

Demographic Determinants of *Miraa* Chewing Among the Youth in Central Division of Wajir East Sub County, Kenya

Abdikadir Sheikh Abdisalan

asabdisalan@yahoo.com

Prof. Kibet Ngetich., Ph D

knetich@egerton.ac.ke/k_ngetich@yahoo.com

Dr. Hadija Murenga, PhD

matuli15@yahoo.com, matuli115@gmail.com, fass@egerton.ac.ke
Faculty of Arts and Social Sciences, Egerton University, Njoro, Kenya

Abstract: Kenya is a major producer and exporter of miraa. Locally, it is predominantly consumed in Wajir and the other adjacent counties in the northern parts of country. Some of the socio-economic and health problems affecting the youth from this part of the country have been linked to excessive chewing/consumption of miraa. Although literature on miraa is fairly extensive, little has been done to identify the determinants of its use. This study was conducted to establish the demographic determinants of miraa chewing among the youth in Central Division of Wajir East Sub County. A sample of 119 youth and key informants were interviewed. The study established that 42.9% of the youth from the area have chewed miraa at least once in their lifetime. The demographic determinants of miraa chewing among the youth were age, gender and level of education, (p -value < 0.05). The main reasons reported for miraa chewing were 'to relieve stress', 'to pass/kill time' and to 'work hard'. The findings of this study will contribute to formulation of appropriate preventive strategies for managing challenges of miraa chewing among the youth and also enrich existing body of knowledge on miraa use.

Keywords: *Miraa Demographic Determinants Youth Wajir Kenya*

1. INTRODUCTION

Miraa (*Catha edulis*) is a plant substance of abuse that is widely used in East and horn of Africa, and parts of Arabian Peninsula for its stimulating effects. The common name of the substance in Kenya is *miraa*. It is also known by other names such as *khat*, *chat*, *gomba*, and *veve*.

Miraa is among the four or five leading drugs of abuse in East Africa and it is mainly used by the youth [1]. It produces dependence, tolerance and mild withdrawal symptoms. It is marked with socio-economic problems such as family instability, economic strain and prolonged absenteeism of the father from the family, malnutrition and poor education performance [2]. *Miraa* contains a psychoactive substance, cathinone, which produces central nervous system stimulation analogous to amphetamine and it is believed that miraa chewing has a negative impact on the physical and mental health of individuals as well as the socioeconomic condition of the family and the society at large [3]. Despite *miraa* being a major source of income to *miraa* producing countries, it also impacts negatively on food security because it makes farmers abandon cultivation of more essential crops like cereals [4, 5]. This situation contributes to increased malnutrition and related diseases among the population [6].

Upon chewing *miraa*, one experience unusual feeling of excitement and alertness, talking too much, lose of concentration on simple tasks or even forgets simple facts and also causes chronic constipation since it causes dehydration [7]. Apart from the habitual use of miraa for pleasure it is widely misconceived that it can improve student academic performance, can keep one awake and can also provide extra vigor and energy [8]. Consumption of *miraa* by student youth is of particular concern since it interferes with normal learning process thus leading to poor academic performance [9]. *Miraa* use increases the risk of the youth in indulging in unsafe sexual pattern [10]. *Miraa* chewing also leads to other numerous adverse social, psychological and medical effects [11, 12, and 13].

Baseline survey carried out by National Coordinating Agency against Drug Abuse (NACADA) on drugs and substance abuse amongst the youth in Kenya indicate *miraa* as one of the major substances of abuse [14]. Numerous studies have also revealed that *miraa* is used by both male and female in Kenya and several other countries [15, 16, 17, 18, 19, 20, and 21].

Although, *miraa* in Kenya is mainly grown in Meru and Embu region, majority of its local consumers are mostly in Wajir and other neighboring counties in north eastern and upper eastern province [22]. *Miraa* chewing has been hindering development and destroying livelihood in these areas [23]. *Miraa* consumption among the youth in Wajir has contributed to increase in mental diseases, increased impotency, high divorce rates, increased rape cases, increased drop out from schools, poor academic performance, increased domestic violence, decreased economic productivity and increased poverty [24].

The study was conducted in Central Division of Wajir East Sub County located in north eastern region of Kenya. The objective of the study was to establish the demographic determinants of *miraa* use among the youth. The study targeted youth who fall in the age bracket 18-35 years. Other persons who were considered to hold crucial and relevant information about the study (key informants) were also interviewed.

2. MATERIALS AND METHODS

2.1. Research Design & Sampling Procedure

The study adopted descriptive social survey research design, which combines both quantitative and qualitative approaches in collection of information from the study sample.

