

Abstract

Global increases in misuse of pharmaceutical opioids are a public health concern. Over the counter (OTC) morphine preparations are sold in the United Kingdom. A netographic study explored online reporting of misuse of OTC morphine based medicines. A systematic internet search was conducted using the terms; ‘*J Collis Browne’s Mixture*’; ‘*J Collis Browne*’; ‘*Chlorodyne*’; ‘*Gee’s Linctus*’; ‘*Morphine Squill*’; ‘*Kaolin &Morphine Mixture*’; and ‘*Opiate Squill Linctus*’ in combination with ‘*forum*’. Following application of exclusion criteria and removal of duplicates, 105 fora threads on 11 publically available online fora were analysed using the EPP method. Key decision-making factors for misuse was grounded in legal availability, curiosity and when in withdrawal. Consumptive effects included euphoria, nausea, vomiting and sedation, and were dependent on tolerance. Concern for harm associated with product additives (squill, kaolin) was reported. Decantation extracted morphine from kaolin based products. Concerted sourcing efforts included multiple pharmacy accessing, appropriate customer profiling, and falsifying medical screening. Displacement to online purchasing occurred, with concern for online sharing of customer information. Development of real-time pharmacy monitoring should incorporate national online pharmacy chains. Continued surveillance of internet drug fora as medium for knowledge exchange and indigenous harm reduction for the misuse of OTC medicines is warranted.

Key Words

Morphine, opium tincture, internet

Introduction

Opioids are derived from the poppy plant '*Papaver somniferum varalbum*' (opium, morphine and codeine), and occur in semi-synthetic (heroin) and synthetic forms (methadone, buprenorphine). Whilst considered relatively safe, potential for misuse and dependence are recognised (Temple, 2003; Butler & Sheridan, 2010; Jones et al., 2012). Global increases in misuse of pharmaceutical opioids are a public health concern (Lessenger & Feinberg, 2008; Gilson & Kreis, 2009; Fischer, Bibby & Bouchard, 2010; UNODC, 2011; 2013; Fischer & Argento, 2012). Efforts to quantify and address misuse are hindered by prescribed and over the counter (OTC) availability, and the covert nature of therapeutic and non-therapeutic misuse (Lessenger & Feinberg, 2008; UNODC, 2011). Further complicating matters, is the wide variety of terminology used to describe this phenomena (Barrett et al., 2008) and recognition of specific consumer motives, characteristics, risk behaviours and trajectories of misuse as distinct from illicit drug use (Casati, et al., 2012; Cooper, 2013a). Generally, misuse encompasses legitimate but incorrect use for medical purposes; and use outside of acceptable medical guidelines at higher doses and for longer than advised (Wazaifyet al., 2005; Nielson et al., 2008; Casati et al., 2012). Regulatory status, public misconceptions around safety, social network and media influences, inappropriate prescribing, availability from pharmacies, self-medication of emotional and physical pain, recreational popularity and illicit availability contribute to patterns of misuse (Gilson & Kreis, 2009; Nordmann et al., 2013). Deregulation to OTC status of some opioids (i.e. codeine, morphine) has been observed to complicate patterns of misuse (Francis et al., 2005).

A range of studies have investigated the misuse of OTC medicines from pharmacist (Matheson et al., 2002; Pates et al., 2002; Albsoul-Younes et al., 2010; Nielson et al., 2013; Cooper, 2011: 2013b) and medical practitioner perspectives (Butler & Sheridan, 2010;

Sheridan et al., 2012). The research base on misuse of OTC opioids remains primarily focused on the weak opiate, codeine (Reed et al., 2011). Studies present treatment profiles of individuals dependent on codeine as distinct from other opiate dependent populations (Sproule et al., 1999; Otto et al., 2009; Zahradnik et al., 2009; Nielson et al., 2011; Nielson et al., 2013; Cooper, 2013c). Community pharmacist perspectives in the United Kingdom (UK) often refer to misuse of morphine based medicines available OTC as secondary to codeine misuse (Ball & Wilde, 1989; Paxton & Chapple, 1996; Hughes et al., 1999; Matheson et al., 2002; Cooper, 2011; 2013a;c; Van Hout, 2014), and characterised by customer accessing of multiple pharmacies for certain products (Parker et al., 1974; Paxton & Chapple, 1996; Cooper, 2011; 2013a;b). These specific products sold in the UK are Gee’s Linctus, J. Collis Browne’s Mixture, formerly Collis Browne’s Chlorodyne and Kaolin & Morphine Mixture BP (Helliwell & Game, 1980). See Table 1.

