

# New Consumption Patterns of Marijuana and Their Implications for Law Enforcement in Kenya

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## Abstract

New consumption patterns of marijuana have emerged in the recent past alongside the conventional ones. In the jurisdictions like Kenya where marijuana is outlawed, these new patterns of consumption comprise the edibles and have posed detection challenges to law enforcers leaving them open to possible abuse and attendant health risks. This manuscript set out to uncover the new patterns of marijuana consumption and their implications on law enforcement in Kenya. The study adopted a mixed methods design to collect data in Siaya and Vihiga counties of Western Kenya. Convenience and purposive sampling techniques were used to identify 327 survey respondents, 20 key informants and 8 FGD participants at the community level. The FGDs included women and men of different age groups while the key informants were different State and Non-State actors at the national and county levels. Semi-structured interview guides were used to collect data from FGDs and key informants. Findings suggest that consumption patterns are changing and new patterns of substance preparations and administration have emerged alongside the conventional ones. Top among the new patterns include using marijuana as an ingredient in cakes and other confectioneries, boiling and blending it into

juice, and using it as tea leaves and additive in other alcoholic beverages. A majority of the young people were found to use the drug currently and with no limitation of time for its use contrary to the past when the old were the majority partakers with self-regulation capacity and norms around time, place and occasion of use. Finally, the study unveiled that the law enforcement agencies lack the capacity and tools to detect the new consumption patterns and there is a tendency to over-focus on the low-end traditional consumers and traffickers. The study concludes that there is need for more studies to unravel the new consumption patterns especially in urban centres and train and resource the law enforcement agencies on their detection mechanisms.

**Keywords:** New consumption patterns, marijuana, cannabis sativa, law enforcement, conventional and edibles.

## Introduction

The latest World Drug Report (2021) indicates that 275 million (5.5%) people used drugs worldwide in the last year up by 22% from 2010. Out of this number, roughly 200 million used cannabis in 2019 representing 4% of the global population. Furthermore, the users have increased by 18% over the past decade, with most countries having reported a rise in the use of cannabis during the pandemic (UNODC, 2021).

In Africa, the number of drug users is projected to rise by 40% from 60 million to 86 million by 2030 for the 15-64 year olds. This increase is because of the continent's younger population and the accompanying high consumption rates of the drugs in the said population. The World Drug report of 2007 had indicated that about 38.2 million (7.7%) of the African population were consumers of cannabis which was far higher than the world's 3.8% (UNODC, 2007).

Cannabis is the most widely used illicit substance globally with 5.6% of adults and youth reporting

use (UNODC, 2018). For centuries, the drug has been used across cultures for medicinal, recreational and sacramental purposes (Duvall, 2019; Abel et al., 2011).

In Kenya, the current prevalence of bhang has been indicated at 1% among the 15-65 year olds (NACADA, 2012). Marijuana is reported to be the most widely used narcotic with the prevalence stabilizing in the ten year period between 2007 and 2017 (Kamenderi et al., 2019a). There exist regional differences in the prevalence with the Nyanza region leading at 1.7%, followed by Nairobi at 1.3% and Coast at 1.3%, North Eastern at 1.1%, Central at 1.1% and Rift Valley at 0.9% (NACADA, 2015). The younger generation that is in the ages of 15-35 year olds has a high prevalence of 1.1% compared to the 15-65 year olds that report 1% indicating a higher consumption rates compared to the older generation (Kamenderi et al., 2019a). In a survey among the secondary school students, marijuana accounted for 7.5% of the overall drug consumption (Kamenderi et al., 2019b).

This high consumption of marijuana and other drugs happens even though the Narcotic Drug and Psychotropic Substances (Control) Act 1994 prohibits possession of, and trafficking in narcotic drugs and psychotropic substances. In it, trafficking in drugs is punishable with life imprisonment under the Act. It also provides for money laundering and forfeiture of proceeds derived from drugs, rehabilitation of addicts, international assistance in drug investigation and proceedings. Kageha (2015) notes that the rationalization of the criminalization of drug laws in Kenya is deterrence and in spite of the "war on drugs" policy, drugs are readily available everywhere in the community.

As part of the efforts to combat the illicit trade and consumption of narcotics, the government of Kenya formed the Anti-Narcotics Police Unit (ANU) in 1983. This was after the realization that Kenya was increasingly becoming a transit point for narcotics destined for other world markets (NACADA, 2015).