A representative sample of 119 youth was interviewed from households in Central Division of Wajir East Sub County through cluster, proportionate to size, systematic and simple random sampling techniques. The households were drawn from the national sample frame operated by the Kenya National Bureau of Statistics known as NASSEP IV (National Sample Survey and Evaluation Programme). Central Division is divided into seven clusters. Households were drawn from all of the clusters in proportion to the size of the cluster. Systematic sampling procedure was used in selection of households in each cluster. At household level a youth (aged 18-35 years) who was available at the time of the study was interviewed. In case there were more than one youth in a given household, simple random sampling technique was applied in selecting of one them. A household in which an eligible respondent was not available or no one was in the household at the time of the survey was replaced with next household but that household was included in the skip value of the systematic sampling, hence this ensured response rate of 100%.

Seven (7) key informants were also interviewed and were selected using purposive sampling techniques. The key informants were drawn from individuals who had information relevant to the study by virtue of their position in the society. One (1) key informant was drawn from each of the following categories using extreme case purposive sampling techniques: chiefs, councilors, religious leaders, representatives of youth organizations and officials from the ministry of youth affairs, public health and education.

2.2. Data Collection Tools & Methods

Structured interview method was utilized in collection of quantitative data from a sample of 119 youth. The data collection instrument that was used for this purpose was an interview schedule. To ensure validity and reliability of the data collection instrument, the interview schedule was pre-tested with a small sample of youth from the neighbouring Tarbaj division in Wajir East Sub County. Tarbaj division was selected for the pilot study due to existence of *miraa* chewing in the area and also its youth population has socio-demographic characteristics similar to that of the study population. However the sample from the pre- test was not included in the actual study. Semi –structured interview method, using key informants' interview guide was used to collect qualitative information from the selected key informants.

The main advantage of using the interview method was its suitability for illiterate respondents, high response rate and allowed the researcher to clarify to the respondents what was not clear, and it enabled the collection of detailed data. This was found to be particularly appropriate for a study of this nature.

2.3. Data Analysis

A statistical tool in SPSS for Windows Version 18.0 was applied in the analysis and presentation of the quantitative data. Descriptive statistical tools such as means and frequencies were used to organize, summarize and show patterns in the raw data collected which allowed simpler interpretation of the data. Chi-square was used to measure the association between the dependent and independent variables. Graphs were utilized in data presentation. The raw qualitative data that was collected from the Key Informants was analyzed by thematic content analysis techniques. The recorded qualitative information was perused to identify, highlight and summarize most frequent responses that were relevant to the study objectives, with aim of constructing direction of the flow of the arguments and ideas. The purpose of the qualitative information was complementary by providing in-depth, explanations, details and meanings to the findings of the quantitative survey research.

3. RESULTS AND DISCUSSION

A total of 119 youth were interviewed. Majority of the respondents were male (64.7%) and female constituted 35.3%. Table 1 presents data on chewing of miraa by gender. Forty three percent (43%) admitted that they have chewed miraa at least once in their lifetime. Majority of the male respondents interviewed (52%) admitted that they have chewed miraa compared with the female respondents where 26.2% reported that they have chewed miraa. A similar study in Agaro region, Ethiopia established that 64% of the youth chew miraa and the prevalence of miraa chewing was high among male compared to female [25]. The prevalence of miraa chewing in Agaro region of Ethiopia is higher than that of this study, possibly because miraa is cultivated in that region of Ethiopia, hence youth would have easy access to miraa. Another study in Ethiopia also reported higher prevalence of miraa chewing than this study at 55.7 % [26]. This possibly was also due to the same reason (miraa is cultivated in that area) and also may be due to the difference in the socio-demographic characteristic of the populations in the study areas.

Table1. Chewing of Miraa by Gender

| | Males | Females | Total |
|-------|--------|---------|---------|
| Yes | 51.95% | 26.19% | 42.86% |
| No | 48.05% | 73.81% | 57.14% |
| Total | 64.70% | 35.30% | 100.00% |

N = 119

The relationship between gender and *miraa* chewing was tested at the 0.05 level of significance. The chi-square value obtained is 7.362 ($X^2 = 7.362$) with 1 degree of freedom. The p-value is 0.007 (p-value < 0.05) implying that there is a significant relationship between the two variables (gender and *miraa* chewing). Hence gender is a demographic determinant of *miraa* chewing amongst the youth in central division of Wajir East Sub County. Male are almost 2 times more likely to chew *miraa* than female.

