

Abuse of OTC and prescribed drugs: popping pills for thrills?

Janet Mifsud B.Pharm (Hons); PhD (QUB)

Senior Lecturer, Department of Clinical Pharmacology and Therapeutics
University of Malta, Msida MSD2040 Malta
Email: janet.mifsud@um.edu.mt

Educational aims

- to understand the various factors which could lead to prescribed and OTC drug abuse.
- to recognize warning signs of prescribed and OTC drug abuse misuse
- to identify best practices in the treatment of prescribed and OTC drug abuse
- to recognize the role of pharmacists in the prevention and education of this key issue in health care.

Key words

prescribed drug abuse, OTC drug abuse, drug misuse, drug addiction

Several studies have shown that there is a high prevalence of prescription and over the counter (OTC) drug misuse among certain population groups. In this paper, an overview will be given as to which classes of groups are mostly abused or misused. An analysis will be given as to the various factors, including associated etiologic and social factors, which could lead to prescribed and OTC drug abuse. Warning signs of prescribed and OTC drug abuse misuse will be described. Best practices in the treatment of prescribed and OTC drug abuse will be given, together with a discussion on the role of pharmacists, health care professionals and regulatory authorities in the prevention and education of this key issue in health care. The benefits of easier access to medicines should be balanced against the potential harm from unsupervised or inappropriate use of prescribed medication.

Introduction

What do Heath Ledger, Anna Nicole Smith, Michael Jackson, Elvis Presley have in common? In all the cases, it was found that the manner of their death was accidental and resulted from the abuse of prescription medications (Table 1)¹. Presley's doctor, Dr. George C. Nichopoulos, had explained the singer's open attitude toward prescription drugs was due to the fact that *"He felt that by getting [pills] from a doctor, he wasn't the common everyday junkie getting something off the street."*²

Is prescribed and OTC drug abuse a modern problem?

Abuse from OTC and prescribed medication is not a new phenomena. The earliest known

records of prescriptions for drugs were found on clay tablets, in 2600 BC ancient Babylon. For many centuries all pharmaceutical products remained totally unregulated and by the 19th century even drugs such as morphine, laudanum and cocaine were readily available through travelling salesmen.³ It was only in 1914 that the US became the first country to introduce legislation which required the sale of drugs, in this case narcotics, to be restricted to licensed physicians or pharmacists.⁴

Why do people abuse drugs?

Various definitions have been used to define drug abuse and misuse. The nonmedical use of prescription or over-the-counter (OTC) medications implies that the user is using

them for reasons other than those indicated in the prescribing literature or on the box label.⁵ The definition several agencies adopt is similar to the US concept i.e:

*Non-medical use, misuse, and abuse of prescription drugs are defined as the use of prescription medications without medical supervision for the intentional purpose of getting high, or for some reason other than what the medication was intended*⁶

Legislation in Europe to regulate the supply of medicines originated 40 years ago following the thalidomide disaster. This led to the European Economic Community Directive 65/65/EEC, which classifies those medicines into classes which require prescription.⁷

What leads to drug abuse and misuse?

Several studies have indicated that patients have a love-hate relationship with prescribed medication. A study carried out on doctors' and patients' perceptions in the decision to prescribe, showed that 40% of patients think illnesses always need drug treatment, 67% patients hope for prescription, while doctors perceive 56% patients wanted prescriptions.⁸

Many of the medications which are abused have legitimate medical uses for people with a variety of illnesses and injuries. They may even be used in high doses for selected medical problems.⁵ Several key factors drive drug abuse. There is a general misperception that abusing medicine is not as dangerous as "street drugs". In addition, there is the added advantage of ease of access of prescribed and OTC medication via medicine cabinets at home, or other person's prescriptions. The internet in recent years has also led to easier accessibility of medicine.⁹ A 2006 survey documented that 89% of internet sites selling controlled prescription drugs in US have no prescription requirements. Of the 11% of sites that required a prescription, 70% only required a prescription be faxed, allowing a customer to easily forge prescriptions or fax the same prescription to several Internet pharmacies. There has also been a trend toward online consultation in lieu of a prescription. In 2006, 99 Web sites offered such a service.¹⁰

It is important to recognise and treat abuse since it can result in decline in work, school, or home performance, legal problems, use in risky situations, and continued use despite social/personal consequences. Dependency can result in tolerance, withdrawal symptoms, decline in normal

activities. The Diagnostic and Statistical Manual of Mental Disorders 4th revision (DSM-IV) definition of drug dependence is not very useful in this context because it relies heavily on the concepts of 'loss of control over the drug' and withdrawal symptoms which are not the main driving force in prescription drug abuse.¹¹

