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# Health Related Quality of Life Variation among Water Pipe (Argihla) Smokers in Baghdad, Iraq

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## Abstract

The effects of water pipe (argihla) smoking on Health Related Quality of Life (HRQOL) on male population of ٢٠٠ in Baghdad, Iraq was investigated. Aquestionnaire regarding health survey consisted of short form questions (SF٣٦) was grouped into ٨-scales: Physical Functioning (PF), Social Functioning (SF), Role Physical (RP). Mental Health (MH), Energy/ Vitality, Bodily Pain (BP) and General Health (GH). The survery was summarized into two main aspects: Physical Component Summary (PCS) and Mental Component Summary (MCS). Results showed that the majority of argihla smokers aged between (٢٠-٢٩) years old. The smoking percentage of unmarried individuals is higher than that of married ones and it's more dominant among college education level. More than half number of argihla smokers have occupations and most of them are already smoking cigarettes. The mean score of (PCS) subscales were lower than those of non smokers at all subscales except the bodily pain score. All mean score subscale belonging to (MCS) were low for argihla smokers as compared with non smokers. Regression analysis revealed that old aged smokers with allergic and asthmatic diseases are those whom consume argihla weekly, and the employed smokers were the most important independent explanatory variable of the poorest (PCS) while the most explanatory variable of poorest (MCS) are represented by those of the college educational level, cigarette smokers, old aged whom suffering allergic and asthmatic diseases.

## Introduction

Argihla smoking has increased recently in the Middle East countries, because of its potential impact on life-threatening conditions, nicotine dependence and the lack of knowledge about its health effects, it was believed that ٢٠٪ of adult people living in these countries smokes argihla[١]. It is common among young adults in Egypt, Syria, Lebanon, and other Arabian gulf countries[٢]. Studies in Kuwait were indicated that more than ٥٠٪ of adult population had smoked argihla at least once throughout their lives[٣]. In Baghdad water pipe is now widespread more than ever, especially among young people and even among adolescents; in addition argihla smoking represents a public health threat.

Some people think that water pipe smoking (WP) is safer than cigarette smoking because the tobacco smoke is pulled through water before it is smoked, actually this is not true. Although the smoke may be smoother or less irritating, it contains the same toxic chemicals and carcinogenic component like the smoke of any tobacco product[٤]. The most popular type of tobacco used in water pipes is called (ma'assel). It is a mixture of crude tobacco fermented with molasses (blackhoney) and different fruit flavors added to it like (apple, strawberry, etc.)[٥]. The addition of several additives: honey, glycerin and other flavors in the process of preparing the flavored (ma'assel) tobacco is a trial to lower the nicotine content per each gram of flavored tobacco. The Smoking of one head of flavored (ma'assel) tobacco, that contains in average one-third of nicotine presented in ٢٠ cigarettes (٢٠٤ mg/ pack), results in a ٢٠٪ higher plasma nicotine level[٦].

More alarming, studies discovered that water pipe tobacco contains dangerously high levels of toxic metals, such as chromium, lead, cobalt and arsenic [٧]. In addition to studies that have examined water pipe smokers were reported a high concentrations of carbon monoxide, "tar" and nicotine in there blood [٨]. Actually water pipe smokers inhale more nicotine than cigarette smokers because of the large inhaled smoke, other studies found that typical one-hour session of water pipe smoking to ١٠٠ to ٢٠٠ times the volume of smoke inhaled from a single cigarette [٤]).

Researches also shown that after ٤٥ minutes of water pipe use expired air, carbon monoxide, plasma nicotine and heart rate are significantly elevated. Nicotine dependence may also result by repeated inhalation of tobacco smoke from water pipe [٨].