This difference in *miraa* chewing between male and female would be explained by the common tendency of males to abuse substance compared to females. In *miraa* chewing communities, it appears there is greater cultural acceptance of males chewing of *miraa* compared to females. This opinion concurs with views expressed by the religious leaders during the key informants' interview. They explained that it was a cultural phenomenon that dates back hundreds of years; the society views negatively females who use *miraa* compared to male.

Table 2 below presents the distribution of the respondents based on their age bracket and the percentages of those who chew or do not chew *miraa*. Majority of the respondents were in the age bracket 18-21years (29.4%) followed by the age bracket 22-25 years (26.1%). The age bracket of those from 33 up to 35 years had the least number of respondents (12.6%). The age brackets 26-29 years and 30-33 years constituted 15.1% and 16.8% of the respondents respectively.

Table2. Age and Miraa Chewing

| | | Respondent's Age | | | | | Total |
|-----------------------------|-----|------------------|--------|--------|--------|----------|--------|
| | | 18-21 | 22-25 | 26-29 | 30-33 | above 33 | |
| Have you ever chewed miraa? | Yes | 20.00% | 38.71% | 44.44% | 65.00% | 73.33% | 42.86% |
| | No | 80.00% | 61.29% | 55.56% | 35.00% | 26.67% | 57.14% |
| Total | | 29.41% | 26.05% | 15.13% | 16.81% | 12.61% | 100.0% |

N=119

Majority (73.3%) of those who have chewed *miraa* are more likely to be found in the age bracket 33-35 years, while majority (80%) of those who have never chewed *miraa* are more likely to be found in the age bracket of 18-21. The reason why higher percentage of older youth (33-35 age bracket) reported to have chewed *miraa* compared to other age brackets is because in the Somali community *miraa* is chewed by adult men. The traditional/cultural elders interviewed unanimously reported that traditionally *miraa* used to be chewed exclusively by adults and elderly men, mainly for recreational purposes and after work. The increasing chewing of *miraa* by young people is an emerging phenomenon which the society does not fully approve. The reason why majority of those who reported not to have chewed *miraa* (80%) fall in the lowest age bracket (18-21 years) would also be partly due to the stigma associated with young people chewing, hence some may not have been comfortable in admitting that they have ever chewed *miraa*.

The relationship between the dependent variable (*miraa* chewing) and the independent variable (age) was tested at the 0.05 level of significance. The chi-square value obtained is 17.396 ($X^2 = 17.396$) with 4 degrees of freedom. The p-value is 0.002 (p-value < 0.05) hence implying that there is a significant relationship between the two variables (age and *miraa* chewing), implying that age is a demographic factor that determines *miraa* chewing in the study area.

The mean age of those who chewed *miraa* was 17.2 years. The lowest age at which youth started *miraa* chewing was 9 years while the highest age was 25 years. A study in Uganda established that majority of *miraa* chewers were in the age bracket 16-25 years [27]. A similar study among University students in Ethiopia revealed that the average age of *miraa* chewers was 21 years [28]. The differences in mean ages of *miraa* chewing in these two studies would be due to differences in the demographic characteristics of the respondents.

This study has also revealed that there is difference in the prevalence of *miraa* chewing based on level of education, as shown in the Table 3. The category with highest percentage of *miraa* chewers was that of those with primary level education at 71.4%. It was followed by those with no formal education at 54.2% and those with secondary education at 32.7%. Those with tertiary/collage education had the least *miraa* chewers amongst them at 25%, followed by those with university level education at 28.6%. Therefore the respondent's level of education is a determinant of *miraa* chewing, as indicated by the statistically significant association between the two variables, tested at the 0.05 level of significance. The chi-square value obtained was 12.704 ($X^2 = 12.704$) with 4 degree of freedom. The p-value is 0.013 implying a significant relationship between level of education and *miraa* chewing (p-value < 0.05).

Table3. Level of Education and Miraa Chewing.

| | | Respondent's level of education | | | | | Total |
|-----------------------------|-----|---------------------------------|-------------------|---------------------|-----------------------------|----------------------|--------|
| | | No formal education | Primary education | Secondary education | Tertiary /College education | University education | |
| Have you ever chewed miraa? | Yes | 54.17% | 71.43% | 32.73% | 25.00% | 28.57% | 42.86% |
| | No | 45.83% | 28.57% | 67.27% | 75.00% | 71.43% | 57.14% |
| Total | | 20.17% | 17.65% | 46.22% | 10.08% | 5.88% | 100.0% |

N=119

Accordingly, those with no formal education or low education level are more likely to chew *miraa* than those with higher education level. The youth with no formal education or those whose highest

Demographic Determinants of *Miraa* Chewing Among the Youth in Central Division of Wajir East Sub County, Kenya

level of education is primary school might have missed the opportunity to improve their socio-economic status in the society due to their low level of education. The resultant stress has ‘pushed them’ to chew *miraa*. This opinion was supported by the respondents’ themselves. “To relieve stress” was reported as the main reason for *miraa* chewing by (35.3%) of the respondents. This view, was also further corroborated by all of the key informants interviewed (chiefs, education officers, public health, religious, councilors & youth leaders).

