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Determinants of smoking and smoking behavior among
Palestinian women in East Jerusalem

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Dedication

To my loving family, dearest parents, brothers and sisters, for their continuous support and believe in me and in my work through the years of this Master study, and ever…

To my teachers, who taught me the true meaning of public health and its importance in our lives, especially as occupied country.

A Very special dedication to my supervisor, Dr Nuha El Sharif, for her quality time and effort.

To all my family and friends, especially Manal, for their continuous moral support.

To all the Palestinians in Jerusalem behind the Separation Walls and all over Palestine.

Abeer Issa Sandouka

Declaration

I certify that this thesis submitted for the Degree of Master is the result of my own research, except where otherwise acknowledged, and that this thesis (or any part of the same) has not been submitted for a higher degree to any other university or institution.

Signed

Abeer Issa Sandouka

Date

Acknowledgments

Abstract

Despite the moral cost and the known medical risks of smoking, tobacco consumption has increased and is still increasing among women around the world, especially in developing countries. However, a limited number of smoking studies have been carried out among Arab women. In Palestine, no published study was concerned with determinants of smoking among women. Accordingly, the study aims to examine possible determinants of smoking behavior, as a serious public health issue, among the Palestinian women in East Jerusalem. The study objective was to explore the associations between various variables; i.e. socio-economic, demographic, psychological factors, as well as certain attitudes, norms and beliefs, and women's smoking status and behavior.

This study used a cross-sectional design that included 306 women aged ≥18 years old, whether working or not working, living in East Jerusalem -behind The Separation Wall - between November 2006 and June 2007. A self-administered questionnaire was used to collect the study data. The sample included non-working women living in houses of schoolchildren in the sixth grade of eight selected schools; and working women in six non-governmental organizations and two non-governmental hospitals in East Jerusalem hospitals.

Study outcomes included: smoking frequency (ever smoking), smoking history (current smokers, used to smoke and never smoker), and smoking currency. Current smokers were identified as women who either smoke occasionally or regularly.

Univariate analysis was used to test for significant associations between the various outcomes and the study variables using a chi-square of p value < 0.05. Two multivariate regression models were developed for both ever smoking and current smoking outcomes.

Results showed that 39.2% of the study population were in the age group 32-38 years of age, 75.8 % were married women, and 96.4% were Muslims, while 33.7% were employed women and 50% had more than 12 years education. Current smokers constituted 16.1% of the study population. Of the current smokers, 40% were heavy smokers and 57.4% tried to quit but failed. Women from families with two or more smokers showed increased risk to be frequent smokers compared to women from families with less than two smokers (p>0.05). Also, women whose parents agree on smoking showed a 15-fold more risk to be frequent smokers when compared to women whose parents did not agree on smoking. Women in the age group 18-24 years were most likely to be a frequent smoker compared to other age groups, while women who lived in villages or towns showed five-fold increased risk for smoking frequency compared to women living in cities. Among non-single women, having a smoking partner and having less than three children increased the risk for smoking frequency. On the other hand, women whose parents approve the smoking behavior showed a 12-fold increased risk compared to women whose parents did not agree on smoking (p<0.05), while women from families with less than two smokers showed an inverse association with current smoking outcome. Also, educational level was significantly inversely associated with smoking currency among women. The study also found that compared to women with non-smoking partners, women with smoking partners have higher odds for smoking currency.

In conclusion, study results highlighted the importance of various factors. Social status, social network, attitudes, believes and norms were the most important determinants for smoking frequency and smoking currency among women in Jerusalem. Educational level was the most important determinant for smoking currency, regardless of recent knowledge about smoking hazards. Economic factors related to women's own job, income and working hours had no direct associations with women's smoking behavior at all smoking outcomes. Shortage of awareness about the addictive nature of smoking and health hazards of smoking among the study population was concluded.

From a public health point of view, the study recommends the implementation of a family-focused health awareness program directed specifically at non-working and at less educated women and their partners. Present antismoking programs at schools and other institutions must be evaluated and developed further. At the research level, we recommend to conduct a national smoking survey among women that covers broader issues related to women's health and other more specific issues like pregnant women and smoking.

محددات التدخين وسلوك النساء الفلسطينيات المدخنات في القدس الشرقية

الملخص:

على الرغم من المخاطر الأخلاقية والطبية المعروفة للتدخين، لا يزال استهلاك التبغ في ارتفاع مطرد   في أوساط النساء حول العالم، وخاصة في البلدان النامية. ومع ذلك، فعدد الدراسات التي أجريت حول التدخين في أوساط النساء العربيات محدود. في فلسطين، لم يسبق أن نشرت أية دراسة تعنى بالعوامل المحددة للتدخين بين النساء. تبعاً لذلك، تهدف هذه الدراسة إلى تفحص المحددات المحتملة للتدخين – باعتبارها إحدى المشكلات الجدية المتعلقة بالصحة العامة – في أوساط النساء الفلسطينيات في القدس الشرقية. وتبرز اهميه الدراسة في استكشاف العلاقة بين المتغيرات المختلفة، أي العوامل الاجتماعية–الاقتصادية والديموغرافية والنفسية، وكذلك بعض الاتجاهات والمعايير والمعتقدات من جهة، والسلوك المتعلق بالتدخين بين النساء من الجهة المقابلة.