In general, as compared to cigarette smoking, water pipe smoking is characterized by less frequent exposure (one to four sessions per day) but with a much more intense exposure per session which varies between ١٥ and ٩٠ minutes minutes. The uptake of tobacco nicotine is equivalent to ٢-١٢ cigarettes per portion of tobacco used (*hagar*) (one *hagar* was considered equal to one cigarette). A regular user of water pipe usually smokes several hagars per session and on average smokes ٢–٣ sessions per day. This translates into intake of nicotine equivalent to more than one pack of cigarettes per session for most water pipe smokers[٩]. also Carbon monoxide exposure increases the level of carboxy haemoglobin in the blood. This leads to increase the red blood cells' affinity for oxygen and causes tissue hypoxia[١٠]. Some studies have revealed the relationship of water pipe smoking to carboxy haemoglobin levels. In Saudi Arabia results were found that the higher carboxy haemoglobin levels are attributed to the effect of the burning charcoal [١١]. Other comprehensive studies in Egypt showed that smoking one hagar increased carboxy haemoglobin levels significantly more than smoking one cigarette from baseline levels [١٢]. The same studies concluded that water pipe smoking increases carboxy haemoglobin at any smoking level.

The World Health Organization (WHO) has recently released information documenting WPS as a harmful form of smoking and has even proclaimed (WPS) to generate more smoke than cigarettes[١٣]. Scientific studies verify that water pipe smoking may affect different systems either directly by contact or the smoke itself as in the respiratory system, lips[١٤], oral cavity[١٥,١٦] and hand skin by caused eczema[١٧,١٨] or indirectly by the metabolites of tobacco products[٩], which may cause lung cancer, chronic obstructive lung disease, emphysema, precipitation of Asthma attacks and pneumonia, heart disease, hypertension and cancers including esophageal, gastric & bladder [٤, ٣,٧]. Additional dangers are represented by infectious diseases resulting from pipe sharing with others and the frequent addition of alcohol or psychoactive drugs to the tobacco [٨].

Measuring health status in a population is important for the evaluation of interventions and the prediction of health and social care needs. Quality of life (QOL) studies are of essential complement to medical evaluation[١٩].

The objective of the present study was to investigate any relationships between argihla smoking and Health Related Quality Of Life (HRQOL) in a male population lives in part of Rusafa sector within Baghdad city. Since different factors may influence (HRQOL), in this study, we tried to assess the predicted effects of socio-demographic factors on (HRQOL).

**Volunteers and Methods**

The research was designed as cross–sectional population based study to inspect the relationship between water pipe smoking as a type of tobacco smoking and its health effects on quality of life restricted for male smokers living in Baghdad. The method that used to collect data based on random samples of individuals about ٣٠٠ male (٢٠٠) individual as argihla smoker and (١٠٠) as non – smokers, the survey included smokers whom smoked either regularly (≥١ cigarette/ day or ≥ ١argihla/ week) and non smokers including subjects whom don't smoke .This definition were established in accordance to (WHO) criteria for cigarette smoking which were set by Maziak *et al.* for water pipe smokers [٢٠]. The age of participants ranged between (٢٠-٦٠) year, and they divided into four categories.

Basic demographic data were collected from participants as questionnaire, like age, education status, marital status, occupational status, cigarette smoking status, water pipe smoking status, allergy diseases and other diseases status.

Other general questionnaire[٢١] was used to measure the quality of life (QOL) represent a short form of ٣٦ questions in arabic for health survey (SF), it yields an ٨-scale : **physical functioning** (extent to physical activities including vigorous without limitation to

health), **social functioning** (extent to interference with normal social activities due to physical and emotional problems), **role physical** (extent to problems with work or other daily activities as result of physical health), **role emotional** (extent to problems interfere with work or daily activities), **mental health** (extent to feelings of nervousness and depression with time), **energy / vitality** (extent to feels full of pep and energy or tired all of the time), **bodily pain** (extent to pain or limitations due to pain ) and **general health** (extent to evaluates personal health)[٢].

The SF-٣٦ scores were translated to a scale ranged between (٠-١٠٠), the best quality of life (QOL) state refers to a higher score (١٠٠) while lower score (٠) refers to the worst status of QOL. SF-٣٦ was reduced from eight scales to two summary scales namely the physical component summary (PCS) and mental component summary (MCS) [١٨,٢٢].

To evaluate the PCS and MCS three steps were used. First, standardized the eight SF-٣٦ scales by using means ± standard deviations from the general population. Secondly, aggregated by means of factor score from the population. While last step include standardization the aggregate (PCS) and (MCS) scores with a linear T-score transformation to give a mean of ٥٠ and standard deviation of ١٠, in general population[٢٢].