Insert **Table1** about here

In contemporary health practice, morphine is mostly used to reduce cough severity in patients with idiopathic chronic cough, and is present in OTC anti-diarrhoeal preparations (Fuller et al., 1988; Vertigan et al., 2006; Morice et al., 2007). Its use is limited due to increased incidence of adverse side effects such as sedation, with severe hypokalaemia and renal failure on prolonged use, and risk of physical and psychological dependence (Dicpinigaitis, 2009; Molassiotis et al., 2010; Birring, 2011). Overdose and death can occur on single dosage ranging between 100 and 150mg in adult individuals not habituated to opiates (McGuigan, 2004). Adverse effects of misuse of OTC morphine based medicines (for example Gee’s Linctus) include cardiac toxicity, proximal myopathy (Smith et al., 1986; Mason et al., 1987;

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Griffiths et al., 2009) and death (Tuncok et al., 1995). Dependence contributes to peripheral neuropathy and mental illness (i.e. acute psychosis) in middle aged patients (Seager & Foster 1958; Conlon, 1963), relapse and poor prognosis among youth (Parker et al., 1974), and neonate abstinence syndrome in the case of maternal dependence (Semmens, 1974). Fatalities, high risk of respiratory depression, severe hypokalaemia, metabolic alkalosis and hypertension occur from misuse of Kaolin & Morphine Mixtures, caused by high sodium bicarbonate and liquorice content (Todd et al., 1985; Greaves, 1985; Oswald, 1986; Turner, 1987; Barragry & Morris, 1980; Kirkham et al., 1987; Graham et al., 2010; Boland et al., 2010).

Whilst studies have explored perspectives of individuals dependent on OTC codeine (Nielson et al., 2011; 2013, Cooper, 2013c), and recreational user intoxication experiences with codeine (Van Hout, 2014b), very little is known about user trajectories and experiences of misuse of morphine based medicines available OTC in the UK. Given the recent shift in cyber consumerism of pharmaceutical and novel psychoactive drugs (Boyer et al., 2007), we chose a netographic approach (Kozinets, 2002; 2010) to explore user experiences of misuse of these OTC morphine based medicines and as reported on publically available website forums.

Methods

The aim of the study was to garner unique insight into the phenomena of misuse of OTC morphine based medicines in the UK (see Table 1), as reported via asynchronous interactions between unconnected online parties engaging in public web-forum discussions (Hsiung, 2000; Kramish et al., 2001; Saba & McCormick, 2001; Day & Keys, 2008). The study was

cognisant of the reflective life worlds of users (Mottern, 2013) and conducted in the absence of any preconceived hypotheses or generalizations (Wertz, 2005).

Based on the review of literature on misuse of OTC medicines in the UK and the available studies referring to misuse of specific morphine containing products, a systematic internet search was executed on Google Insights for Search, Google and Yahoo by utilising the specific key words for these products; '*J Collis Browne*', '*J Collis Browne's Mixture*', '*Chlorodyne*', '*Gee's Linctus*', '*Morphine Squill*', '*Kaolin & Morphine*', and '*Opiate Squill linctus*' and in combination with the word '*forum*'. These combined searches generated 1,603,680 hits relating to sites where these terms had been cited (see Table 2). In compliance with ethical protocols for netographic research (Hsiung, 2000; Kozinets, 2010) researchers accessed publically available postings, maintained observational status and did not make personal contact with participants.

Insert **Table 2** about here

The first 25 hits per search term were scrutinised for forum activity. Sampling was grounded in Kozinet's (2010) netographic criteria relating to scale, interactivity and heterogeneity. 13 web-sites hosting forum activity around OTC morphine based medicines were identified. Of these 13 sites, two were excluded when discussions on morphine based medicines did not specify misuse. Consequently the 11 remaining sites were methodically searched using the internal search engine with the specific key words: This search ran until no more data could be located on the site and generated 402 identified threads. Following application of exclusion criteria; exclusion of forums not hosting discussions, or discussions not based on misuse, and removal of duplicates, 105 discussion threads remained. See Table 3.

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Insert **Table 3** about here

The discussion forum threads were transferred to a Word document in accordance with the EPP method, and produced 53,457 words for subsequent analysis. Confidentiality measures included the removal of screen pseudonyms, URLs, country and city identifiers (Wilkinson & Thelwall, 2011). The analysis was conducted in an open, impartial, and cautious manner using the Empirical Phenomenological Psychological (EPP) five step method (Karlsson, 1995) derived from Husserl's (1970) phenomenology theory.

Step 1. The dataset was read three times in order to familiarize and obtain an insight and create an unbiased overview with complete absence of any specific hypothesis.

Step 2. The data was divided into meaning units (MU), without regard to recorded syntax, and each time a new meaning, focus or topic occurred in the data set.

Step 3. MUs were reaffirmed by both researchers so as to present the noteworthy and implicit meaning of the misuse phenomena in objectivised terms, and with informational rationality (Maxwell, 1992) ensured by collaborative team discussions with respect for user experiences.

Step 4. Restated MUs were categorised by repeated team and individual consultation of the data, by checking the category was maintained, and consideration of specific characteristics and similarities in the misuse phenomena.