Due to technological advancement and the need to camouflage and hide from the authorities in

jurisdictions where cannabis is criminalized such as Kenya, many new patterns of consumption different from the conventional ones have emerged especially among the youth. For example, Moltke and Hindocha (2021) found that 8.5% of their study respondents used edibles as the route of administration. Not only have these new patterns been under documented and therefore, remained unknown to most of the public but also there is a gap as to whether the law enforcers are well capacitated to detect them and what this means for the enforcement of the anti-drug laws. This state of affairs poses serious regulatory flaws and health risks as the possibility of the drugs getting into the hands of those unintended and unaware of such methods becomes high. Focusing on two counties of Kenya (Vihiga and Siaya), this article unveils the new consumption patterns and their implications on law enforcement in Kenya.

## Methodology

The data for this paper was generated from an ethnographic study conducted in Siaya and Vihiga Counties in Western Kenya in 2020. These counties were purposively sampled based on media and research reports that marijuana consumption is prevalent among the communities. For example, a study by Mwenesi (1995) found out that Kakamega, Vihiga and Busia districts lead as the counties where the drug is prevalent in Western region. This study was specifically anchored in Gem, Alego and Ugunja sub-Counties of Siaya and Luanda and Emuhaya sub-Counties of Vihiga (Fig.1).

The research design was ethnographic and cross-sectional in nature combining both quantitative and qualitative approaches. It involved both men and women of different ages (the old men, old women, young men and young women). The study objective was to document the new consumption patterns of marijuana and their implications for law enforcement in Kenya. The data collection process started with the survey using questionnaire then followed by the Focus Group Discussions (FGDs) and Key Informant Interviews (KIIs) which used semi-structured interview guides to enable qualitative probe into gaps identified in the survey. The research assistants were selected from

a group of graduates who besides being speakers of the Luo and Luhya languages were residents of the localities where the study was anchored. Gender composition was observed to ensure that the respondents were free to talk without cultural hindrances and possible bias.

The study applied purposive, convenient and stratified sampling strategies. A total of 327 (210 men and 117 women) were involved in the survey. Vihiga County had a total of 167 respondents (105 men and 62 women) with Siaya having 160 respondents (105 men and 55 women).

Besides the respondents, the study also conducted eight FGDs consisting of young women and men aged 18-34 years and older men and women aged 35 years and above. Each county had 4 FGDs (one each for the different cohorts). There were also 20 key informants interviewed with 8 from Vihiga, 9 from Siaya County. These comprised County Education Officers, Police Officers, teachers, human rights activists and

County Government Officials among others. In addition, 3 informants from the National level actors including government officials and staff of the National Authority for Campaign Against Alcohol and Drug Abuse (NACADA) also participated in the study.

Secondary data review has formed a critical component of this paper. Several sources among them textbooks, journals, reports, newspapers and periodic reviews as well as internet and web based literature were reviewed. The reports by NACADA were found useful in contextualizing the problem of drug consumption.

In terms of data analysis, quantitative data was analyzed using STATA 14.2 whereas for qualitative data, inductive analysis has been used to identify themes and patterns and construct typologies. Codes corresponding to themes and constructs have been used to organize data for refined thematic content analysis.

