are taken long term. Cases of this nature have not been well documented in the literature.

**Codeine dependence**

Few studies have examined codeine dependence in detail. One study conducted in Canada examined a sample of codeine dependent people who had completed a self-report survey accessed via newspaper recruitment (Sproule & Busto, 1999). This study found that those that were codeine dependent were more likely to report chronic pain but also more likely to have used codeine for its pleasurable effects. Whilst pain was a primary reason for initiating codeine use, the study identified a large number of people who had met criteria for codeine dependence. A number (19%) reported using codeine to relax or reduce stress. While the focus of this particular study was not on non-prescription codeine, they found 54% of the sample was using OTC codeine.

In this study 339 eligible participants were recruited via extensive newspaper advertisements (with 700 people responding to the advertisement). Thirty seven percent were codeine dependent and a further 4% met the criteria for codeine abuse.

Average codeine doses reported by those classified as dependent were 179mg per day with 80% reporting using codeine on 5 or more days per week.
Two thirds of subjects that rated their used as problematic met DSM-IV (American Psychiatric Association, 2000) criteria for dependence. The dependent subjects met an average of 4.5 of the 7 DSM-IV criteria for dependence.

Purpose

This study examined the misuse of over the counter codeine containing analgesics, and examined mental health and other co-morbidity in this group. The study gives a better understanding of the natural history of developing dependence on over the counter codeine containing analgesics to inform the development of interventions to reduce misuse, dependence and other related harms from these products.

The key research questions are:

- What are the characteristics of over the counter codeine dependence?
- How can treatment and prevention strategies be best targeted to prevent further misuse and harms?

Objectives

The key components of the study were a web-based survey, qualitative interviews with codeine users, and qualitative key expert interviews with a range of health professionals.

This research enables us to better understand the misuse of OTC codeine and factors associated with misuse of these products. In addition the trajectory from therapeutic use to misuse is explored in detail.

Project Aims

This project aims to understand who is at risk of developing dependence to over the counter (OTC) codeine, and how these products are then used by those who become dependent.

This information is critical to inform the development of interventions aimed at preventing or treating dependence and other harm related to chronic use of these products.
CHAPTER 3: WEB-BASED SURVEY OF CODEINE USERS

Introduction

The first stage of this project aimed to develop a better understanding of how a range of people used codeine products. The recruitment strategy for the survey deliberately invited people who had recently used codeine rather than focussing on codeine users that identified their use as problematic.

The web survey investigated how people used codeine products, and also collected information on a range of other measures including demographic, physical and mental health. The aim was to see if particular characteristics may be associated with developing codeine dependence.

As early work conducted by (Frei, et al., 2010) indicated that some codeine dependent people may not be in contact alcohol and drug treatment services, this strategy of using a web-based survey and a broad recruitment strategy was used in order to reach a wide number of codeine users, and understand how non-prescription codeine products are used by a wide variety of people.

Methods

Participants

Nine hundred and nine participants completed the online survey. Participants who were from outside Australia, who did not report codeine use or who did not complete all the questions in the Severity of Dependence Scale (SDS) are not included the analysis presented. Therefore, eight hundred submitted responses were used for analysis. The mean age of the whole sample (n = 800) was 40.1 yrs old (S.D. 12.3 yrs); 71% percent were female; 83% of the sample were employed (full or part time); and 80% were born in Australia. Almost the entire sample (99%) lived in either privately rented or owned housing. This sample was divided into two groups based on likelihood to meet criteria for codeine dependence, with the analysis presented showing analysis to address the research questions described above.

Materials

The web-based online survey was developed using Lime Survey (Lime Survey, 2008). The survey examined basic demographic information, codeine use, other substance use, treatment history, pain and other aspects of physical and mental health. Principles of online survey design including concise length, clear layout and ease of use were followed (Fielding, Lee, & Blank, 2008).

Validated measures of mental and physical health were included in the survey. Psychological distress was measured using the Kessler-10 (K10) (Andrews & Slade, 2007). This is a short population based measure of non-specific psychological distress. Respondents with scores under 20 are likely to be well, scores 20-24 are likely to have a mild mental disorder, scores of 25-29 are likely to have moderate mental disorder and those with scores of 30 and over are likely to have a severe mental disorder (Andrews & Slade, 2007).

The Severity of Dependence Scale (SDS) is a brief five-item questionnaire that provides a score indicating the degree of dependence experienced by users of different types of drugs. Each of the items explicitly address the psychological components of dependence, specifically the individual’s lack of control over drug taking and the preoccupation and anxieties about drug use. The items are scored on a four-point scale (0-3), with a total score obtained by adding the five-item ratings. A high score is indicative of a high level of drug dependence (Gossop et al., 1995).

The SF-12 is a multipurpose 12-item questionnaire and a short form of the SF-36 Health Survey (Ware Jr, 2000). The items are scored 0 (lowest level of health) to 100 (highest level of health). The questions are combined, scored and weighted to create summary scores for physical and mental health (Ware, Kosinski, & Keller, 1995). The Physical Health Composite Score (PCS) and the Mental
Health Composite Score (MCS) are computed. In Australia the population norm for both scores are approximately 50, whereas scores below 50 indicate poorer physical or mental health compared to the general Australian population (Ware Jr, Kosinski, & Keller, 1996).

**Procedure**

Data collection was completed between March – July 2009.

Participants who had recently used OTC were recruited through a series of newspaper advertisements, emails through personal and professional networks, e-lists and through flyers posted at health services including drug and alcohol services that directed them to a website to complete the survey.

A telephone number was included so that participants could call to complete the survey over the phone if they did not have internet access. One person completed the survey over the phone with the remainder using the online survey option.

Participants were not remunerated for their participation in this phase of the research.

All aspects of the study were approved by the Victorian Department of Human Services Ethics Committee.

**Analysis**

Analyses were conducted using SPSS V14.0 (SPSS for Windows, 2001). Chi-squared test were used for dichotomous variables and one-way ANOVA was used to compare means for continuous variables. Binary logistic regression was used to examine if factors that were significant in a uni-variate analysis were significantly associated in a logistic regression model with the development of OTC codeine dependence.

**Results**

**Codeine dependence**

One hundred and thirty eight participants (17.3 %) were classified as likely to be codeine dependent based on the SDS cut off. Of these 80% reported that their OTC codeine use had become a problem for them. Forty four people (7%) that were not classified as codeine dependent reported that their codeine use had become a problem for them. Eighty four percent of those classified as codeine dependent reported one or more opioid withdrawal symptoms on codeine cessation, compared with 18% of those that were not classified as dependent.

The findings here support earlier work by Grande et al (2009) suggesting a SDS cut-off of 5 has reasonable sensitivity and specificity for identifying people that may be problematic users of analgesics. In this study the cut off of 5 identified almost all people that had self-reported problematic OTC codeine use and reported withdrawal symptoms on codeine cessation. As such, this cut-off was considered appropriate to use for further analysis to compare dependent and non-dependent OTC codeine users.

**Sample demographics**

Participants classified as OTC codeine dependent were compared with non-dependent users on a range of measures. There were a number of differences between the two groups.
Dependent codeine users were younger, likely to have lower levels of education and less likely to be employed full time, compared to non-dependent codeine users. The majority of participants in both groups had completed at least a year 11 equivalent of education and were employed (see Table 1).

**Physical and Mental Health**

Dependent codeine users were more likely to report chronic pain, fair or poor health (rather than good to excellent) and significantly lower PCS scores on the SF12. Measures of mental health (SF-12 mental health component score and K10) indicated significantly poorer mental health functioning (Table 1).

**Substance Use**

Dependent users were more likely to have used OTC codeine for non-medical purposes (for a reason other to relieve pain), and two thirds had exceeded the recommended dose on the last use occasion.

There was no difference in lifetime use of illicit drug use between the groups, but dependent codeine users were more likely to have sought treatment for alcohol or drug problems and to have a family history of alcohol or drug problems.
<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Non-codeine dependent (n = 662)</th>
<th>Codeine dependent (n = 138)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender (Female)</td>
<td>72%</td>
<td>66%</td>
<td>2.106</td>
</tr>
<tr>
<td>Age in years, mean (SD)</td>
<td>40.7 (12.1)</td>
<td>37.3 (12.7)</td>
<td>8.484</td>
</tr>
<tr>
<td>Completed ≤ Y11 education</td>
<td>8 %</td>
<td>24%</td>
<td>32.6</td>
</tr>
<tr>
<td>Completed tertiary degree</td>
<td>64%</td>
<td>38%</td>
<td>30.5</td>
</tr>
<tr>
<td>Employed or full time student</td>
<td>90%</td>
<td>73%</td>
<td>26.3</td>
</tr>
</tbody>
</table>

**General Health**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Non-codeine dependent (n = 662)</th>
<th>Codeine dependent (n = 138)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reported chronic pain problem</td>
<td>31%</td>
<td>47%</td>
<td>12.8</td>
</tr>
<tr>
<td>Rated health good to excellent</td>
<td>90%</td>
<td>59%</td>
<td>87.3</td>
</tr>
<tr>
<td>SF12 Component scores, mean (SD)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical Health Component Score</td>
<td>44.8 (7.9)</td>
<td>39.9 (9.8)</td>
<td>33.5</td>
</tr>
<tr>
<td>Mental Health Component Score</td>
<td>49.4 (8.8)</td>
<td>40.9 (10.3)</td>
<td>83.9</td>
</tr>
<tr>
<td>K10 score, mean (SD)</td>
<td>15.8 (5.5)</td>
<td>24.5 (9.4)</td>
<td>198.3</td>
</tr>
</tbody>
</table>

**Codeine use**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Non-codeine dependent (n = 662)</th>
<th>Codeine dependent (n = 138)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age of first codeine use</td>
<td>22.1 (9.4)</td>
<td>24.1 (10.2)</td>
<td>4.8</td>
</tr>
<tr>
<td>Exceeded recommended dose on last use occasion</td>
<td>10%</td>
<td>65%</td>
<td>202.0</td>
</tr>
<tr>
<td>Ever used codeine for non-medical purposes (%)</td>
<td>25%</td>
<td>67%</td>
<td>77.5</td>
</tr>
</tbody>
</table>

**Drug use history**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Non-codeine dependent (n = 662)</th>
<th>Codeine dependent (n = 138)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ever used illicit drugs</td>
<td>57%</td>
<td>62%</td>
<td>1.0</td>
</tr>
<tr>
<td>Family member diagnosed with AOD problem</td>
<td>28%</td>
<td>43%</td>
<td>11.3</td>
</tr>
<tr>
<td>Ever sought treatment for any AOD problem</td>
<td>10%</td>
<td>42%</td>
<td>86.5</td>
</tr>
<tr>
<td>Sought treatment for codeine dependence</td>
<td>&lt; 1 %</td>
<td>26%</td>
<td>49.7</td>
</tr>
</tbody>
</table>

Logistic regression was undertaken to examine whether demographic characteristics, physical or mental health or OTC codeine use patterns predicted being classified as ‘codeine dependent’ independently. In the logistic regression model factors found to significantly predict dependence to codeine were a higher score on the K10 (OR = 1.08, 95% CI = 1.02–1.13), previous AOD treatment (OR = 2.33, 95%CI = 1.18–4.62), reporting having a chronic pain problem (OR = 2.32, 95%CI = 1.21–4.43) and taking a supratherapeutic dose on the last use occasion (OR = 8.70, 95%CI = 4.66–16.3) (see Table 2).

An association with dependence was not identified with age, employment, education, mental and physical health component scores on the SF-12. As such, of the items described in Table 1, taking higher than recommended doses, previous AOD treatment, chronic pain and scoring higher on scales of psychological distress may be the best predictors of developing a dependence to codeine.
### Table 2: Results of logistic regression

<table>
<thead>
<tr>
<th></th>
<th>p</th>
<th>OR</th>
<th>95%CI Lower</th>
<th>95%CIUpper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>.927</td>
<td>.999</td>
<td>.972</td>
<td>1.027</td>
</tr>
<tr>
<td>Reported health as good to excellent</td>
<td>.249</td>
<td>1.570</td>
<td>.729</td>
<td>3.379</td>
</tr>
<tr>
<td>Mental Health Score (SF12)</td>
<td>.134</td>
<td>.968</td>
<td>.928</td>
<td>1.010</td>
</tr>
<tr>
<td>Physical Health Score (SF12)</td>
<td>.366</td>
<td>.979</td>
<td>.934</td>
<td>1.025</td>
</tr>
<tr>
<td>K10 Score</td>
<td>.007</td>
<td>1.076</td>
<td>1.021</td>
<td>1.134</td>
</tr>
<tr>
<td>Was person employed</td>
<td>.717</td>
<td>1.158</td>
<td>.524</td>
<td>2.559</td>
</tr>
<tr>
<td>Completed tertiary education</td>
<td>.556</td>
<td>1.194</td>
<td>.661</td>
<td>2.159</td>
</tr>
<tr>
<td>Previous AOD treatment</td>
<td>.015</td>
<td>2.332</td>
<td>1.176</td>
<td>4.624</td>
</tr>
<tr>
<td>Person self-reports chronic pain</td>
<td>.011</td>
<td>2.319</td>
<td>1.214</td>
<td>4.430</td>
</tr>
<tr>
<td>Used doses greater than recommended</td>
<td>&lt;0.001</td>
<td>8.702</td>
<td>4.655</td>
<td>16.268</td>
</tr>
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</table>

### OTC Codeine use

The median dose of ibuprofen-codeine tablets taken on the last use occasion by non OTC codeine dependent participants reported was 2 tablets, compared with 4 tablets for participants classified as dependent (some large outliers made the distribution non-normal). Approximately two thirds of people classified as codeine dependent reported taking greater than recommended doses on the last use occasion, with just over half (53%) taking at least double the recommended dose; 14% of codeine dependent people took at least 10 times the recommended dose on the last use occasion.

Most (73%) people who were classified as codeine dependent reported using codeine every day or on most days; this is in contrast to non-dependent codeine users where 7% reported use on most or every day. Of those that reported daily use, 87% reported using the medication daily for at least 1 year; 47% of daily users had been using codeine daily for three years or more.

The overwhelming majority of non-dependent codeine users (93%) reported purchasing OTC from a single chemist on the last use occasion. The main source of OTC codeine amongst dependent codeine users was purchasing from a single chemist (58%); the second most common source was purchasing codeine from multiple pharmacies (37%). Only a minority of all participants (6 %) reported other sources for OTC codeine; the internet was only reported as a source in 4 cases (0.5%).

### Discussion

Using a web-based survey we identified a sample of codeine dependent people that were mainly employed and educated beyond a Year 11 level, with almost half having completed a tertiary degree. Of those that met the criteria for dependence, 75% had never sought treatment for their codeine dependence.

A large number of OTC codeine users had taken doses of OTC codeine above recommended doses, (for Nurofen Plus advice is not to take it for more than 3 days at a time except with doctor’s advice) and reported taking codeine for considerably longer periods of time than recommended for the licensed indication for these products (acute pain relief). Most dependent users reported using OTC codeine for regular use for at least a year. The finding that many codeine dependent participants used multiple pharmacies may have important implications when considering the need for real-time surveillance of sales of OTC pharmaceuticals.
Those that were considered codeine dependent in this study appear different on many characteristics to opioid dependent people identified in previous studies in Australia. Studies such as the Australian Treatment Outcome Study (ATOS) (Ross, 2005) and the National Illicit Drug Reporting System (IDRS) (Stafford et al., 2009), which recruit populations of mainly opioid users, have found that most participants did not report employment as a main source of income, had completed a mean of 10 years of formal education, and most had experienced treatment before. This is in contrast to the majority of this group of dependent users being employed, having completed at least 12 years of education (Year 11 equivalent) and most being treatment naive. This may be a result of this study methodology reaching a broader population than is possible with ATOS and IDRS study methodologies which tend to access populations already familiar with alcohol and drug services. This highlights the value of using innovative techniques such as new technologies to understand and identify new patterns of drug use in other populations. This population being a mean of 37 years old and 66 female differed in gender from the IDRS 2009 (mean age 37 years, 64% male) and age and gender ATOS 2005 (mean age 29.5 years, 64% male).

Implications of web survey findings

Treatment needs for codeine dependent people
In identifying a different population of opioid dependent people, one important consideration is whether current treatments for opioid dependence would be appropriate for this cohort of opioid users. Whilst almost all participants who were classified as codeine dependent felt their codeine use was a problem for them, only a quarter had sought treatment for codeine dependence. This suggests that there is an unmet treatment need. It is not clear if the suppliers of OTC codeine products, that is pharmacists, are knowledgeable in assessing codeine dependence or are aware of appropriate referral pathways. Further work is required to examine this.

Risk factors for codeine dependence
There was an association between OTC codeine dependence, chronic pain and poorer psychological functioning. This is consistent with the well accepted association of chronic pain with conditions such as depression (Katon, Egan, & Miller, 1985; McWilliams, Goodwin, & Cox, 2004). This is also important to help inform the treatment needs of this group, with additional consideration given to addressing chronic pain and thereby improve treatment outcomes.

Other factors that may predict the development of codeine dependence, identified through this and other studies, include previous history of AOD treatment or family history of drug dependence and chronic pain (Ives et al., 2006).

Universal precautions for self selected medication
Others have recommended screening those requiring opioid based pain treatment using a universal precautions framework to identify those at greater risk of developing dependence (Gourlay, 2005). How to apply this to medications that are often self-selected is an important area for consideration; allowing people who use codeine to make an informed choice about this risk and to self-monitor the development of dependence is crucial to prevent unnecessary harm.

Limitations of web surveys
There are some limitations of a web-based survey method. This is the first web-based survey into over the counter pharmaceutical dependence in Australia and should be considered the basis for further work. Due to the restrictions in length we were not able to administer lengthy tools to assess dependence and withdrawal. Notwithstanding, the SDS tool used to look at withdrawal has been found
to be reliable and valid for a range of substance dependencies. The generalisability of the findings of a larger population of codeine users needs to be considered. A sampling bias can result from a web based approach this sample may not be representative of all codeine users. However, this methodology has enabled a closer examination of codeine dependence in a population not usually included in study samples into opioid dependence in Australia.

**Future work**

The finding that there are characteristics associated with OTC codeine dependence may be useful for developing screening tools aimed at identifying those at most risk. Areas that may be useful to explore based on the findings of this survey include

1) Dose: has the therapeutic dose been exceeded?

2) Is there a history of substance use disorder or treatment?

3) Is the person experiencing some form of psychological distress?

4) Does the person have chronic pain?

The best way for these questions to be used in a pharmacy setting should be the subject of further work; it is also important to validate a screening tool in a wide variety of codeine users. This work suggests these characteristics could be used as potential flags indicating more caution or information are required. Where these characteristics are identified those responsible for supply of non-prescription opioids may be able to talk to patients about the potential association with dependence and put extra safeguards in place such as supplying smaller quantities, monitoring for difficulties controlling codeine use and referring for further care where conditions like chronic pain do not appear to be adequately managed.