Step 5. Categories were placed within more general themes, so as to increase the level of perception through identifiable patterns within related categories. Three themes with 51 categories were generated. See Table 4.

Insert **Table 4** about here

Results

The interpretations of these experiences of access and misuse of OTC morphine based medicines were written by anonymous authors and published on public Internet fora. It is not possible to provide a detailed representative profile of these consumers, given the inconsistency of reporting of gender and age, and the potential for multiple screen identities. Participants reported use of a range of prescribed and OTC pharmaceuticals (clonidine methadone, codeine, dihydrocodeine, oxycodone, chlormethiazole, clonazepam; alprazolam, tizanidine, promethazine, buscopan, ranitidine, gabapentin), novel psychoactive drugs (methoxphenidine, methiopropamine) and street drugs (heroin, ketamine, cannabis) with OTC morphine products. Some reported use of poppy seed tea and kratom leaf.

User Decision-Making and Product Choices

Fora discussions centered on the availability, contents and potential uses for intoxicating purposes of OTC morphine based medicines in the UK. Many participants conversed around these preparations being direct descendants of the wide variety of opium medications circulating in the UK during the 19th century.

‘The Victorian era drug culture still has a certain allure.’

‘Us Brits love a bit o’ Morphine.’

Discussions lamented the fact that product ingredients had changed, with morphine content and subsequent potency reduced.

‘J Collis Browne is a real hangover to the days of Victorian patent medicines, although back in them days there was actually a substantial amount of morphine or opium tincture, not the fractions of a millilitre the opiophobic nanny state allows to be put in there nowadays.’

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Decisions to use OTC morphine linctus appeared for the most part grounded in curiosity and interest to experiment. Comments centred on prior home socialisation of use of Gee's Linctus and Kaolin & Morphine as a child.

'I was silenced by Gee's as a kid.'

'I was brought up on those. I think it was almost standard practice.'

Participant experience of codeine, and the problematic nature of extracting codeine from additives in cold water extraction methods and desire to avoid the intense 'codeine itch' appeared to influence interest in misuse of OTC morphine.

'[Gees] This OTC way of getting an opiate high is quite a bit more expensive

than doing a codeine CWE but it's a lot easier and the high is far nicer.'

Some participants described using codeine and morphine linctus (both Gee's Linctus and J Collis Browne) to stave withdrawals from heroin.

'Once knew a guy who would drink 4 bottles of Collis a day... Tastes a bit disgusting at first but if you're someone trying to avoid the turkey and have no alternative then it's valid.'

Fora discussions observed that OTC morphine based products were generally ineffective in managing opiate withdrawals. Gee's Linctus was also advocated to prolong poly drug taking episodes or assist comedown from other drugs.

'I've tried J Collis browne's and Kaolin & Morphine as emergency rattle cures and to be honest neither of them done a XXXX thing.'

Many participants commented on the favourable price of OTC morphine based medicines. Gee's Linctus was observed as most popular, particularly as the ethanol content was viewed by participants as potentiators of opium/morphine, and when the user was opiate naïve. J Collis Browne was generally viewed as weaker than Gee's Linctus, and for individuals with opiate tolerance disappointing.

'Gee's Linctus was always my fave though. Such a nice buzz compared with codeine or any other OTC opioids.'

Some comparisons were made to methadone in terms of potency.

'100ml [J Collis Brownes] is roughly equivalent to 20ml of methadone. If you've not got a habit it's quite nice.'

Several comments were made around quality of intoxication effect per brand, with participants recommending avoiding generic products made by independent pharmacies (i.e. own brand).

'It contains so little actual morphine in a horrible mixture that it's kind of pointless if you have a hint of any tolerance.'

Sourcing, Pharmacy Control and Web Retail

Discussions centred on perceptions of legality inferring ease of access to morphine based preparations in pharmacies and from web retailers. Forum activity from outside of the UK discussed '*codeine and morphine product tourism*', online restrictions in dispatching to the US and Australia, and indicated certain envy for those residing in the UK.

'I was almost drooling over some of the stuff they sell.....Gee's Linctus, J Collis Browne's, Unfortunately, these 'nicer' items are restricted from being shipped to the USA, according to the dispatch policies.'

Pharmacy vigilance in the supply of OTC morphine was viewed by many as a '*stumbling block*' to purchasing. Participants described restrictions imposed by pharmacy controls when suspicious of customer drug aberrant behaviour, such as customer intoxication or suspected guilt, customer appearance, or inappropriate and frequent requests to purchase.

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'Got turned down by the pharmacy for some Gee's Linctus, despite the whole "it's for my granddad, he's a bit awkward" facade. What's the point in having something for sale if you're going to do your best to not sell it?'

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Some participants commented that Gee's Linctus, J Collis Browne and Kaolin & Morphine Mixture were generally easier to purchase in pharmacies than codeine linctus.