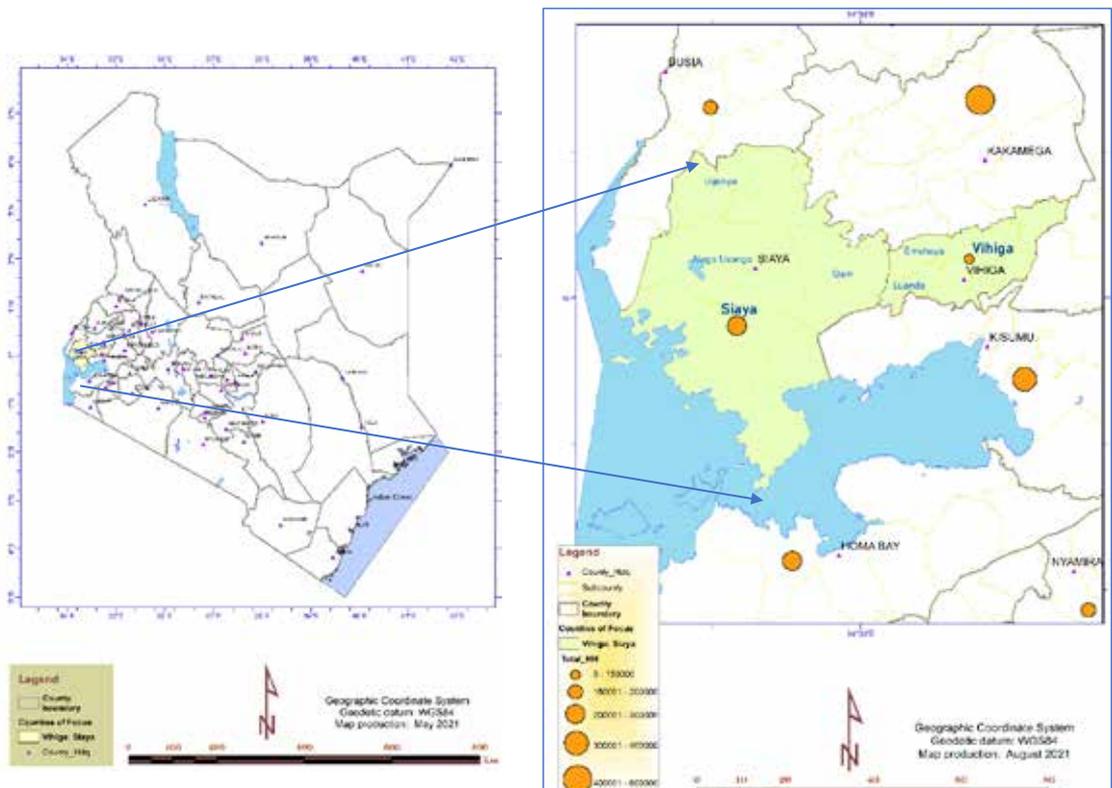


Fig1: Spatial contexts of the study areas in western Kenya (left) and within the counties. Relative household sizes according to the Kenya 2019 census mapped. Source: Authors

All the respondents were recruited based on informed consent and free will to participate. The following information was openly availed to all the respondents: The aim of the study and methods to be used; institutional affiliations of the research; anticipated benefits and potential risks and follow-up of the study; duration of the study; compensation; any discomfort it may entail; right to abstain from participating in the study or to withdraw from it at any time without reprisals and assurance of confidentiality and anonymity.

All the research subjects were adults of sound mind and above the age of 18 years. All the possible risks and attendant benefits of the research were duly explained to the participants and everyone allowed to ask questions. Research permit for the study was obtained from the National Commission of Science, Technology and Innovation (NACOSTI/P/20/4719) in Kenya.

## Results

### Demographic profile of respondents

Table 1 shows the demographic characteristics of the survey respondents. Interviews were conducted with a total of 327 respondents. Close to two thirds (64%) were males while 36% of the sample was females. In terms of age categories, the study reached out to a wide spectrum of individuals including the young, middle aged as well as the old. In total, 50% of the respondents were young people aged 18-35 years and 30% were 36-53 years while 20% were over 53 years old. Those aged above 35 years provided information on the traditional/conventional consumption practices in their communities from their own past practices and what they observed and heard from the generations ahead of them.

In terms of educational achievement, more than a third (35%) had secondary education, 27% had primary education while close to a fifth (20%) had university education. Hence close to 82% of the respondents could provide information on consumption practices for school and college going students. The diversity in gender, age ranges and education levels in the study sample brings in different shades of opinion on the subject matter which enriches the ethnographic data presented.

**Table 1: Demographic Characteristics of respondents**

	Vihiga	Siaya	Total
	167 (51.1)	160 (48.9)	327 (100.0)
<b>Gender of respondent</b>			
Male	105 (62.9)	105 (65.6)	210 (64.2)
Female	62 (37.1)	55 (34.4)	117 (35.8)
<b>Age</b>			
18-35	84 (51.2)	78 (48.8)	162 (50.0)
36-53	48 (29.3)	48 (30.0)	96 (29.6)
Above 53 years	32 (19.5)	34 (21.3)	66 (20.4)
<b>Highest level of completed education</b>			
Pre-primary	2 (1.2)	7 (4.4)	9 (2.8)
Primary	40 (24.4)	47 (29.4)	87 (26.9)
Secondary	64 (39.0)	50 (31.3)	114 (35.2)
Tertiary	25 (15.2)	22 (13.8)	47 (14.5)
University	32 (19.5)	31 (19.4)	63 (19.4)
Other	1 (0.6)	3 (1.9)	4 (1.2)

### Conventional and new consumption patterns of Cannabis Sativa

### Consumers, time, location and occasions for Cannabis use in the past and present generations

Survey data revealed significant disparities in the consumers, time, locations and occasions when bhang was consumed in the past and present in the two communities. In the past, consumption mostly happened in the evenings according to half of the respondents (50%) suggesting that its use was controlled by the elderly partakers to occur after work and mainly for recreational purposes. Still, 35% of those surveyed said it was used in

the morning. Only 23% of the respondents said it was consumed any time in the past. However, a majority (87%) reported that presently, new consumption patterns have emerged in the two communities. Its consumption takes place at any time (Table 2), a change that probably marks a shift in the reasons for its use as well as norms governing the use. The lack of self-regulation in the present times could be part of the push factor leading to its abuse among the current generation in the study population.

