Knowledge, Attitude and Practice Study on Smoking among Male Students in Al-Jabal Al-Gharbi University, Gharian - Libya

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Abstract: Tobacco is a serious threat to health and a proven killer and ranks second as a cause of death globally. The worldwide mortality from tobacco related diseases reached up to 4 million per year in 1998 and is expected to become 10 million per year in 2030. This is more than the total deaths from tuberculosis, malaria, maternal and major childhood conditions combined. **Methodology:** A cross – sectional university – based study was carried out in **AL-Jabal AL-Gharbi** University- Gharian - Libya. An anonymous self-administered questionnaire was used. **Results:** This study included 304 students distributed nearly equally between faculties of Medicine, Art and Engineering in **AL-Jabal AL-Gharbi** university, Libya. The average age of students was 22.1 years. The prevalence of smoking among students was found to be 28.3%. Cigarette smoking constituted 80.2% and Shisha constituted 19.8%. Smoking among students was significantly related to higher age of students, higher family income and smoking among other family members of students. There was no significant difference between prevalence of smoking in different faculties of the University of **AL-Jabal AL-Gharbi**. The main motives for smoking were curiosity, peer pressure and smoking among other family members. Educational lessons about smoking hazards, prevention of smoking at public places and increasing taxes on cigarettes were suggested by students to prevent smoking.

[Hala H. Abou-Faddan and Sabra M. Ahmed **Knowledge, Attitude and Practice Study on Smoking Among Male Students in Al-Jabal Al-Gharbi University,Gharian - Libya]** *J Am Sci* 2012;8(11):485-491]. (ISSN: 1545-1003). http://www.jofamericanscience.org. 75

Key words: Smoking, Male Students, Libya.

1. Introduction

Tobacco is a serious threat to health (Ball, 1986) and a proven killer (Older, 1986) and ranks second as a cause of death globally (WHO, 2007). The worldwide mortality from tobacco related diseases reached up to 4 million per year in 1998 and is expected to become 10 million per year in 2030. This is more than the total deaths from tuberculosis, malaria, maternal and major childhood conditions combined (WHO, 1999). Trends of smoking are changing in developed and developing countries. Although smoking is static or declining in most of the developed countries due to intense public health measures, it is increasing in the developing countries due to massive promotional activities of cigarette companies (Simpson, 1997). According to WHO, there were 800 million smokers in the developing countries in 1997 as compared to 300 million in the developed world (WHO, 2002). These figures may not correctly reflect the actual proportion of smokers in developing and developed countries, due to different population sizes.

The morbidity and mortality associated with tobacco use is shifting from the developed world to developing countries, especially low- and middle-income Arab countries (Jha and Chaloupka, 2000). One such country, which has the highest rate of tobacco consumption in the Middle East and North Africa is Egypt (Corrao *et al.*, 2000; Hassan, 2003). It is estimated that 34% of Egyptians are daily smokers, with males having significantly higher daily smoking rates than females (43.4% males, 4.7% females) (ERC Statistics International, 2001).

Information on tobacco consumption is essential to improve the focus of prevention and control measures and thereby succeed in the struggle against tobacco use.

Smoking among future health care personnel such as medical students is an important issue.

Medical students are generally in the age group 17-25 years .this is the time when life style patterns, both healthy and unhealthy are formed.

WHO has included prevalence of tobacco use among subgroups such as physicians, nurses, other health workers, ect. among the indicators which should be monitored by each country (WHO, 1998).

Objectives:

The aims of this study are

1. To assess the magnitude of tobacco smoking among the medical and nonmedical male students in AL-Jabal AL-Gharbi university, Gharian, Libya.
2. To study knowledge, attitude and practice of smoking among male students in AL-Jabal AL-Gharbi, university, Gharian, Libya.

3. To study the difference in knowledge, attitude and practice of smoking among smokers, non – smokers, medical and non - medical students of AL-Jabal AL-Gharbi university, Gharian, Libya.

2. Subjects and Methods

This study included a total of 320 students from first to final year of AL-Jabal AL-Gharbi University, Gharian, Libya, of them 304 completed the questionnaire with a response rate of 95%. All of the medical students were targeted for the survey. Two faculties (Art and Engineering) were selected randomly as a comparison group. After seeking administrative approval and verbal consent of the participants. A structured questionnaire consisting of three parts was developed for this purpose. The first part was about socio-demographic characteristics of participants. The second part was about self-reported smoking status. The third part was about students' knowledge of tobacco related diseases. Smoking status was defined as regular or occasional cigarette or goza smoking at time of the study. Non smokers are those who never smoked.