## Statistical Analysis

Data analysis were achieved by statistical Package (SPSS) Version ١٣ software. The sociodemographic variables (qualitative variables) are described as percentages and were compared with chi-square statics to statistical significance of differences prevalence across sociodemographic variables. T-test was used to compare the mean score of each subscale between argihla smokers and non smokers. Logistic regression was used to determine the association between independent variables and dependant variables, the independent variables included age, education status, marital status, occupation status, cigarette smoking status, allergy and asthma disease status, argihla smoking consumption, while the two summary scales, (PCS) and (MCS) were considered as dependent variables. The P value of less than ٠,٠٥ was considered statically significant.

## Results

Demographic characteristics of participants are shown in detail in Table (١). The age category (٢٠-٢٩) year indicates to higher percentage (٣٦,٥٪) of argihla smokers as compared with other age categories, while the Argihla smokers in level of college education represent the higher percentage (٤٠٪) as compared with other education levels, and (٦٠٪) of argihla smokers are cigarette smokers, also (٥٠٪) of argihla smokers suffering from chest diseases in comparison with non smokers. The values of chi-square test refers to significant differences of ($p \leq$ ٠,٠١) in all qualitative variables of (education status, marital status, occupation status, cigarette smoking status, argihla smoking consumption) except the variable (age) which is not significant.

*Table (١)*
*The Socio–demographic Characteristics of the Study Population Sample (N. ٣٠٠).*

| *Characteristics* | *Arghila smokers (%) n.= ٢٠٠* | *Non smokers (%) n.= ١٠٠* | $X^{٢}$ |
|---|---|---|---|
| Age (year) | | | |
| ٢٠-٢٩ | ٧٣(٣٦,٥) | ٣٥(٣٥) | |
| ٣٠-٣٩ | ٦٥(٣٢,٥) | ٢٨(٢٨) | ٠,٩٧ |
| ٤٠-٤٩ | ٣٧(١٨,٥) | ٢٢(٢٢) | |
| ٥٠< | ٢٥(١٢,٥) | ١٥(١٥) | |
| Education status | | | |
| Primary | ١٢(٦) | ٥(٥) | |
| Secondary | ٧٢(٣٦) | ١٥(١٥) | ٢٨,٦** |
| College | ٨٠(٤٠) | ٣٥(٣٥) | |
| Higher education | ٣٦(١٨) | ٤٥(٤٥) | |
| Marital status | | | |
| Yes | ٨٨(٤٤) | ٧٣(٧٣) | ٢٢,٤** |
| No | ١١٢(٥٦) | ٢٧(٢٧) | |
| Occupation status | | | |
| Employed | ١٠٨(٩٢) | ٧٦(٧٦) | ١٣,٥** |
| Un employed | ٩٢(٤٦) | ٢٤(٢٤) | |
| Cigarette smoking status | | | ١٠٠,١** |
| Yes | ١٢٠(٦٠) | ٠(٠) | |
| No | ٨٠(٤٠) | ١٠٠(١٠٠) | |
| Disease status (asthma, allergy) | | | ٦,٠٤* |
| Yes | ١٠٠(٥٠) | ٣٥(٣٥) | |
| No | ١٠٠(٥٠) | ٦٥(٦٥) | |
| Argihla smoking consumption | | | ١٠٠,٥** |
| Daily | ٦٤(٣٢) | ٠(٠) | |
| Weekly | ١٣٦(٦٨) | ٠(٠) | |

***significant at p≤٠,٠٥ ** significant at p≤٠,٠١ $x^{٢}$ chi square value.***

The results of the (QOL) questionnaire are display in Table (٢). The mean scores of eight subscales of SF-٣٦ health survey, in Table (٢) indicates statically significant differences between argihla smokers and non smokers in all subscales at ($p \leq ٠,٠١$), except of bodily pain (BP).

