

Advisory Council on the Misuse of Drugs
(ACMD)

Khat (Qat): Assessment of Risk to the Individual and Communities in the UK.

Executive Summary

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1. Introduction

- 1.1 Khat is a herbal product consisting of the leaves and shoots of the shrub *Catha edulis*. It is cultivated in the Horn of Africa and the Arabian Peninsula and chewed to obtain a stimulant effect.
- 1.2 Khat is not currently controlled under the Misuse of Drugs Act 1971. Two of the chemical constituents isolated when the plant is chewed, cathinone and cathine, are classified as Class C drugs under the Act.
- 1.3 This report considers the necessity of inclusion of khat under the Misuse of Drugs Act based on its harmfulness or other legislative changes that may be appropriate.
- 1.4 The report is based on a detailed scrutiny of the relevant scientific literature. It considers the current level of khat use in the UK, the health risks from using khat, and the harms to society as a consequence of khat use.

2. Background

- 2.1 In February 2005 the Minister responsible for Drugs asked the Advisory Council on the Misuse of Drugs (ACMD) to advise the government as to the current situation in the UK and the risks associated with khat use. This report is the basis of the Khat Working Group's advice to the ACMD.
- 2.2 The ACMD is established under the 1971 Misuse of Drugs Act to keep under review the drug situation in the United Kingdom and to advise government ministers on measures to be taken for preventing the misuse of drugs or for dealing with the social problems connected with their misuse.
- 2.3 The classification of drugs, in Schedule 2 of the 1971 Misuse of Drugs Act, is based on the harm they cause:-

Class A: (most harmful) includes cocaine and heroin.

Class B: (intermediate category) includes amphetamines and barbiturates.

Class C: (least harmful) includes cannabis, anabolic steroids and benzodiazepines.

- 2.4 When advising about harm the ACMD takes account of the physical harm they may cause, their pleasurable effects, any associated withdrawal reactions after chronic use, and the harm that misuse may bring to families and society at large.

3. Epidemiology

- 3.1 Information about the use of khat in the UK comes from reports into the communities from countries that traditionally use khat. Such reports are subject to sampling bias due the way interviewees are recruited. The largest epidemiological survey of drug misuse in England and Wales, the British Crime Survey, does not include khat as one of its reference drugs.
- 3.2 Most of the prevalence data comes from the Somali community. Figures range from 34% to 67% of the Somali community who identify themselves as current users of khat. The figure of 34% is from the highest power study and likely to be the most accurate figure. The wide range is due to the sampling techniques employed, males tend to report more use than females, so if the group sampled is biased toward men, the prevalence increases.
- 3.3 There are no published reports in the other individual ethnic communities. When ethnic communities are grouped together people reporting current khat use ranges between 37% and 60%.
- 3.4 Levels of khat use in traditional khat chewing countries are comparable if not slightly higher, than rates in the UK. In Somalia a large survey found 31% of respondents admitting current use. In Ethiopia this was 50%, and in Yemen 82% of men and 43% of women admitted they currently used khat.
- 3.5 There are no reports of khat use in the UK outside of the communities that traditionally use khat.

4. Import, export, distribution and use of khat in the UK

- 4.1 Approximately 6 tons of khat arrives in the UK per week, mostly by air from Kenya. The bulk of this is in transit for supply to the United States of America. The UK is a base for khat distribution to many countries, including the US, where the plant is illegal.
- 4.2 There is an efficient distribution network to the khat using communities across the UK. Most users buy khat at the *mafresh*, a meeting place where khat is bought and chewed. *Mafreshi* proprietors often sell soft drinks and cigarettes alongside khat. The trade in khat is a legitimate business and is quite distinct from the trade in illegal drugs.

- 4.3 *Mafreshi* are subject to health and safety requirements as they are public places where a product is sold and consumed, however many are unknown to the local authorities. They are of varying standards of cleanliness and safety. Alternatively khat is bought at local shops, in markets or via 'mobile traders' (people selling khat from the back of a car or van on the street).
- 4.4 Men are more likely to use at the *mafresh* and women are more likely to use at home, often alone. There is under-reporting of women's use of khat probably as a result of the extra stigma they face.
- 4.5 Khat is used in bundles of approximately 250g of fresh stems and leaves; each bundle costs £3-5 (approximately £15/kg). In the United States of America, where khat is illegal, the street price is approximately \$400/kg.
- 4.6 Most people who use khat, chew it once or twice a week. The average chewing session lasts 6 hours and usually 1 or 2 bundles of khat are consumed. A significant minority chew daily and use greater amounts per day.