The questionnaire was self-administered, the students were not required to give any identification and were asked to deposit the completed forms in a 'box' placed in the room. This was done to ensure confidentiality and valid responses from the students. A pilot study was conducted on 30 students who were not included in the study.

The data was entered and analyzed by using SPSS version 10. Chi-Square test was used to evaluate the difference regarding knowledge about tobacco related diseases at the significance level of P=0.05.

3.Results

This study included 304 students, about one third of them were medical students, another one third was from faculty of Art and the last third was from faculty of Engineering. Prevalence of smoking among total students was 28.3%. There was no significant difference between prevalence of smoking among different faculties. Mean age of smokers was significantly higher than that of non-smokers (22.5 versus 22 years, P = 0.046). Also, smokers had significantly higher family income than non-smokers (P<0.0001). (Table 1).

Friends were the source of first cigarette in 64% of smokers. Duration of smoking was less than 24 months in 46.5% of smokers. Regarding type of tobacco used, it was cigarette in 80.2% of smokers. The most common places of smoking were, home (20.9%), outdoors (33.7%) and cafe (18.6%). (Table 2).

Prevalence of smoking among family members of smokers was 59.3%. The most common smokers among other family members were brothers (65.7%) and fathers (51.4%). (Table 3).

Table (4) revealed that non-smoker students had better knowledge than smoker students with a significant difference regarding knowledge of smoking as a hazardous effect on health, risk factor of cancer, cardiovascular, chronic lung diseases, congenital anomalies, infertility and addiction. On the other hand, medical students had better knowledge than non-medical students with a significant difference regarding risk factor for cancer, chronic lung diseases, congenital anomalies, infertility and, osteomalacia.

Table (5) showed that 79.1% of smokers want to stop smoking. The main motives for smoking were curiosity (61.6%), peer pressure (37.2%), sign of welfare (34.9%) or maturity (30.2%).

Educational lessons about smoking hazards (87.2%), prevention of smoking at university, schools and hospitals (81.6), increasing taxes on cigarettes (71%), and prevention of cigarette importation and advertisement (64.8%) were suggested for prevention of smoking from students' point of view (Table 6).

Table (7) shows that the main source of knowledge about hazardous effect of smoking was radio/ television (74%), schools (61.8%) and family (42.4%).

Table (1): Characteristics of participants in AL-Jabal AL-Gharbi, university- Libya, 2010:

Characteristics:	Smokers	Non smokers	Total
Prevalence of smoking	86 (28.3)	218 (71.7)	304 (100.0)
Type of educations:			
- Art	26 (30.3)	77 (35.3)	103 (33.9)
- Medicine	29 (33.7)	71 (32.6)	100 (32.2)
- Engineering	31 (36.0)	70 (32.1)	101 (32.9)
P – value	0.676		
Age of participant:			
- 19 - 20	19 (22.1)	54 (24.8)	73 (24.0)
- 21- 22	26 (30.2)	78 (35.8)	104 (34.2)
- 23 - 24	30 (34.9)	70 (32.1)	100 (32.9)
- 25 and more	11(12.8)	16 (7.4)	27 (8.9)
Mean ± SD	22.5 ± 2.2	22.0 ± 1.8	22.1 ± 1.9
P – value	0.046		
Father's education:			
- Illiterate	11 (12.8)	12 (5.5)	23(7.6)
- Basic education	33 (38.4)	105 (48.1)	138 (45.4)
- Secondary /University	42 (32.2)	101 (46.4)	143(47.0)
P – value	0.057		
Mother's education:			
- Illiterate	25 (29.1)	46 (21.1)	71(23.4)
- Basic education	30 (34.9)	93 (42.7)	123 (40.4)
- Secondary/ University	31 (48.9)	79 (36.2)	110 (36.2)
P – value	0.273		
Family income:			
- <400 dinars	44 (51.2)	122 (56.0)	166 (54.6)
- 400 - <800	31 (36.0)	76 (35.0)	107 (35.2)
- 800 and more	11 (12.8)	20 (9.2)	31 (10.2)
Mean ± SD	483.1 ± 222.8	383.0±224.5	411.3±228.0
P – value	0.001		
Total	86 (28.3)	218 (71.7)	304 (100.0)