**Table 2: Consumers, Timings, Location and Occasions of consumption of bhang**

	Vihiga	Siaya	Total
<b>Who were the consumers of bhang in the traditional society?</b>			
Old men	110(67.1)	120(75.0)	230(71.0)
Warriors	34(20.9)	55(34.4)	89(27.6)
Young men	45(27.6)	33(20.6)	78(24.1)
Old women	20(12.3)	32(20.0)	52(16.1)
Young women	8(4.9)	15(9.4)	23(7.1)
Others	15(9.2)	20(12.5)	35(10.8)
<b>Who are the consumers of bhang in the present day society?</b>			
Old men	34(21.0)	54(33.8)	88(27.3)
Warriors	19(11.7)	25(15.6)	44(13.7)
Young men	151(92.1)	153(95.6)	304(93.8)
Old women	20(12.3)	31(19.4)	51(15.8)
Young women	70(43.2)	121(75.6)	191(59.3)
Others	15(9.3)	16(10.0)	31(9.6)
<b>Time when bhang was consumed in the past</b>			
Morning	55 (33.5)	58 (36.3)	113 (34.9)
Afternoon	8 (4.9)	17 (10.6)	25 (7.7)
Evening	65 (39.9)	96 (60.0)	161 (49.8)
Anytime	50 (30.7)	25 (15.6)	75 (23.2)
Others	17 (10.4)	24 (15.0)	41 (12.7)
<b>Time when bhang is consumed presently</b>			
Morning	6 (3.7)	15 (9.4)	21 (6.5)
Afternoon	4 (2.5)	5 (3.1)	9 (2.8)

Evening	8 (4.9)	23 (14.4)	31 (9.6)
Anytime	153 (93.3)	130 (81.3)	283 (87.3)
Others	9 (5.5)	6 (3.8)	15 (4.6)
<b>Occasions when bhang was consumed in the past</b>			
Visitation/Welcoming guests	8 (4.9)	29 (18.2)	37 (11.5)
Wedding and marriage	7 (4.3)	26 (16.3)	33 (10.2)
Burials	36 (22.1)	43 (26.9)	79 (24.5)
Parties	72 (44.2)	55 (34.4)	127 (39.3)
Others	59 (36.2)	78 (48.8)	137 (42.4)
<b>Occasions when bhang is consumed today</b>			
Visitation/Welcoming guests	5 (3.1)	29 (18.1)	34 (10.5)
Wedding and marriage	10 (6.1)	30 (18.8)	40 (12.4)
Burials	50 (30.7)	52 (32.5)	102 (31.6)
Parties	83 (50.6)	95 (59.4)	178 (54.9)
Others	70 (42.9)	77 (48.1)	147 (45.5)
<b>Location where bhang consumption was done in the past</b>			
At home	49 (30.2)	36 (22.5)	85 (26.4)
In the bush	47 (28.7)	43 (26.9)	90 (27.8)
In special huts	91 (55.8)	109 (68.1)	200 (61.9)
Others	18 (11.0)	32 (20.0)	50 (15.5)
<b>Location where bhang consumption is done currently</b>			
At home	47 (28.8)	60 (37.5)	107 (33.1)
In the bush	80 (48.8)	85 (53.1)	165 (50.9)
In special huts	22 (13.5)	34 (21.3)	56 (17.3)
Others	80 (49.1)	109 (68.1)	189 (58.5)
<b>Was the consumption of bhang a public event in the past?</b>			
Yes	34 (21.0)	28 (17.5)	62 (19.3)
No	108 (66.7)	104 (65.0)	212 (65.8)
Don't Know	20 (12.3)	28 (17.5)	48 (14.9)
<b>Is consumption of bhang a public event currently?</b>			
Yes	47 (29.9)	37 (23.1)	84 (26.5)
No	106 (67.5)	121 (75.6)	227 (71.6)

The survey findings on time for bhang consumption were also corroborated with qualitative data. According to key informants and focus group discussants, the use of bhang was highly controlled in the traditional society as opposed to the present times. In the past, bhang was mainly consumed in the evening after work for recreational purposes. It was also used sparingly in the morning when men needed energy for the day's work.