The next stage of the research design was designed to better understand how people develop codeine dependence. In-depth studies were conducted with a small number of OTC codeine dependent people, giving a further context to understand the findings of the web survey.
CHAPTER 4: QUALITATIVE INTERVIEWS WITH CODEINE USERS

Introduction

This phase of the research completed qualitative interviews with a smaller number of people who met criteria for codeine dependence. Using open ended questions we aimed to understand people’s pathways from therapeutic to problematic use and gain a deeper understanding of issues that affect codeine dependent people.

Methods

Participants

Participants in this stage of the study responded to advertisements to participate in a qualitative interview about their codeine dependence. Participants were screened to determined dependence to codeine as per DSM IV criteria. Twenty people were interviewed who were assessed to meet DSM IV criteria for codeine dependence using a screening tool. Participants for the qualitative interview were recruited from the sample that had completed the web-based survey. At the end of the web based survey people were invited to take part in a qualitative interview (see Chapter 3 for further details on recruitment to the web survey). A phone number and email address was provided to participants to self refer for a qualitative interview. In addition, the study was advertised at alcohol and drug services and in public areas such as libraries and cafes with a study flyer so that participants could make direct contact about the study or be referred by clinic staff. Participants were screened to determine if they met criteria for codeine dependence based on current DSM IV criteria for opioid dependence. Only participants that met criteria for opioid dependence as per the DSM IV were included in the qualitative interviews.

Materials

A semi structured interview schedule was developed to explore four key areas.

- Pathways from therapeutic to problematic use
- Use patterns and product preferences
- Harms experienced
- Previous and current treatment experiences.

The schedule was developed and reviewed by experts in addiction for face validity prior to the piloting of the semi structured interview schedule. The semi-structured nature of the interview enabled respondents to draw upon their own experience and discuss issues whilst providing an opportunity for new and unexpected issues to emerge.

Procedure

Interviews were arranged in person or over the phone depending on where the person was living.

Participants were remunerated $30 for time and travel costs.

All aspects of the study were approved by the Victorian Department of Human Services Ethics Committee.
Analysis

The qualitative interviews were recorded and transcribed verbatim (for ease of reading phrases such as ‘um’ and ‘ah’ were removed from quotes when cited). We completed the analysis with the assistance of QSR qualitative software (2008). The authentication procedures included an initial content analysis of key themes and a validation process of agreement between the researchers of the themes emerging from the data before a final review of the themes was completed. Using the software we were able to compare typologies using variables such as age and gender to examine patterns of use amongst these groups.

Results

Types of codeine use

In completing the qualitative analysis we have identified three main typologies of people who use OTC codeine. The results are presented according to these groupings. These sub types within the cohort of codeine users were identified through the analysis process and represent a range of codeine use from therapeutic use through to high dose dependence.

Group 1 - Therapeutic dependence group

The first typology are a group of ‘therapeutic use dependency’ users. This group are defined by not increasing above the daily recommended dose but using the maximum dose regularly for long periods of time (in some cases 15-20 years).

This group met the DSM IV criteria for dependence but did not describe most of their use as non-medical or take very high doses. This group would often describe anxiety at the idea of not having codeine and engage in ‘pre-emptive’ use; to prevent the onset of pain which was not currently present.

A characteristic of this group was appearing able to set limits for themselves around their use whilst still identifying that the codeine use is a problem and often expressing desires to reduce their codeine use or be free of the codeine dependence. An example of this recognition of placing boundaries around this use is illustrated below.

"Yes so that was quite a gradual thing, it probably took six months to get to that point where it was four at a time instead of two. And I remember when it went from two to four you know it was like urghhh... what am I doing to myself? And thenI went from four in the morning to another two in the evening and I remember feeling as though this was the beginning of the end... that it was going to get out of control but it hasn’t. I guess going back to those grass roots reasons as to why I am taking it and being careful to not you know… I guess putting those boundaries in place ... I have been very staunch in my thinking about that saying well this is what it has to be but no more."
(Male, 35 yrs)

Pain management, and in particular headaches were one of the more common reasons for use and the descriptions of use appeared consistent with literature on medication overuse headache (Diener & Limmroth, 2004; Evers & Marziniak, 2010). Whilst this group would often take the maximum dose of these medications they don’t describe themselves as effectively treating their pain, and described a cycle of continuing to use the medications despite their limited effectiveness and worsening pain.

"But I never, I won’t just suffer, nah, no." (Female, 37 yrs)

"Um, well look I guess I always have painkillers on me or have access, or can get to them somehow, you know drive down or whatever if I’m staying with someone or whatever but yes I still am in a lot of pain even after I’ve taken them, you know what I mean, like it doesn’t
always get rid of, it does sometimes but it doesn’t always and I can be at uni or whatever and in such agony and can’t open my eyes, I mean my headaches are one sided but I couldn’t open say my right eye.” (Female, 29 yrs)

Despite the difficulties of managing pain this group’s OTC codeine use did not escalate over the recommended dose for periods of months to years.

Some people from this group then transitioned to high dose dependence after a period of not exceeding the therapeutic dose. One participant described using these medications at a maximum dose for a pain condition, and then escalating into ever increasing doses after a period of controlled use.

"...It wouldn’t have been more than the eight a day,... most days I would have been taking the full amount for nearly the 10 months” (Female, 42 yrs)

This same participant went on to describe that after 12 months of taking codeine she began episodes of taking 6-8 tablets in a 2 hours session just to try and reduce pain. The use escalated then to 16 tablets a day and rapidly up to 48 tablets a day. This participant went on to describe how around this period of use she had suffered the loss of a parent and that she enjoyed the feeling of codeine making her feel ‘numb’.

Participants in this group described different situations where they were able to control their use. Reasons for self control included concerns about health and pregnancy:

"I had four pregnancies, so each time I'd try and keep my use really, really low during the pregnancy and then the early days of breastfeeding and then by the time I'd weened them I was back on a more normal amount.” (Female, 44 yrs)

A theme amongst those that fitted into the typology of therapeutic use dependence often made references to limiting their doses and not exceeding maximum doses, clearly expressing a wish to retain control:

"It’s been interesting the last two weeks there have been probably been times where I haven’t touched it until you know mid afternoon so that sounds so funny saying that but even to even get to 2 o’clock without thinking about it are big things considering that it’s been a long time since I have not been on medication so I have looked at that through fresh eyes over the last couple of weeks. I have managed to get till 2.30pm or 3 o’clock without even things about pain discomfort or any psychological discomfort that might come not being medicated. That has kind of given me a bit of a ray of light... like a crack that I am starting to see... that maybe there is a time for me to set aside and say well ok all being well over the next three days I am going to try and have one and a half or two of them being medication free so in saying that yeah... it definitely is a problem... there are no two ways about it. The thought of just not doing it is certainly not terrifying but one that does sort of make me say well I got a start manipulating here and start thinking of ways that I can get out of making that commitment there is definitely the old beast of addiction that uh rears up but I wonder how much of that is due to the current sort of medications or the old Frank that sort of was so dormant that now turns around and says I am not going through that again. I don't know what it would be like, it’s like I have never had those times of abstinence from it for a good year at least so it’s definitely controlling me to some degree". (Male, 35 yrs).

1 Names have been changed to preserve anonymity
Group 2 - Non-medical/recreational user group

In our sample, a second group of OTC codeine existed who identified their use as recreational or were using codeine purely for its euphoric effects, with descriptions of codeine being fun and providing a positive experience. This group clearly define their use as being outside the realms of medical use.

Common characteristics of this group were good knowledge about ingredients and harms, and the use of harm reduction practices such as codeine extraction to reduce the intake of paracetamol.

Comparisons were made by this group to other drugs, including comparing cost and safety:

"I think it's also a very cost effective habit, that's why it's maintained. I mean on heroin I'd be paying maybe $25 a dose whereas you know opiates I can get a 72 pack of Nurofen Plus for $13 which means I'm spending you know $6.50 a day on a drug addiction which is really good, it's really cost effective." (Male, 25 yrs)

"I mean its so cheap codeine, I mean at $15 for a packet of 100 tablets ...that's really cheap, $7 a hit is great"  (Male, 30yrs)

At one point at a potential milestone of the participant’s education he decided to try heroin as a treat and was disappointed following his codeine experience, demonstrating the positive perception of codeine compared to illicit drugs common:

"I just felt like oh is this all heroin is about, and the other drug [codeine] that I was taking I liked that a lot better so I stuck with that. I was shooting it [heroin] up for a while, maybe four months, but it was a massive hassle getting hold of it and I quite consistently got ripped off and I've... like there's a lot of stigma with needles, it just wasn't worth it for a lot of reasons. Like finding a vein and not fucking up your veins is a hassle, you've got to get fresh syringes, that's a hassle too, the cost of it, just yeah, not worth it.....heroin was too much of a hassle and it was too expensive." (Male, 25 yrs)

Participants in this group made comments reflecting knowledge about the products they were using, ways to reduce harm.

"...so that's a gram of codeine a day but I probably wasn't getting that much because it was, the extraction system wasn't that efficient so out of that 1000mgs I was probably getting maybe 500mgs which is still a shitload of codeine..." (Male, 30 yrs)

"...whatever it was I do my research, it's not like I'm an idiot and I just randomly chose a number of tablets..." (Male, 25 yrs)

The desire to be knowledgeable and reduce harm suggests that this group are amenable to harm reduction messages.

Some recreational users were identified to have transitioned to the high dose dependence use patterns after a period of recreational use.

Group 3 - High dose dependence

A third typology were identified of whose use had transitioned to high dose dependence patterns. This group may have transitioned from the therapeutic or recreational use (as shown in Figure 1).

An example of the transition below, taking a combination of prescribed and OTC codeine:
"I started off taking them four hourly and then it wouldn't affect it for that long so then I'd take them two hourly and then once the Dr put me onto the prescription Panadeine Forte for a little while I just took a couple of those and that seemed to help but not for very long and very soon I was taking perhaps two Panadeine Forte plus three or four Panadeine or Mersyndol or something OTC as well. It sort of got into a vicious cycle where I could take six Panadeine Forte and then two hours later take four Panadeine or one of those and it wasn't until, I mean really the Dr should have picked it up earlier, I didn't even know about it, that you could become addicted to them. It sort of never occurred to me. It was only when I swapped Dr's and I went for a Panadeine Forte prescription and she said but I only gave you one three weeks ago and I said but they're all gone that she actually picked up that I was addicted to them." (Female, 54 yrs)

The transition from therapeutic use to high dose use was linked to experiencing a good feeling from higher doses of codeine for some people as the comments below demonstrate:

"Obviously one minute I had a headache and the next minute I was feeling quite great and quite relaxed." (Female, 31 yrs)

"It was mostly just when I got period pain or something like that. I would definitely always have Nurofen Plus in my drawer and would wait obviously until it was that time of the month and at the first sign of any sort of headaches or cramps I would just take some Nurofen Plus but I would never exceed the dosage in one day. Like I would only ever have six at the very most in one day and I would never do it for more than a couple of days in a row because I was really, I don't know, I guess just some stigma attached to it so I was really concerned about doing it but..." (Female, 31 yrs)

"...looking back on it.. I might have been taking sort of two every couple of days or something like that but then all of a sudden I was having them every day... it sort of went, because obviously then in the afternoon, if I'd have six and then if I really did have a bad headache during the day then I'd take some but then I'd still have my six in the evening and so then before I knew it I was taking more than the recommended daily dose and sort of ignoring it in a way, just turning a blind eye..I used to sort of probably split it up throughout the day so that like I think it rapidly jumped up to about 10 or 12 a day" (Female, 31 yrs)

"...after between 20 and 24 tablets a day I started getting a little bit of euphoria and a little bit of "gee this is alright, this is feeling good," and uh I even, it wasn't until probably in the 40s (tablets per day) that I started getting the nods, as to what they now term as the nods. I didn't even know the term back then, I had no idea (laughs) and ah um, and I loved it, I just absolutely loved it at that stage and there was no going back". (Male, 42 yrs)

Patterns of dependence were characterised by daily use of high doses, opioid withdrawal syndromes, continued use despite harms (including a range of physical and social harms). One person described taking 48 tablets a day and described compulsive use, being unable to go without the codeine:

"I couldn’t go a day without it. So by the time it came around to that sort of 4pm – 5pm time yeah I really needed it, yeah, I really needed it." (Female, 38 years)
This high dose dependence group were defined by their use of excessive doses (up to around 100 tablets per day). People in this group acknowledge that their use is problematic but report difficulties controlling their use despite having an awareness of the risks of experiencing severe side effects/adverse effects.

Quite graphic stories are described by this group; several descriptions such as the one below were made illustrating the desperation experienced by this group:

One participant described taking over a hundred tablets in one day and up to 24 tablets at once. When asked if it was hard to swallow they replied:

“Yeah there were a few times when they (the tablets) were stuck in my throat and I had to sort of put my fingers down to get them out otherwise I felt like I was going to choke” (Male, 35 yrs)

Other descriptions were also given of difficulty swallowing the tablets:

“I just swallowed the rotten things down and yeah it was really hard towards the end because your stomach, it heaved and you just felt sick, even the smell of them made me feel sick but I needed that hit so I swallowed them all down and I think at one stage I was able to get half a dozen down in one go but by the end I was lucky to get one down at any time.” (Female, 42 yrs)
Other Issues

This section will now present some of the other relevant and emerging themes that were identified amongst codeine dependent people.

Illicit Drug Use

Very few participants described a history of illicit drug use, and only two participants described current illicit drug use. Most of the participants that had ever used illicit drugs described this use as a significant time ago, and most references were to trying a drug once.

Heroin and amphetamine use were not commonly reported amongst the group of people interviewed. Four reported lifetime use of heroin with two reporting a more significant history of heroin use. One participant described smoking heroin, and currently only doing that occasionally. Similarly only three participants reported ever using amphetamines, none reporting a substantial use history. Cannabis similarly was reported by six participants with most references to a history of occasional use (for some participants a single use experience).

The patterns of minimal polydrug use and a lack of current use of illicit drug use appears to be in contrast with other opioid dependent samples described in the literature. Most participants interviewed did not report a history of illicit drug use, and those that did reported low levels of use.

For the small number of people that did report illicit opioid use comparisons were made between illicit drugs and codeine. One participant commented that they tried heroin but due to the hassle associated with acquiring illicit drugs and the side effects preferred codeine.

"... I would have gotten into heroin for a while, I was shooting it [heroin] up for a while, maybe four months, but it was a massive hassle getting hold of it and I quite consistently got ripped off and I've... like there's a lot of stigma with needles, it just wasn't worth it for a lot of reasons.... I also got really bad pleuritis, which is like a histamine response, if you know you scratch your face it's like you get a rash or something, you feel really flushed....that's the allergic response to opiates. Anyways... and I never got that off codeine.... I think I stopped buying heroin but I just replaced it with opiates, sorry codeine because heroin was too much of a hassle and it was too expensive and stuff." (Male, 25 yrs)

One participant reported having used OTC codeine as a substitute for heroin when they were heroin dependent. However, their current use of codeine started following an injury and considerable pain.

Prescription Pain Medication

Many participants had reported using stronger prescription analgesics, with almost three quarters of those interviewed describing previously using Panadeine Forte®, oxycodone or morphine.

One pathway to OTC codeine use was following use of higher strength prescription paracetamol codeine products (for example Panadeine Forte® was often specifically referred to) with participants describing some forms of OTC codeine as easier to access:

"I started out on a low dose of Panadeine Forte® when I went to the doctor with my back and I'd supplement that prescription with over the counters..... mainly Nurofen Plus... and it was easier to get Nurofen plus than it was to get the Panadeine Extra for some reason; it was only one and a half milligrams difference in the dose." (Female, 63 yrs)
Amongst the sample common themes were

- Familiarity with products like Panadeine Forte®
- References of taking OTC pain relief at a young age (influence of parents etc)
- Descriptions of positive experiences and feelings from Panadeine Forte®.

A few people described this transition of using prescription analgesics but then going to OTC when prescription analgesics were no longer prescribed.

"I was on the Endone for about a month and then of course, then they gave me Panadeine Forte®, I was on that for I think about six months and then of course it all stopped and then I was told to just use OTC." (Female, 38 years)

Another participant was prescribed Panadeine Forte® for around two months before commencing OTC codeine use:

"Yeah I just ran out of Dr’s, I’d been to so many different Dr’s and sort of, I ran out and I found out, actually my father bought a packet because he had lower back pain and I think I got a couple off him and I thought these weren’t too bad, they had 12.8mgs of the codeine..." (Male, 35 yrs)

**Benzodiazepines**

Benzodiazepine use was reported by almost half of the sample (eight participants) with alprazolam being commonly mentioned.

**Other OTC drugs**

One participant described self medication with other OTC medications to counter side effects of codeine, in this case using lactulose to counteract the constipation from codeine:

"...it took me many years to discover lactulose, because I wanted something and I knew that Ford pills were addictive and um, I knew that they will take more and more and more to get the same effect. Using Senna tablets and all that, I knew that, well I had heard that they were addictive as well. Lactulose is non-addictive and um a little but more effective at it, at managing it, although you have to be careful about how much lactulose you take, it’s a balance of getting the runs and getting it right so you gotta watch that" (Male, 42 yrs)

**Alcohol**

Fewer participants made reference to alcohol with most reporting that they only drank infrequently, with most identifying the effects of combining codeine and alcohol. Three participants also reported a history of heavy or problematic drinking.

**Use Transitions and Pathways**

In our sample we recruited a range of users, including regular users who didn’t exceed therapeutic doses, those that gradually increased to high doses after starting using codeine product for pain relief, and those that use codeine as substitutes for illicit drugs or in some other recreational context.
**First use of OTC codeine**

Many participants recalled OTC codeine use from a young age and often reported parents giving codeine to them. Histories of headaches or other pain, often spanning more than one generation, were common among this group.

"My mother had always been a migraine sufferer and consequently I think when I started getting headaches instead of perhaps waiting and seeing if you know it was just a headache she started me on codeine very early on, just the OTC one. I think that was because she had really bad migraines which she took prescription medication for and she didn’t want me suffering like she suffered so she thought oh well if I knock these on the head, instead of which she sort of introduced me to OTC pain killers quite early and I think that probably added to my attitude of well you know they’re only OTC." (Female, 54 yrs)

This participant went on to experience severe headaches and was hospitalised for detoxification with her codeine dependence. Interestingly, once detoxified of codeine the headaches abated, suggesting that withdrawal from codeine may have been contributing to much of her headaches.

"Once I got off the codeine, one of the things that this new Dr introduced was acupuncture and I must admit that did help and since I was having that regularly, that really did help the headaches and I think that got me through as well and once I got rid of any of the residual addiction, my headaches obviously lessened." (Female, 54 yrs)

Others with substance abuse histories, and higher levels of neuroadaptation started using higher doses from the outset:

"Well I just sort of realised that you know, I’d just given up heroin and I realised that you know hey, I could have a handful of these and you know, so really I was abusing them really from the start." (Female, 44 yrs)

**Dependence following therapeutic use**

As noted above a common theme was that people described a transition of using prescription analgesics to using OTC medication when prescription analgesics were no longer prescribed, and in some cases they were recommended to use OTC analgesics as required post discharge from hospital.