***Table (٢)***
***Comparison of (٨) Scores of QOL(Sf-٣٦) between Argihla smokers and Non smokers (Mean ± SD).***

| *Scores of sF-٣٦* | *Argihla smokers (n= ٢٠٠)* | *Non smokers (n= ١٠٠)* | *P-value ≤ ٠,٠٥* | *P-value ≤ ٠,٠١* |
|---|---|---|---|---|
| | *Mean±SD* | *Mean±SD* | | |
| Physical Function | ٦٩,٣±٢٢,٥ | ٧٥,١±٢١,٣ | <٠,٠٥ | <٠,٠١ |
| Role-Physical | ٦٠,٨±٣٧,٤ | ٧١±٣٥,٦ | <٠.٠٥ | <٠,٠١ |
| Body Pain | ٧٤,٩±١٩,٠ | ٧٦,٩±١٦,٣ | n.s | n.s |
| General Health | ٦٤,٢±١٩,١ | ٧٠,٠±١٥,٩ | <٠.٠٥ | <٠,٠١ |
| Vitality | ٦١,٣±٢٠,٨ | ٦٦,١±١٣,٨ | <٠.٠٥ | <٠,٠١ |
| Social Functioing | ٧٣,٢±٢٠,١ | ٧٩,٠±٢١,٥ | <٠.٠٥ | <٠,٠١ |
| Role Emotional | ٦١,١±٣٥,٧ | ٧٣,٩±٢٦,٥ | <٠.٠٥ | <٠,٠١ |
| Mental Health | ٦٤,٨±١٩,٢ | ٦٩,٨±١١,٠ | <٠.٠٥ | <٠,٠١ |
| *PCS | ٦٦,٥±١٢,٩ | ٧٣,٢±١٢,٤ | <٠.٠٥ | <٠,٠١ |
| **MCS | ٦٥,٣±١٤,٠ | ٧٠,٣±١١,٤ | <٠.٠٥ | <٠,٠١ |

**** physical component summary, ** mental component summary, n.s non significant.***

The results in Table (٣) demonstrate the relationship between the independent variables and the effects of each variable on (PCS) and (MCS) for argihla smokers. These results obtained by calculation the correlation index (person correlation) of each variable, which indicated that the relationship between the variable age with (PCS) and (MCS) is significant at p ≤ ٠,٠١, p ≤ ٠,٠٥ (٢ - tailed), as well as the variables education status, disease status, cigarette status and argihla smoking mode (daily, weekly), but the variable marital status shows no significant relationship with dependant variables (PCS) and (MCS) at (p value ٠,٠١). Other correlations displayed in Table (٣), showed that age of participants has been correlated significantly with cigarettes smoking status (person correlation = - ٠,٢٢٢**),** and educational status has been correlated with cigarettes smoking status and diseases status significantly (person correlation=٠,٥٤٩, ٠,٣٦٧) respectively. The consumption of argihla daily or weekly has been correlated significantly with cigarette smoking status (person correlation = ٠,٤٠٧) and diseases status of participant (person correlation = ٠,٢٧٩).

***Table (٣)***
***Correlations between Variables of the Study with (PCS) and (MCS) for Argihla smokers.***

| *Variables* | *age* | *Education status* | *Marital status* | *Occupation status* | *Cigarette status* | *Disease status* | *Argihla consumption* | *PCS* | *MCS* |
|---|---|---|---|---|---|---|---|---|---|
| Age | ١ | -.١١٥ | -.١٦٣* | .٠٨٩ | -.٢٢٢** | .١٤٩* | -.١٢٥ | -.٢٢٠** | -.٢٦٢** |
| Education status | -.١١٥ | ١ | .٠١٦ | -.٤١١** | .٥٤٩** | .٣٦٧** | .٤٢٤** | .٣٦٤** | .٣٥٧** |
| Marital status | -.١٦٣* | .٠١٦ | ١ | -.٠٢٨ | .١٠٧ | .٠٥٨ | .١١٨ | .٠٧٩ | .٠٨١ |
| Occupation status | .٠٨٩ | -.٤١١** | -.٠٢٨ | ١ | -.٢٤٦** | .١١٩ | -.١٢٥ | .٠٠٤ | -.١١٠ |
| Cigarette status | -.٢٢٢** | .٥٤٩** | .١٠٧ | -.٢٤٦** | ١ | .٦٥٧** | .٤٠٧** | .٥٥٠** | .٦٢٦** |
| Disease status | .١٤٩* | .٣٦٧** | .٠٥٨ | .١١٩ | .٦٥٧** | ١ | .٢٧٩** | .٤٥٠** | .٤٣٠** |
| Argihla consumption | -.١٢٥ | .٤٢٤** | .١١٨ | -.١٢٥ | .٤٠٧** | .٢٧٩** | ١ | .٥٠٩** | .٣٩٧** |
| PCS | -.٢٢٠** | .٣٦٤** | .٠٧٩ | .٠٠٤ | .٥٥٠** | .٤٥٠** | .٥٠٩** | ١ | .٣٦٧** |
| MCS | -.٢٦٢** | .٣٥٧** | .٠٨١ | -.١١٠ | .٦٢٦** | .٤٣٠** | .٣٩٧** | .٣٦٧** | ١ |