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'Not all pharmacies will stock Gees etc. Those that do don't just hand it out to anyone, they will ask why you want it and weigh you up. If they think you are a dirty druggie you won't get it.'

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Having the right customer profile or appearance, background story and medical reasons for request, was viewed as vital to reducing pharmacist and counter assistant suspicion, and securing a successful sale. Participants described uncomfortable experiences when pharmacists intervened, and subsequent refusal to sell the product.

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'I can never really get my head round this. As far as I know it's 100% legal for them to sell you it, 100% legal for you to buy it but some places will refuse if you look like you're going to abuse it? I've got to stop going in that place stoned and unshaven in a leather jacket and build up a friendly rapport with 'em.'

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Many commented on 24 hour pharmacies given rotation of staff as useful in sourcing morphine based products. Many for discussions centred on the recommendation to use friends, family and middle aged female contacts as optimal routes to securing products. Several comments observed *'Get yourself a woman of a certain age, worth their weight in gold; Just watch the chemist change his tune, they never question Ladies of a Certain Age.'*

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'Pharmacy hopping' by virtue of travelling around the country or large city purchasing morphine products was described by several participants.

'A gazillion chemists to choose from is prime 'Gee'-collecting territory. Folk living in cities have it easy getting such cheap 'n' cheerful minor opioid goodnesses. Gets tricky in small towns where the pharmacist recognises you if you go in too often.'

Certain types and chains of pharmacies were observed to be easier to access than others.

'You wanna look for the type of pharmacies that are ran by old men just for the joy of doing it.'

'You have to ask for it by name and usually only "mom and pop" pharmacies carry it.'

Over time and in correspondence with development of opiate withdrawals, sourcing via multiple pharmacies was described as problematic and time intensive.

'I always rather enjoyed the daily Gee's hunts meself. In the early days anyways. Got to be a bit of a chore when anything less than four bottles a day had me "clucking". Gee's can bite yer bum if you hammer it too long.'

Displacement toward internet sourcing and online pharmacy purchasing was described by many participants when experiencing withdrawals and difficulties in accessing pharmacies. Some online pharmacies restricted sales to a certain amount of bottles per order in a designated timeframe and engaged in a certain level of virtual customer scrutiny prior to order completion. Blacklisting of online customers and cancellation of orders were described on suspicion of customer aberrance. Use of false customer profiles and appropriate medical symptoms were advocated when completing the pre order screenings. Multiple online pharmacy purchasing and personal recording keeping of prior access was advocated.

'I've had no problems ordering a bottle or two a week from the same pharmacy; they give you a questionnaire re: symptoms and then bang it off to you. Of course they think I'm a 65 year old woman...'

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Cost-benefit pricing defined by participants as *'bang for your buck'* was described by some as a deterrent to online purchasing given the costly dispatch charges for recorded deliveries.

'Only downside is the one bottle per order rule and the hefty delivery charge. I'd probably be better off financially with a heroin habit to be honest.'

Given the lack of face to face interaction and potential for recognition of suspicious custom, some fora discussions centred on participants concerns with regard to whether online pharmacies serving the UK shared a customer database of morphine and codeine linctus purchase history.

'Does anyone know whether online pharmacies keep some sort of database on when 'suspect' items are purchased, or alternatively if they use an algorithm to check if the time has been < 2months etc...? In a shop environment I'd assume this is down to personal judgement, however online the only thing they have to go off is statistics.'

Experiences and Consumptive Practices

Effects from Gee's Linctus and J Collis Browne's Mixture (weaker) were described as *'unbelievably euphoric, so dreamy it borders on tripping sometimes'*, taking several hours to peak and lasting several hours until comedown. Kaolin & Morphine Mixture was described as *'tripping and nodding, and a pleasant enough way to spend an afternoon'*. Experiences were dependent on tolerance and described as follows;

'About a quarter to a third of a bottle [Gee's] did the trick with no tolerance - lovely euphoria and dreaminess. It's fairly stimulating at first - the dreamy noddiness takes a while to take over. Opium tincture is such a beautiful high.'

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Dosage ranged from ½ to several bottles of Gee’s Linctus and J Collis Browne’s Mixture over the course of the drug taking episode. Mixing with soft drink (i.e. ‘Sprite’) and holding one’s nose was recommended to promote consumption.

‘I can take 1/3 of a bottle of J Collis Browne’s Mixture which is less than 7mg of morphine ~(20 mg per bottle) and get a very nice high, walking around feels kind of floaty and I can stay up for hours. 1/2 a bottle is the most I have done and that gave me a serious euphoria.’

Some participants advocated tentative gauging of dosage, and use of dosing intervals to promote and prolong low tolerance.

‘I would experiment at lower doses and work your way up to a comfortable level.’