5. The pharmacology of khat

- 5.1 Cathinone and cathine are alkaloid stimulants present in khat and are responsible for its subjective effects. Chewing is an efficient way of extracting these chemicals from the plant matter. Khat degrades with time so it must be consumed within 36 hours of harvesting.
- 5.2 Effects from chewing khat can be felt within 30minutes, but maximal plasma concentrations occur after about 2 hours. The time taken for the drugs to be eliminated from the blood is approximately 8-20 hours for cathinone and 25 hours for cathine.
- 5.3 There is evidence that khat, like other drugs of misuse, can cause the release of the neurochemical dopamine in the brain. Dopamine is thought to be responsible for the re-enforcing properties of drugs of abuse. Khat may also act on central serotonergic and peripheral adrenergic neurotransmitter systems.

6. Risks to physical health

- 6.1 There is evidence that chewing khat is a risk factor for the development of oral cancers. In pre-clinical and clinical studies, chewing khat leads to macroscopic and microscopic pre-cancerous changes in the buccal mucosa.

- 6.2 Khat has significant sympathomimetic properties. Chewing khat leads to an increase in blood pressure and may precipitate myocardial infarction. It is difficult to tease out the specific risk factor of khat for heart disease as most users also smoke tobacco during a khat session.
- 6.3 There is some evidence that khat affects the reproductive health of both sexes. In women it may be associated with delivery of low birth weight babies (as with smoking cigarettes), although the evidence for this is not strong. Cathine is excreted in breast milk although the impact of this is unknown.
- 6.4 In men there is some evidence that using khat is associated with lower sperm motility and sperm count. Some studies report an increase in libido when using khat and others have found decreased libido with chronic use of khat.
- 6.5 Residual pesticide, dimethoate, has been found on khat leaves produced in Yemen. There is no published data on khat produced in other countries. Chronic dimethoate poisoning can lead to weakness, fatigue, slurred speech and lack of co-ordination.
- 6.6 Khat administered chronically to animals causes an increase in liver transaminases and signs of chronic hepatic inflammation. There are no studies investigating the effects of khat on the hepatic system in humans.

7. Risk of addiction and to psychiatric health

- 7.1 There is evidence that khat may cause the release of dopamine in the brain. Release of this neurotransmitter is thought to be important in the development of dependency on drugs of abuse.
- 7.2 Dependency on a drug is defined as a syndrome of symptoms related to the desire to use a drug, the control over drug use, tolerance of drug effects, withdrawal symptoms, harms from drug use and neglect of other activities of life.
- 7.3 There is evidence that some individuals use khat in a dependent way. However, for the majority of users this does not appear to be the case. Animals can be made dependent on khat and they will self-administer the drug in a dependent way.
- 7.4 There are case reports of people developing psychosis after use of khat. Unfortunately, as yet, there are few controlled studies investigating the possibility of a causal link between khat use and psychosis. Evidence points to social stress such as the effects of war on the Somali population mixed with misuse of khat can increase the likelihood of the development of psychotic symptoms.

- 7.5 As yet there is insufficient evidence to make a definitive statement about the risks of developing psychosis after using khat. However, in countries where khat use is widespread there is no corresponding elevation in prevalence of psychotic disorders. This suggests that khat is not a causal factor for the development of psychosis.
- 7.6 In common with other stimulants, users of khat often report feeling low in mood after a khat using session. However, there is no evidence that khat use is a risk factor for developing depression.

8. Risk to society

- 8.1 The partners of khat users often complain that their partners' khat use is responsible for lack of input into family life, for family arguments, and leads to excessive expenditure of the family budget. It is cited as a reason for family breakdown by spouses, and there is a fear that men using excessively (as heads of the family unit) lead to isolation for their spouses and children. It is impossible to say if khat use is the cause of or the scapegoat for family disharmony.
- 8.2 Khat users appear to have very low levels of other drug or alcohol use. There is no evidence that khat use is a gateway to the use of other stimulant drugs, although there is however, high associated tobacco use.
- 8.3 Khat does not lead to acquisitive crime in the way that is evident with crack or heroin use. This may be due to its low cost and its lower re-enforcing properties.
- 8.4 There is evidence that administering khat to rats causes an increase in aggressive behaviour. There is only anecdotal evidence of the same response in humans.
- 8.5 There are several case reports of individuals using khat and driving. Khat is likely to reduce attention span whilst driving, however co-ordination appears to be minimally affected.
- 8.6 The khat industry is a legitimate business. There is no indication of organised criminals or terrorists being involved in the UK trade, perhaps because of its legality. However, since the USA made khat illegal there is some evidence of organised criminals becoming involved in its shipment to the USA.

9. Discussion

- 9.1 Existing evidence suggests that khat use is widespread in the UK among immigrant communities from the Horn of Africa and the Arabian Peninsula. There is no evidence of its use by the wider community.
- 9.2 Khat is a much less potent stimulant than other commonly used drugs such as amphetamine or cocaine. However some individuals use it in a dependent manner.
- 9.3 Khat use is a risk factor for oral cancers and possibly for myocardial infarction. Residual pesticides on the leaves of khat represent a health risk.
- 9.4 There is some evidence of an association with chronic khat use and development of psychological symptoms. However, as yet there is no proven causal association.