"I was on the Endone for about a month and then of course, then they gave me Panadeine Forte®, I was on that for I think about six months and then of course it all stopped and then I was told to just use OTC." (Female, 38 yrs)

After two months she had exhausted the prescribers that were willing to supply Panadeine Forte®.

"I just ran out of Dr’s. I’d been to so many different Dr’s and sort of, I ran out and I found out, actually my father bought a packet because he had lower back pain and I think I got a couple off him and I thought these aren’t too bad, they had 12.8mgs of the codeine...” (Female, 38 yrs)

Others had similar descriptions of transitioning to OTC codeine from prescription pain medication:

"When I left the hospital they gave me oxycontin and endone, reducing over around 10 days, and then no further pain relief....The pain was still significant so I started using (OTC) codeine again." (Male, 35 yrs)

"the surgeon put me on Panadeine Forte® and so I was back on that for the pain in my finger so I had from him, I had three prescriptions of Panadeine Forte® and then no more because it had settled down, the finger wasn’t that bad. But by then I was addicted to it..." (Male, 35 yrs)
again and he wouldn’t give me any more prescriptions for Panadeine Forte® so I went back to the chemist and bought OTC stuff again.” (Female, 50 yrs)

“it was only when I had a motorcycle accident, I was in hospital and needed to be on pain medication and a lot stronger obviously than OTC. When obviously you know my, sort of issues got better, I was told that look if I needed to use pain medication I’m best to use OTC Nurofen Plus or Panadeine, something like that and of course I did start using that and from there...” (Male, 38 yrs)

“Yeah I just ran out of Dr’s. I’d been to so many different Dr’s and sort of, I ran out and I found out, actually my father bought a packet because he had lower back pain and I think I got a couple off him and I thought these aren’t too bad, they had 12.8mgs of the codeine... Yeah so I just got them OTC and I was on, started off about two packets a day because they weren’t as strong as the Panadeine Forte®.” (Male, 35 yrs)

This theme of untreated pain post hospital admission was reflected by two further participants also who had previous dependencies to codeine, returning to codeine use after discharge from hospital. The pathway from prescription opioids during hospital admission to other problematic substance use is an area that requires further research. There is the possibility that additional follow up of patients following the prescribing of strong analgesics may be warranted, or more detailed information given at discharge from hospital.

In one case a participant was embarrassed to ask for more scripts (from their doctor) because of a history of dependence so for this reason they purchased their own OTC codeine products:

“I didn’t want to ask my GP for a prescription for Panadeine Forte® or Endone or any, or codeine or anything like that ... he didn't want to write the prescriptions for codeine anymore so I, that’s when I started buying it OTC, Panadeine because I was too embarrassed to ask him for a prescription for codeine phosphate.” (Female, 50 yrs)

**Blurring between therapeutic and non-medical use**

Some participants were able to identify the point at which they began transitioning between therapeutic and non-therapeutic use, either by ever increasing doses, or by taking the medications for reasons other than intended, recognising that they perhaps didn’t have the amount of pain that might necessitate medication but were taking the medication anyway:

“Yeah it’s sort of blurry that line. You know I always kind of look back and think when was that stage when I crossed over but I guess maybe the work stuff, that was what changed it, maybe that was what become non medicinal to just taking it so from your migraines and that to maybe you know a bit of a swap back to working long hours so thinking I’ll take this so I can get promoted and think this is sweet you know and everyone thinks I’m the greatest worker. I thought this is alright. But even then, maybe the work side of things... I realised I wasn't actually feeling you know so much pain that I had to take it you know.” (Male, 21 yrs)

Another participant described escalating codeine use for dental pain, and reduced control or awareness of amounts taken.

“Instead of going to the dentist I found that I could relieve my pain just as effectively by popping more tablets. And next thing you know I was going over the directed amount of my tablets and this was a process of probably three months that I was doing this in... I then probably went over my recommended dosage by quite a lot at this stage, so it was probably at between 12 and 15 tablets a day of Nurofen Plus and found that it was managing my pain quite effectively. I then found ..I was just taking them per day and I was just popping them by habit at this stage and I wasn’t probably counting them, ‘oh just take them as needed.” (Male, 42 yrs)
A further participant described finding that escalating his dose meant he got rid of his migraine but also gave added benefits during a stressful period at work:

"Initially I did and then I thought well you know if I doubled it then it would work better so it would get rid of my migraine more so yeah I was taking, instead of two I was taking four or five at a time just to you know try and get rid of it initially... I was probably only having it when I actually needed it. I'd still take more than I was probably supposed to have but it wasn't to my mind of thinking I was dependant on it at that stage. It was just a medicinal thing...." (Male, 21 yrs)

"....I got promoted to the area 2IC and then I thought, when I was taking the codeine I found I could work longer because I didn’t have the pain....so it was sort of masking the pain a bit at the same time thinking OK I need to get through a whole day of work here so I was working 14 hour days, 15 hour days almost every day and I was just taking codeine." (Male, 21 yrs)

"it became more of a work based thing and I thought, well I was taking four at a time, five at a time in between breaks and stuff to get through you know what I thought the pain at work and then it just progressed to just taking them for the fun of it. Every day I’d have 20 to 24" (Male, 21 yrs)

Another participant described positive feelings following codeine use for pain relief, identifying benefits of the good feelings in addition to the pain relief:

"Absence of pain becomes initially, oh look that's good, that's gone and then you think isn't this lovely, oh this is wonderful and floaty and life's great. It doesn't last really that long, really at the end of the day, it really doesn't last that long." (Female, 38 yrs)

**Pre-emptive use**

Some participants described using codeine in a ‘pre-emptive’ way,

"I've never increased the dosage, I've never taken more than two in any one go but I might have taken two, two hours ago and then two another....Of a work day it usually comes on in the afternoon about 3pm....so I just always like to have some in my bag, I've got some in my desk and then I have got some at home in case I get one on the weekend. It had become a routine. It's like its 3pm and I'm going to get a headache and you sort of go am I talking myself into it .... I was taking it in advance of the pain." (Female, 37 yrs)

Another person had a similar story of taking no more than 8 tablets a day but never having a day without and sometime doing pre-emptive medication in case of pain. This is recommended in pain literature to do 'round the clock dosing', however there is a limited evidence base for the use of combination codeine products in this way.

"There is probably certainly times when the pain is not as severe as it would need to be in order to medicate um, so I guess there is a degree of habit or habitual taking um or the 'just in case' kind of medicating." (Male, 35 yrs)

**Awareness**

Awareness that use had become problematic was often only seen in retrospect, or after interaction with health professionals regarding pain issues. Interaction with health professionals (nurse, pharmacists and a dentist) were identified by different participants to have been the catalyst for their own awareness that use had become problematic. Examples of these interactions described by a number of participants are detailed below:

"I didn't, I didn’t really know until... see it was 12 months after I’d originally started I had this incredible pain down the right side of my face and I thought it was a migraine and I went and saw my Dr and she wanted me to see a neurologist because I had a few tests done and
they couldn’t find anything ...by the three months time, by the time I got to see the neurologist I knew I was hooked. I’d be up in the middle of the night in incredible pain; I would take a couple of analgesic calmatives… I know at one stage it was called Fiorinal and then I just went to the chemist brand because they were cheaper and I’d have a couple of those, nothing would happen and they were meant to calm you down so you could actually sleep but the pain wouldn’t have gone so I’d take a couple of codeine 45 minutes later and then nothing would have happened again so another 45 minutes later I would have had another couple so within the space of about two hours I was having six to eight tablets just to try and get back to sleep in the middle of the night…. I went to the dentist and at this stage I knew I was hooked on the pills.” (Female, 42 yrs)

“It sort of got into a vicious cycle where I could take six Panadeine Forte and then two hours later take four Panadeine or one of those and it wasn’t until, I mean really the Dr should have picked it up earlier, I didn’t even know about it, that you could become addicted to them. It sort of never occurred to me. It was only when I swapped Dr’s and I went for a Panadeine Forte prescription and she said but I only gave you one three weeks ago and I said they’re all gone that she actually picked up that I was addicted to them….they put me into hospital …she said when did you take your last Panadeine and I said oh I took four Panadeine Forte and four Panadeine about two hours ago and she said yeah well you wait. And the withdrawal was not pleasant.” (Female, 54 yrs)

“I’d convinced myself that if I didn’t have them I couldn’t function and I found that out because when I didn’t have them, I was just like a mess. I was just a mess. I couldn’t do the housework, I couldn’t, I had headaches, I was just a mess and I went up… My partner actually took me up to the Dr’s this day and I was shaking and I was upset and depressed and everything and I went into the Dr and he said look you need help. This is so, the first Dr who had ever said it to me. I thought to myself yeah I do need help.” (Female, 38 yrs)

“I went to my Dr, GP to get full check up, blood and everything you know and he saw my liver is nearly going and he asked me, he goes are you drinking alcohol? I said no, he goes so do you take any tablets and I go oops. I have to tell you and I did tell him and he got panic. He was in panic. He tried to put me in this place; he goes you have to stop these tablets straight away. Your liver is nearly going if you, you will die because you can’t live without liver.” (Female, 39 yrs)

“...they found the scrap hundred packets of Nurofen Plus and so they bagged it up and took them down to the office and tipped them out of the table…” (Male, 21 yrs)
It seemed fewer participants came to the realisation that something was wrong, or accepted that their use was excessive without external intervention, either from a family member, colleague or health professional, highlighting how important the need is for health professionals to ask about OTC medications to enable early detection of problematic use.

In trying to understand how people rationalised using such high doses of OTC codeine without recognising that a problem had developed revealed a perception that requiring higher doses (as time passed) was normal.

“...if you can take 2+ 2+2 you can take 6...'you know you need it for the pain' type thinking...it was that agony in the middle of the night that started me increasing my dosage. I thought, gee I can have these six in that space of time; well I can have them (six tablets) every time during the day that I need them. You know, your body gets used to that amount of codeine and you need more.” (Female, 42 yrs)

...rationalising that they just needed to take more because it wasn’t working or wasn’t strong enough.

“It wasn’t strong enough and I was developing a tolerance towards it. I must have been in hindsight but I didn’t know that at the time. It was only when I was actually without the tablets that I knew that I was actually in withdrawal.” (Male, 42 yrs)

There were also participants who thought that because they were taking some precautions (in this example taking it after food) it was acceptable.

“...(if) I really did have a bad headache during the day then I’d take some but then I’d still have my six in the evening and so then before I knew it I was taking more than the recommended daily dose and sort of ignoring it in a way, just turning a blind eye. I guess I was thinking, even today I sort of like to this day I sort of think well if I have them after food it’s OK, you know it’s so not, depending on what you’re taking but I don’t know, I guess it’s a mental thing as well because it’s something I’m ashamed of but if I do partly the right thing I can somehow justify it in my own little world.” (Female 31 yrs)

Some codeine users likened continuing to take OTC codeine, despite the risks, as similar to smoking despite health warnings, or thinking ‘something has to kill you’:

“I can see it creeping up, um, but maybe I’ll die before then so... you just can’t worry about that, you just can’t. I mean I don’t know how smokers look at it, but smoking you might be going to die from smoking cancer related illnesses, does that make them stop smoking or do they just think oh well, what will be, will be, I dunno.” (Female, 58 yrs)

“Look it did creep up on me, it did creep up because you sort of think you’re in control of it and I can stop it but once I, I think the first time I tried to stop taking it, I realised that I can’t do this, I can’t do it and then you think well I’ll have to keep taking it and then you have these silly ideas, oh well you know, I’ll be OK, oh you know you’ve got to die of something.” (Female, 38 yrs)

Raising awareness that by escalating doses beyond the maximum dose is a warning sign that dependence is occurring has been identified in consumer information in the United Kingdom (The British Pain Society, 2010). Advising consumers that to talk to a health professional if they identify
these warning signs is a strategy that may similarly be adopted in Australia, and appears to be a salient message based on comments made by the participant above.

Participants often commented that they only realised that they had a problem after running out of the medication and/or experiencing severe withdrawal. Despite this awareness however, high dose use would usually continue for some time with participants describing a loss of control over their use by this stage.

Pregnancy was a key point at which some of the females interviewed identified that they needed to reduce their codeine use.

Loss of control
Despite an awareness of a dependency, strong warnings or considerable harms from their OTC codeine use some participants described continuing to use high doses.

“I’d probably have 16 a day or something at the start when I was having that tooth pain… I had tried to cold turkey before that but my Dr warned me not to when I came clean with her and then we started a tapering thing but then I went back and at the end I was having something like 36 pills twice a day.” (Female, 42 yrs)

When the same participant was asked if she knew she was putting herself at risk she replied:

“I knew and by that stage, when I was having that many… I mean I kind of, when I started to feel really sick, trying to get them down, I got back down to 36 in one go and even that was pretty difficult because you’d retch trying to get them down but you just knew you needed to get them in there to make you feel OK again” (Female, 42 yrs)

These reports are consistent with established features of opioid dependence, such as continued use despite harm (American Psychiatric Association, 2000).

Escalation
The period of time from first use to escalation varied somewhat between participants. For some people defined as ‘therapeutic users’ control would be maintained for a period of months to many years, however other therapeutic users went on to take high doses (and thus transition into a new category).

A common theme reported was that once people experienced the euphoric effects of codeine their dose would escalate. This is explained by one participant below, who initially started using lower doses at night to relax and within a month he had become a regular user:

“It was a pretty low dose; I think it would have been probably 40mgs or 50mgs… of codeine… pretty much night time, 9pm, 10pm, basically straight after work… when the doses went up more, (I felt) euphoric, just a basically an overall relaxation, yeah it just helped to get rid of the stress….

Yeah it just basically became closer and closer together until I was doing it every day and the doses started going up and up and I kept on trying to improve on it….Probably only within about a month until I was using it pretty much daily.” (Male, 27 yrs)
Another participant identified taking more tablets in a single dose as having a more positive effect than multiple small doses:

“Like the feeling is something that I started to crave and I knew that taking six at one time would give me a lot better effect than taking two in the morning, two at lunch and two at night.” (Female, 31 yrs)

However, after this point of taking six tablets at once her use quickly escalated. The same woman went on to explain that even though she was taking six at a time, because a six tablet dose was within the recommended daily dose, she could justify this (despite the fact that the maximum dose was frequently repeated in one 24 hour period). Knowing that she was following directions such as taking the medication after food assisted in her own rationalisation of exceeding the recommended doses:

“I’d have six and then if I really did have a bad headache during the day then I’d take some but then I’d still have my six in the evening and so then before I knew it I was taking more than the recommended daily dose and sort of ignoring it in a way, just turning a blind eye. I guess I was thinking, even today I sort of like to this day I sort of think well if I have them after food it’s OK, you know it’s so not, depending on what you’re taking but I don’t know, I guess it’s a mental thing as well because it’s something I’m ashamed of but if I do partly the right thing I can somehow justify it in my own little world.” (Female, 31 yrs)

One other participant described use that was initiated for dental pain but which rapidly escalated, once he discovered that extra tablets relieved the pain, resulting in a delay in going to see the dentist:

“… after a while my teeth were hurting even more ....Instead of going to the dentist I found that I could relieve my pain just as effectively by popping more tablets. And next thing you know I was going over the directed amount of my tablets and this was a process of probably three months that I was doing this in... I then probably went over my recommended dosage by quite a lot at this stage, so it was probably at between 12 and 15 tablets a day of Nurofen Plus and found that it was managing my pain quite effectively. I then found once I got ... that I was just taking them per day and I was just popping them by habit at this stage and I wasn’t probably counting them, "oh just take them as needed.” (Male, 42 yrs)

This once again demonstrates people rationalising their OTC codeine use in part by the fact they were following directions such as ‘take after food’ or ‘take as needed’. Clear guidelines about what is inappropriate use of these medications may help with earlier identification of problematic use.

Relapse

Descriptions of relapse and ongoing use varied. Consistent with opioid dependence being defined as a chronic relapsing disorder (Cami & Farre, 2003), codeine users described long term patterns of use, withdrawal and relapse. One example of the circumstances of post exposure and relapse is described below:

“I didn’t use Nurofen Plus® for I think it was about eight months and it was I guess a headache again and I just, I think I got cocky to be honest and just thought OK it’s been all this time, surely I can have Nurofen Plus to get rid of this headache and nothing will happen....I think it was about eight months from going cold turkey and then when I convinced myself that it was OK to have a couple which I did... originally I didn’t buy a packet, I took, I asked a lady at work if she had any headache tablets and she happened to have Nurofen Plus so I took two of those but then I guess in the afternoon I remember sitting at work just thinking about how it was making me feel and like enjoying that relaxation feeling again so on the way home I bought a packet of Nurofen Plus.” (Female, 31 yrs)
**Decision to seek treatment**

The role of the pharmacist and the inconvenience of going to multiple pharmacies was a ‘light bulb’ moment for a number of participants, with the interaction with the pharmacist being identified as having helped them make the decision to seek treatment.

An example of the increasing inconvenience of ‘pharmacy shopping’ is described below:

"I guess I thought I can’t continue on like this. Like I think it was the stress of going to each, you know different pharmacy every day and planning my whole day around getting a packet of codeine every day because I used to go almost every day to get a pack." (Male, 21 yrs)

This suggests measures such as reducing pack sizes and involving pharmacist in the sales appear to be effective measures for some people in raising awareness and bringing about change.

However, awareness didn’t necessarily mean seeking treatment straight away, with participants describing awareness and ambivalence about their use.

"I have to say there was a love hate relationship with the drug where I loved the feeling and hated the agony that I had to go through pharmacy to pharmacy to pharmacy to pharmacy to be chasing these drugs all the time.” (Male, 42 yrs)

**Reasons for use**

There was a range of ways people described using codeine, which were not mutually exclusive and some have been cited previously but include:

- Initiating use for pain however transitioning to high dose use once the euphoric effects of codeine were identified

- Initiating use for recreational purposes and developing a high dose dependence

- Transitioning from prescription opioids (whilst under medical supervision) and using OTC codeine post discharge from care

**Recreational use**

As highlighted previously, OTC codeine was used as a substitute for illicit opioids but was also used because of the calming effects of codeine identified by those using OTC codeine recreationally:

"Just the calmness, good for hangovers. Good for sleeping, good for, I found it really good for social situations. I actually think of the first time I really did an extraction and ended up at a bar in Fitzroy or somewhere actually and thinking back this was probably when I was about 19 or 20 and just that sense of calmness and also not really wanting to drink at that point which was kind of interesting. So I’d normally go out and probably drink to excess and get a hangover and then you’ve got this sort of comparative state and sort of feeling a sense of calmness, probably also calmness around people like I’m probably not the most social type of being but feeling you know in a sense of control and I can remember that was the sort of first time I went out with that feeling so yeah and that’s sort of something that I guess I was continuing to seek.” (Male, 38 yrs)

"Around that time, a close friend and I would go for coffee in the city, like once a fortnight and I have fond memories. We’d go to Gloria Jean’s in the city, in the mall, read some books then we’d go to Hyde Park or the Domain, the Botanic Gardens sorry and we’d each take some codeine and we’d just sit and relax and talk and it was fun.” (Male, 25 yrs)
Medication overuse headache
Some participants described a ‘viscous cycles’ of constant headaches that were either later identified to be medication overuse headache or consistent with this phenomenon. Two examples of this are included below:

“I was getting cluster migraines, one after the other, as one went away another one would start, that’s what I thought but … what was actually happening was my body had become used to such a level of codeine that once that level started to drop I started to get a withdrawal headache and of course I would think oh god, my migraine is back, take some more codeine, I’d take some more codeine and my headache would go away and I would think oh thank goodness and two hours later it would be back again. …No it was always the headache but of course I didn’t realise that it was a vicious cycle because by that stage the headache was part of the codeine addiction.” (Female, 54 yrs)

“Yes but then also what I didn’t know at the time, but what I do know now is that obviously prolonged use of ibuprofen causes headaches as well, same with codeine so I guess it was like a catch 22, I’d take it for a headache but then it would cause headaches which I would then in turn take some more and get a worse headache. So it was like a really sort of vicious cycle. So a few times I tried to sort of cut back on the amount that I was taking.” (Female, 31 yrs)

Pain relief
Some participants reported that their use of OTC codeine began escalating as the OTC codeine was no longer working for the pain (this was a very common theme) as a result of a range of health conditions such as sinuses, fibromyalgia and arthritis.