Main classes of drugs of abuse

Trends of increasing abuse of prescription drugs around the world has been reported by the United Nations.¹⁰ Several classes of drugs show up repeatedly in classes of drugs which are abused:

- Opioids and other analgesics e.g. vicodin, oxycontin, tylenol, codeine, dextromethorphan which is found the majority of OTC cough medicines
- Anti-anxiety drugs and Sedative/hypnotics e.g. benzodiazepines
- Stimulants: drugs used for ADHD and weight loss
- Antidepressants
- Image drugs (laxatives, diuretics, steroids)
- Ergogenic aids in sports

Who is most likely to abuse from prescribed/OTC medications?

Several different types of populations are more susceptible to prescription abuse. These include youths, the elderly, pain patients who abuse opiate medications, as well as users with comorbid psychiatric conditions.¹²

Prescription abusing populations: youths

The harmful legal products consumed by youths consist of many different types of substances found in many different products that are readily available to children and adolescents.¹³ Various studies in US have shown that prescribed medication abuse among teens has tripled in the last 10 years. From 1992 to 2003, abuse of controlled prescribed drugs grew at the rate of twice that of marijuana and five times that of cocaine.¹⁴ These studies have shown that an alarming number of teens have a false sense of security about the safety of abusing prescription medications and 40% believe that prescription medicines are "much safer" to use than illegal drugs. 31% believe there's "nothing wrong" with using prescription medicines without a prescription "once in a while" and 29% believe prescription pain relievers are not addictive.¹⁵

Prescription abusing populations: elderly

Although older adults represent 13% of

population, they account for nearly one-third of all medications prescribed and these are prescribed for longer periods than are younger adults. The elderly are associated with multiple medical problems, have a higher incidence of chronic pain thus more possibility of opioid abuse and also can misunderstand directions and this leads to nonadherence. Some elderly patients also have multiple physicians. In addition the problem may be a hidden one since there is denial among family members, peers or care providers.¹⁶

Prescription abusing populations: gender

While men and women have similar rates of use of prescription drugs, gender differences have been observed among girls aged 12-17 years old. Studies have shown that they are more likely to use abusable prescription

drugs, especially opioids and anxiolytics; are two to three times more inclined to be diagnosed with depression and given more psychotherapeutics and twice more prone to be addicted to drugs.¹⁷

Prescription Abusing Populations: pain

Pain is a subjective unpleasant sensory and emotional experience arising from the actual or potential tissue damage or described in terms of such damage. Each individual learns the application of the word through experiences related to injury in early life. There is a complex relationship between drug abuse and use of opioids in pain management, with overlapping vulnerability and psychopathology. It is also associated with the consumption of other substances and inadequate monitoring.¹⁸ Published rates of abuse and/or addiction in chronic pain

Table 1: Drugs found at time of autopsy of Heath Ledger, Anne Nicole Smith, Michael Jackson and Elvis Presley

Name	Drugs found at time of autopsy
Heath Ledger	oxycodone and hydrocodone – diazepam alprazolam temazepam doxylamine
Anna Nicole Smith	chloral hydrate diphenhydramine clonazepam diazepam temazepam oxazepam lorazepam acetaminophen, atropine topiramate ciprofloxacin, (for treatment of abscess on her left buttock from chronic repeated injections of various hormones eg GH)
Michael Jackson	propofol lorazepam midazolam omeprazole, hydrocodone sertraline paroxetine, carisoprodol, hydromorphone
Elvis Presley	as many as 14 different drugs, including codeine and methaqualone Singer had been prescribed between 5,000 and 10,000 tables in the eight-month span before his death.

populations are approximately 10%. There are in fact several common features between chronic pain and addiction such as early trauma, loss of mastery, loss of control, loss of sense of self, cognitive error.¹⁹

Prescription Abusing Populations: image addiction

Recent years have seen a rise in the misuse of laxatives, diuretics, steroids and diet aids to improve personal appearance. Media promotes "idealistic" body and this can lead to body perception issues. Several are due to a disorder in body image; low self-esteem, depression, suicide and it is more common among career professionals such as models; firefighters; police officers and military personnel. The frequent use of laxatives as a form of weight control can cause serious problems can lead to severe dehydration, heart attack, nervousness hallucinations, high blood pressure, insomnia, confusion, death.²⁰