Table (2): Characteristics of smoker male students in AL-Jabal AL-Gharbi university- Libya, 2010:

Characteristic	Frequency	Percentage
Source of first cigarette:		
- Friends	55	64.0
- Family	10	11.6
- Cafe	15	17.4
- Neighbours	6	7.0
Duration of smoking :		
- <24 months	40	46.5
- 24 - <48 months	26	30.2
- 48 months and more	20	23.3
Type of smoking:		
- Cigarette	69	80.2
- Shesha	17	19.8
Most common place of smoking:		
- At home	18	20.9
- Outdoors	29	33.7
- At work	5	5.8
- At cafe	16	18.6
- At means of transportation	1	1.2
- More than one place	17	19.8
Total	86	100.0

Table (3): Relationship between smoking among male students and other family members in AL-Jabal AL-Gharbi university- Libya, 2010:

Characteristics	Smokers	Non-smokers	Total
Smoking among other family members			
- Yes	51 (59.3)	83 (38.1)	134 (44.1)
- No	35 (40.7)	135 (61.9)	170 (55.9)
P - value	0.001		
Who is smoker among other family members			
- Father	18 (35.3)	30 (36.1)	48 (36.4)
- Brother	23 (45.1)	27 (32.5)	50 (37.9)
- Grandfather	5 (9.8)	15 (18.1)	20 (22.7)
- Others	5 (9.8)	11 (13.3)	16 (12.1)
Total	51(59.3)	83 (37.9)	134 (100.0)

Table (4): Knowledge regarding the ill effect of tobacco in AL-Jabal AL-Gharbi university- Libya, 2010

Knowledge	Smoking status		Student type		Total
	Smokers	Non-smokers	Medical	Non- medical	
Hazardous effect on health					
- Yes	75 (87.2)	211 (96.8)	100 (100.0)	186 (91.2)	286 (94.1)
- No	11 (12.8)	7 (3.2)	0 (0.0)	18 (8.8)	18 (5.9)
P – value	0.005		-		
Risk for cancer in general					
- Yes	69 (80.2)	195 (89.4)	94 (94.0)	170 (83.3)	264 (86.8)
- No	17 (19.8)	23 (10.6)	6 (6.0)	34 (16.7)	40 (13.4)
P – value	0.032		0.010		
Risk for cancer genitor-urinary tract					
- Yes	31 (36.0)	91 (41.7)	34 (34.0)	88 (43.1)	122 (40.1)
- No	55 (64.0)	127 (58.3)	66 (66.0)	116 (56.9)	182 (59.9)
P – value	0.361		0.127		
Risk for cardiovascular diseases					
- Yes	69 (80.2)	202 (92.7)	87 (87.0)	184 (90.2)	271 (89.1)
- No	17 (19.8)	16 (7.3)	13 (13.0)	20 (9.8)	33 (10.9)
P – value	0.002		0.400		
Risk for chronic lung diseases					
- Yes	59 (68.6)	194 (89.3)	92 (92.0)	161 (78.9)	253 (83.2)
- No	27 (31.4)	24 (10.7)	8 (8.0)	43 (21.1)	51 (16.8)
P – value	<0.0001		0.004		
Risk of congenital anomalies of newborn					
- Yes	28 (32.6)	128 (58.7)	41(41.0)	78 (39)	156 (51.3)
- No	58 (67.4)	90 (41.3)	59 (59.0)	122 (61.0)	148 (48.7)
P – value	<0.0001		0.012		
Risk for infertility					
- Yes	29 (33.7)	107 (49.1)	35 (35.0)	101 (49.5)	136 (44.7)
- No	57 (66.3)	111 (50.9)	65 (65.0)	103 (50.5)	168 (55.3)
P – value	0.015		0.017		
Risk for weak sex					
- Yes	26 (30.2)	101 (46.3)	26 (26.0)	101 (49.5)	127(41.8)
- No	60 (69.8)	117 (53.7)	74 (74.0)	103 (50.5)	177 (58.2)
P - value	0.010		<0.0001		
Risk for osteomalacia					
- Yes	32 (37.2)	100 (45.9)	30 (30.0)	102 (50.0)	132 (43.4)
- No	54 (62.8)	118 (54.1)	70 (70.0)	102 (50.0)	172 (56.6)
P – value	0.170		0.001		
Cause of addiction					
- Yes	55 (64.0)	180 (82.2)	81 (81.0)	154 (75.5)	235 (77.3)
- No	31 (36.0)	38 (17.8)	19 (19.0)	50 (24.5)	69 (22.7)
P – value	0.001		0.281		

Table (4): Continued.