“…and they were meant to calm you down so you could actually sleep but the pain wouldn’t have gone so I’d take a couple of codeine 45 minutes later and then nothing would have happened again so another 45 minutes later I would have had another couple so within the space of about two hours I was having six to eight tablets just to try and get back to sleep in the middle of the night.” (Female, 42 yrs)

The same participant was rationalising that she needed the medication for the pain, and that she needed OTC codeine (rather than seeking further medical advice) because the pain medication wasn’t working at the normal dose:

“…it was that agony in the middle of the night that started me increasing my dosage. I thought, gee I can have these six in that space of time, well I can have them every time during the day that I need them. You know, your body gets used to that amount of codeine and you need more.” (Female, 42 yrs)

Pain was a very strong catalyst as one participant described a strong aversion to feeling pain, and was willing to medicate her pain regardless of the consequences. When discussing the risks of her medication for her kidney, she reflected on a previous conversation about this risk:

“Well he sort of said you know... you’ll need to get a new kidney from somewhere. Whatever. I was really upset at the time and you just have to balance well yeah, that’s down the track, I live with pain now, I’ll worry about that down the track, I can’t worry about that now. If my kidney’s pack it in, they pack it in. what do you want me to do? Stop taking it and how will I live with the pain. You’re (the Dr) not going to come down and look after me.” (Female, 58 yrs)
Anxiety, Mood and Stress Relief and Coping

In addition to the transition of use with pain other participants described taking codeine in response to stressful situations and to reduce anxiety. Participants described using codeine for lifting mood or numbing emotions.

"...it made me feel a bit more relaxed and less, I dunno, less troubled I think because that was... when I was actually feeling physically dependant was around the time my father died as well and that had been a pretty hard time for me because I was closer to my father than anyone else in the family and I almost had a break down... it made me feel numb. Like I no longer had any problems. If I'd had enough to get rid of that dental pain and could go to sleep it was such a relief that I didn't feel and I guess you get into that sort of thing where you like to feel nothing and that's why you take more of it and more of it to keep that feeling of numbness and nothingness over you, you don't have to feel anything." (Female, 42 yrs)

"I use it as a stress relief that's one thing but then I also use it because I like the feeling so it's one thing to be able to treat stress...... I have tried different cognitive behavioural things with my psychologist and meditation and you know different things to try and sort of slow my mind down sometimes if I'm overanalysing things or worrying and stuff like that but nothing comes close to codeine." (Female, 31 yrs)

"I was always a very shy, isolated kid and um didn't have many friends, and had a dreadful self esteem, and I found that the codeine, by taking pain killers that I could, and I wasn't even aware then that you could get them by prescription or anything... um and I was aware that they made me feel better. Yeah, so I saw them as a 'blotting out of reality'... now that was as a teenager, and I think when I am depressed as an adult that is when I tend to take more CNS depressants" (Female, 63 yrs)

Chemical coping is a phenomenon described in the literature, initially in relation to drug use in response to coping with end stage cancer. More recently this term and research into identification of 'chemical copers' amongst non cancer patient with the term being used to refer to using pain medication (commonly opioids) to cope with stress (Kirsh, Jass, Bennett, Hagen, & Passik, 2007). The descriptions of dose escalation and use of medication to deal with life stressors are consistent with chemical coping described in the pain literature.

Trauma

Trauma experienced especially by women is consistent with other literature in the area which has concluded that there is evidence to support a self-medication theory following traumatic experiences for women (Hien, Cohen, & Campbell, 2005), this is consistent with descriptions given in this study.

"...he was always bashing me, calling me slut, putting me down, you ugly, look at your face, you know and I used to have migraine, like bad one, vomiting, I can't sit in the light you know....I took two, it didn't help, then I took, 15 minutes later another two, didn't help, I took 20 because it was bad and the bastard was, I had a pain and he's still calling me bitch, this and that, I can't take it sometimes you know. I took 20 for the headaches to go away. After I realised something, that 20 tablets of the, I become like, I don't know, my English is not that good, like whatever he did, I ignore it, you know after that 20 tablets you know. I was like flying (laughing)" (Female, 39 yrs)

Price and accessibility

Some people, specifically recreational codeine users, said that the low cost was a reason for use as demonstrated in earlier quotes. The availability of codeine and its legality were also identified as factors that contributed to recreational or non-medical use:
Perceptions of codeine use

The concept that a legal drug was ‘normal’ (i.e. perceptions around legal vs. illicit drugs) was something that was raised by a number of participants, mainly those using OTC codeine in a recreational context. In addition, stigma against illicit drug users was commonly expressed.

“...because it’s legal it’s sort of nice, like I’m really glad that I’ve found a drug that’s legal and relatively cheap and you know. I mean I’m not glad but it’s better because at least I’m not a junkie in the gutter type of thing anymore so I can pass myself off as a normal person.” (Female, 44 yrs)

The feeling of stigma expressed about other types of drug users may be associated with OTC codeine users described reluctance to seek treatment through traditional AOD services, and is further discussed in the barriers to treatment section.

Ease of access and removing the need to be interacting with illicit drug markets was described to make OTC codeine a more attractive drug to use compared to heroin:

“I wouldn’t, if I had to chase or score codeine the same way I scored heroin, I’d buy heroin. In the same way that there is illicit morphine for sale in the drug community but most people choose heroin because it’s that little bit better. That’s just consumer choice I guess.” (Male, 30 yrs)

“Yep, some people take ecstasy and marijuana, that’s it, I took opiates as a young person and even now I take opiates and that does it for me. I’m up, I’m stimulated, it doesn’t make me dopy and noddy and sleepy, yeah it stimulates me.....But when you extract the codeine out it is viable because it works, it gives you a decent hit, it’s very cheap and you can’t go wrong” (Male, 30 yrs)

“not having to deal with the illegal element you know, like having to deal with a dealer or... I’m not that social, you know I don’t find that something I particularly want in my life is dealing; I’d rather deal with just a simple monetary transaction. I don’t get off on the fear of getting busted” (Male, 38 yrs)

“Well because it’s not illegal, because it’s not something that you are not allowed to have on you. It’s something that people take every day for pain. You certainly know that you’re out of control but it’s not something illegal so look it’s OK, you know they sell it OTC, I know I’m abusing it but you know it’s there, you can get it OTC.” (Female, 38 yrs)

The perception that OTC codeine was more respectable than illicit drugs was also expressed:

“Much more respectable... certainly there was no illicitness in it whatsoever, so it was great.” (Male, 42 yrs)
**OTC Codeine is a milder drug**

It was a commonly reported perception that OTC codeine was distinct from both illicit drugs, prescriptions drugs, and perhaps more similar to drugs like alcohol and nicotine. For some the availability of OTC codeine in shops was linked to its perception of being a less serious drug:

"You know there’s a distinction, I, to me the distinction between the over the counter versus the prescription codeine, is not as vast as the distinction you’re making with say, illegal drugs and say cigarettes and alcohol, like I think they are poles apart." (Female, 37 yrs)

“No because it’s legal it’s sort of nice, like I’m really glad that I’ve found a drug that’s legal and relatively cheap and you know. I mean I’m not glad but it’s better because at least I’m not a junkie in the gutter type of thing anymore so I can pass myself off as a normal person." (Female, 44 yrs)

“Just like, just euphoria, like I dunno, just a weaker form of heroin or whatever, in my mind I didn’t really link the two but at the time I would have read oh it’s mildly euphoric and you feel warm all over and it’s great.” (Male, 25 yrs)

“I don’t really consider codeine even near the same league as heroin or methadone or ice” (Male, 30 yrs)

“No not quite as bad. Like they know that it’s bad but I think because it’s something that you can buy in a shop it’s not, it’s not a prescription drug so it’s not like you’re getting the hard stuff sort of thing but it’s um, it’s something that you can buy from a shop so it’s not as I guess frightening as if I was to go out and get heroin or something like that”. (Female, 31 yrs)

“I don’t know, maybe I just thought you know it’s not like heroin or speed so I thought this is fine, it’s just pain killers” (Male, 21 yrs)

**Codeine is similar to other opioid dependence**

Another theme that contrasted with perceptions that OTC codeine was a milder and more respectable drug emerged when other participants identified similarities between to codeine and other opioids. Comments seemed to reflect that opioid dependence is opioid dependence, irrespective of which opioid was used, identifying similarities between participants own OTC codeine dependence and other people with opioid dependence:

“...it’s still addiction and its still, I consider it all sort of the same thing because it’s still something that you, it’s affects you physically and mentally and you have to get over it, it can affect anyone (Female, 31 yrs)

“I mean we’re all the same, people who’s been on this, we all chemist shop, we all have differing needs as to the amount of pills we take but we’re pretty much all the same in that we’re just trying to numb emotions and that we have to actually seek to do something about those emotions to help us get away from the drug. Yeah we’re all pretty similar in that way so yeah...” (Female, 42 yrs)

“At the end of the day it’s 80mg of codeine that’s going into my system every day... that’s going to have an effect. Over the counter or prescribed from the doctor or bought illegally from Fitzroy or Footscray...” (Male, 35 yrs)

**Codeine use is different to illicit drug use**

Codeine users often described themselves as being different from other ‘drug users’ by not seeing their dependence as similar to a dependence on other substances. This perception is reflected in the range of comments below:

“I remember there was this one little shopfront that was on the way from where I used to work on the weekends to the tram and I think it must have been a drug counselling shop and..."
it had a huge poster of this... you know, the stereotypical drug user, this girl who was really emaciated with dark eyes and you know... and I was thinking "oh my god, how could anyone ever do that to themselves?" It’s that lay perception of “I’m not a drug addict, there is no way, things you buy in the chemist aren’t drugs.” (Female, 63 yrs)

“I guess even when I went to the detox centre I thought you know, I know this is a serious problem but then I think there were people around me like heroin users and stuff and I think, it’s not that I don’t class myself in that category” (Male, 42 yrs)

“Yes, look, it’s doesn’t really concern me. The only thing that concerns me sometimes is that I have to line up with the methadone people, or the other heroin users at the clinic, the pharmacy to get my medication and I am not really one of those sort of guys, but obviously I am, I am just another drug addicted person just as they are as well.”(Male, 42 yrs)

Interestingly, participants who were dependent on OTC codeine described how they felt about codeine. Descriptions of feeling shame and stigma about drug use were common. Language such as using the words ‘addict’ and ‘drugie’ were common, with people describing how naive they were and how the dependence really crept up on them.

“I think I was more embarrassed than anything... that people knew that I was an addict” (Female, 42 yrs)

“I didn’t even know about it, that you could become addicted to them. It sort of never occurred to me” (Female, 54 yrs)

“I didn’t think I would get addicted to it no, because I started off not taking very much and I was, I mean it was very infrequent so I didn’t think that I would get addicted to it. Obviously I realised later, but it’s quite insidious. It really does creep up on you. I couldn’t say exactly when I became addicted”. (Female, 50 yrs)

Mental health and codeine use

A number of participants identified a link between their codeine use and their mental health symptoms including depression and anxiety which were commonly reported by participants. This would suggest that participants were commonly self-medicating to manage symptoms of mental health. This idea of using codeine to cope with a range of mood disorders and psychological symptoms was a strong theme as evidenced by the wide range of descriptions below:

A combination of using codeine for managing panic attacks, social phobias and being depressed were described:

“I said I’m not even leaving the house today because if I do I’m worried I’ll go down to the chemist and at that time I was thinking if I go to the chemist I’m going to go in and get some codeine but I’m not going to have the one or two I’m going to have the whole box and because my body is not used to them, I’m going to die.”(Female, 42 yrs)

“...and then once Honours started we had these like Honours seminars where each week someone gives a talk, like a presentation on a paper and you know you sit around talking about it and I found that the codeine helped with my, I have like social anxiety and I found that I felt a lot less anxious around people in social situations and so once a week I would have taken it like... and 30 minutes before, maybe 45 minutes before the seminar just to help with my anxiety.” (Male, 25 yrs)

This young male had previously been on antidepressants and reported taking up to 72 tablets of codeine daily, again describing codeine as the only way to cope.

“...it’s hard. If I, part of me is lazy and I like getting high but a part of me, it’s the only way I can cope with things, I feel I can cope with things and if I was to be given something, or
cope with life. It’s the only way I can cope with life and the pressure I put on myself and the demands of success that I put on myself” (Male, 25 yrs)

Another participant described depression, insomnia and made references to suicidality:

“If it was it was subconscious. I certainly didn’t consciously think oh I’ll take all these tablets and see what it does to me. Or if I take all these tablets and I end up dead well who cares. But yes, so certainly I wasn’t in a very good frame of mind at the time.” (Female, 54 yrs)

Other descriptions were given of using codeine use in the context of self-medicating post natal depression

“I suffered post natal depression after my first child and I took that to. I took, you know I kept taking the codeine to try and make myself, well to try and feel better mentally. Did it cause... look I suppose in this way, if I didn’t take codeine, I would be very depressed. I’d feel awful, I’d feel very blue, feel very depressed, I had to take it; I had to take it to feel normal.” (Female, 38 yrs)

Another person described being hospitalised from depression and being detoxed from codeine whilst hospitalised:

“I was hospitalised for depression once years and years ago and they also dealt with the codeine, you know they weened me off the codeine while I was there.” (Female, 44 yrs)

For some participants pain and depression were difficult to separate.

“...about two days a week with this pain it makes me so depressed and I end up taking maximum doses just to knock me out.” (Female, 63 yrs)

One participant described her experience of trialling other approaches to cope with with her anxiety and had tried both medication and CBT but reflected that these had not been as effective as codeine in reducing anxiety.

“ I have tried different cognitive behavioural things with my psychologist and meditation and you know different things to try and sort of slow my mind down sometimes if I’m overanalysing things or worrying and stuff like that but nothing comes close to codeine.” (Female, 31 yrs)

These descriptions of using codeine for a wide range of mental health problems, taken in context with the common reporting of mental health problems amongst Australians more generally where 20% of Australians experience mental health problems (in past 12 months) (Henderson, Andrews, & Hall, 2000) and the easy access to OTC codeine helps to understand how such ‘everyday individuals’ run into difficulties with these products.

**Harms from codeine use**

Harms reported could be classified into the following categories:

- Physical side effects of the simple analgesic ingredients paracetamol or ibuprofen (gastrointestinal, liver)
- Physical harms resulting from untreated conditions (e.g. untreated dental pain)
- Side effects from chronic high doses of codeine (opioid dependence, dry mouth and constipation)
- Social harms resulting from drug dependence (effects on relationships)
- Cognitive effects if acute intoxication (e.g. car accidents)

Continuing to take OTC codeine rather than seek medical help also seemed to contribute to physical harm with people not addressing their health needs because they were self-medicating. One
Participant had lost a number of teeth because he had not attended to his dental pain as the high codeine doses were numbing the pain:

"I ended up wiggling the tooth out and didn’t have the agony that I had but because I was already addicted I still needed to keep taking the tablets to you know get rid of the headaches that would come if you didn’t have them." (Female, 42 yrs)

Other dental complications were consistent with xerostoma related to the drying effects opioids can have on the mouth:

"My teeth, I don’t know if it’s from the codeine, but you can see the holes in the top of my teeth. I don’t know if that was from the tablets, and the dryness in my mouth after. I think because it dried my mouth out" (Male, 21 yrs)

A number of participants described incidents with driving and codeine, with a number of other descriptions of mental ‘fuzziness’, and impact of codeine use on employment due to impaired cognition. People were able to reflect that driving was inappropriate. For one participant damaging her car helped bring about realisation about the need to address her codeine use while others describe continuing to drive despite harm. These dangers are illustrated below:

"I drove up into mum’s driveway, because at this stage I’d actually been evicted from my home because I was too busy buying codeine to worry about paying my rent and I hit her brick letterbox. I didn’t stop because I couldn’t figure out… I was so dopey that yeah, I couldn’t figure out that I was actually being stopped by something and I’ve actually kept the damage on my car because it’s an old car anyway so it doesn’t matter but I’ve kept it there to remind me of that fog that I was in while I was on codeine. As soon as a position came up again I went for it, in the detox unit." (Female, 42 yrs)

"I mean I used to drive my kids to school and from school and you know I would have had probably eight Panadeine, a handful of Mersyndol and a couple of Panadeine Forte and jump in the car and go and get the kids from school…. during that period of time, speeding tickets and I had a couple of, I remember I backed into our house once so I probably shouldn’t have been in charge of a car." (Female, 54 yrs)

"Oh well I nearly drove the car into a tree, because I was drinking with it and I popped probably 10 and then I was drinking and then I drove home from the pool and I was off the road, on the road, off the road, on the road." (Female, 39 yrs)

"I lost a job over it at one stage, because I was just... I nearly got into a car wreck with my manager in the car. I was just nodding off and I just wasn’t coping and I was just nodding off in appointments... it was a high pressure job where you had to perform, I simply wasn’t doing the job because I would rather take tablets than do my job" (Male, 42 yrs)

These are clear examples of harm not only to the codeine user but to the community. People using codeine described themselves feeling like ‘zombies’ or being really ‘out of it’ such as below.

"I was just really like a zombie and even, I gave up the marijuana as well so I was just on the codeine and I was just feeling very zonked and a bit nauseas all the time" (Female, 44 yrs)

"I wanted to be relaxed when I was there, and, in hindsight I was quite overmedicated to be that, and everyone probably could see that I was drugged out of my mind except myself and that is a real negative point as well, you don’t have as much insight into your own performance as other people watching you." (Male, 42 yrs)

Dependence

Most participants either self-identified themselves as ‘addicted’ and/or clearly described commonly recognised features of opioid dependence such as loss of control over use, tolerance, withdrawal, giving up social activities, using OTC codeine to cope with stressful situations:
Self identification as being addicted was common:

"It's as though a switch flicked over in my brain and now, whereas before I didn't have any problem whatsoever with opiates now I have a tremendously big problem with opiates and I can't control my use and I am genuinely addicted." (Male, 25 yrs)

Loss of control over use despite harm was also described:

"I just had a problem and I just had to manage it, and I thought that I would be able to do it just by going down little by little by little, just by decreasing it I thought I would be able to take it down but I liked the taste too much, I liked the feeling too much in order to give it up." (Male, 42 yrs)

Physical Harms

Gastrointestinal harms were commonly associated with OTC codeine products, and specifically products containing ibuprofen.