The reasons for chewing *miraa* mentioned by the respondents are summarized in Table 4 below.

Table 4. Reasons for Chewing *Miraa*

| | Males | Females | Total |
|----------------------------------|--------|---------|---------|
| To release stress | 35.00% | 36.36% | 35.29% |
| To pass/kill time | 25.00% | 45.45% | 29.41% |
| To fit in the company of friends | 7.50% | 0.00% | 5.88% |
| To work hard | 20.00% | 0.00% | 15.69% |
| Curiosity | 10.00% | 18.18% | 11.76% |
| Others | 2.50% | 0.00% | 1.96% |
| Total | 78.43% | 21.57% | 100.00% |

N = 51

Majority of the youth chew *miraa* either to “release stress” or to “pass/kill time” at 35.3% and 29.4% respectively, totaling to 64.7% of the *miraa* chewers. The other reasons given for chewing *miraa* are “to fit in the company of friends” (5.9%), “to work hard” (15.7%) and “curiosity” (11.8%).

“To release stress” is a common factor in *miraa use* among both males (35%) and females (36.4%). The “stress” would be due to unemployment, underemployment or reduced life opportunities among the youth in the study area. From the information collected from the Key Informants, it also emerged that unemployment and inability to participate in economically beneficial activity is contributing factor in *miraa use*.

Females do not chew *miraa* in order to “work hard” unlike males where 20% reported that they chew *miraa* in order to “work hard”. Hence it shows that there is difference in the nature of work done by males and females (gender roles) in the study area. However, females are almost two times (45.5%) more likely to chew *miraa* in order to “pass/kill time” than males (25%). This would be due to more idleness among the female population in the study area compared to males.

Similar reasons, “peer pressure” and “relieving stress” was also mentioned in another study [29]. Another study reported that *miraa* is chewed “to keep alert while reading” and for “relaxation with friends” [30]. Other reasons for chewing *miraa* reported in the literature are “to get concentration”, “for religious prayers” “for enjoyment” and “to accompany or socialize” with family members [31], “to reduce fatigue” and “increase performance” [32, 33, 34].

4. CONCLUSION

Miraa chewing is both human resource and public health problem. The disastrous socio-economic and health consequences of the youth indulging in *miraa* chewing are enormous.

The objective of the study was to establish the demographic determinants of *miraa* chewing among the youth in Central division of Wajir East Sub County, Kenya. Age, gender and level of education were the demographic factors that were found to have had a statistically significant association with *miraa* chewing ($P < 0.05$), hence would determine its use amongst the study population.

The findings of this study will contribute to knowledge based formulation of realistic and appropriate preventive programs to help curb the problem of *miraa* chewing among the youth. The information that has been generated from this study would also enrich the existing body of knowledge, specifically on *miraa* consumption and generally on drugs and substance abuse.

REFERENCES

- [1] NACADA. (2004). Youth in peril: alcohol and drug abuse in Kenya. Nairobi: Longman.
- [2] Kerichio, B. (1994). *Drug Abuse in Kenya*, Nairobi, Uzima Press.
- [3] Kalix, P., & Braenden, O. (1985). Pharmacological aspects of the chewing of *miraa* leaves. *Pharmacological Reviews Journal*, 37, pp.149-164.