Knowledge	Smoking status		Student type		Total
	Smokers	Non-smokers	Medical	Non- medical	
Risk for insomnia and fatigue					
- Yes	45 (52.3)	158 (72.5)	67 (67.0)	136 (67.6)	203 (66.8)
- No	41 (47.7)	60 (27.5)	33 (33.0)	68 (33.4)	101 (33.2)
P – value	0.001		0.954		
Risk for increased ppetite/weight gain					
- Yes	10 (11.6)	46 (21.1)	11 (11.0)	45 (22.1)	56 (18.4)
- No	76 (88.4)	172 (78.9)	89 (89.0)	159 (77.9)	248 (81.6)
P – value	0.055		0.019		
Risk for increased mortality					
- Yes	56 (65.1)	185 (84.9)	82 (82.0)	159 (77.9)	241 (79.3)
- No	30 (34.9)	33 (15.1)	18 (18.0)	45 (22.1)	63 (20.7)
P – value	<0.0001		0.412		
Cause of increased activity					
- Yes	23 (27.1)	23 (10.6)	10 (10.0)	36 (17.7)	46 (15.2)
- No	62 (72.9)	195 (89.4)	90 (90.0)	167 (82.3)	247 (84.8)
P – value	0.001		0.087		
Cause of increased concentration					
- Yes	48 (55.8)	22 (10.1)	25 (25.0)	45 (22.1)	70 (23.0)
- No	38 (44.2)	196 (89.9)	75 (75.0)	159 (77.9)	234 (77.0)
P – value	<0.0001		0.567		

Table (5): Attitude of participants towards smoking in AL-Jabal AL-Gharbi university- Libya, 2010:

Attitude	Yes	No
Do you think that smoking has problem solving effect	37 (43)	49 (57)
Do you want to stop smoking	68 (79.1)	18(20.9)
Smoking in closed places	53 (61.6)	33 (28.7)
Do you know that smoking is prevented in closed places	72 (83.7)	14 (16.3)
Motives for smoking:		
- Curiosity	53 (61.6)	33 (38.4)
- Peer pressure	32 (37.2)	54 (62.8)
- Acquired habits from parents or relatives	18 (20.9)	68 (79.1)
- Makes one looks mature (sign of maturity)	26 (30.2)	60 (69.8)
- Sign of welfare	30 (34.9)	56 (65.1)
Not forbidden from religiously	54 (17.8)	250 (81.3)
Increase body activities	46 (15.1)	258 (84.9)
Increase concentration	70 (23.0)	234 (77.0)
Smoking is not prevented in general places and means of transportation	146(48.0)	158 (52.0)

Table (6): Suggestions for prevention of smoking among male students in AL-Jabal AL-Gharbi university- Libya, 2010:

	Yes	No	Do not know
Fee for smoking at public places and means of transportation	192 (63.2)	74 (24.3)	38 (12.5)
Smokers at public places should be isolated at special sites	194 (63.8)	89 (29.3)	21 (6.9)
Prevention of smoking at university, schools and hospitals	248 (81.6)	49 (16.1)	7 (2.3)
Increase taxes on cigarettes	216(71.1)	72 (23.7)	16 (5.3)
Prevention of cigarette importation and advertisement	197 (64.8)	76 (25.0)	31 (10.2)
Smokers are not allowed to act as community leaders or top occupations	91 (29.9)	147 (48.4)	66 (21.3)
Do not sit beside smoker students during smoking	98 (32.3)	184 (60.5)	22 (7.2)
May have a smoker friend	196 (64.5)	93 (30.6)	15 (4.9)
Do not allow smoking during home visits	158 (52.0)	108 (35.5)	38 (12.5)
Educational lessons about smoking hazards	265 (87.2)	35 (11.5)	4 (1.3)