Gastrointestinal effects from NSAIDS such as ibuprofen are well documented (Adebayo & Bjarnason, 2006; Bjarnason, Hayllar, MacPherson, & Russell, 1993; Langman, Morgan, & Worrall, 1985; Morris et al., 2003) as are the effects of paracetamol on the liver. These are also known to be worse with chronic administration and higher doses. Descriptions of GI side effects given by participants ranged from nausea, stomach ulcers and retching to serious stomach bleeds, kidney and liver damage. In a number of cases participants self-medicated or ignored the side effects rather than seeking help.

"When I started to feel really sick, trying to get them down, I got back down to 36 in one go and even that was pretty difficult because you'd retch trying to get them down but you just knew you needed to get them in there to make you feel OK again. I had a lot of stomach problems which I ended up with ulcers because of all the ibuprofen." (Female, 42 yrs)

"I'd get bad stomachs and you sort of knew enough not to go and buy your Zantac or whatever it is at the same place as your codeine, I guess just a bit of common sense didn't hurt too much." (Male, 38 yrs)

"Yeah. I was grabbing them all the time and I just remember, the last time, before I came in here I'd take, like I'd get up at 7pm at night and I'd get up to watch the footy and I'd take something like 96 or something and like I was running out the front, because I didn't want anyone to know I was sick or anything and I was coughing up like half of the tablets came out, there was actually blood and there was a lot of blood involved as well coming out and I still didn't get a liver check and I still didn't really open my eyes to anything" (Male, 35 yrs)

"I have been in ICU, um, I have had terrible kidney and liver damage over it, although everything is fine at the moment, they tell me everything is fine. I was at a stage there where it was really dicey and I was a sick man." (Male, 42 yrs)

"I had ulcers in my oesophagus, I had to have a sort of a camera put down because, look that was the other thing I think that in the end I was becoming very anaemic and they couldn't put a finger on it why I was anaemic and I didn't click to it, I would get very low in iron to the point where I'd have to have iron injections and they decided to do an internal and put a camera down my mouth and into my stomach to see if you know. I had any internal bleeding, and I was ulcerated and I just said, 'oh look I do take Nurofen Plus for pain', I didn't tell them how much and they said well that's probably what's doing it and had they known probably how many I was taking they would have probably freaked out. But yes, it did cause me to be anaemic numerous times and that was awful." (Female, 38 yrs)
Constipation was another troublesome side effect reported, which one participant self-medicating with OTC laxatives to manage this:

“There were other problems developing at this stage too and that was bad constipation, that was becoming a very bad problem, and controlling the constipation I didn’t know what to do at that stage, and it was more of a problem, it was becoming a serious issue...which I soon after learned to manage with lactulose…” (Male, 42 yrs)

“Constipation was a bad one. Yeah that was very painful. Going to the toilet was you know, all the blood, a lot of pain” (Male, 21 yrs)

**Social Harms**

Social harms included loss of employment and tension with family, partners and friends. The effect on relationship and family is in addition to the risks described above relating to driving children while drug affected which was also reported.

”...probably a year into the marriage he realised that I was out of control with it and it was just before I went and really got help, he said to me you either stop taking this or I’m leaving you and I’m taking the children because you can’t even look after, actually I only had one at that stage, you can’t even look after your daughter. I’m afraid to leave our daughter in your care because he worked long hours and he said I’m afraid of what might happen because you’re just out of it and he said I’m going to leave you if you don’t do something about it. It caused a lot of problems.” (Female, 38 yrs)

**Harm reduction**

Not all people who used codeine described negative effects from codeine use. One person described an absence of negative health problems whilst a number of people using codeine recreationally were very knowledgeable about harm reduction techniques such as codeine extraction, and described with pride how they pass on knowledge to help others avoid harm.

“I’ve taught quite a few other people on line how to safely and efficiently do codeine extractions because you meet people online who are taking 50 tablets a day, just swallowing them and all they want is the codeine. So the way I look at it... to me its harm minimisation and the best way is to teach people that you can actually extract the codeine out and not take all the crap. I mean ideally it would be nice to go to the chemist and buy just codeine, no paracetamol” (Male, 30 yrs)

These codeine users appear knowledgeable about side effects from the simple analgesics included in combination products:

“I also know that ibuprofen can upset your stomach more even though I am on Nexium® ... I make sure that I don’t take over the... like the eight Panadol equivalents if you like of paracetamol or the um, eight ibuprofen because otherwise I am aware that the other products... it’s not the codeine I am worried about, it’s the other product its mixed with yeah.” (Female, 63 yrs)

Other codeine users were intending to reduce harm but had inaccurate information, being unaware of the risks of ibuprofen versus paracetamol:

”Initially I read reports about ibuprofen causing stomach ulcers and then, and so I sort of stayed away from that but then I switched over when I tried it, I would have tried it a few times and I would have maybe done a bit more research and this issue of it causes stomach ulcers is more along the lines of it increases the risk of you developing a stomach ulcer. So that would have changed my perspective and I would have gone oh OK, so I can take this
drug and it just increases my risk of stomach ulcer, it doesn’t actually cause it, or it does cause it but you know what I mean. That’s why I would have switched over because then I didn’t need to worry about the toxicity. I mean ibuprofen has its own toxicity but it’s at a much higher level than paracetamol...I kind of do have the onsets of a stomach ulcer now and so I’m thinking that if I do develop one I’ll have to stop.” (Male, 25 yrs)

This demonstrates the misinformation that can occur, with this user identifying signs of GI damage, consistent with taking high doses of ibuprofen. As noted above, seeking knowledge may mean that harm reduction messages could be effectively targeted to this group to reduce harm.

Treatment

**Barriers to treatment**

Perceptions that opioid substitution treatment was not for OTC codeine users was reflected by participants. One participant when asked why they didn’t want to be on buprenorphine maintenance treatment after their inpatient withdrawal experience reflected:

“I didn’t want to have to go through it again. I was in there with all these hardened drug users.” (Female, 42 yrs)

Interestingly this was despite a very positive treatment experience in the inpatient unit, with positive comments about the staff and the service. In addition, negative perceptions were also held by OTC codeine users about other people on opioid substitution programs.

“...they wanted to give me buprenorphine because it’s a lot easier to get off and less addictive but I just, yeah it would have, you have to come during the particular hours in the day, the people there look like, were just typical westies, you know unemployed and uneducated idiots...I just couldn’t face going to a methadone clinic... part of me thought I was better than all the other people going there and that this is beneath me, lining up to get my daily dose of methadone or buprenorphine” (Male, 25 yrs)

For this participant the realisation that things had got serious enough to be referred to a methadone clinic was a ‘light bulb’ moment, after which he addressed his use.

“That just was a wakeup call that this is a situation that I’d created for myself and the only way to get out of it was through a lot of suffering and I went through a really bad withdrawal.” (Male, 25 yrs)

The negative perceptions around opioid substitution treatment as they are described appear to be a barrier for people entering evidence based treatments for opioid dependence, instead choosing shorter term withdrawal where the evidence of effectiveness is very limited. Codeine users associating negative responses to suggestions of opioid substitution treatment where they feel they will be required to attend particular hours and mix with other substance users. This would suggest that other treatment models may be more attractive to this group.

Other participants expressed a clear desire to avoid maintenance type treatments because of their personal beliefs, focussing on abstinence as an outcome.

“I don’t want to go on like a methadone type program because in a way I don’t see that, like I know you’re weaning off it but it’s just a substitute and I don’t want to substitute, I want to stop.” (Female, 31 yrs)
Despite aiming for abstinence however this participant was continuing to use high doses of ibuprofen-codeine and was having great difficulty reducing, suggesting that while abstinence might be a long term goal it was probably not a realistic goal for now. Education regarding treatment options amongst OTC codeine users may assist in addressing these concerns. For this person, due to the high consumption of ibuprofen, substitution treatment with buprenorphine is likely to be a much safer treatment option.

Other comments suggested some participants felt more comfortable with over the counter medications than moving to prescription medications may help us to understand resistance to maintenance treatments:

“I knew that valium was addictive and I thought I don’t want to give up Nurofen Plus® for prescription medication and end up really addicted.” (Female, 31 yrs)

This is a particularly interesting reflection for someone taking very high doses of ibuprofen-codeine that they would end up ‘really addicted’ if they used a prescription medication. The perception that over the counter products were ‘less addictive’ and safer than prescription drugs was made by a number of people who used codeine.

Concerns around effective management of pain conditions were also expressed, with one participant also linking her relapse to a lack of effective pain control

“I stayed on the Subutex® for six months but I was still getting migraines and the Subutex® didn’t do anything for the pain....I wasn’t able to have proper pain relief when I was on the Subutex® and I was really frightened about the pain, not to mention the fact that I was still getting migraines” (Female, 50 yrs)

This case highlights the important of managing co-occurring opioid dependence and pain conditions. The need for collocated or co-ordinated pain and addiction services has been recommended in previous research studies into pharmaceutical misuse (Nielsen et al., 2008).

For some participants addressing the dependence was less complicated than addressing the pain. One participant struggled with buprenorphine and pain control but has recently switched to methadone on the advice of a specialist:

“I’m not needing any codeine OTC because the methadone is enough for me not to have any withdrawal and I’m really hoping that as the dose gets larger its actually going to either prevent or treat the migraine.” (Female, 50 yrs)

Limited knowledge of the treatment options around pharmaceutical drug dependence was also perceived as a barrier as one participant felt their counsellor was not particularly knowledgeable in the area of codeine dependence:

Some barriers appeared to be more unique to codeine users:

“She didn’t quite understand anything about it...... you know what codeine is and how it works in the body in general” (Male, 27 yrs)
“She was pretty, I mean she’s a great GP, she’s known me for a lot of years so I’m very comfortable talking to her but she was quite shocked. She said she’d never met anyone up until then who had had any problem with any OTC medication that contained codeine.”
(Female, 31)

This may suggest that there is a need for up skilling of the workforce in regard to knowledge about pharmaceutical drugs. This issue was previously identified as a challenge with pharmaceutical drugs (Nielsen, et al., 2008). Other barriers to addressing opioid use that were consistent with those generally recognised with opioid dependence, such as waiting periods, distance to services, being able to access residential care whilst caring for children and stigma from health professionals (Ritter, 2009). Some of these barriers were greater for rural participants where confidentiality and being listed as a drug user in a smaller community, is consistent with barriers to treatment previously identified for people in rural areas.

Support networks, groups and forums in treatment
While two participants reported that they didn’t use the internet for information a number of participants made reference to online forums and support groups, identifying that knowing they were not alone was important to them, and reporting positive experiences suggesting online information is both able to be accessed and is viewed as a valuable resource by a number of the codeine users interviewed:

“I mean we’re all the same, people who’s been on this, we all chemist shop, we all have differing needs as to the amount of pills we take but we’re pretty much all the same in that we’re just trying to numb emotions and that we have to actually seek to do something about those emotions to help us get away from the drug. Yeah we’re all pretty similar” (Female, 42 yrs)

“...knowing that there’s other people actually doing it or struggling with it is really good actually.” (Female, 44 yrs)

This participant also reported felt a sense of isolation being from a Victorian country area and had found a lot of information on the forum that was valued.

Accessing information on the online forums also seemed to facilitate treatment seeking for some codeine users:

“I just wanted some information and it was before I went to the Dr because I was a little bit ashamed and I didn’t know what to say so I just sort of Googled it, found this bulletin board and spoke to other people who had the same kind of issue and it was really, the people on that bulletin board that convinced me to go to my Dr and spill my guts.” (Female, 31 yrs)

Family support in treatment
A number of participants also identified family and partners as a strong support. It was common for participants to report supportive social networks. Social support has been identified as a positive indicator for treatment success (Ciraulo, Pielachniczek-Buczek, & Iscan, 2003). Previous research into pharmaceutical opioid dependent populations found that this group has some predictors of good treatment outcomes compared with other groups of opioid users (Sigmon, 2006).
Treatment access and treatment seeking

Interaction with health professionals including GPs, nurses and pharmacists seemed an important and common theme in making a decision to seek help.

It was often the GP who identified problematic use and explained to the participant that they needed treatment for the first time:

"My partner actually took me up to the Dr's this day and I was shaking and I was upset and depressed and everything and I went into the Dr and he said look you need help. This is so, the first Dr who had ever said it to me. I thought to myself yeah I do need help." (Female, 39 yrs)

Participants often described seeing a GP prior to accessing inpatient withdrawal, or being directly referred by their GP. While some participants reported that it was their doctor who alerted them to their codeine dependence, others expressed disappointment that the doctor had not identified the problem sooner.

Some participants also identified that their own GP either was unsure about how to provide treatment or had negative reactions to codeine users. One example is included below:

"...it can happen to absolutely anyone before you even realise it and I just think that once people find themselves in that position they're too ashamed or afraid to ask for help because there's not, I don't think there's enough education with Dr's either so when they go and tell their Dr they get a bad reception that puts them off even more and it frightens them from getting any more help. Luckily for me, my Dr's, she didn't know anything about it but she was very supportive and got me the information I needed but on the bulletin board that I'm a member of, there's lots of people who have been to Dr's and Dr's have just sort of gone off at them and told them that you shouldn't take that many tablets and its like well I know that's why I'm here but they don't get the help that they need, they get sort of frowned upon and looked at as if they're drug addicts, which they are but they need help and that's why they're there but they don't get the help that they need and it's all too hard for them so they just keep taking them." (Female, 31 yrs)

This highlights the importance of not only educating the general public about the risks of dependence, but also educating frontline health professionals with information about effective, evidence-based treatment for codeine dependence.

Detoxification both medicated and unmedicated (‘cold turkey’), was the most common treatment attempted by our sample. People generally reported they had relapsed to codeine use multiple times following these withdrawal treatment episodes:

"I can't remember what they call it but there was a centre that they advised me to go to so I had an appointment there and we spoke about what ways and I said I'd tried to do cold turkey but that didn't work and tapering didn't work for me, I knew I had to find some other way. They decided on me going into a detox program." (Female, 42 yrs)

Attempting to self manage dependence with cold turkey withdrawal attempts is also reported amongst illicit opioid user (Holt, Ritter, Swan, & Pahoki, 2002). Success rates in both treatment populations appear to be low. Participants described their previous unsuccessful self detoxification attempts:

"The trouble is that psychologically its almost easier to do it that way than to try and cut down because when I try and cut down I just, I go OK for a few days and then I just can't, I"
have a bad patch and I just think oh fuck it, I'll just have a handful and I'll try again tomorrow." (Female, 44 yrs)

"I stop taking them and I'm off for about a week and then I start up and its like an on and off, relapse, quitting, relapse, quitting." (Male, 25 yrs)

"...when I was on 72 I tried withdrawal a few times, like quitting cold turkey. The first one was with benzo's, quitting cold turkey and taking benzo's and then I relapsed." (Male, 25 yrs)

Some codeine dependent people reported surprise at their level of discomfort from codeine dependence.

"I mean I've done it a couple of times this year where I've just stopped cold turkey and I can't believe how sick it makes me." (Female, 44 yrs)

Participants gave detailed descriptions of their own experience of opioid withdrawal:

"Oh physical withdrawal lasts maybe three days, three or four days but psychological withdrawal lasts a lot longer and I think that's what sort of always gets me is the just, it feels like the world is ending and you can't, I can consciously say to myself it's the opiate withdrawal that's making you think that this is a really bad situation but when you're in it, when you're in that situation you don't say oh this is just the opiates talking, you think that your world is crashing around you and you realise or remember that there's a drug that can help you deal with that problem and you start taking it again." (Male, 25 yrs)

"I got an absolute blinding headache to the point that I was begging them for something for the headache and they said no, absolutely nothing. Then I got stomach cramps and sweats and depression, oh it was shocking and it probably took three or four days before it got to the point where I could actually open my eyes without a headache. So yes it wasn't very pleasant." (Female, 54 yrs)

Pharmacotherapy treatments

Some participants made comments about avoiding pharmacotherapy because of their negative perceptions of the treatment.

In contrast, for the participants who had received pharmacotherapy treatment, their comments were generally positive. Examples of positives of pharmacotherapy identified included reduced craving and increase in self-esteem.

"Yeah well I was still, you know I was prescribed Suboxone and I'd go in there once a week after that to see DXX(worker) and it was strange because I walked past the chemist and I didn't even think of Panadeine, I didn't even think of it, I was on something else. I didn't feel like it, I didn't feel like codeine. I didn't feel like it. The Suboxone had taken the cravings away yeah and I started feeling better about myself." (Female, 39 yrs)

Another participant also commented that being on pharmacotherapy meant that she stopped being so focussed on the need to take codeine tablets, identifying that as a helpful aspect of the treatment:

"You don't think about those idiot tablets" (Female, 39 yrs)

Interestingly, while the majority of the codeine users described their experience of dealing with pharmacists during codeine purchasing as frustrating, one participant reported a very positive relationship with the pharmacy once they were on pharmacotherapy treatment:

"I find the pharmacy side really easy ... I like the people there, I think they're good people and I think they're well intentioned" (Male, 38 yrs)
The participant expressed a desire not to attend the pharmacy every day and not to see the doctor as frequently. This participant also saw another GP for a chronic health condition, which only required attending twice a year for a 6 month script. In comparison, attending every 3-4 weeks for a buprenorphine script was described as time consuming, and the participant also often experienced extended delays whilst waiting for an appointment in the bulk billing clinic for his pharmacotherapy script. This perception that different standard treatment systems exist for different medical conditions could act as a treatment barrier and warrants further consideration.

"I find that bupe is perfect in, as a replacement but yeah, there’s issues in the social aspects I guess or, you know if I could just go and get that in a very similar way to my insulin it would make much more sense" (Male, 38 yrs)

Other positive experiences around pharmacotherapy treatment were also reported:

"I went in and they you know assessed me and they said you can do it two ways – you can either go into detox and it will be over with and you know or we can do it slowly and you can go on what we call, I think it was Suboxone then, I’m now on Subutex and you need to come and see us regularly and they told me the whole process and a detox wasn’t really an option for me. I had children, I don’t have family down here, it would have been too much of an upset. For me, I needed something more than that; I needed just to be gradual. I needed to change habit over a long period of time and that’s what’s happened and by taking the Subutex, even if I want to, even if I feel like ‘oh look, oh you know maybe, maybe just once I’ll go and get some codeine’, it won’t work. So it totally deters you, it’s not an option and now it’s been two years I never want to go back there and it’s really been the best two years of my life….The best two years of my life and the Dr’s, well the Dr and the nurse that I see are just fantastic. The support I’ve had from them has just been wonderful." (Female, 38 yrs)

Being able to better inform codeine dependent people about their treatment options and of other people’s positive experiences with treatment may help to reduce the time it takes for people to seek help, particularly as many codeine users reported negative perceptions of the currently available treatments.

