

The Impact of Chewing Khat during Pregnancy on Foetal Death History

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Abstract: Chewing the leaves of Khat, a natural stimulant from the *Catha Edulis* plant, is a social habit in Yemen and East African countries. The aim of study to determine the effect of chewing khat during pregnancy on the history of foetus death in Sana'a city, Yemen. The sample was consisted of mothers attending the Primary Health Care Centre in Sana'a City and who had children less than two years of age, about 36% of them chewing khat during pregnancy. About 44% of pregnant mother's chewer khat had history of foetus death as compared to 34% non-chewers khat, the difference was significantly associated. In addition, risk of pregnant mothers chewing khat regularly to have foetuses death was about 4 times as compared to non-chewers ($p < 0.05$).

Keywords: Khat, foetal, chi square, logistic regression.

1. INTRODUCTION

Khat Chewing is a social habit widely practiced in Yemen and some countries of the Horn of Africa. Fresh green leaves of the plant *Catha edulis* are chewed over a period of time for their pleasurable stimulant properties [1] and it, a psychotropic plant, is a deeply rooted addictive habit in Yemeni society [2].

Yemeni women chew less than men and about 90% of men are chewers (habitual and occasional) compared to some 60% of Yemeni women [2, 3, 4].

Several studies documented a number of negative reproductive health for khat chewing during pregnancy, inhibition of placental blood flow, which leading to effect and the impairment of foetal growth [5, 6, 7].

In Yemen, it was found that 46% of women aged (15-49) reported chewing khat during pregnancy, 32% of pregnant women had vaginal infection and 35% had more prolonged labor when chewing khat [8].

Pregnancy is an important event during a woman's reproductive life and her health as well as that of her foetus's become sensitive to outside stimuli. Chewing khat during pregnancy can have a damaging effect on the foetus's health [6, 7]. Yet, few studies have investigated the prevalence, and adverse effects, of khat chewing in pregnant women in Yemen and beyond [5].

The objective of this brief paper is to examine the prevalence of khat chewing during pregnancy on history of foetal death among Yemeni pregnant women.

2. MATERIAL AND METHODS

The survey was carried out during April-May 2013 in Sana'a City, the capital of Republic of Yemen. The questionnaire was administered consecutively to mothers attending the Primary Health Care Centre in Sana'a City and who had children less than two years of age. The questionnaire had been designed, pilot tested and modified accordingly. It consisted of 35

questions covering socio demographic characteristics of the mother, as well as information on infant’s breast-feeding and weaning and contraceptive methods after the last pregnancy.

Questions about mother’s attitudes and habits such as chewing khat and number of times chewing khat per week during pregnancy and after delivery.

3. STATISTICAL ANALYSIS

Data were analyzed by chi square to reveal the association between pregnant mothers chewing khat and non chewer. Also, logistic regression was used to find the effect of chewing khat during pregnancy on the history of foetus death. All analyses were performed using SPSS 21 program.

4. RESULTS

Table1. Characteristics of mothers attending Primary Health Centers

Variables	Category	n	%
History of foetus	foetus live	391	62.1
	foetus dead	239	37.9
Mother chewing khat during pregnancy	No	404	64.1
	Yes	226	35.9
Number of chewing khat	not chewing khat	404	64.1
	once per week	89	14.1
	twice par week	22	3.5
	three times per week	17	2.7
	four times per week	32	5.1
	every day	66	10.5

Table 1 reveals that 630 married women with at least one child (≤ 24 months) completed months of age were enrolled in the study. Their age ranged from 15 to 45 years with mean 27 years and SD 5.97 years. About 38% of women had foetus dead. It observed that 36% of women were chewing khat during their pregnancy and 10.5% of them chewing khat every day.