Table (7): Source of knowledge about smoking hazards in AL-Jabal AL-Gharbi university- Libya, 2010:

Source	Yes	No
Radio / Television	225 (74.0)	79 (26.0)
Books and magazines	124 (40.8)	180 (59.2)
Sessions about smoking	96 (31.6)	208 (68.4)
Family	129 (42.4)	175 (57.6)
Schools	188 (61.8)	116 (38.2)

4. Discussion

This study examined the prevalence of smoking among medical and other college male students of AL-Jabal AL-Gharbi university, Gharian, Libya, as well as their knowledge about tobacco related diseases.

Prevalence of smoking: The smoking prevalence in this survey showed that 28.3 percent of students were current smokers. It was found that prevalence of tobacco smoking among males > 15 years in Libyan Arab Jamahiriya is 47.6 % (WHO, 2009).

It was found that prevalence of cigarette smoking among male medical students in the Faculty of Medicine in Tripoli, Libya was 14% (Ahmed, 2006).

In Egypt, The prevalence of smoking among male adolescents and young adults (15 – 24 years) in Assiut governorate was 30% (Probhat and Chloupka, 2000). In a study conducted in Assiut university students revealed that, the prevalence of smoking was 31.9% (WHO, 1999).

The percentage of smokers among male secondary school students was 29.3% in Alexandria city (Conrad *et al.*, 1992).

The prevalence of current smoking among rural secondary school students in Qualyobia governorate was estimated using anonymous self-administered questionnaire and CDC criteria for youth smoking. The results showed that the overall prevalence of lifetime cigarette smoking among high school students was 29% (40% of males and 7% of females) with the median age of initiation at 11 years of age. Current cigarette smoking prevalence was found to be 8% (11.5% among males and 0% among females) (CDC, 1998).

In Saudi Arabia, prevalence of tobacco smoking among males medical colleges in Riyadh was 24% (Ali, et al, 2010)

In Morocco, The overall prevalence of current smoking was 31.5% for males and 3.1% for females (Chakib, et al, 1992).

In another study on cardiovascular risk factors conducted in 2000 in Morocco, found smoking rates of 31.5% for men and 0.6% for women (Tazi *et al.*, 2003).

In Pakistan, an overall smoking prevalence of 22 percent among people of 15 years and above (36 percent of males and 9 percent of females) was found (National Health Survey of Pakistan, 1990-1994). A survey of medical students of the Aga Khan University in 1993 gave a smoking prevalence of 11 percent current smokers (17% males and 4% females) (Hussain *et al.*, 1995). Similar studies of smoking prevalence among medical students of Karachi and college students of Peshawar have shown a prevalence rate of about 22 percent (Ahmed *et al.*, 1995).

All these studies indicate trends of smoking similar to our survey findings. The difference between the result of this study and other studies may be due to involvement of different age groups in different studies.

This study revealed that, there were no significant difference between prevalence of smoking among medical and non-medical students. This is consistent with a similar study conducted in China (Zhu *et al.*, 2004).

On the other hand, a study on habits of tobacco use among medical and non-medical students of Kolkata revealed that overall tobacco prevalence was significantly higher among nonmedical male subjects with a prevalence of 61.2% in comparison to 26.2% among their medical counterpart ($P<0.002$)(Chatterjee *et al.*, 2011).

Family income and smoking: In this study, there was a significant relationship between the prevalence of smoking and family income. As the family income increases, the prevalence of smoking is increased. This finding was in agreement with previous similar studies in Qualyobia and Assiut Governorates (CDC, 1998 and Zarzour and Sabra, 2004)

Role of the family: Acceptance of smoking by the family was significantly associated with prevalence of smoking among university students ($P = 0.001$). These results were corresponding to the results of a study conducted in the city of Novara, Italy, which revealed that tobacco consumption among students in related to smoking in parents particularly fathers (Gadalla *et al.*, 2003).

Peer effects: Peer effect was the most important reason of starting as it was the initiating factor in 37% of smokers in this study and 64% of smokers took the first cigarette from their friends. This was in accordance with Conrad *et al.* (1992) who reviewed 27 prospective studies conducted between 1980 and 1992 examining predictors of smoking initiation among children. Peer influences were found to be strong predictors of smoking initiation in almost all the studies. Burt and Peterson (1998) found in their study that peer influences were not only on smoking initiation but also on quitting.