When discussing experiences of withdrawal treatment, one participant reflected that despite her concerns, the experience was not as negative as she had expected. Although, feelings of shame and stigma around being identified as codeine dependent or 'addicted' appear to persist:

"Physically it was horrible but they handled it with yes, they didn’t make me feel, like I mean the minute someone says addiction you immediately think of drug addicts and all the rest of it and I felt like, oh my god, I’m an addict and but I must admit at the hospital and that they didn’t make me feel dreadful. If anything I felt a bit stupid that I had taken so much without really thinking about it. It was almost like well hang on you’re supposed to be an intelligent human being, you went to university and everything and here you are addicted to an OTC medication." (Female, 54 yrs)

This participant’s comments reflect the belief that addiction, and particularly addiction to non-prescription medications is something that should not happen to intelligent people. It is possible that these perceptions could delay help-seeking. Education for the general population that opioid dependence affects a wide range of people may help to reduce stigma and facilitate help-seeking.

Another participant who was finding it challenging to schedule time for a home detox (cold turkey) also echoed similar feelings of shame around being identified as ‘addicted’:
"I don’t want to have to take too much time off work if I can help it and I guess that’s, it’s another step that frightens me because it’s again, just another confirmation that I’m addicted to drugs. Like I know the fact that I have to wean off drugs, I know that I’m addicted to drugs but I like to try and convince myself that I’m not at the point where I have to go into an inpatient rehab sort of place". (Female, 31 yrs)

**Prevention**

Participants made further recommendations regarding what may have assisted them with their codeine use, including better information from health professionals about the risks of dependence with codeine and the risks of taking high doses of paracetamol or ibuprofen:

"I think people should have the knowledge that you can extract the codeine because I think too many people are giving themselves irreparable liver damage and stomach damage by eating handfuls of pills and I know that you can’t just have codeine tablets at the chemist because every man and his dog would probably then be taking codeine but I think maybe there should be a prescription for codeine tablets for people who have proven themselves to be addicted to the OTC Nurofen tablets or Panadeine tablets.” (Male, 30 yrs)

Some participants had transitioned to OTC use from prescription drug use, and expressed concern about the limited information they were given regarding the risks with codeine from the prescriber:

"I’d say it was thoughtless. I don’t think that the Dr really covered, I’d say I was uneducated as to the dangers involved. It’s one thing for a Dr to give the patient Panadeine Forte but then I think that they should have said well you know you strictly stick to what’s on the prescription and don’t take OTC medications at the same time.” (Female, 54 yrs)

"if the Dr’s would have you know told me a little bit about the Panadeine Forte and what it can do to you or you know a bit more information would have been you know good". (Female, 39 yrs)

"I guess for me the main concerns that I have are surrounding the potency, getting some information about how addictive are these products.” (Male, 35 yrs)

"...personally I don’t think that you should be able to get something like that OTC. I never, I don’t think I ever would have had a problem with it if I couldn’t get it OTC” (Female, 31 yrs)

Participants also supported a system where sales would be recorded or codeine was prescribed:

“Yeah I think that would be great because it would push a lot of people to give up that think they can’t.” (Female, 31 yrs)

“Maybe if they did make codeine a prescription thing then because of the effort would I have bothered you know or maybe I would have stopped, tried to find a way to stop doing it.” (Male, 21 yrs)

**Pharmacy experience**

Participants were fairly consistent with their codeine acquisition, particularly those taking larger doses.

Common approaches were:

- using multiple pharmacies
- purchasing a few days worth at a time (often from multiple pharmacies in one "pharmacy run"
- Noting which pharmacies were easier, and even noting details about individual staff that did
not ask questions

- Not going to the same place too often
- Purchasing lower quantities to avoid interaction with the pharmacist
- Internet was only identified as a source when it was becoming harder to source codeine, with one reason listed for this being wanting to avoid the record keeping that went with internet purchasing
- Opportunistic purchasing was common, for example when out of their usual area if a pharmacy was seen in passing this was identified as a good opportunity to stock up
- Going to a prescriber was considered expensive and a hassle

The language used to describe codeine acquisition often included descriptions of "juggling" or "rotating sites". Knowing the answers to the standard questions from pharmacists were deemed to be important. Much anxiety appeared to exist around being remembered by the pharmacist and of being questioned.

In retrospect some understood the role of the pharmacist and the concept of 'duty of care'; and also the idea that codeine should be more restricted was supported by many, though at the time of their peak use (often just prior to deciding to seek treatment) there were descriptions of starting to find the pharmacy shopping a real hassle.

"I have never been refused any and I don't want to get to that point. And I don't want her to think that I'm using it for anything other than, the headaches....But obviously, you know, I guess she, you know, her duty of care is to go 'well you're telling me you are getting headaches, you are buying this stuff on a regular basis, what are you, what are you doing to get rid of the headaches' I guess". (Female, 37 yrs)

Questions asked by pharmacy staff

The main interaction described by almost all participants as being the "standard" questions and comments included:

- Asking what the product was being used for
- Stating ‘don't take more than 8 a day’

Little additional questioning was described by participants. No participant described an experience of a pharmacist directly raising concerns about abuse or dependence with the participants interviewed or referring them/suggesting they seek assistance with codeine dependence.

Participants expressed that they strongly wished to avoid questioning by the pharmacist, this was a common theme with strategies employed to avoid questioning including:

- Going to 'easy' pharmacies where less questions were asked
- Speaking to staff they knew did not ask questions
- Buying smaller quantities from more pharmacies rather than asking for larger packs

"...if I go at the weekend it's the weekend pharmacists who don't know me and they want to know why I'm taking it and do I realise the side effects and do I understand the side effects and what other tablets am I on, blah, blah, blah. I think at my age I don't need that. So I go during the week for the codeine..." (Female, 58 yrs)

Participants reported changes more recently with pharmacists beginning to question them more when purchasing codeine:
"I must admit that maybe in the last 12-18 months I have been asked a lot more by pharmacists, like is it, is it for yourself? Have you taken them before; you know der-der-der? Which I had never had as much" (Female, 37 yrs)

"...lately chemists have been asking me for my driver's licence. They've just started getting more strict about it. Up until, it's only been the last few months. Up until then nobody has ever asked me for any ID." (Female, 50 yrs)

Some participants reflected that being asked questions suggested some sort of judgement about their character rather than recognising pharmacists' role in providing health information, and needing information to do that:

"I do feel a little bit indignant, it's like come on, it's me but they don't know me and I know they have to ask those questions." (Female, 37 yrs)

There was also a sense of mystery as participants wondered why they were asked questions and wondered if it would affect the amounts of codeine they could purchase.

"...they're most strange questions... I mean, who in their right mind would say "why are you using it?" "No real reason!"(laughs). It's just the strangest questions that they ask" (Male, 35 yrs)

This is a good example of the real lack of understanding of the pharmacist's role and their need to gather information through questions to determine if the use is appropriate. Participants, while feeling quite frustrated being asked questions, also agreed that it was good that pharmacists asked these questions. However, some comments by the participants seemed to suggest that they thought the pharmacists were asking questions as a measure to prevent abuse rather than to prevent harm and promote safe use of the medications.

"...a couple of them wanted to know my name, and wanted to write it down, or type it into their computer and I didn't know what that meant, whether that went to... I didn't know where that information went, I didn't know whether it went just to that pharmacy or whether it spread the word around to other pharmacies as well. I still don't know in fact." (Male, 42 yrs)

One participant reported choosing to purchase the lower strength (less restricted, Schedule 2) codeine products after an uncomfortable experience with purchasing a Schedule 3 product:

"...they just looked at me like I was a junkie, like a really dicey, they just sort of gave me the, like an interrogation, what do you need this for and I felt like such a criminal." (Male, 25 yrs)

It's possible that negative perceptions of pharmacists could serve as a considerable barrier to seeking help, or receiving advice around inappropriate codeine use. Non-judgemental care when providing treatment for drug dependence is widely accepted as a key principal in professional practice. This non-judgemental approach to potential dependence is also important for pharmacists when addressing risks of medication use. Perceptions from codeine users suggest this is an area for consideration.

**Access to codeine**

A consistent theme amongst participants was the association of dressing well and looking respectable being associated with easier access to codeine.

One participant reflected that the questioning has been effective in getting her to reflect on her use however further comments indicated that there was a perception that the supply of codeine was based
more on her appearance than a therapeutic need. When asked if she was worried she wouldn't be sold codeine at any point she responded:

"I always think, I look respectable enough to be able to, you know, order some." (Female, 37 yrs)

This comment revealed the perception that sale was based on respectability.

"I think being a middle aged woman helps you know because you don't look like some raving drug addict and I usually try and also buy something else that makes it look, like I get some sort of nasal spray or some bloody, I mean the money I've wasted on bi-products because that way it looks like I'm legitimate you know." (Female, 44 yrs)

"I'm reasonably well presented and clean cut so most of the pharmacists I go to either in Melbourne or in the country, they might look me up and down but they'll go yeah alright OK and they'll sell it to me." (Male, 30 yrs)

This further illustrates that appearance is perceived as crucial for successfully purchasing codeine, with a number of participants referring to things like 'being looked up and down'. This observation is consistent across the range of codeine users (from those with therapeutic dose dependence to those using high doses and recreationally extracting codeine). Comments from participants indicated that as long as their appearance was 'appropriate' they didn't experience any difficulties sourcing codeine.

"I would always dress in my suit or tie to make sure that I looked professional, and I had my nice professional glasses on and um suit and tie... and I looked responsible so they would sell me 48 tablets at a time, I was able to get my days supply. ...When I wasn't in my business suit and when I was in my track pants and in my jumper um, they looked at me warily, and a couple of them wanted to know my name, and wanted to write it down." (Male, 42 yrs)

This participant quickly changed his behaviour due to a perceived easier access to OTC codeine when dressed in his suit, including offers to up-size the amount of codeine sold:

"I just made sure that I would always wear my suit and tie and I always went to the couple of pharmacists that would never look at me sideways, and I would... and every time I would wait and ask for 48, they would never bat an eyelid and were quite happy to serve me. Matter of fact, when I said I would just have 24 they said "are you sure you don't want 48?" so they were quite happy to um, to give me a high dose, I even had a couple of the same pharmacists say "we've got a bigger pack now, 72, would you like those?...its quite time consuming, going around shopping every day at the chemist, especially every different one. I didn't find it so much trouble because I was... I am a salesman and I could get out and travel all over the city so I am able to slop at different chemists to get it each day, and did my little shopping (laughs) and when you are in a suit and tie they never turn you down (laughs)." (Male, 42 yrs)

Despite the fact that the participant met the criteria for codeine dependence there seemed to be limited insight into the fact that the codeine use may be appropriate or that the role of the pharmacist could be to assist if there was problematic codeine use.

The role of pharmacists' questioning as outlined on the Victorian Pharmacy Board website http://www.pharmacybd.vic.gov.au/ (Pharmacy Board Victoria, 2010) which states that questioning is used to determine a therapeutic need and thereby avoid supplying the drug to support a dependence. Information regarding codeine supply does not currently highlight a role for prevention (for warning
about the possibility of dependence and signs of use becoming problematic). Expanding the pharmacists’ role to include this aspect of prevention may be crucial in limiting further harm.

**Refusal to sell codeine**
Refusal was rarely reported, even by participants whom reported large quantities of codeine being purchased or consumed on a daily basis.

Refusals tended to result in going somewhere else to purchase the product. Refusals were not accompanied with referrals or discussion around codeine dependence or risks with prolonged or high dose use.

The cumulative effect of increased difficulty in acquiring codeine was identified to be a motivating factor in seeking treatment. In one case the participant had a doctor who had determined that codeine was not appropriate and had refused to continue to prescribe it, however the participant then began to use OTC codeine instead rather than looking at alternate ways of managing the pain.

“..now I only take OTC, my Dr’s don’t give me prescriptions. ...my Dr and I both agreed it wasn’t working. It just wasn’t helping my pain and my tolerance was so big.” (Male, 30 yrs)

Participants reported variation in the ways different pharmacies responded. Some pharmacies were described to be more cautious around codeine supply while other pharmacies were not as vigilant.

“It’s funny, the only people that did was the store in, the chemist in HXX. I only went there like three times I think but they said look you’ve had this like pack every couple of days or every three days and we’re going to refuse to sell them to you. But I don’t know, it seemed strange to me, the HXX one you know, it’s a little community sort of chemist. I thought OK you’ll have to stop but then whereas the ones that weren’t (in HXX) didn’t really cotton on or didn’t really care, I’m not sure. I just kept buying them and no one ever said anything, never questioned me. Yeah I just stopped going to the HXX” (Male, 21 yrs)

A real reluctance was perceived from some pharmacists to intervene:

“...he[s] the pharmacist who I always go to, where I get the methadone from and that I did get the buprenorphine from, he’s known me for 20 years and so he’s the one who sold me a lot of OTC preparations and he said to me the other day, he said now that you’re on methadone, please don’t buy any more OTC codeine preparations and I said no, I have no intention of buying anymore and he said oh good. Because I think he was worried that he might have to refuse me and he didn’t want to....

(The methadone prescriber) rang him to ask if he would do methadone..... Luckily he said yes he would do the methadone as long as I didn’t buy any OTC codeine preparations so that’s the first time he’s ever expressed concern about that. I don’t blame him, he should have ages ago.” (Female, 50 yrs)

**Codeine shopping**
Using multiple pharmacies was a common strategy to acquire larger amounts of codeine. Interestingly while participants found this inconvenient, they also identified that this was important in their own realisation, a ‘red flag’, that their use had become problematic.

One participant reported that a positive outcome of being questioned regularly and having to visit pharmacies so frequently was that it provided a trigger to help them realise they had a problem with OTC codeine:
"I thought I can’t continue on like this. Like I think it was the stress of going to each, you know different pharmacy every day and planning my whole day around getting a packet of codeine every day because I used to go almost every day to get a pack." (Male, 21 yrs)

This may suggest that the recent regulatory changes resulting in supply limitations can have a positive effect.

Some participants didn’t identify the link directly themselves but noted an association between greater intervention by pharmacists and a need to assess if a change was required:

"...you knew that with all those questions you couldn’t come back again in a day or two days. If you bought a 48 box they would wonder where they’d gone to and they probably wouldn’t give them to you. So you’d shop around but I remember towards the end, just before I really sought help, that at some chemists they would take your license.....It happened to me a couple of times. They wanted my license and they’d record it and I think, I don’t know why, but they’d take your license and just record your details and that you’d taken a box and that started to bother me and I thought well gee if it gets to this how am I going to sort of keep going with it." (Female, 38 yrs)

A few participants reported that they saved their local pharmacies for emergencies when they were using many pharmacies, and tended to stock up on codeine further from home.

"you’d also leave the ones nearby, you wouldn’t go there too often because they were the places that you wanted to go to when you really needed to get something quickly." (Male, 38 yrs)

This interpretation of having no codeine as being an emergency and never wanting to be without codeine was a common amongst participants.

Internet pharmacies were used by very few of the participants, though concerns were expressed with this method due to the transaction being recorded and potentially traceable. Participants that used internet pharmacies reported trying to not use the same internet pharmacy twice or too often and described being cautious with their purchasing.

**Perceptions of pharmacists**

Often the role of pharmacist was not appreciated and was considered an inconvenience. This undermines the value of the interaction between the pharmacist and the customer. Representatives from professional bodies such as the Pharmacy Guild have also described the interaction between the pharmacist and customer as ‘an inconvenience for the majority of patients who use these products appropriately’ (Simmons, 2010) suggesting this perception is a widely held belief.

Factors such as the age of the pharmacist were also commented on as impacting on the validity of the interaction:

"I don’t need to have to explain myself to a 25 year old why I’m buying something." (Female, 58 yrs)

The idea that commercial gain comes into the therapeutic decision making was raised, for example one participant when asked why they thought the pharmacist sold them the codeine even though they seemed to suspect there was a problem and they had been frequently purchasing it responded:
"Because I’m giving them money….If I was a legitimate customer and they said no I can’t sell this to you, you’ve been coming in too many times and buying the same thing, they would pretty much lose me as a customer if they were wrong. So if you’re going to make that sort of accusation I think you need to be really, really right and certain pretty much that no one was being dicey and so maybe they erred on the side of caution like they gave me the benefit of the doubt and they said no I’m not going to say anything to this guy because he’s a customer." (Male, 25 yrs)

It is impossible to know if this accurately reflects the intent of the pharmacist, but the existence of these perceptions have an effect on the opportunity for pharmacists to effectively intervene.

Another participant had quite a different view perceiving that the pharmacists didn’t see it as their job. This was the reason they thought that after 5 years of purchasing codeine consistently from the same pharmacist no one had ever said anything:

"I honestly don’t think he thought it was any of his business. His job was to dispense the prescriptions which he did and sell the OTC medication." (Female, 54 yrs)

Perceptions of advertising codeine were also interesting, reinforcing the perception of OTC codeine being sold just to make money:

"...to advertise you know if you buy, you can buy a packet of 48 for $15 or you can buy a packet of 70 odd for $14 you know it’s just encouraging you to buy more and it’s just ridiculous. It’s just a money making thing, it’s got nothing to do with people’s health I don’t think." (Female, 31 yrs)

Participants were acutely aware of things like which pharmacies recorded codeine sales and which didn’t. Whether pharmacists asked questions or recorded details had an impact on whether someone would return to their store:

"and some chemists write down my address but not all of them and even the same brand, like the XX(Large chain pharmacy), in the city they never ask for my address…but the one at XX(local pharmacy) which is closer to me always does." (Female, 29 yrs)

"Yeah I just stopped going to the XX (Smaller local pharmacy) one because I was worried that they might ask me something so I was like no I’m going to avoid that altogether. When you get asked questions you’re sort of nervous and you’re embarrassed. I would always just say it’s for a migraine when they asked." (Male, 21 yrs)

"Yeah it was and the XX(Chain pharmacy) in LXX, it’s on the shelf so you don’t have to go talk to them, you just take it off the shelf so I did that a lot. Take it off the shelf; they served me, walked out so that was my favourite place in the end to go. Didn’t have to answer any questions, it was awesome." (Male, 21 yrs)

Ease of access and other sources of codeine

Most participants described access to OTC codeine as ‘easy’ and they mostly reported purchasing OTC codeine themselves. Occasionally they reported that family members purchased the OTC codeine for them.