In terms of consumers, data revealed that traditional norms only allowed adults to partake of the substance. This emerged from FGD participants who said that: "Only elderly men, grandparents and above were allowed to consume *bhang*". Table 2 indicates that in the olden days, consumers of *bhang* were old men (71%) while 28% said it was the warriors. The mention of the warriors as consumers could imply that the substance was found useful in inducing energy and courage to the young warriors. In the present-day society however, the consumers as mentioned include young men (94%) and young women at close to 60%. Others mentioned include old men (27%), old women (16%) and warriors at 14%.

Regarding the occasions for consumption, 39% and 24% of respondents in both counties affirmed that consumption of *bhang* in the past mostly happened during parties and burials respectively. A similar pattern was also seen in the present-day society where a majority (55%) said *bhang* is used during parties while 32% said it is used during burials. In the past, most of the smoking was done in special huts for the elderly (62%), bush (28%) and in the home (26%). In the present-day however, the most common place for smoking *bhang* is in the bush (51%) followed by the home (33%), a finding that may be attributed to its criminalization. Moreover, 66% of the respondents did not think consumption of *bhang* was a public event in the past. Similarly, 72% of the respondents did not think *bhang* consumption is currently a public event.

Qualitative data supported the survey findings above on occasion and location for *bhang* smoking in the past and present times. According to key informants and focus group discussants, *bhang* was smoked during special occasions such as visits by close friends in which case it was consumed in the special hut of the host where they would not only advise each other but also talk, laugh and taunt each other. It was also used during communal meetings of the elders, burials, bride-wealth negotiation, rituals and memorial celebrations. A few women took the drug but in the company of their husbands. Self-regulation was observed by the consumers and there were few cases of abuse and misbehaviour as revealed

by the verbatim quote below:

*"In the past, anyone seen misbehaving after consumption was stopped, sanctioned and taken home. Today, all people ....men, women, boys and girls of all ages use the drug. They are not even aware of how much they have consumed"* (A key informant in Vihiga County).

Consistent with survey findings, the above qualitative information further emphasizes self-regulation that characterized *bhang* consumption in the past. Today, FGD participants expressed that it has no specific time for use as it is consumed anytime 'like a cigarette'. Moreover, there are no age and gender limitations as everybody the young and the old, women and men alike partake of it. There was also consensus that today, more women use the drug among the young compared to the past when fewer women used it among the older age group under the close watch of their husbands.

Consumption of Cannabis in designated places mainly the special huts of the elderly underscores the desire of the past generation to control both its use and purpose for consumption. This normative practice perhaps is what explains why 'abuse' of the drug in the past was minimal. On the other hand, consumption in the bush as done by the younger generation today has emerged due to criminalization of the drug in Kenya and hence fear of arrest. All study participants were unanimous that in both past and present generations, consumption of the substance has never been a public event pointing at the effects of criminalization and the need for underground behaviour to avoid possible arrests by the authorities. It was also noted that the present consumers in most cases subject members of their households to secondary consumption since the smoking is done in the houses with children and other vulnerable members as opposed to the past where special huts existed where consumption took place.

Data on the consumers in past and present has shown that consumption patterns have changed as more young men and women (94% and 60% respectively) than old men and women (27% and 16% respectively) consume the substance today

contrary to the past. This situation may be partly attributed to criminalization of bhang which has left the young who are more risk averse as the majority consumers. It can also be argued that the traditional norms which restricted the consumption time and age of consumers functioned to reinforce self-regulation of its use as opposed to today when the pervading permissive society and globalization forces such as the mass media and role models catalyse the consumption among the young people. On top of these, commercialization where the traders and those in the value chain use it as a source of income has further increased its use among the young people today. Worse still, it is one of the only available forms of entertainment accessible to the poor youth since it is available, accessible and affordable.

### **Methods of Cannabis consumption in the past and present generations**

#### *Smoking, chewing, vaporization and hand-pipes*

The study unveiled four main modes of consumption of Cannabis as smoking, chewing, vaporization and hand-pipes among others (Table 3). These are used by both past and present generations. Smoking accounted for 97.5% of the respondents while chewing, vaporization and hand-pipes accounted for 16%, 10% and 7% respectively. Traditionally in both communities, vaporization was done by the use of traditionally made earthenware that contained sand, fire and water to allow vaporization to occur. This earthenware was called 'Nyaloo' among the Luo and "Oluchekhe" among the Luhya.