Negative views were evident with regard to the foul taste, projectile vomiting and lasting nausea with flatulence, particularly when consuming one or several bottles of Gee’s Linctus and J Collis Browne’s Mixture for achievement of an intoxicating effect. Parsley was recommended to reduce the unpleasant taste. Antacids were recommended to improve absorption, and grapefruit as potentiator.

‘Gee’s is so foul tasting and weak that I wish I’d never bothered. I could only get through about 90% of my bottle before my stomach said enough. I felt queasy for hours afterwards and the Gees flavoured burps were pretty sickening too.’

Gee’s Pastilles were described as sickening and a poor recreational experience.

‘Absolutely no effect, pretty gutted about those Gee’s Linctus Pastilles, two boxes and literally nothing, plus they taste disgusting. I honestly think it was my worst attempt at getting high yet.’

Many users were worried about potential harms associated with consumption of excessive amounts, relating to presence of additives such as squill, ethanol, peppermint and kaolin.

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3 *'...and if you drink enough to get high, the other active – squill vinegar - is pretty*
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5 *damn nasty in high doses.'*
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8 For a activity discussed preparation of solutions for rectal administration (*'plugging'*) for an
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10 enhanced potent effect, and whether intramuscular or intravenous injection was safe.
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12 Injecting use was strongly rejected by participants due to potential for tissue and vein damage
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14 caused by additives such as kaolin. Awareness of harmful additives fuelled for a discussion
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16 around optimal methods of morphine extraction.
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19 *'Difficult to separate the Kaolin from the morphine and consuming a recreational*
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21 *level of morphine would require ingesting so much Kaolin one would be very very*
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23 *ill.'*
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26 Comments were made around extraction of morphine from Kaolin & Morphine products by
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28 use of simple decantation methods, or syringing the liquid morphine solution from the kaolin
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30 clay base.
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33 *'You just need to let the contents settle - the kaolin will form a thick, heavy layer*
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35 *at the bottom and skim the liquid off the top with a pipette, oral syringe or*
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37 *similar.'*
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40 This method was viewed by many as time intensive, sub-optimal, price negative and
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42 potentially harmful given the remainder kaolin content. Other threads centred on
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44 requirements for more sophisticated methods (i.e. acid/base extraction and column
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46 chromatography).
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49 *'Unless you own a centrifuge, you're not going to be able to separate the*
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51 *morphine from the clay. Filtering doesn't work, as it blocks up all filters almost*
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53 *instantly. And the liquid won't separate from the clay powder by itself. Also it's so*
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55 *expensive, that it's just not worth it.'*
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Discussion

The study provides a unique insight into consumer decision-making processes to access OTC morphine based medicines for misuse purposes. A netographic approach (Kozinets, 2010) was utilised to collect rich and timely data in a thorough manner by systematic examination of embedded, multi-level and multi sited publically available online phenomena (Wittel, 2000; DiMaggio et al., 2001; Wilson & Peterson 2002; Markham, 2005). Limitations of the study are present in the form of online self-reporting, however validity is ensured in the form of ‘trustworthiness’ of the data (Lincoln & Guba 1985; Wallendorf & Belk 1989) by verification of extensive similarities across forum activity relating to product and pharmacy choices, experiences in sourcing and misuse, morphine extraction and awareness of harm. Validity is further ensured by virtue of verified contents in OTC available morphine products (*‘Gee’s Linctus’*, *‘J Collis Browne’s Mixture’*, and *‘Kaolin & Morphine Mixture BP’*). Validity in the use of EPP was optimised by implementation of partial phenomenological psychological reduction, and horizontal consistency and vertical consistency in the interpretation of data (Karlsson, 1995).

Whilst the internet is not a significant source for diversion of opioids (Inciardi et al., 2007: 2009; Wilsey et al., 2010; Hamer et al., 2013), it is increasingly utilised to inform and support online communities of users (Van Hout & Bingham, 2013). Cyber communities of drug users and interested parties fuel exchange of communal folk pharmacology around pharmaceutical opioid misuse (Southgate & Hopwood, 2001). Key intoxication outcomes, indigenous harm reduction messages and awareness of harmful additives are grounded in expert knowledge based on prior experiences and common sense practices (Friedman et al., 2007; Boyer et al. 2007; Holt & Treloar, 2008; Van Hout, 2014b). Similar to Van Hout’s 2014b study on codeine intoxication phenomena, key reasons for misuse were grounded in legal availability,

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curiosity and management of opiate withdrawals. Studies have identified problematic drug users and methadone maintenance patients using OTC codeine to manage withdrawals when unable to secure either heroin or prescribed methadone (Heard et al., 2006; Reed et al., 2011). Effects included euphoria, nausea, vomiting and sedation (Zacny & Gutierrez, 2003; Zacny, 2005; Emmett & Nice, 2006; Van Hout, 2014b). Awareness of opiate tolerance and intense nausea appeared to negate optimal experiences. Similar to the study on OTC codeine, poly pharming by virtue of use of antacids and potentiating practices (i.e. grapefruit) was recommended (Van Hout, 2014b). Participants were aware of harms associated with additives, such as excessive ingestion of kaolin (Todd et al., 1985; Greaves, 1985; Oswald, 1986; Turner, 1987; Barragry & Morris, 1980; Kirkham et al., 1987; Graham et al., 2010; Boland et al., 2010), and squill (Griffiths et al., 2009). Decantation of the brown supernatant morphine fluid from Kaolin & Morphine Mixtures was advocated (Sheridan & Strang, 2003; Emmett & Nice, 2006; Butler & Sheridan, 2010; Cooper, 2013c).