"...the chemists down near where I live and they had them on display, not behind the counter and that’s a big chemist, you know a really big chemist and I’d have one of those green environmental bags and I’d just walk in and I’d be like ‘oh yeah no one’s really looking’ so I’d grab four and put them in the bag and then I said ‘oh, no one’s looking’ I’ll grab some more you know so I got about another four, I think the highest I got was 15 at one stage and that
15 went in four days so, and they were packets of 24 and then of course when I ran out I went and did the same thing, like you know I picked the busiest time. I mean I’d buy them when I had the money but if I didn’t have the money well you know, I had to do it, I had to get it.” (Male, 35 yrs)

People claimed that the pharmacist’ intervention fitted into polar extremes or what could be described as “deal or no deal”. It seemed that either the product was purchased with virtually no pharmacist interaction, or otherwise on very rare occasions, the sale was refused with limited discussion. A few participants also described confusing interactions where they could see the product on the shelf and the pharmacist denying that it was in stock, saying they had run out.

Pharmacists were described to engage well with the client once they had started on a methadone or buprenorphine program at the pharmacy. Often the participants had purchased OTC codeine from that same pharmacy for a long period of time without the pharmacists ever raising concerns around dependence/addiction.

This raises the question of how comfortable pharmacists feel discussion risks of addiction, or concerns about potential dependence with customers. Do pharmacists see this as their role, or do they feel that they have not been equipped with the skills to have this difficult conversation?

It was interesting to explore participant’s perceptions of pharmacists. One participant’s experiences demonstrated how people can fear being asked by the pharmacist about their OTC codeine consumption and how embarrassing this would be for her:

“I probably would have been too embarrassed, walked out and thought I’ll never go back there again and I would have gone somewhere else” (Female, 38 yrs)

Paradoxical to her expectations, after the participant had made the decision to seek help and ended up on a buprenorphine program at one of the pharmacies she used to regularly shop at her experience was quite different:

“They were very good actually I must admit. They were exceptionally good. I mean obviously they ran the (opioid substitution treatment) program there so it made it easier, like you know they were dealing with it all the time, but once I was open about it, they actually, they wanted to know, they were very interested and they were very supportive. ...Yeah I said I’ve had a problem and look they were excellent.” (Female, 38 yrs)

Another participant identified that the pharmacists only really began to get involved once a serious problem existed, and further explained that by this time he was not open to information from the pharmacist. This participant reflected that information about the risks of codeine needed to be given earlier on. He stated that after his use had escalated he was no longer receptive to such information:

“In the beginning (information about risks of opioid dependence) would have (been valuable), it would have in the beginning, but when I was addicted I wouldn’t have been interested…. it would have to be early in the piece.” (Male, 42 yrs)

This response suggests that pharmacists may have missed their moment by only starting to intervene once patterns of frequent purchase have been established. Also monitoring systems that only detect people once they reach a purchase threshold may be inadequate in preventing pathways to dependency. An alternative approach, such as a universal precautions approach, where all patients are screened for risk and a minimal standard of precautions is applied to all patients has been suggested for prescription medications. This approach has been used in preventing spread of blood
borne viruses, and one of the benefits of such an approach is that rather than assess risk based on appearance, the same level of minimum standards are applied to all patients, giving a minimum level of protection to all.
CHAPTER 5: KEY EXPERT INTERVIEWS

Introduction
The final phase of the research aimed to conduct semi-structured interviews with Key Experts (KE) from the drug and alcohol field who had considerable experience working with codeine dependence. Community pharmacists working in retail settings where codeine sales were a standard part of service provision were also interviewed. Open ended questions explored: common presentations of codeine dependent people, treatment approaches that were seen to effective and other experiences of working with codeine dependent people.

Methods
Participants
Fourteen KE were interviewed from a range of professional backgrounds including addiction medicine specialists, pharmacotherapy prescribers, pharmacists, an AOD withdrawal nurse and an AOD clinician.

Materials
An interview schedule was developed to explore:

- Characteristics of OTC codeine users compared to other AOD service users
- Treatment presentations related to codeine
- Treatment approaches used with codeine dependent people

The schedule was developed and reviewed by experts in addiction for face validity prior to piloting the survey tool.

Procedure
Interviews were arranged in person or over the phone depending on where the key expert was located.

KE were not remunerated for time and travel costs.

All aspects of the study were approved by the Victorian Department of Human Services Ethics Committee.

Analysis
The Key Expert interviews were recorded and transcribed verbatim and analysed using QSR qualitative software (2008). As with the analysis of the qualitative interviews with codeine dependent people the authentication procedures included an initial content analysis of key themes, intercoder agreement that is a validation process of agreement between the researchers of the themes emerging from the data before a final review of the themes.

Results
Participant Characteristics
Key Experts interviewed came from two main sources; those working in the alcohol and drug sector (including addiction medicine specialists, pharmacotherapy prescribers and other AOD workers) and community pharmacists. Those in the AOD sector had considerable experience with opioid
dependence and all reported seeing a reasonable number of cases of codeine dependence. Pharmacists reported seeing many people who were regular codeine user, and all had at least 10 years experience in Australian retail pharmacy settings.

**Characteristics of Codeine Dependent People**

*Identification of codeine dependence*

KE identified a number of ways that codeine users came to the attention of health services.

Examples of different pathways were:

- Through hospital referrals (generally due to unplanned admissions):

  
  
  ".. a couple actually have come to me though the general hospital because they have been admitted through intensive care. We have had a couple of people with acute renal failure secondary to non-steroidal use which obviously comes hand in hand with the Nurofen Plus®" (Addiction Medicine Specialist)

- A specialist that worked across general and specialist services identified that many of these patients existed in primary care settings:

  
  
  ".. I don’t think they would see themselves in need of specialist D&A (Drug and Alcohol) services and they might be more inclined to see their GP ... I certainly saw more of these people in general practice than I did as a specialist " (Addiction Medicine Specialist)

- Through being denied prescription medications and shifting to OTC analgesics:

  
  
  "People are usually along this track before they come to us... they can be 6-12 months along the track taking prescribed medications before a GP or specialist says ‘Hang on, you know you should be off these medications by now’", but then, it can be another 6-12 months trying to get them off before the GP or the specialist finally, spits the dummy and says ‘Hang on, this is out of control’. So, often these patients have had a couple of years messing around with other medications before they sort of moved onto over the counter stuff when their doctors won’t give them anything more.” (Addiction Medicine Specialist)

*Characteristics of codeine users*

A number of characteristics were consistently identified by the key experts; though some inconsistency was also detected.

Common features were:

- co-morbidly (pain or mental health)
- a greater proportion of females
- low insight into dependence

Inconsistency was reported in:

- Age of populations (some KEs saw this in young people though others identified codeine dependence in association with an older population)

The populations were also identified as being different from heroin using populations in their level of functionality and social acceptability their drug use:
“(the codeine users are at) the more functional end in inverted commas, so they are probably more middle class .. middle of the road than your more hard core heroin user for example” (Addiction Medicine Specialist)

“(OTC codeine dependent people are) a little different to mainstream heroin users in their belief that their drug use / dependence was socially acceptable in comparison to that of a heroin user.” (GP)

**Composition of codeine users**

The group was described as older and more likely to have medical complications, pain conditions or psychosocial stressors in their life. Two addiction specialists suspected the older age may be related to a longer period of problematic use prior to treatment entry, rather than an older group of users per se:

“...for example I have a 62 year old gentleman that started on a program about 4 months ago and he had been doing this for about 20 odd years but um ended up in ICU because of renal failure. That is how he came to our notice.” (Addiction Medicine Specialist)

Others felt this was an older group:

“I guess they would be all a bit older … its more I think all the patients I can think of were doing it in their late 30’s or 40s.” (Addiction Medicine Specialist)

“They tend to be older, some people tend to be like in their 50s that have sort of gotten used to taking, it was almost like coming from that generation of you know take a Becks and lie down.” (Pharmacist)

Some studies have described populations of pharmaceutical opioid dependent populations as an older age group (Simoni-Wastila, 2004) particularly when compared to heroin users. Pharmaceutical users have been found to be more likely to report oral rather than injecting use and are more likely to have histories of pain and mental health problems (Brands, Blake, Sproule, Gourlay, & Busto, 2004). Other studies have indentified other factors such as social stability and lower levels of opioid dependence that may predict better treatment outcomes (Sigmon, 2006).

KE consistently reported that there were more females identified with problematic OTC codeine use, consistent with other reports describing higher incidence of problematic pharmaceutical use amongst females more generally (Simoni-Wastila, 2004).

“(OTC Codeine users are) predominantly female …just off the top of my head 10:1 but whether that is the true incidence in the community or presentation bias is a different issue” (Addiction Medicine Specialist)

Given the well accepted underrepresentation of females in alcohol and drug services it appears likely that this does not represent a presentation bias. Given females have been previously identified to have higher rates of prescription opioid misuse (Simoni-Wastila, 2004) and specific needs and barriers to treatment (Swift & Copeland, 1996) this is important to consider when thinking about the treatment needs of this populations of opioid users.

“I feel like women are more dependant but I don’t know, that’s just a generalisation. I haven’t got any facts to back that up but especially for migraines, they all seem to be women who need to take the Mersyndol” (Pharmacist)
Pain and other comorbid presentations
KE consistently identified either pain or other mental health comorbidity amongst the codeine dependent people they had seen. This is consistent with the findings of the web-based survey in Chapter 2. Injecting drug use (current or previous) was not identified as a common feature:

"(OTC codeine is) generally taken for chronic recurrent pain of a milder grade for which the codeine provided gradually more of euphoria than pain relief. They (the patients) feel more difficult to move psychologically to an acceptance of their own dependence, despite presence of obvious harms." (GP)

"if you are looking as a group of opioid users, are they different? Yes they tend to be. They tend to be people who are unemployed, people who did not use illicit drugs, or certainly anything apart from cannabis. And often a younger demographic and more often females. So quite different to the typical opioid dependent population in that respect." (Addiction Medicine Specialist)

"there’s some individuals who have some chronic pain issue and who are trying to manage it themselves. Um...which you know, when it becomes a chronic pain issue, that’s obviously the time when you stop try to manage it yourself." (Pharmacist)

"they often also have mental health comobidities and they are often sort of long standing one like personality disorders....quite a proportion of them don’t inject." (Addiction Medicine Specialist)

The perception by one pharmacist that most codeine dependency stems from pain conditions as opposed to intentional codeine abuse was an interesting perception.

"70%-80% of them started off with legitimate problems, you know they had an injury at work or they were in a car accident or they, you know something and they’ve gotten themselves into trouble so there is, you know pain management is such a difficult field." (Pharmacist)

Interestingly some pharmacists claimed that codeine users came from lower socioeconomic backgrounds and were discernible by their appearance so perhaps the codeine dependent participants who dressed respectably to avoid detection were correct to do so.

Changing population of codeine users
Some changes reported over time were to do with younger users of codeine now being identified:

"in fact there is an impression that we are seeing younger people now doing it where as i would have said in general practice that the average age was 30-40s ... but now we are seeing younger people who may be 20s and 30s .. that doesn’t tell you the age that they are starting, that’s the age that they seek treatment." (Addiction Medicine Specialist)

A large increase in the number of people for whom OTC codeine was their primary drug was observed by KE.

"it definitely had an increase, a slow increase over the years, like 2005 we had 14 people who said codeine was their primary substance and then last year (2008) it was 27 so its nearly double." (AOD Clinician)

Case examples of codeine dependent people
KE involved in treating codeine dependent people were asked to describe specific cases of codeine dependency that were an example of the kinds of cases they were seeing. Of the 18 cases described
there was great consistency between key experts. Cases were generally aged mid to late 30s to 40s, two-thirds were female, often identified though hospital admissions though some cases presented to alcohol and drug treatment services. Recent illicit drug use was not common though some cases had a distant history of intravenous drug use followed by years of abstinence prior to OTC codeine use. Treatment approaches used were almost always pharmacotherapy (methadone or buprenorphine +/- naloxone) with good treatment outcomes being reported. Cases of escalating use due to headaches/migraine and chemical coping were consistent with reports from the people who used OTC codeine.

**Identifying codeine users in the pharmacy setting**

Pharmacists identified a range of characteristics of codeine users, though this was felt to be a challenging area:

"I suppose you can make a simple assumption that generalization that maybe the people are from lower socioeconomic group. At the same point, I know some of those who are well-educated, PhD's, with codeine dependence buying habits. And also, you know, it is not uncommon for people from high socioeconomic groups who seemingly very well educated" (Pharmacist)

"They can become abusive if you try to intervene. They can also often be in denial about it you know, what they are doing or it's not really a problem or sometimes they can be quite dramatic or hysterical or so that can happen. Also, sometimes what you can find is they will stop coming to your pharmacy and stop frequenting yours for a while and go off somewhere else instead." (Pharmacist)

Comments suggested the perception from pharmacists that codeine dependence was associated with deviancy, and deteriorating general appearance. When considered in light of OTC codeine users comments that when they looked more respectable they had fewer problems seeking codeine seems to fit well with the comment by one pharmacist interviewed when describing codeine dependent populations:

"So just a general sort of more deviant behaviour in actually trying to get codeine and you know, less effort on their general appearance and just the look of their health generally deteriorating" (Pharmacist)

This use of appearance to identify different types of dependence was also echoed by another pharmacist:

"I think the people who are on methadone or suboxone, I don't know how to say it but they look like they're addicted to you know, they just have a different look, people who appear to be dependent on morphine can look like very normal people who don't, you wouldn't suspect them of having any kind of addiction." (Pharmacist)

Another pharmacist was more conservative in their identifying codeine dependence, basing it solely on frequency of purchase, and being less confident of ability to identify codeine dependence:

"I wouldn't be able to really pick very well, I couldn't confidently say you know that someone is more addicted than another person except for when they come back regularly." (Pharmacist)

This clearly raises a challenge for pharmacists using frequency of purchase where sales are not uniformly recorded and records from other pharmacies are not available as an indicator. Other pharmacy characteristics such as extended hours pharmacies, and shift changes in pharmacists may
also increase the difficulty in identifying frequent codeine purchases. In this scenario the reluctance to identify a codeine user or refuse a sale can be clearly understood.

"Of course it gets a bit hairy because then it depends how often they use it whether they actually become dependent on it versus addicted to it and you know all sorts of things. I don’t live their lives, I don’t know." (Pharmacist)

This is a revealing reflection about not knowing much about the codeine purchaser. Not having the information to know if a customer may be dependent, and also at what point to intervene present a clear challenge for the pharmacy profession. Clear guidelines for pharmacists about what is an appropriate response to suspected dependence appear vital to improve responses and outcomes. Responses described by the codeine users themselves in Chapter 4 were limited to generally two responses, sale, or no sale, though some exceptions were described. For those when a sale was not made in some cases pharmacists had simply reported they were out of stock, consistent with responses reported by the pharmacists themselves. Descriptions such as these seem to suggest that pharmacists are not comfortable explaining to customers that they suspect they may be using codeine inappropriately and have limited responses other than to trying and avoid a sale in this situation.

Social costs of codeine dependence

Unlike traditional heroin using populations who tend to have considerable legal issues, pharmaceutical drug use was reported to have a lesser impact on social stability.

"I think that it’s the people at the prescription end and the over the counter end of the spectrum tend to hang onto their jobs and don’t seem to get into quite as much strife so i think they are maybe a bit for functional that the illicit users.” (Addiction Medicine Specialist)

"those that had illicit opioid problems would be more troubled by legal matters and so forth, I think that’s perhaps the major feature, that OTCs tend to cost less and are not so involved with crime and perhaps come from a more functional group of people." (Addiction Medicine Specialist)

Many KE worked in multiple settings and were able to describe the different populations in different settings:

"The patients that I see in my (private) practice are usually slightly different. Usually the patients have got pain issue, migraine, some other pain related issue, and they self medicating their pain issue but end up medicating their worries and miseries with the drugs as well and end up with secondary dependence." (Addiction Medicine Specialist)

KE described at least two groups those that may have had a past history of illicit drug use, and others that did not:

"...about half of them I have seen don’t have any history of injecting drug use whatsoever” (Addiction Medicine Specialist)

"...(they) tend to be more from a chronic non-malignant pain background than from a classical opioid dependence group” (Addiction Medicine Specialist)

"And a lot of them (people who are codeine dependent) that I have seen have either had past history of opioid dependence or had some sort of medical, an accident and started off as some sort of pain relief and become addicted to it that way." (AOD clinician)

One KE had an interesting observation that the OTC codeine users seen in the service he worked in often didn’t have pain histories with clear diagnosis, but this group had less clear histories and diagnosis meaning that would often not be prescribed prescription drugs as easily:
"I can think of some that have, well not non-specific but like things like chronic abdominal pain in some of the females and chronic back pain in some of the males, which are reasonably non-specific things. They often don’t have good clear medical diagnosis. You see, the people that have clear good medical diagnosis of their chronic pain, end up getting stronger medications...the people with what you’d be convinced was true proper ongoing chronic pain, they don’t seem to get stuck on the codeine, they go to other things. The people I have with codeine who have chronic pain have non-specific things with unidentified pathology.” (Addiction Medicine Specialist)

A number of KE described an alternate path to problematic use relating to a history of opioid dependence, often following an injury. One example is included below:

"he came in to see me because .. he wanted to do something about it seriously himself. He was under no coercion from other people that I could see. He gave his history of prior heroin use and being on methadone. He had then had 6-8 years clean, started using alcohol, topping up with a bit of codeine for .. I am not exactly sure why he started maybe he had an injury or something. This is a problem that these guys are often very vulnerable to reinstatement of the issue and have a bit of a nibble at opioids um you know either potent ones like morphine or methadone but even lower potency ones like codeine and their brain just says ‘yep, i’ll have more of that thank you’ and then rapidly they are back into taking a lot of aaah codeine, as i said he was taking 30-60 tablets a day and um.. but he did seek methadone" (Addiction Medicine Specialist)

This case also highlights that some familiarity with the treatment system can be protective, in other cases where codeine dependent people had little awareness of their dependence they tend not to identify as drug users or seek treatment themselves:

"(he) had been an illicit drug user and kind of knew that opioids were problematic whereas this women sort of was very surprised to learn that she was opioid dependent and at least some of her pain was caused by running out of opioids." (Addiction Medicine Specialist)

This response of surprise at being opioid dependent is consistent with reports from the codeine dependent people themselves who reported often being genuinely unaware. As noted above, this raises an important consideration in how to target interventions to a population who might not identify themselves as codeine dependent.