**Table 3: Methods of consumption and preparations of Cannabis for both past and present generations**

<i>Category of information</i>	Vihiga	Siaya	Total
<b><i>How is bhang consumed in your community?</i></b>			
Smoking	159 (97.0)	157 (98.1)	316 (97.5)
Chewing	23 (14.1)	29 (18.1)	52 (16.1)
Vaporization	12 (7.4)	21 (13.1)	33 (10.2)
Hand pipes	15 (9.2)	8 (5.0)	23 (7.1)
Others	13 (8.0)	16 (10.0)	29 (9.0)
<b><i>How is bhang prepared for consumption in your community?</i></b>			
Sun dried	155 (94.5)	146 (91.3)	301 (92.9)
Pounded	15 (9.2)	53 (33.1)	68 (21.1)
Boiled/vaporized	19 (11.7)	25 (15.6)	44 (13.6)
Chewed raw	16 (9.8)	8 (5.0)	24 (7.4)
Others	3 (1.8)	15 (9.4)	18 (5.6)

According to the key informants, when dried Cannabis was vapourised with the use of "nyaloo" that was connected via a pipe to a water compartment, it was called "Poko or Puga". This type of smoking was believed to purify the substance and make it less harmful before the vapour could be inhaled.

*"Smoking was done either through the vapourization pipe (Oluchekhe) or a small pipe called Olukata" (Key Informant, Vihiga).*

A further 9% of the respondents reported other new methods of cannabis administration as follows; sniffing, boiling and blending into juice ("Jah Juice"), baking into weed cookies and adding it to sweets and mints. On further probing, key informants stated that advancement in technology has led to these modern innovative ways of consuming bhang. Illegalization of the substance may have also played a role in such innovations as the people try to find ways of camouflaging the drug for fear of legal consequences. The verbatim quotes below from key informants and

FGD participants further unpacked these new methods of consumption:

*"There are people who consume peeled marijuana, others consume the one that is filtered with water and others consume the ones already wrapped with paper while other people chew the seeds one by one"* (Excerpt from young men's FGD Siaya).

*"Today it is boiled and blended with juice. This is called Jah Juice by the present youth"*. (Excerpt from Young women's FGD Siaya).

*"The seeds can be baked into either cakes or cookies"*. (Excerpt from Young men's FGD Vihiga).

*"Green raw bhang is pounded and the green liquid added into busaa- a traditional brew. One full tin of 1 kg of busaa would have 2-3 of the pure bhang liquid. (Key informant, Vihiga).*

Fig. 2: Marijuana being baked into cookies and other confectioneries at home.



Source: Daily Nation of February 02 2021.

*"Today, one of the best methods of consuming bhang is through edibles. We just make cookies and bake cakes and since no one suspects, you have your peace and rarely do you get troubled by the authorities"* (Excerpt from young women's FGD in Siaya).

*"While in college, we used to get supplies of cookies and since it was trendy and most girls preferred it, I got addicted and I have continued to bake them and sell to make some income. The best thing about it is that apart from your known clients, no one else suspects you. There is no smell to attract the police or designated consumption joints to raise any suspicions"* (Key Informant in Vihiga).

*We realized recently that most of the policemen do not even know how bhang looks like. They simply arrest those who smoke or big peddlers who trade in large volumes. Have you ever heard of any one arrested with cookies or any confectioneries? Police simply do not know them and consumers are safe"* (Excerpt from young men FGD in Luanda).

*"Unlike smoking which can usually be smelt from afar, cookies attract no attention and no one has ever been arrested to the best of my knowledge"* (Excerpts from young women FGD in Siaya).

Other new methods according to study participants include using it in tea; the leaves are extracted and used like tea leaves or in powder form and boiling and adding it to the water used for preparing ugali.

Study findings indicate that the modern methods have evolved as a result of new technological developments, demands of the new millennials and legal environment in Kenya. Among the modern methods that are of interest in this paper are the edibles and how that mode of consumption is undetectable by the law enforcement officers and its possible implications for the enforcement of the Narcotics and Psychotropic Substances Act of 1994.

### **Capacity of the anti-drug enforcers to enforce the law**

According to the study, the young consumers opined that the authorities particularly the police are not well trained to detect bhang in mints and confectionaries. They note that these new consumption patterns also ensure that they are not suspected by their parents since the smell is also reduced substantially.