Pharmacist reporting of concern around customer OTC opioid aberrance is evident (Ball & Wilde, 1989; Paxton & Chapple, 1996; Hughes et al., 1999; MacFayden et al., 2001; Pates et al., 2002; Matheson et al. 2002; Reed et al., 2011; Cooper, 2011; 2013a:c). Access to products in pharmacies required concerted efforts, both in terms of face to face and virtual consultations. Similar to Nielson et al., (2013) participants reported having to present with appropriate appearance, behaviour, rehearsed script and customer profile in order to achieve a successful face to face, and online purchases. Strategies to address suspicious requests include rejection of sale, supply of small amounts, removal of products from sight and claiming products are not in stock (Matheson et al., 2002; Pates et al., 2002; Albsoul-Younes et al., 2010). Given these restrictions plus need to purchase substantial amounts for intoxication purposes or when experiencing withdrawal, displacement to online purchasing

was observed (Cooper, 2013c), despite being costly. Multiple purchasing of pharmaceutical opioids, whether face to face or online is associated with drug (Peirce et al., 2012) and heroin (Martyres et al., 2004) related fatal overdoses. Queries around online sharing of customer information were of interest, and highlight consumer awareness of growing policy shift toward real-time monitoring of supply (UNODC, 2011; Le Roux, 2013; Shan et al., 2013). Well-designed real-time monitoring systems track and monitor levels of supply, prevent ‘pharmacy hopping’ in the event of refusal of sale, and provide context for pharmacy brief interventions (Wrobel, 2003; Chee & Schneberger, 2003; Shand et al., 2013; Bateman, 2013; Le Roux, 2013).

Conclusion

The study presents an insight into consumer accessing of OTC morphine for misuse purposes and is intended to contribute to further policy and pharmacy practitioner dialogue on how to monitor, support and intervene with consumers suspected of misuse. Development of real-time monitoring should incorporate national online pharmacy chains in order to monitor trends of misuse of OTC medicines. Continued surveillance of internet drug fora as medium for knowledge exchange and indigenous harm reduction for the misuse of publically available medicines is warranted.

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Tables

Table 1 Morphine based Products sold in the United Kingdom

Name	Manufacturer	Contents	Recommended Dosage	Use	List of excipients	Undesirable Effects	Overdose
Gee's Linctus	Thornton & Ross Ltd	opium tincture, squill oxymel	Adults and children over 12 years: 5ml. Children under 12 years: Not recommended. The elderly: Use with care, not exceeding the recommended adult dose.	For relief of the symptoms of coughs.	Anise oil Benzoic Acid Camphor Ethanol (96%) Purified Water Tolu flavour solution Syrup	Nausea, vomiting, constipation, drowsiness, confusion. Larger doses may cause: respiratory depression, difficulty with micturition, urticaria, pruritis, flushing and hypotension. Tolerance with long term use. Squill contains cardiac glycosides and can cause nausea, vomiting and anorexia, diarrhoea and abdominal pain can sometimes occur	Signs of morphine over-dosage include: pin-point pupils, depressed respiration, circulatory failure, pulmonary oedema, convulsions, renal failure and coma.
Gee's Pastilles	Potters Herbals	Opiate squill	Children over 12 years, adults and the elderly: - Suck up to 2 pastilles every 4 hours	For relief of the symptoms of coughs.	Conc Camphorated Opium Tincture Squill Liquid Extract Cinnamic Acid Benzoic Acid Glacial Acetic Acid Honey	Nausea Drowsiness	Not recorded.
Kaolin and Morphine Mixture BP	Thornton & Ross Ltd	sodium bicarbonate, kaolin light, morphine hydrochloride	Adults and children over 12 years: Two 5ml spoonfuls. Children under 12 years: Not recommended for children under 12 years	For relief of the symptoms of diarrhoea and upset stomachs.	Ethanol (96%) Peppermint Oil Diethyl ether (Peroxide Free) Chloroform Treacle black commercial Liquorice liquid extract Syrup Purified water	morphine may cause drowsiness stomach cramps and flatulence nausea, vomiting, constipation, drowsiness and confusion. Prolonged use may lead to tolerance and dependence.	In the unlikely event of overdosage with this product, signs of morphine toxicity and overdosage include pin-point pupils, respiratory depression and hypotension. Circulatory failure and deepening coma may occur in more severe cases.
Kaolin and Morphine Mixture BP	THE BOOTS COMPANY PLC	kaolin light, morphine hydrochloride	Adults and children of 12 years and over: Two 5ml spoonfuls, mixed with water. Take this amount 3 times in 24 hours, if you need to, until your diarrhoea is relieved.	Relief of diarrhoea For relief of the symptoms of diarrhoea and upset stomachs.	purified water, sodium bicarbonate, sucrose, chloroform, ethanol (0.45 vol %), black treacle, liquorice liquid extract, ether, peppermint oil.	Feeling sick, being sick Constipation, dry mouth, sweating Drowsiness, facial flushing Changes to the pupil in your eye	Not recorded.