**** correlation is significant at the ٠,٠٥ level ( ٢-tailed).***
***** correlation is significant at the ٠,٠١ level ( ٢-tailed).***

In Table (٤), (PCS) was regressed as a dependant variable with independent variables. The value of correlation coefficient (R) = ٠,٦٤, $R^2$ was (٠,٤١), with standard error of (١٠,٠٠), that's mean around ٤١٪ of the variability in PCS was determined by independent variables in the equation of regression. Statistical results for (PCS) indicated, that argihla smokers with old ages (٥٠ < year) scored less than the younger smokers (٢٠-٢٩), also argihla smokers with allergy and asthma diseases are significantly scored less than the smokers with no diseases, as well as, daily argihla consuming smokers scored less than the weekly consuming ones, and the non employed subjects scored less than the employed ones (all p value ≤ ٠,٠١).

***Table (٤)***
***Linear Regression Model to Predict Quality of Life from (PCS), for Argihla smokers.***

| *variables* | *Regression coefficient(B)* | *Standard Error (B)* | *P value* | *٩٥٪ confidence interval for B* | |
|---|---|---|---|---|---|
| | | | | *Lower Bound* | *Upper Bound* |
| constant | ٣٢,٧٤ | ٤,٠٣ | ٠,٠٠١ | ٢٤,٧٩ | ٤٠,٦٩ |
| Cigarette status | ٥,٦٠ | ٢,١٩ | ٠,٠١١ | ١,٢٩ | ٩,٩٢ |
| Argihla consumption | ٨,٤٢ | ١,٦٤ | ٠,٠٠١ | ٥,٢٢ | ١١,٧١ |
| Age | -٠,١٩ | ٠,٠٤ | ٠,٠٠١ | -٠,٢٩ | -٠,٠٩ |
| Disease status | ٥,٨٨ | ٢,٠١ | ٠,٠٠٤ | ١,٩٠ | ٩,٨٦ |
| Occupationstatus | ٣,٠٨ | ١,٤٦ | ٠,٠٣٧ | ٠,١٨ | ٥,٩٧ |

The independent variables were regressed with (MCS) as independent variable in Table (٥). The value of correlation coefficient (R) = ٠,٦٨, ($R^{٢)}$ = ٠,٤٦, with standard error of ١٠,٤٢. In other words, according to the equation of regression, around ٤٦٪ of the variability in (MCS) was determined by independent variables of the predictive model. Subjects who smoke cigarettes scored less than nonsmokers. However the differences were statically significant the weekly argihla consumption appear to score more than that of daily consumption.

*Table (٥)*
*Linear Regression Model to Predict Quality of Life from (MCS), for Argihla smokers.*

| variables | Regression coefficient(B) | Standard Error (B) | P value | ٩٥٪ confidence interval for B | |
|---|---|---|---|---|---|
| | | | | Lower Bound | Upper Bound |
| constant | ٣١,٩٠ | ٣,٣٠ | ٠,٠٠١ | ٢٥,٣١ | ٣٨,٤١ |
| Cigarette status | ١٠,١٠ | ٢,٣٧ | ٠,٠١١ | ٥,٤١ | ١٤,٧٠ |
| Argihla consumption | ٣,٩٤ | ١,٧٧ | ٠,٠٢٧ | ٠,٤٥ | ٧,٤٠ |
| Education status | ٢,٦٣ | ١,٠٨ | ٠,٠١٦ | ٠,٤٨ | ٤,٧٧ |
| Age | -٠,١٣ | ٠,٠٥ | ٠,٠٠٧ | -٠,٢٣ | -٠,٠٣ |
| Disease status | ٤,٤٦ | ٢,١٠ | ٠,٠٣٥ | ٠,٣١ | ٨,٦١ |