Table 2. crosstabulation between mother chewing khat during pregnancy and history foetus status

Fetus History	Mother chewing khat during pregnancy	
	No	Yes
foetus live	265 (65.6)	126 (55.8)
foetus dead	139 (34.4)	100 (44.2)
Persons Chi Square	5.962	
P-value	0.015	

Table 2 shows the comparison between mother who chewing khat during pregnancy by those who never chewing and with their foetus history. It notes that 44.2% of foetuses history belong to mother who chewing khat during pregnancy were dead. The result of chi-square reveals significant association between chewing khat during pregnancy and their foetus death history.

The purpose of research is to distinguish the effect of number of chewing khat during pregnancy on the history of foetal death. The history of foetal death is a binary variable (live=0, dead=1) and the number of chewing khat is categorical variable. Therefore, the logistic regression model is appropriate method, data analysis was done to assess the effect of number of chewing khat per week on the history of foetal death using SPSS 21.

Table 3. Result of Logistic Regression of History of Foetal Death

Variable	Category	Odds Ratio	95% C.I. for OR		P-value
			Lower	Upper	
Number of chewing Khat	not chewing khat (0)				.097
	once per week (1)	1.223	.763	1.960	.403
	twice par week (2)	1.887	.798	4.460	.148
	three times per week (3)	.786	.271	2.276	.657
	four times per week (4)	2.138	1.037	4.409	.020
	every day (5)	3.715	1.005	6.928	.011

Table 3 shows the relationship between the number of chewing khat during pregnancy and the history of foetal death. It reveals that mothers who chewing khat during pregnancy four times per week (OR=2.138 [1.037 - 4.409] P=0.020) were more likely to had foetus dead comparing to not chewing khat. Also, mothers chewed khat during pregnancy every day (OR=3.715 [1.005 - 6.928] P=0.011) were more likely to had foetus dead comparing to not chewing khat.

5. DISCUSSION

Khat chewing is common among Yemeni women, even during pregnancy, it may affect the wellbeing during pregnant which reflect its effect on foetal wellbeing. The findings of research reveal 38% of pregnant women had history of foetal death during their pregnancy (Table 1). 36% of women had chewed khat and about 14% of them chewed khat once time per week and 10.5% chewed khat every day. This finding was found in Ethiopia where about 26% of pregnant women used khat [9], whereas in Jazan, Kingdom of Saudi Arabia, it was found that about 45% of females used khat at least once while 13% are considered regular khat users [10].

Table 2 shows that mothers who chewed khat during pregnancy had a higher history of foetal death (44%), as compared with not chewing khat during pregnancy, and the difference was a statistically significant. By contrary, it was observed that there was no difference in rates of stillbirth as compared pregnant khat chewers to non-chewers [7].

The finding of the logistic regression analyzing showed statistically significant risk of 2.138 times to mother who chewing khat four times per week had history of foetal death as compared to those did not chew khat (p<0.05).

Risk of mothers chewing khat every day to have foetus death was 3.72 times as compared to mothers not chewing (p<0.05).

Therefore, mothers who chewing khat during pregnancy every day were at high risk to have about 4 times history of foetal death than not chewing khat.

In pregnant women, consumption of khat affects growth of foetus by inhibiting utero-placental blood flow and as a consequence, impairs foetal growth [5].

Commonly, it observed that if pregnant mothers regularly chewed khat, it has a negative effects on the foetus, it may be one of the factors contributing to perinatal, young infant death, and infant mortality in societies [5].

In Taiz (Yemen), a study concluded that Khat chewing is associated with higher rate of cesarean and instrumental deliveries that may affect maternal and the foetal wellbeing [11].

The strength of this research lies in the fact that it concentrates on the practice of khat chewing during pregnancy. There is a lot of the literature published on khat, which concentrate on the pharmacology, chemistry and the social, economic and medical aspects of this plant [12]. Nevertheless, to our knowledge, studies investigating the prevalence of khat chewing among Yemeni pregnant women. The research documented a high prevalence of khat chewing during pregnancy.

The main conclusion is that women chewing khat during pregnancy were more likely to have foetuses who exposure to die than other women. Therefore, educational programs to prevent this habit during pregnancy among the women may be recommended.

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