			Do not give to children under 12 years.				
J Collis Browne's Mixture	Thornton & Ross	Morphine hydrochloride equivalent to 1.0mg anhydrous Morphine Peppermint Oil 1.5 microlitre	For coughs: One to two 5 ml medicinal teaspoonsful. May be repeated every four hours. For diarrhoea: Two to three 5 ml medicinal teaspoonsful. May be repeated once or twice at four hourly intervals if required.	Diarrhoea, cough relief	Ethanol (96%) BP Benzoic Acid BP Capsicum Tincture BPC 1973 Caramel (E150) BPC 1973 Chloroform BP Citric Acid Ph Eur Hypromellose Ph Eur Sorbitol Solution Ph Eur Treacle Purified Water	nausea, vomiting, constipation, drowsiness, difficulty in micturition, ureteric or biliary spasm, dry mouth, sweating, headache, facial flushing, vertigo, bradycardia, tachycardia, palpitations, postural hypotension, hypothermia, hallucinations, dysphoria, mood changes, dependence, miosis, decreased libido or potency, rashes, urticaria and pruritus.	Not recorded.

Table 2 Search terms used

Search Term used in combination with 'forum'	Hits
J Collis Browne's Mixture	125,000
J Collis Browne	125,000
Chlorodyne	11,000
Gee's Linctus	8,200
Morphine Squill	1,310,000
Kaolin and Morphine Mixture	21,800
Opiate Squill Linctus	2,680
Total	1,603,680

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Table 3 Sites containing Trip Reports and Thread Discussions around misuse of OTC Morphine based preparations, and records remaining following application of exclusion criteria

Website Link	Website name	Initial search result number of users reports/threads	Threads excluded as per exclusion criteria.	User Discussion Threads After exclusion	Distinct pseudonyms per site recorded
http://www.drugs-forum.com/forum/index.php	Drugs Forum	38	26	12	46
http://www.bluelight.org/vb/content/	Bluelight	163	101	62	151
http://forum.opiophile.org/forum.php	Opiophile	168	145	23	61
http://www.shroomery.org/	Shroomery	7	7	0	n/a
http://old.qi.com/talk/	QI Forums	6	5	1	3
http://www.pharmacyreviewer.com/forum/	Pharmacy reviewer	4	2	2	6
http://www.readytogo.net/smb/	RTG Sunderland message boards	3	2	1	4
http://www.theapricity.com/forum/forum.php	The Apricity	9	8	1	2
http://www.tripme.co.nz/forums/	Trip Me Forums	2	1	1	3
http://forum.grasscity.com/	Grasscity	1	0	1	4
http://www.m-alliance.org.uk/forum/index.php	The Alliance	1	0	1	6
	Totals	402	297	105	286

Table 4 Categories and themes emerging during the empirical phenomenological psychological analysis method.