**Discussion**

This study included qualitative interpretation for the relationship between argihla smoking and Health Related Quality of Life (HRQL). The results showed that the mean score of subscales for Argihla smokers were lower than that of non smokers in all subscales except the subscale Bodily Pain (BP) that belongs to (PCS). That means the quality of life in argihla smokers is worse and poorer than non smokers and argihla smoking is significantly associated with physical component of health that include physical functioning, role physical, bodily pain and general health. The smokers with lowest scorc have limitation to do their daily activities, as well as they faced general health problems. These findings were in agree with other study in Iran which refers to decrease in quality of life of argihla smokers in all mean score of subscales that belongs to (PCS) [٢].

The decrease in all subscales that belongs to (MCS) which included vitality; social functioning; role emotional; mental health in argihla smokers as compared with the same subscales of non smokers, became worse, and smokers have worse health in the previous mental component. These results are similar to those of other studies in which found that argihla smokers became in time more nervousness and have symptoms of depression because of decreases in (MCS) [٢٣].

The current study indicated that the majority of argihla smokers were aged between (٢٠-٢٩) years old, however other studies conducted on argihla smokers, showed that the mean that ages of participants were in between (٢٧-٤٠) year old [٢٤]. Other study showed that the range is between (٢٥-٤٠) [٢٢], this leads to conclusion that argihla smokers in Baghdad spreads among young adults because they believes that argihla smoking is harmless and without health effect on them. According to the educational levels of participants, it was found that college education level represented the highest category of argihla smokers as compared with other levels, this result agreed with other studies in Lebanon and Syria which concluded that a ١٠٠٪ of argihla smokers have the high school education in minimum, whereas another study in Misurata, Libya referred to approximately ٧٥٪ of the argihla smokers were highly educated[٢٥]. These results indicated that the opinions about argihla smoking being harmless did not seem to be due to lack of education[١٤]. From the results above, it could be observed that the percentage of married smokers was lower than that of unmarried ones, an explanation for these results, may be related to the fact that unmarried participant or young adults were more careless and have lesser sense of responsibility over their families, on the other hand, married persons played more important role in taking care of their families and they tended to value family safety with regard to argihla smoking more than unmarried persons[٢٢]. The present study Indicated that more than a half of participant (٥٤٪) were having occupation, that mean they have an icome and offers money to consuming argihla more than unoccupied ones, these results were assisted by study in Libya which refered to ٦٩٪ of argihla smokers have different jobs and have a high income[٢٥].

The argihla smokers in the current study shows that most of them were cigarette

smokers and they used argihla as a new habit hoping to quit cigarette, but they found that its more difficult to quit both. According to the findings of this study disease status such as allergy and asthma spreads among argihla smokers of Baghdad /part of Rusafa, because they exposed to a large amount of smoke with different types of allergic chemicals, this finding lined with the previous studies [٢].

In our study, smoking argihla weekly refers to higher percentage as compared with daily consumption, because most of smokers were in age range of (٢٠-٢٩) years and this age refers to youth and young adults, that means they grouping together during weekends to share argihla smoking. The past studies showed that Socio-demographic characteristics effected on the (HRQOL). It has been observed that the differences between argihla smokers and non smokers were related to socio-demographic characteristics, an argument still rises about these characteristics, therefore linear regression analysis was done to assess the interactions between argihla smoking and other independent variables. The regression analysis revealed that old aged smokers with allergic and asthmatic diseases are those whom consume argihla weekly, and the employed smokers were the most important independent explanatory variable of the poorest (PCS), while the most explanatory variable of poorest (MCS) are represented by those of college educational level, cigarette smokers, old aged whom suffered allergic and asthmatic diseases.

**References**


[١] Chaouachi K. "Review on Narghile (water pipe, shisha, water pipe) smoking". *Le Courrier des Addiction.*; ٦ :١٥٠ – ١٥٢. ٢٠٠٤.

[٢] Tavafian S. S., Aghamolaei T. and Shahram Z. "Water Pipe Smoking and Health-Related Quality of Life: A Population - Based Study". *Arch. Iranian Med* ١٢ (٣) : ٢٣٢ – ٢٣٧. ٢٠٠٩.