In Egypt, in a study in rural areas of Qaulyobia governorate, peer smoking was significantly associated with students smoking status. Students who reported that one of more of their friends is a smoker had triple the risk of smoking. Also, peer pressure was found to be the most important cause students gave for starting smoking and friend 's home was the second most common place for smoking. The most important reason given for starting to smoke was peer pressure (CDC, 1998).

A similar finding was reported in Riyadh, Saudi Arabia (*Ali Al-Haqwi*, 2010)

Place of smoking: In this study, the most common places of smoking were, home (20.9%), outdoors (33.7%) and cafe (18.6%). Smoking at home reflects the lack of parental guidance on objection to

smoking which is an important factor to prevent young people from smoking.

Knowledge about smoking hazards: The students' deficiency in knowledge regarding tobacco related diseases such as cancers of throat and larynx, peptic ulcer, stroke, preterm babies and male infertility are important issues that must be addressed. There is need to increase awareness among the youth for other serious consequences of tobacco related diseases along with lung cancer, heart disease and other health problems.

This finding agreed with a study which was conducted in Ziauddin Medical university which revealed that students were deficient in knowledge regarding tobacco related diseases such as cancers of throat and larynx, peptic ulcer, stroke, preterm babies and male infertility are important issues that must be addressed (Chatterjee *et al.*, 2011).

In this study, 94.1% of students knew that smoking uses is harmful for health and 89.1% of them knew that it causes cardiovascular disease. This is agree with a study on Tobacco use and cardiovascular disease in rural Kerala which found that 96.6% of the subjects knew that tobacco use is harmful for health, but only 22.5% of the subjects knew that it causes cardiovascular diseases. (Thankappan and Thresia,2007).

Another study in Riyadh, Saudi Arabia revealed that About 94% of the study sample indicated that smoking could cause serious illnesses. The students also indicated, that smoking is related to major chronic diseases, especially lung cancer and heart diseases, but to a lesser extent, to sexual dysfunction, as approximately a third of the students did not know if smoking could cause any sexual dysfunctions (Ali Al-Haqwi *et al.*, 2010).

Conclusion and Recommendations

Based on the results of this study it can be concluded that university students in AL-Jabal AL-Gharbi University, Gharian in Libya have higher level of smoking. Several important tasks are considered as important responsibilities of the administrators of the university e.g. health education sessions and discussions about smoking hazards. Therefore the following recommendations are suggested:

- Multi- pronged approach like strict enforcement of anti-tobacco laws, massive social mobilization for anti-tobacco movement using regular well planned anti-tobacco campaign, observation of "no tobacco/anti-tobacco" day, role play/drama/puppet show; demonstration, etc. can be beneficial.
- Inclusion of health and economic hazards of smoking in the curricula of medical and non-medical university students. Students may be benefitted by regular classes on tobacco impacts included in course curriculum starting from lower school level, cessation help/training. Also inclusion of *health and economic hazards of smoking in the curricula of preparatory and secondary schools is particularly important to prevent early exposure of students to smoking.*
- Health education sessions about hazards of smoking should be held regularly in the university. Inclusion of physicians, religious men and sociologists in these sessions is important.
- Parents should have their role in prevention of smoking.
- Prohibition of tobacco advertisement by all means.
- Increase taxes on tobacco sale.

Limitations Of This Study:

Results Of This Study Are Based On Cross-Sectional Data, So Causal Influences Cannot Be Determined. The Reverse Direction Of Causality Is Plausible. Adolescents Who Have Already Experimented With Cigarettes Might Choose To Befriend Others Who Have Also Experimented With Cigarettes, So As Not To Feel Different, And Not Vice Versa. To Develop A Better Understanding Of The Conditions Under Which These Variables Operate As Causal Factors, More Longitudinal Study Designs Are Required. However, The Influences Of Family Smoking On Adolescent Smoking Behavior Cannot Be Explained By This Reversal Of Causality And Remains An Important Smoking Risk Factor That Needs To Be Addressed For This Population.

The Smoking Status Is Based On Self-Reporting By The Students. This Can Result In Under-Reporting Of Smoking Status, Even Though No Identification Was Required.

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