Theme	Category
<i>User Decision-Making and Product Choices</i>	<ol style="list-style-type: none"> 1. Availability, contents and potential uses for intoxicating purposes of OTC morphine based preparations in the UK. 2. Awareness of preparations as direct descendants of 19th century opium medications in the UK 3. Product ingredients had changed, with morphine content and subsequent potency reduced. 4. Decisions to use OTC morphine linctus grounded in curiosity and interest to experiment. 5. Prior home socialisation into the use of Gee's Linctus and Kaolin & Morphine as a child and due to parental efforts to promote infant sleep. 6. Prior codeine experiences, problematic nature of extracting codeine from additives and desire to avoid the intense 'codeine itch' influences interest in OTC morphine products. 7. Use of codeine and morphine linctus (both Gee's and J Collis Browne) to stave withdrawals from heroin. 8. OTC morphine based products generally ineffective in managing opiate withdrawals. 9. Favourable price of morphine based preparations. 10. Gee's Linctus most popular, due to ethanol content and when the user was opiate naïve. 11. J Collis Browne generally viewed as weaker than Gee's Linctus, and for individuals with opiate tolerance disappointing. 12. Some comparisons made to methadone in terms of potency. 13. Quality of intoxication effect per brand. Recommendations to generic products made by independent pharmacies. 14. Gee's Linctus advocated to prolong poly drug taking episodes or assist comedown from other drugs.
<i>Sourcing, Pharmacy Control and Web Retail</i>	<ol style="list-style-type: none"> 15. Perceptions of legality inferring ease of access to morphine based preparations in pharmacies and from web retailers. 16. Forum activity from outside of the UK discussed 'codeine and morphine product tourism'. 17. Restrictions imposed by pharmacy controls when suspicious of customer drug aberrant behaviour included the appearance of customer intoxication or guilt, customer appearance, inappropriate and frequent requests to purchase. 18. Pharmacy vigilance in the supply of OTC morphine viewed as a 'stumbling block' to access. 19. Gee's Linctus, J Collis Browne and Kaolin & Morphine Mixture generally easier to purchase in pharmacies than codeine linctus. 20. Having the right appearance, background story and medical reasons for requesting morphine based products viewed as vital to reducing pharmacist and counter assistant suspicion, and securing a successful sale. 21. Descriptions of uncomfortable experiences when pharmacists intervened, and subsequent refusal to sell the product. 22. 'Pharmacy hopping' by virtue of travelling around the country or large city purchasing morphine products described. 23. Certain types and chains of pharmacies observed to be easier to access than others. 24. 24 hour pharmacies useful in sourcing morphine based products. 25. Recommendation to use friends, family and middle aged female contacts as optimal routes to securing products. 26. Over time and in correspondence with development of opiate withdrawals, sourcing via multiple pharmacies described as problematic and time intensive. 27. Displacement toward internet sourcing and online pharmacy purchasing described when experiencing withdrawals

	<p>and difficulties in accessing pharmacies.</p> <p>28. Some online pharmacies described restricting sales of OTC morphine products to a certain amount of bottles per order in a designated timeframe and engaging in a certain level of customer scrutiny prior to order completion.</p> <p>29. Blacklisting of online customers and cancellation of orders described on suspicion of customer opioid aberrance.</p> <p>30. Use of false customer profiles and medical symptoms advocated when completing the pre order screenings.</p> <p>31. Cost-benefit pricing defined as ‘bang for your buck’ described as a deterrent to online pharmacy purchasing given the costly dispatch charges for recorded deliveries.</p> <p>32. Participants residing outside of the UK commented on unsuccessful attempts to process orders and restrictions in dispatching to the US and Australia.</p> <p>33. Multiple online pharmacy purchasing and recording keeping of when sites were accessed was advocated.</p> <p>34. Given the lack of face to face interaction and potential for recognition of suspicious custom, participants described concerns with regard to whether online pharmacies serving the UK shared a customer database of morphine and codeine linctus purchase history.</p>
<i>Experiences and Consumptive Practices</i>	<p>35. Effects from Gee’s Linctus and J Collis Browne’s Mixture (weaker) described as ‘quite euphoric, floaty, very relaxed, ‘lush’ and ‘fiendish’, taking several hours to peak and lasting several hours until comedown. Kaolin & Morphine Mixture described as ‘tripping and nodding, and a pleasant enough way to spend an afternoon’.</p> <p>36. Experiences were dependent on opiate tolerance.</p> <p>37. Dosage ranged from ½ to several bottles of Gee’s Linctus and J Collis Browne’s Mixture over the course of the drug taking episode.</p> <p>38. Mixing with soft drink (i.e. ‘Sprite’) and holding ones nose recommended to promote consumption.</p> <p>39. Negative views with regard to the foul taste of morphine linctus, projectile vomiting and lasting nausea with flatulence.</p> <p>40. Antacids were recommended to improve absorption, and grapefruit as potentiator. Parsley was recommended to reduce the unpleasant taste.</p> <p>41. Gee’s Pastilles were described as sickening and a poor recreational experience.</p> <p>42. Awareness of potential harms associated with consumption of excessive amounts of Gee’s Linctus.</p> <p>43. Tentative dosing and use of dosing interval to promote and prolong low tolerance advocated.</p> <p>44. Excessive oral consumption discussed in terms of potential harms relating to presence of additives such as squill, ethanol, peppermint and kaolin.</p> <p>45. Preparation of solutions for rectal administration (‘plugging’) for an enhanced potent effect.</p> <p>46. Injecting strongly rejected due to potential for tissue and vein damage caused by product additives such as kaolin.</p> <p>47. Awareness of harmful additives grounded in fora discussion around optimal methods of morphine extraction.</p> <p>48. Extraction of morphine from Kaolin & Morphine products by use of simple decantation methods.</p> <p>49. Purchasing of syringes to measure liquid to the 0.1ml for use in syringing the liquid morphine solution from the kaolin clay base.</p> <p>50. Decantation method viewed by many as sub-optimal, price negative and potentially harmful given the remainder kaolin content.</p> <p>51. Sophisticated methods (i.e. acid/base extraction and column chromatography) required to extract morphine</p>