Prescription abusing populations: drug abuse in sports

Performance-Enhancing Substance are defined as "...any substance taken in nonpharmacologic doses specifically for the purposes of improving sports performance ... by increasing strength, power, speed, or

endurance or by altering body weight or body composition."²¹

Several of these pharmacological agents are drugs used for weight control or enhancement of oxygen carrying capacity, masking agents. They also include anabolic agents, stimulants, peptide hormones. There has been documented increase in misuse of Human Growth Hormone (hGH) especially in US for improving performance in order to ensure sports scholarships.²²

What are the risk factors?

There are four main ways to identify patients at risk: history: personal history & family history; screening instruments; behavioral check lists and therapeutic maneuver and co-morbid psychiatric disorders. Family management problems which could lead to misuse of drugs have been identified by poorly defined rules; lack of monitoring or excessive discipline by parents; negative communication patterns and poor anger management. Absence of healthy recreational or leisure interests, early antisocial behavior (e.g., aggression, hyperactivity, defiance) and academic failure.²³

How to treat misuse and abuse of drugs

Several holistic treatment schemes have been proposed including involvement in

alternative activities; instilling a sense of well being and self-confidence and developing a healthy coping strategies to deal with stress. Patients should have a perspective of "improvement" and the activity should be achievable, enjoyable and meaningful. It is also important to treat educate parents and carers. They should be taught to be observant of over-the-counter drug usage in their adolescent children; the importance of discarding old and unused medications.²⁴

Conclusion

"Determining legitimate medical purpose can be challenging. Despite their best efforts to balance their roles as health care providers and gatekeepers, pharmacists still struggle with the lack of a formal process for dealing with incidents of suspected or recognized abuse."²⁵

Prescription drug abuse is a complex problem, affecting a heterogeneous population and is one which is largely unknown and unaddressed. Pharmacists need to watch for prescription and OTC medication abuse. Adequate prescription monitoring mechanisms lack so pharmacists need to rely on their observation skills and the patient's behaviour pattern over time in order to detect possible prescription or OTC drug misuse.

Possible treatment strategies could include

- inquiring about prescription, OTC, and herbal drug use
- inquiring about drug use
- providing disposal containers that patients can use to dispose of their unused or unneeded prescription or OTC medications;
- careful record keeping of prescription refills.⁵

When deciding if a medicine should be reclassified to make it available over the counter, regulatory authorities must balance the benefits of easier access against the potential harm from unsupervised or inappropriate use. Some countries have an intermediate stage, pharmacy-only sale, where there is still some supervision from healthcare professionals.⁷ Pharmacists should enhance their involvement in health promotion and their understanding safe use of medications and actively develop programs and resources for the benefit of their patients.

Table 2: Commonly Used Prescription Drugs with Potential for Abuse

Category	Drug examples
Sedatives	Barbiturates Flunitrazepam
Dissociative anesthetics	Ketamine
Opioids and morphine derivates	Codeine Fentanyl Morphine Oxycontin Dextromorphan
Stimulants	Amphetamines Cocaine Methamphetamine Methylphenidate
Anabolic steroids	
Tranquilizers and muscle relaxers	Benzodiazepines Carisoprodol
Laxatives	
Diuretics	

References

1. Pharmaceutical Drug Manufacturers. List of Drug Related Celebrity Deaths. 2011. Available at <http://www.pharmaceutical-drug-manufacturers.com/articles/listofdrugrelated-celebritydeaths.html>. (accessed 30 March 2011).
2. Prescriptiondrugabusehelp. Prescription Drugs in Hollywood. Available at <http://www.prescriptiondrugabusehelp.com/prescription-drugs-in-hollywood>. (accessed 30 March 2011).
3. Foster B. The history of prescription drug abuse. Available at www.ehow.com/about_5449380_history-prescription-drug-abuse.html, (accessed 30 March 2011).
4. Monheit B. Prescription drug misuse. *Australian Family Physician* 2010; 39(8): 540-546.
5. Lessenger, JE and Feinberg SD. Abuse of Prescription and Over-the-Counter Medications. *J American Board Family Medicine* 2008; 21(1): 45-54.
6. Office of National Drug Control Policy Executive Office of the President. A Report on the Troubling Trend of Prescription and Over-the-Counter Drug Abuse Among the Nation's Teens. January 2008. available at http://www.theantidrug.com/pdfs/prescription_report.pdf (accessed 30 March 2011).
7. Ferner RE, Beard K. Over the counter medicines: proceed with caution. *BMJ* 2008; 336(7646): 694-696.
8. Greenhalgh T and Gill P. Pressure to prescribe. *BMJ* 1997; 315: 1482.
9. National Center on Addiction and Substance Abuse at Columbia University. You've got drugs: prescription drug pushers on the internet. 2006. available at <http://www.casacolumbia.org/templates/PressReleases.aspx?articleid=356&zoneid=61> (accessed 30 March 2011).
10. Kuehn BM. Prescription drug abuse rises globally. *JAMA* 2007; 297:1306.
11. American Psychiatric Association. Task Force on DSM-IV. DSM-IV-TR® Diagnostic and Statistical Manual of Mental Disorders, 1994. available at www.psychiatryonline.com/resourceTOC.aspx?resourceID=1 (accessed 30 March 2011).