[٣] Memon A., Moody P. M., Sugathan T. N., el- Gerges N., al - Bustan M. and al - Shatti A. "Epidemiology of smoking among Kuwaiti adults : prevalence, characteristics, and attitudes". *Bull World Health Org.* ٧٨: ١٣٠٦ – ١٣١٥. ٢٠٠٠.

[٤] WHO. "Study group of Tobacco Regulation. *Waterpipe Tobacco Smoking: Health effects, Research Needs and Recommended Actions by Regulators".* Tobacco Regulation Advisory Note p. ١-١٢. ٢٠٠٥.

[٥] El-Hakim I. E. and Uthman M. A. "Squamous cell carcinoma and keratocanthoma of the lower lip associated with "goza" and "shisha" smoking". *International journal of dermatology* ٣٨ (٢): ١٠٨ – ١٠. ١٩٩٩.

[٦] Hadidi K. A. and Mohammed FI. "Nicotine content in tobacco used in hubble – bubble smoking". *Saudi medical journal* ٢٥ (٧): ٩١٢ – ٧. ٢٠٠٤.

[٧] Maziak W., Ward K. D., Soweid R. A. and Eissenberg T. "Standardizing questionnaire items for the assessment of water pipe tobacco use in epidemiological studies". *Public Health* ١١٩: ٤٠٠ - ٤٠٤. ٢٠٠٤.

[٨] Shihadeh A. "Investigation of mainstream smoke aerosol of the argileh water pipe". *Food Chem Toxicol* ٤١:١٤٣ - ٥٢. ٢٠٠٣.

[٩] Khan, J. "Shisha Smoking : A Serious Risk to Health". ٢٠٠٧.

[١٠] WHO. "Tobacco used in shisha studies on water pipe smoking in Egypt". Regional Office for the Eastern Mediterranean, Egyptian Smoking Prevention Research Institute P. ٦٤. ٢٠٠٦.

[١١] Van Meter K. W. "Carbon monoxide poisoning". In Tintinelli et al, eds. *Emergency medicine: a comprehensive study guide*. New York, McGraw-Hill: ١٣٠٢–٥. ٢٠٠٠.

[١٢] Zahran F., Yousef A. A. and Baig M. H. "A study of carboxyhaemoglobin levels of cigarette and sheesha smokers in Saudi Arabia". *American journal of public health* ٧٢ (٧): ٧٢٢ – ٤. ١٩٨٢.

[١٣] Salem E. S., Shallouf M. A., Meserga S. M. and Nosir M. I." Estimation of carboxyhaemoglobin levels in some Egyptian cigarette and "gouza" smokers". *Tanta medical journal* ١ – ١٧. ١٩٧٧.

[١٤] Shaikh R. B., Vijayaraghavan N., Sulaiman A. S., Kazi S. and Mohammed Shafi M. S. "The acute effects of Water pipe smoking on the cardiovascular and respiratory systems". *j prev med hyg* ٤٩ : ١٠١-١٠٧. ٢٠٠٨.