The new consumption patterns and the attendant voices of the young consumers above lead us to ask fundamental questions regarding the drug policing and whether the authorities understand and are able to police the new methods. A review of the newspaper headlines regarding cannabis trafficking, consumption and arrests just in 2021 alone, the following headlines are registered:

"Secret recipe; Why women are taking bhang" (Daily Nation 02/02/2021).

"Nairobi's "ganja babies", In Kenya, a puff a day keeps the doctor away" (Daily Nation 11/02/2021).

"Police seize shs 16million bhang hidden in water truck" (Daily Nation 18/03/2021).

"Migori police arrest man, seize six sacks of bhang worth 2.9 million" (Daily Nation 13/04/2021).

"Police nab bhang disguised as fish fingerlings in Malindi" (Daily Nation 24/04/2021).

These newspaper headlines just in the months of February, March and April 2021 alone reveal that all the arrests and police action are based on visible physical consignment of drugs and most of them are large volumes. There have also been news from the courts on those convicted and sentenced to various long term sentences as a result of either bhang trafficking or consumption based on the traditional smoking. Recently, a Meru couple was jailed for life for trafficking shs 3 million worth of marijuana (Wanyoro, 2021). In another case involving even less amount of bhang, it was reported in 2018 that a man had been sentenced to life imprisonment for trafficking bhang worth shs 23,250 or 155 rolls (Mwawasi, 2018). In yet another case that caused uproar, a woman was jailed for 30 years for trafficking bhang worth shs 2,820 without an option of a fine (Wangari, 2019).

In all the cases and newspaper headlines mentioned above as well as the interviews with the respondents in Siaya and Vihiga involving all the cases of arrests and incarceration, none involved the case of edibles or cookies. People arrested and either jailed or remanded were majorly those found smoking or peddling bhang. This implies that the confectionery industry is either unknown or their methods have not been able to attract the attention of the law.

## Discussion

The study has unveiled both traditional and new consumption patterns of cannabis sativa in the two counties of Vihiga and Siaya. The new

consumption patterns include using it as ingredient in baking cakes and other confectioneries and boiling and blending it into juice. Still others are using its leaves in tea or in powder form and boiling it and adding it into water used to prepare *ugali* as well as adding it directly into *busaa*- a traditional brew and other alcoholic beverages. Most of these new consumption methods are either made commercially or at home. We opine that because the two research sites are predominantly rural, these new patterns of consumption are not as pronounced as in urban areas. Other scholars like Lindsay et al. (2021) also found out that cannabis is used as foods in a wide range of products such as candies, baked products, lozenges and beverages. The topical cannabis administration utilizes full cannabis extract- a thick oil that has been decarboxylated to activate cannabinoids. Once cannabinoids are activated, they can be absorbed through the skin (Lindsay et al., 2021).

The global cannabis edible market has seen significant growth in recent years and is projected to grow substantially over the next years (Lindsay et al., 2021). As the trend becomes more popular, an extensive array of edibles that are either commercially prepared or homemade have become available on the market (Barrus et al., 2016; Budney et al., 2015; Schauer et al., 2016).

The survey by NACADA (2015) observes that one of the emerging trends of concealing narcotic drugs is lacing with confectioneries where drugs are used as ingredients when baking cookies and cakes. They note that this new consumption patterns is popular among the youth with more women preferring the method. The modes of marijuana consumption may have implications for initiation of use; repeat use and the development of use disorders; and timing, length and severity of intoxication (Johnson et al., 2016).

Several factors have been credited with the expansion of the edible market: they can be produced at home, they are convenient to transport and use and there is a perception that edibles are more relaxing than inhaled cannabis. There are those who generally believe that edibles do not present the same health challenges as does smoking and there is a longer duration of

action associated with the use of edibles (Vandrey et al., 2015).

The lack of distinctive smell of the narcotic laced confectioneries makes it more difficult to tell the difference between the ordinary baked foods or confectioneries and the illegal narcotic laced products making them very attractive to the youth (NACADA, 2015). Because edibles have no odor, they are largely undetectable to parents as well as law enforcers and others (Johnson et al., 2016). In many jurisdictions, producers of edibles have been able to circumvent regulatory systems and this poses challenges to policy makers worldwide (Barrus et al., 2016). Additionally, targeted marketing strategies have led to an increase in popularity among the youth (Borodovsky et al., 2017).