Key points

- Prescription drug abuse is a complex problem, affecting a heterogeneous population and is one which is largely unknown and unaddressed.
 - Many of the medications which are abused have legitimate medical uses for people with a variety of illnesses and injuries.
 - It is important to recognise and treat abuse since it can result in decline in work, school, or home performance, legal problems, use in risky situations, and continued use despite social/personal consequences.
 - Several classes of drugs show up repeatedly in classes of drugs which are abused and several different types of populations are more susceptible to prescription abuse.
 - Parents and carers should be taught to be observant of over-the-counter drug usage in their adolescent children; and the importance of discarding old and unused medications.
12. Campbell D. GPs have got Britain "hooked on painkillers." *Observer* 2008. Feb 10:1
 13. Gruenewald PJ. Reducing adolescent use of harmful legal products: intermediate effects of a community prevention intervention. *Subst Use Misuse* 2009; 44(14): 2080-2098.
 14. National Household Survey on Drug Abuse. Non-medical use of prescription-type drugs among youths and young adults. Washington, DC: Office of Applied Studies, 2008. available at <http://www.ncjrs.gov/hlm/chapter2.htm> (accessed 30 March 2011).
 15. National Institute on Drug Abuse, Monitoring the Future 2008; Prescription Abusing Populations: youth; Partnership and Attitude Study (PATS). Available at <http://www.nida.nih.gov/DirReports/DirRep208/DirectorReport12.html> (accessed 30 March 2011).
 16. Nielsen S. Prevention of pharmaceutical drug abuse. *Prevention Research Quarterly* 2008; 7, 1-13.
 17. Griffiths RR, Johnson MW. Relative abuse liability of hypnotic drugs: a conceptual framework and algorithm for differentiating among compounds. *J Clin Psychiatry* 2005; 66: 31-41.
 18. Kalso E, Edwards JE, Moore RA, McQuay HJ Opioid tolerance and dependence - do they matter? *European. Journal of Pain*; 2005; 9:157-162. 3.
 19. Collins GB, McAllister MS. Combating abuse and diversion of prescription opiate medications. *Psychiatr Ann* 2006; 36: 410-6.
 20. Berge KH, Seppala MD, Schipper AM Chemical dependency and the physician. *Mayo Clin Proc.* 2009; 84(7):625-31.
 21. World Anti-Doping Agency [Internet]. A brief history of anti-doping. [Updated June 2010; cited 20 October 2010]. Available at <http://www.wada-ama.org/en/About-WADA/History/A-Brief-History-of-Anti-Doping/> (accessed 30 March 2011).
 22. Kraemer WJ, Dunn-Lewis C, Comstock BA, Thomas GA, Clark JE, Nindl BC Growth hormone, exercise, and athletic performance: a continued evolution of complexity. *Curr Sports Med Rep.* 2010;9(4):242-52.
 23. Kroutil LA, Van Brunt DL, Herman-Stahl MA, Heller DC, Bray RM, Penne MA. Nonmedical use of prescription stimulants in the United States. *Drug Alcohol Depend.* 2006; 84:135-143
 24. Breslin KT, Reed MR, Malone SB. An holistic approach to substance abuse treatment. *J Psychoactive Drugs.* 2003 Apr-Jun;35(2):247-51.
 25. Thompson CA. Prescription Drug Misuse Highlighted As National Problem *American Journal of Health-System Pharmacy.* 2001;58(11): 1-2.