- [4] UNODC. (2004). *Global drug trends*. Newyork. United Nations.
- [5] Murad, F. (1983). Social effects of miraa. In J. Mayberry, G. Morgan., & E. Perkin. (eds.). *Miraa-induced schizophreniform psychosis in UK*. pp. 211-214. Madagascar: International Council on Alcohol and Addictions
- [6] UNODC. (2004). *Global drug trends*. Newyork. United Nations.
- [7] Giannini, A. J., Burge, H., Shaheen. J. M., & Pace, W. A. (1986). Miraa: another drug of abuse? *Journal of Psychoactive Drugs* 18, pp.155-158.
- [8] NACADA. (2004). *Youth in peril: alcohol and drug abuse in Kenya*. Nairobi: Longman.
- [9] Mwenesi, H.A (1994). *Drug abuse in Kenya: A national report*. Nairobi: United Nations Drug Control Programme, Regional Office for East and Central Africa
- [10] Mwai, J.N. (2001). *The Drug abuse monster*. Thika: Vallen Publishers.
- [11] NACADA. (2004). *Youth in peril: alcohol and drug abuse in Kenya*. Nairobi: Longman
- [12] Basheer, T. A. (1980). The use of miraa: a stimulant with regional distribution. In G. Edwards, & A. Arif. (eds.), *Drug problems in the Sociocultural Context; A basis for policies and programme Planning*,(pp. 86-93.). Geneva: World Health Organization.
- [13] Kennedy, J. G. (1987). *The flower of paradise - the institutionalized use of Miraa in north Yemen*. D. Reidel. Dordrecht.
- [14] NACADA. (2004). *Youth in peril: alcohol and drug abuse in Kenya*. Nairobi: Longman
- [15] NACADA. (2006). *Frequently asked questions on drug and substance abuse*, Nairobi: NACADA
- [16] Basheer, T. A. (1980). The use of miraa: a stimulant with regional distribution. In G. Edwards, & A. Arif. (eds.), *Drug problems in the Sociocultural Context; A basis for policies and programme Planning*,(pp. 86-93.). Geneva: World Health Organization.
- [17] Kennedy, J. G. (1987). *The flower of paradise - the institutionalized use of Miraa in north Yemen*. D. Reidel. Dordrecht.
- [18] Giannini, A. J., Burge, H., Shaheen. J. M., & Pace, W. A. (1986). Miraa: another drug of abuse? *Journal of Psychoactive Drugs* 18, pp.155-158.
- [19] Weir, S. (1985). *Miraa in Yemen-consumption and social change*. British Museums Publications: London.
- [20] Elmi, A. S. (1983a). The chewing of miraa in Somalia. *Journal of Ethnopharmacology*, 8, pp.163-176.
- [21] Luqman, W., & Danowski, T. S. (1976). The use of miraa (*Catha edulis*) in Yemen; social and medical observations. In *Journal of Internal Medicine*, 85, 246-249.
- [22] NACADA. (2004). *Youth in peril: alcohol and drug abuse in Kenya*. Nairobi: Longman.
- [23] WHO Expert Committee on Drug Dependence (1985). *Twenty-second Report*, World Health Organization Technical Report Series, No. 729. Geneva:WHO
- [24] Aden, A., Odimba, E.O., Ndolo, U.M., & Chundra, M.C. (2006). The socio-economic effects of khat chewing in Kenya. *East African Medical Journal*. 83(3).pp. 67-73.
- [25] Adugna, F., Jira, C., & Molla, T. (1991). Khat chewing among Agora school students, Agora south western Ethiopia. *Ethiopia Medical Journal*, 32(3), pp.161-6.
- [26] Alem, A., Kebede, D., & Kullgren, G. (1999). The prevalence and socio-demographic correlates of miasa chewing in Butajira, Ethiopia. In *Acta Psychiatrica Scandinavica Supplement*, 1999;397(1): pp, 84-91.
- [27] Ihunwo, A.O., Kayanja, F.I., & Amadi-ihunwo, U.B. (2004). Use and perception of psycho stimulant khat among three occupational groups in south western Uganda. *East African Medical Journal*. 81(9): 468-472
- [28] Zain, Z.A. (1988). Polydrug abuse among Ethiopian university students with particular reference to Miraa, In *Harm Reduction Journal* 91(2):1-70.
- [29] Ageely, H.M. (2009). Health and Socioeconomic hazards associated with *khat* consumption. *Journal of Family and Community Medicine*. Vol.15, pp. 73-76.
- [30] Yared, K. (2002). Cigarette smoking and khat chewing among college students in northwest Ethiopia. *East African Medical Journal*. 79:274-278

Demographic Determinants of *Miraa* Chewing Among the Youth in Central Division of Wajir East Sub County, Kenya

- [31] Tesfaye, F., Byass, B., Wall, S., Berhane, Y., & Bonita., R. (2006). Association of smoking and khat(*Catha edulis*) use with high blood pressure among adults in Addis Ababa, Ethiopia. *Prev Chronic Dis.* 5: 1-11
- [32] Ayana,A.M., & Mekonnen,Z (2004).Miraa chewing, socio-demographic disruption and its effects on academic performance on jima university students, Ethiopia. *Ethiopian Medical Journal.*42:125-136
- [33] Zain, Z.A. (1988). Polydrug abuse among Ethiopian university students with particular reference to *Miraa*, *In Harm Reduction Journal* 91(2):1-70
- [34] Kebede,Y.(2002). Prevalence and risk factors of cigarette smoking and miraa chewing among college students in North West Ethiopia. *The East African Medical Journal* 79, pp.74- 91.