This rising popularity of edibles has resulted in an increase in incidences of unintentional cannabis exposure in children (Wang et al., 2014; NACADA, 2015 and Lindsay et al., 2021). This is exacerbated by the fact that in other world markets, there are limited or no laws in place governing the production, labeling and safe use of edibles while in Kenya, the knowledge of the existence of the edibles is limited and the producers are home based in an environment of secrecy. In fact, NACADA (2015) sums this up by observing that “the country lacks factual evidence to prove the existence and use of narcotic laced confectioneries”.

The study results are also a clear testimony to the fact that the emerging consumption patterns of bhang are either not known to the authorities or it is not easily detectable by them. As Kageha (2015) observed, bhang users through the conventional methods face arbitrary police swops, beatings, harassment, and bribery are constantly suspected even when they are innocent. In the community, the conventional drug users' encounter police in the drug dens, they are flushed out of streets, houses or other places they frequent. However, those in the edible industry seem to be going on with their businesses unperturbed and the consumers of their products are not even known by the authorities.

The NACADA (2015) exploratory survey

on the use of narcotics in the production of confectioneries reported a high consumption of weed cookies, weed cakes and *kaimatis* and lollipop sweets among the youth and particularly those in institutions of learning. These spaces are not very easy to police and in most cases, the drug consumption is not noticeable. As observed by one of the makers of the edibles;

*“It all started in college and after school, my clients kept asking for the stuff and as someone in business, you have to give them what they want. I bake the cakes in the evening and send a rider to deliver whenever the clients place an order. Most of my deliveries are in Kileleshwa, Kilimani and Lavington”* (Reported by Kabale, 2021).

She further notes that she gets her clients through word of mouth and some of her loyal customers have been with her for the last five or so years. She observes that her clients prefer edibles because they are more discreet and do not have the smell that comes with smoking.

The confessions in the young people's FGDs show that the consumers of edibles are well aware that the authorities have no capacity to police them adequately. The only way for the law enforcers to tell whether the cookies are laced with narcotics is to taste them. The cookies are also not very different from the ordinary ones and telling the difference is not a walk in the park unless one is himself or herself a consumer.

The rapid technological innovation, combined with the agility and adaptability of those using new platforms to sell drugs and other substances, is likely to usher in a globalized market where all drugs are available and accessible everywhere. As observed by UNODC (2021), the technologization of drug distribution through service hotlines, mobile telephone, internet based services, contactless services, vending machines, mail services have all changed the face of drug distribution and availability. This requires a deeper reflection and new thinking in the way drug policing is undertaken. Kafeero (2021) reporting for Uganda notes that Tasha Cookies and Stash is using Twitter and Instagram to market its edibles and pills, and WhatsApp to connect with buyers

for deliveries. Ubuy Uganda, an e-commerce store, also imports cannabis cosmetic products from the USA and other markets for its customers in the Country.

## Conclusion

The new consumption patterns particularly edibles that are difficult to monitor and pin down have presented a nightmare for law enforcers. The fact that narcotics remain illegal, the innovative ways to monitor misuse cannot be put in place. In jurisdictions where decriminalization has been undertaken and consumption of cannabis legalized such as Canada, Netherlands, Portugal and some parts of the United States such as Oregon, there are regulations for edible cannabis packaging and labeling requirements which include: child resistant packaging, tamper proof features, list of allergies, list of ingredients, nutritional fact, storage requirements, health warning messages, standardized cannabis symbol, milligrams of THC and CBD per serving and maximum THC per serving as reported by Lindsay et al. (2021).

This observation implies that the consumption of edibles is not just a law enforcement issue but also a health concern given the fact that most edibles have high concentration of narcotics and may pose unknown health risks. The authorities are therefore, called upon to both appreciate the new realities and retrain the police and other law enforcers on the new consumption trends, or the fight against drugs particularly the low level consumers through edibles and other beverage concoctions will continue unabated. The biggest danger is the reportedly high consumption rates in the institutions of learning and the possibilities of underage consumption as noted.

## Declarations

### Ethics approval and consent to participate

The research team explained the objectives of the study to the participants and those who voluntarily expressed willingness to be interviewed were issued with consent forms for signing before participating in the study. The explanations included making the participants aware that the study would lead to publications in scientific

journals and disseminations in conferences. Research permit for this study was obtained from the National Commission of Science, Technology and Innovation (NACOSTI/P/20/4719).

### Consent for publication -Not Applicable

### Availability of data and materials

All relevant data are within the manuscript and the raw data still in the custody of the investigators and will be discarded after three years.

### Competing interests

The authors have declared that no competing interests exist

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