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**الخلاصة**

تم التحري في هذه الدراسة عن تأثير تدخين الأركيلة على نوع الحياة المتعلق بالصحة لعينة تتالف من (٢٠٠ فرد) من الذكور ضمن محافظة بغداد/ العراق. قام الأفراد بالأجابة عن قائمة الأستبيان التي تحتوي على (٣٦ سؤال) وتم نمذجة الأسئلة الى ثمان مستويات تتعلق بـ : الوظائف الجسمية، الوظائف الأجتماعية، الدور الجسمي، الصحة العقلية، الطاقة والنشاط، الآلام الجسمية والصحة العامة. ويمكن تلخيص تلك الفقرات الى مستويين هما: ملخص الوظائف الجسمية (PCS) وملخص الوظائف العقلية (MCS). لقد أظهرت النتائج بأن الأغلبية العظمى من مدخني الأركيلة تتراوح أعمارهم بين (٢٠– ٢٩) عام. كما أن نسبة الأفراد المدخنين غير المتزوجين هي أعلى من تلك لدى الأفراد المتزوجين وهي شائعة بين فئات الشباب ذوو التعليم الجامعي. أن أكثر من نصف مدخني الأركيله هم من ذوي الوظائف الثابتة وأن أغلبهم يدخن السجائر أيضاً. أن معدل الرصيد لملخص الوظائف الجسمية (PSC) كان أقل من معدل الرصيد لغير المدخنين في جميع المقاييس الفرعية عدا الرصيد الخاص بآلام الجسم. أن جميع معدلات الأرصدة للمقاييس الفرعية المتعلقة بملخص الوظائف العقلية (MCS) كانت قليلة لدى مدخني الأركيلة مقارنةً مع غير المدخنين. لقد أظهر التحليل التراجعي (Regression) analysis بأن المدخنين الكبار في السن والذين يعانون من أمراض الحساسية والأمراض التنفسية هم الأكثر استهلاكاً للأركيلة أسبوعياً، كما أن فئة المدخنين الموظفين كانت المتغير المستقل والآكثر تعبيراً لأضعف الوظائف الجسمية(PCS) في الوقت الذي كان به أكثر المتغيرات تعبيراً عن أضعف الوظائف العقلية (MCS) متمثلا بالفئات: طلاب التعليم الجامعي، مدخني السجائر وكبار السن الذين يعانون من الامراض التنفسية والحساسية.

[١٥] El Hakim I. E. and Uthman M. A. "Squamous cell carcinoma and keratocanthoma of the lower lip associated with "goza" and "shisha" smoking". *International journal of dermatology* ٣٨ (٢): ١٠٨ – ١٠. ١٩٩٩.

[١٦] Al-Belasy F. A. "The relation of "shisha" (water pipe) smoking to postextraction dry socket". *Journal of oral and maxillofacial surgery* ٦٢ (١) : ١٠ – ٤. ٢٠٠٤.

[١٧] Knishkowy B. and Amitai Y. "Water - Pipe (Narghile) Smoking": An Emerging Health Risk Behaviour. *Pediatrics* ١١٦: ١١٣- ٩. ٢٠٠٥.

[١٨] Önder M., Özta and Arnavut O. "Nargile (hubble-bubble) smoking – induced hand eczema". *International journal of dermatology* ٤١ (١١) : ٧٧١. ٢٠٠٢.

[١٩] Sabbah I., Drouby N., Sabbah S., Retel - Rude N. and Mercier M. "Quality of Life in rural and urban populations in Lebanon using SF- ٣٦ Health Survey". Health and Quality of Life Outcomes ١: ٣٠ - ٤٤. ٢٠٠٣.

[٢٠] Almerie M. Q., Matar H. E., Salam M., Morad A., Abdulaal M., Koudsi A. and Maziak W. "Cigarettes & waterpipe smoking among medical students in Syria: across - sectional study". *Int J Tuberc Lung Disease* ١٢(٩): ١٠٨٥ - ١٠٩١. ٢٠٠٨.

[٢١] Abdul Mohsin, S. A. "Translation of the RAND ٣٦ – Item Health Survey ١،٠ (aka SF - ٣٦) into Arabic". ٣١-٣٧ published by RAND, ١٧٠٠ Main street, Santa Monica, Washington. ١٩٧٧.

[٢٢] Al-Ghamdi M. S., Taha A. Z., Bahnassy A. and Khalil M. S. "Quality of life in a sample of hypertensive patients attending primary health care facilities in AL– Khobar, Saudi Arabia". *SSFCM Journal* ٩ (١) : ٢٠ -٣٨. ٢٠٠٢.

[٢٣] Schmitz N., Kruse J., Kugler J. "Disabilities, Quality of Life, and Mental Disorders Associated With Smoking and Nicotine Dependence". *Am J Psychiatry* ١٦٠ : ١٦٧٠ - ١٦٧٦. ٢٠٠٣.

[٢٤] El - Setouhy M., Shahinaz G. Ali ES., Mohamed MK. "Water pipe (*Shisha*) smoking in cafes of Egypt". *J Egyption Soc Parasitol* ٣٣ : ١٠٧٣ - ٨٥. ٢٠٠٣.

[٢٥] Sugathan S., Daghir O. M. and Swaysi M. "Socio - Economic Correlates of Shisha or Waterpipe Smoking In Misurata, Libya".