Despite using a weaker opioid (codeine) the severity of the dependence in comparison with other opioids was felt to be similar, but the populations differed:

"My impression is that this presentation of opioid dependence is no less severe than when presenting with illicit heroin, morphine, methadone use. It just involves a different group of people." (Addiction Medicine Specialist)

A lack of awareness, and not identifying as drug users was a common feature described by Key Experts as seen below:

"...they just sort of stumbled into this syndrome of taking a packet of Nurofen forte (sic) or mersyndol or something like that a day ...some of these patients don’t realise how toxic some of these medications are .. either that or they are a bit embarrassed ... and so they don’t let on, they don’t identify themselves as drug users." (Addiction Medicine Specialist)

"...most would not see themselves as having a drug or alcohol problem." (Addiction Medicine Specialist)

"...lot of your older middle class people are mortified when you tell them that codeine is just like morphine or heroin and they have become de facto a junkie, they would just about hit you for saying that, and you tell them its metabolised to morphine and it gets into your brain and that is what it does so you are going to get the same withdrawal symptoms ...they tell
you 'WHY DIDNT ANYONE TELL ME ABOUT THIS'... so they seem genuinely concerned.”
(Addiction Medicine Specialist)

A change in awareness was also identified amongst KE, with codeine dependence now being formally recognised in the alcohol and drug field and treatment provided:

“...it’s only been recently that we have actually started taking it seriously. A lot of codeine users when they’d come in and when they were assessed there was a lot of you know "you don’t need help to get off this sort of thing" so it wasn’t really recognised how they needed the treatment where now it is more recognised I think.” (AOD clinician)

KE identified that whilst codeine dependent people recognise there is some kind of problem, by the time they receive a referral to a specialist AOD service, they are still not fully aware of the dependence issue:

"By the time they get here they do definitely know that they have a problem, I don’t think that they are very aware that how physically dependent on it they are it though. They know that they feel unwell but I don’t think that they understand that they are expected withdrawal symptoms and they are not that insightful into their physical dependence" (AOD Clinician)

The grey area between treating pain and self-medicating opioid withdrawal was also identified by a number of key experts”

“...when they come into hospital with their symptoms they don’t realise that its connected to their drug use...I mean some of them might have initially put it down to 'I've got a bit of an ache or a pain' but that might have been opiate withdrawal as much as anything else.” (Addiction Medicine Specialist)

“...in those people weaning them down with plenty of reassurance seems to work ok and i have certainly seen a few people where they themselves are pleasantly surprised that the back pain they were treating is gone and all they are treating was their opioid withdrawal symptoms by taking more codeine." (Addiction Medicine Specialist)

Harms
Common harms identified could be grouped into two main types:

- Harms associated with codeine dependence
- Harms associated with taking large amounts of ibuprofen or paracetamol

Amongst KE that were addiction medicine specialists the pathway to treatment appeared to be determined by which of these harms was most problematic for the individual at the time.

Addiction Medicine Specialists described a number of cases that were identified through acute hospital presentations, with patients identified in the emergency department or in intensive care with severe side effects from ibuprofen consumption (eg stomach bleeds & anaemia, kidney failure) or paracetamol consumption (eg liver disease/damage). Overdose or respiratory depression from the codeine ingredient was thought to be rare. This group may not have self-identified their use as problematic at the time of admission.

Patients entering treatment through drug treatment services tended to reflect a population that may have sought help as their drug use was starting to impact on their lives, including employment and relationships, or alternatively had been referred by another health professional who had identified the dependence.
Treatment Approaches

Common approaches to treatment were identified by those in the alcohol and drug field. These included:

- Maintenance pharmacotherapy
- Opioid assisted withdrawal (with buprenorphine)
- Inpatient detoxification

Counselling or other psychosocial interventions were not perceived to be taken up frequently by codeine dependent people, though some described this as a standard adjunct to the pharmacotherapy treatment that they offered (but did not support this as a standalone approach).

Individual preferences were expressed by some practitioners between methadone and buprenorphine but generally maintenance pharmacotherapy treatment was agreed to be the most effective approach and was favoured over detoxification. Key Experts reported that the doses of pharmacotherapy were not necessarily felt to be lower for this group, despite codeine being often referred to as a weaker opioid (Australian Medicines Handbook, 2008). Buprenorphine-naloxone was also identified to offer a less restrictive treatment model which Key Experts observed was helpful in this group.

One Addiction Medicine Specialist described his standard treatment approach:

"Private Practice Patients get a mixture of medications and psychological support. And mostly the patients are doing very well. I think particularly Suboxone, as it is a more normalised treatment, if you like. You can get people to take it and it works very well because it is no different to taking another medication with a less supervised regime."

(Addiction Medicine Specialist)

Maintaining people who were dependent on codeine preparations on codeine based preparations with a tapering approach was described by some addiction medicine specialists as something they may have done some time ago but this was an approach that was no longer supported.

A general change in practice amongst those involved in delivering AOD treatment included specifically screening for codeine and other pharmaceutical dependence amongst all treatment entrants in response to changing drug use patterns seen in services.

The main interventions identified as used in the pharmacy settings were around restricting or refusing supply, including limiting quantity supplied to daily or weekly pick-up. Responses varied greatly between individual pharmacists.

Some were quite assertive in addressing concerns:

"...we specifically ask the pharmacy assistants to be aware of them... we would normally have intervened directly with the customers directly ... have a chat with them, see what the problem is, see if they’ve spoken to a doctor or stuff like that if they are willing to give us further details, say, chronic pain issue and they are seeing a doctor about it then normally, we try to contact the doctor just to sort of checking up on the stories and things. And you
know, you suppose, most severe exempt of it is it there are times that we’d say that we are
not willing to sell you anymore products at all.” (Pharmacist)

Other pharmacist described a more passive approach:

"I mean the ways I usually get around it is if I sort of suspect this person is abusing it I will
say I don’t have it." (Pharmacist)

"I will sell just a small quantity or tell them I don’t have any depending on what it is and just
make the other staff aware, ‘oh I think this person is overusing can we just monitor’....With
the OTC stuff the only, the primary intervention is to limit how many packets they buy or to
say I don’t have any left...with the ones that seem to be open to you know a conversation or
information that you can offer them some information about that or sometimes some of them
will almost hint that there’s a problem and they’re trying to get off these and you know again,
just offer them information, saying you know, encouraging them and saying you know good
luck, if you need to talk about it some more you know....a lot of them will more likely go to
the Dr to talk about some sort of way of reducing or coming off something rather than the
pharmacist and you know to be honest I’m not really. I’m not sure, I only have a very basic
knowledge of how they would, I’m not an expert in the detox field of how they would come
off something apart from reducing the dose slowly etc. etc. I wouldn’t be able to tell them
you know, give them a plan.” (Pharmacist)

This pharmacist stated that they had only intervened once when they had a concern about OTC
dependence, and their comments indicated they had limited confidence or expertise addressing
addiction related issues.

Some pharmacists had seen good outcomes when codeine dependent patients had been started on
the opioid substitution treatment program, though direct referral for treatment by the pharmacist did
not appear to be common.

Key challenges were identified with pharmacists finding it difficult or uncomfortable to intervene:

"Occasionally we might bring it up, you know you really should use less of this, you’re using
a bit much and maybe you should see a Dr but I find it quite hard. I think most pharmacists
do and you sort of, I think we all know that if we don’t give it to them they’ll probably go
somewhere else anyway...... I find it difficult to know how to discourage them from buying it
and how to sort of, what to tell them, I find that just personally difficult but they don’t ever
pose many difficulties” (Pharmacist)

"We got those, we got a manage pain effectively flyer and little stickers which we stuck on all
the boxes and that made me feel better, I felt like at least it had something on there that I
didn’t have to say, it was actually written on there and they all had a look at it because it was
stuck on the box and they had to lift it off so I thought, that felt like at least I was doing
something when I didn’t know what to tell them again.... We only got it sent once, I’ve still
got some left but at the start we put them on every box and now we just do it for people that
we think might need to be reminded more often.” (Pharmacist)

This pharmacist pointed out that warning stickers developed by the pharmaceutical company to let all
customers know of potential risks were only targeting those that they thought had a problem. This
could perhaps limit the effectiveness of this intervention. As indicated in the previous chapter the
approach by pharmacists of targeting interventions based on customer appearance may not be
reaching the full spectrum of people who experience dependence to codeine products. An evaluation
of interventions such as warning labels and stickers is required.
KE seemed to generally support the greater restrictions around OTC codeine sales. The support was twofold: partly because of concerns around dependence, and also because of the recognised limited efficacy of the low doses of codeine provided in OTC products, as one pharmacist said:

"I think that for most things you probably don't need codeine. Codeine doesn't help that much more so I think for most cases, just paracetamol or ibuprofen would be enough. Especially because it can become addictive, I would agree with changing the schedule and making it prescription only." (Pharmacist)

This is consistent with a recent large review on the efficacy of combination analgesics finding a lack of evidence for over the counter combination analgesic products with codeine (Bandolier, 2010).

Difficulties working with codeine users

One pharmacist described how challenging it was working with codeine users because they don’t really want to be questioned, nor do they have good insight into the possibility that they might be opioid dependent. Pharmacists’ reports that customers know all the answers to the questions and would tell them what they wanted hear. The end result often appears to be that codeine is supplied because concerns cannot be validated. Pharmacists appear to be in a difficult position, particularly in the absence of real time medication records that might alert them of codeine supplied through other pharmacies. The perception that ‘if we don’t give it to them they will go somewhere else anyway’ was reflected by more than one pharmacist.

One pharmacist described a patient that was dependent on OTC codeine that was slowing tapering their dose whilst being managed by a GP. This approach contrasted with addiction medicine specialists reporting moving away from this approach due to the potential toxicity of the paracetamol or ibuprofen ingredients. Standard guidelines about the management of OTC codeine dependence however do not exist to inform GPs as to best practice in this area.

Limiting sales seems to be the main intervention as opposed to addressing the difficult issue of dependence with customers in a pharmacy. The appropriateness of addressing these issues in a pharmacy setting was also raised due to lack of privacy in the pharmacy.

Interestingly, while codeine dependent people seem to resent being questioned about their codeine use, pharmacists similarly feel uncomfortable raising the issues. As one pharmacist said:

"It's a bit tricky to sort of say look ...I reckon you've got a problem, do you want to talk about it ....interestingly sometimes you never see them again because you've just gotten too close to the problem, .... they just don't want to be interrogated". (Pharmacist)

Failure to self identify use as problematic was identified as a barrier to treatment:

"...the challenge is that to get patients to accept that they are highly opioid dependent or maybe highly opioid dependent and need pharmacotherapy for that. Which is sometimes quite confronting for people if you don’t like to be labelled or treated as a drug addict. They don’t see themselves in that group and of course they are very different to people who we usually treat for heroin anyway, so for them it’s quite confronting." (Addiction Medicine Specialist)

"I suppose, people who use codeine, a lot of codeine users that we would see, would just be self medicating. So, either they haven’t identified as having an addiction or they are sort of in denial." (Pharmacist)
These KE descriptions are consistent with perceptions reported by codeine users themselves. These challenges are even greater for OTC codeine dependent people that have not entered treatment or had any realisation that there might be an issue. As highlighted in the previous chapter there seems to be a role for greater education of the general population about the risks of dependence with these products. One pharmacist described difficulties having this conversation:

"I have mentioned to people you know you might become dependent on codeine sort of very subtly and they don’t, from my experience these people have all said no, no not me, I couldn’t, no, I don't think I would, I'm using it for pain and they sort of look down upon the idea that they could be dependant." (Pharmacist)

In light of the comments made by OTC codeine dependent people in the previous chapter this is a difficult situation for both the codeine dependent person and the pharmacist, neither of whom report feeling comfortable discussing codeine dependence with each other.
CHAPTER 6: DISCUSSION AND RECOMMENDATIONS

Typologies of codeine use

Three typologies of codeine dependent people were described:

- **Group 1** - Those with therapeutic dose dependence: characterised by self control over maximum doses and limited awareness of dependency

- **Group 2** - Recreational users: deliberately using codeine seeking the euphoric effects, are generally knowledgeable about OTC codeine and knowledge seeking its potential harms

- **Group 3** - Those with high-dose dependence: Consuming substantial daily doses and being at considerable risk largely due to paracetamol or ibuprofen consumption. Some of this group describe having developed awareness that their use is problematic. However, they may not seek evidence based AOD treatment due to negative perceptions of treatment/other drug users, or report compulsive use despite having become aware of the harms after dependence has developed

Risks of codeine use

The risks, awareness of risks and potential interventions required for each group vary. Understanding the characteristics of these three typologies will enable prevention and intervention strategies to be targeted.

The grey area between pain and addiction, where people were medicating opioid withdrawal while thinking that they were treating their pain was a common feature. This is crucial to consider when targeting strategies. This group of codeine dependent people often did not recognise that they were treating withdrawal and not pain. This group reported escalating their doses to large daily doses and experiencing severe adverse events before this was identified. This viscous cycle was consistently described by OTC codeine dependent people and key experts. Further work is required to better understand if many of these cases involving worsening headaches and chronic combination OTC codeine products may represent phenomena such as medication overuse headaches (Diener & Limmroth, 2004; Evers & Marziniak, 2010)

Mental health and codeine use

Chemical coping (Kirsh, et al., 2007), self medicating a range of mental health symptoms was also reported by both OTC codeine users and key experts. The discovery by the OTC codeine user that codeine consumption assisted with relaxation and mood often preceded dramatic dose escalation.

Education about codeine dependence

A number of codeine users appeared to rationalise their dose increases thinking they needed to increase the dose as they had simply become used to the dose and is wasn’t working. Clear messages to all OTC codeine users that if maximum doses are exceeded they should seek medical care promptly rather than continuing to use OTC codeine are warranted. Key points that may reduce further harm include:

- Informing all OTC codeine users that exceeding recommended doses is a warning sign that should be addressed
Inform that use of OTC codeine for mental health conditions rather than pain may be a warning sign.

Reminding that OTC codeine is only intended for short term use, medical advice is warranted for longer term use and there is limited evidence that OTC codeine is appropriate for long term treatment.

In particular, the following warning could be positioned clearly and prominently on the front of the pack: ‘Can cause addiction. For three days use only’. It also could cite information about the warning signs of addiction, i.e. if the medicine is needed for longer periods and in higher doses than recommended, and if stopping the medicine makes you feel unwell with symptoms being relieved when medication is taken again.

**Awareness of OTC codeine dependence liability**

OTC codeine users generally appeared to transition from therapeutic use to dependence, though a small number of recreational users were identified. OTC codeine users indicated they were largely unaware of the risks of OTC codeine causing dependence. Informing all people purchasing OTC codeine of the possible risks of OTC codeine medication does not appear to be common practice. Pharmacists clearly have a role in advising about common adverse effects associated with any medications; however in practice there appears to be considerable opportunity to enhance this role for non-prescription codeine products. Educating the general population about the importance of the pharmacists’ role and about risks with these medications more generally appears to be warranted.

Early intervention has been suggested by the OTC codeine dependent people interviewed to be the only time that information about risks would be considered; that is before features of opioid dependence (such as loss of control over use) are present or prior to escalating doses to reveal the euphoric effects of codeine. Current responses appear targeted at those who have developed dependence already.

A strong theme to come out of the comments is that pharmacist level of intervention is often related to the customer’s appearance. This means that people who appear higher functioning may miss out on any level of protection, while those that appear to be 'down and out' may experience greater discrimination and possibly be denied pain management. A more systematic approach to assessing risk is required.
Key Recommendations

Recommendation 1 – Raising awareness

There is a need to raise general awareness of risks of dependence

- Key messages should include seeking advice if exceeding recommended doses, risks of OTC codeine use and driving, and signs of opioid dependence and opioid withdrawal.

- Pharmacists have a key role in applying a more systematic approach to educating people about the risks of dependence which should be facilitated by the recent rescheduling of OTC codeine

Recreational users appear amenable to harm reduction information, and as such it would be appropriate to target messages to this group through peers. This already happens with regard to information about codeine extraction, though whether information about harms around ibuprofen have been clearly understood is less clear. Developing evidence based messages around risks of ibuprofen consumption and disseminating these messages should be considered.

High dose codeine use appears to continue for some time before problematic use is detected, and often presents through hospital emergency departments, in some cases having multiple admissions before problematic OTC codeine use is identified

- Health professionals need to be aware of the possibility of developing codeine dependence and routinely ask about OTC medication use.

- Health professionals and consumers need to be provided with information about how to recognise opioid dependence, such as is provided in the patient information leaflet included in packs of these products. In particular, warning such as the approach taken in the United Kingdom should be adopted. These labels are planned to be positioned clearly and prominently on the front of the pack stating ‘Can cause addiction. For three days use only’. Product Information Leaflets in the United Kingdom will also carry information about the warning signs of addiction, e.g. if the medicine is needed for longer periods and in higher doses than recommended.

Recommendation 2 - Identify barriers to treatment

Barriers to treatment should be addressed including:

- Negative perceptions of pharmacotherapy treatments

- OTC codeine dependent people identifying current treatments as being for ‘other people’ with clear stigma against illicit opioid users demonstrated with the use of terms like ‘bum’ and ‘junkie’

- OTC codeine dependent people often having limited insight into the fact that they were dependent and being unaware of treatment options

Despite these barriers, treatment experience was generally positive for those that experienced it. Importantly, online forums were identified as being valued by OTC codeine dependent people for their information and support functions. OTC codeine users felt comfortable accessing these forums.
suggesting that this is a good medium to provide information to this group of opioid dependent people, and that the on-line forums could facilitate referral to face to face service where required.

**Recommendation 3 - Enabling pharmacists to respond effectively**

Comments from pharmacists indicate that they do not have the information needed to detect OTC codeine dependence, nor do they feel confident addressing OTC codeine dependence with customers. Interventions from pharmacists regarding OTC codeine dependence appear to be poorly targeted.

There is a challenge for pharmacists using frequency of purchase when sales are not uniformly recorded and records from other pharmacies are not available. In this scenario the reluctance to identify OTC codeine misuse or refuse a sale can be clearly understood.

- Routine recording of codeine sales may be warranted
- Therapeutic responses rather than simply declining sales and recording details are required; responses from pharmacists where OTC codeine dependence is suspected need to be carefully developed in order to engage this at-risk group. It is crucial that this is responded to as a health and not a law enforcement issue.

Inventions such as stickers or warnings regarding OTC codeine dependence may only get used for certain customers; an evaluation of these education strategies is required as they may not be reaching their target audience.

This must also be considered in light of comments from OTC codeine dependent people in Chapter 4, where they report discomfort at being questioned by pharmacists. Finding a way to assist pharmacists to talk to patients about the possibility of dependence including generally raising the awareness of dependence is crucial. Recent changes in legislation now require that a pharmacist be involved in every sale of OTC codeine providing an important opportunity for pharmacists to give information to all people using OTC codeine. Developing interventions and referral pathways to make the most of this interface between OTC codeine users and health professionals is vital for preventing further harm.

**Limitations of research**

Limitations exist with all research and should be acknowledged with research of this type. Convenience sample methods are commonly used in research with hidden populations however it should be remembered that it would be difficult to know if the findings here can be generalised to other populations that were not represented in this study. It is likely that other populations may also have difficulty with OTC codeine dependence and were not captured by the recruitment methods used. However, this study does give important insight into a group of codeine dependent people that have not previously been described in detail.

In addition, purposive sampling was used to identify key experts, and particularly with the small number of pharmacists able to be interviewed within the scope of this project it is difficult to know if the challenges identified by these pharmacists reflect the pharmacy profession more broadly. The commonality between the issues identified by OTC codeine dependent people and the Key Experts provides some validation of these findings. It would be important to confirm if the issues identified by
Key Experts in this study are issues identified by health professionals more broadly. This is outside the scope of this project but an important topic for future work.
REFERENCES


The British Pain Society. (2010). Managing your pain effectively using “Over the Counter” (OTC) Medicines from This leaflet is available to download from www.pagb.co.uk and www.britishpainsociety.org