استخدمت الدراسة تصميماً تحليليا عبر قطاعي شمل 306 نساء في سن 18 عاماً فأكثر، منهن العاملات وغير العاملات، يقطن في القدس الشرقية–داخل جدار الفصل العنصري– في الفترة بين تشرين الثاني/نوفمبر 2006 وحزيران/يونيو 2007. تم استخدام استمارة تعبأ ذاتياً لجمع بيانات الدراسة. وتضمنت العينة نساء غير عاملات من عائلات طلبة الصف السادس في ثماني مدارس مختارة، ونساء عاملات في ست منظمات أهلية ومستشفيين أهليين في القدس الشرقية.

شملت محصلة الدراسة النهائية: تكرار التدخين (لكل من سبق لهن التدخين)، وتاريخ التدخين (مدخنات حاليات، أو سبق لهن التدخين، أو لم يسبق لهن التدخين)، والتدخين الحالي. وتم تحديد المدخنات الحاليات على أنهن النساء اللواتي يمارسن التدخين أحياناً أو بشكل منتظم.   تم إجراء تحليل يعتمد المتغير المنفرد لاختبار الأهمية الإحصائية للروابط بين النواتج المختلفة ومتغيرات الدراسة باستخدام chi-square بقيمة p أقل من 0.05. وتم إعداد نموذجي انحدار متعددي المتغيرات لكل من ناتج من سبق لهن التدخين وناتج المدخنات الحاليات.

اظهرت الدراسة ان 39.2% من النساء في الفئة العمرية(32–38)عاماً من إجمالي مجتمع الدراسة ، وكانت أغلبية العينة من النساء المتزوجات(75.8%) ومن المسلمات (96.4%)، فيما أن   33.7% من النساء في العينة كن يعملن، وكان التحصيل الدراسي لدى 50% منهن يزيد عن 12 عاماً . شكلت المدخنات الحاليات 16.1% من مجتمع الدراسة. ومن بين المدخنات الحاليات، كانت 40% يدخنّ بإفراط، فيما أن   57.4% منهن حاولن التوقف عن التدخين ولم ينجحن في ذلك. أظهرت النساء من العائلات التي تحوي شخصان مدخنان أو أكثر درجة أعلى من المخاطرة بأن يمارسن التدخين بتكرار بالمقارنة مع النساء من العائلات التي تحوي أقل من شخصين مدخنين (p>0.05). وأظهرت النساء اللاتي يوافق أهلهن على ممارستهن للتدخين درجة مخاطرة بأن يمارسن التدخين بتكرار أكثر بخمس عشرة مرة بالمقارنة مع النساء اللاتي لا يوافق أهلهن على ممارستهن للتدخين. كما أن النساء في الفئة العمرية   18–24 عاماً كن الأكثر احتمالاً لأن يمارسن التدخين بتكرار بالمقارنة مع الفئات العمرية الأخرى. أما النساء المقيمات في القرى والبلدات فقد تبين أنهن على درجة مخاطرة بتكرار التدخين

أعلى بخمس مرات بالمقارنة مع النساء في المدن. ومن بين النساء غير العازبات , كانت ممارسة الزوج للتدخين وكان وجود أقل من ثلاثة أطفال لدى المرأة من عوامل ارتفاع المخاطرة بالممارسة المتكررة لعادة التدخين بالمقارنة مع النساء اللاتي لا يدخن أزواجهن وأولئك اللاتي لديهن ثلاثة أطفال أو أكثر. من جانب اخر ، أظهرت النساء اللاتي يوافق أهلهن على ممارستهن للتدخين مخاطرة تزيد باثنتي عشرة مرة بالمقارنة مع النساء اللاتي لا يوافق أهلهن على ممارسة التدخين . كما أظهرت النساء من العائلات التي فيها أقل من شخصين مدخنين علاقة عكسية مع ناتج التدخين الحالي بالمقارنة مع النساء من العائلات التي تحوي شخصين مدخنين او أكثر. وارتبط مستوى التعليم كذلك ارتباطا احصائيا عكسيا مع التدخين الحالي في أوساط النساء . كما اظهرت الدراسة ان احتمال التدخين الحالي أعلى بين النساء اللاتي يدخن أزواجهن بالمقارنة مع النساء اللاتي لا يدخن أزواجهن.

في الخلاصة، أبرزت نتائج الدراسة أهمية العوامل المختلفة. وكانت المكانة الاجتماعية والشبكة الاجتماعية والاتجاهات والمعتقدات والمعايير أهم المحددات بالنسبة لتكرار التدخين و للتدخين الحالي بين النساء في القدس. وبرز المستوى التعليمي كاهم المحددات بالنسبة للتدخين الحالي بين النساء بغض النظر عن المعرفة الراهنة بأضرار التدخين. ولم يكن للعوامل الاقتصادية المتعلقة بوظيفة المرأة ودخلها وساعات عملها أية علاقة مباشرة مع ممارستها للتدخين في جميع النتائج التي تناولتها الدراسة.

نستنتج من الدراسة أن هناك نقصاً في المعرفة بطبيعة التدخين كمسبب للإدمان وبالأضرار الصحية للتدخين في أوساط مجتمع الدراسة. من منظور الصحة العامة، توصي الدراسة بتنفيذ برنامج مرتكز إلى الأسرة للتوعية الصحية يكون موجهاً بشكل خاص إلى النساء غير العاملات والنساء الأقل تعليماً وأزواجهن. ويتوجب تقييم البرامج الحالية لمكافحة التدخين التي تنفذ في المدارس والمؤسسات الأخرى ومواصلة تطويرها. وفيما يتعلق بالبحوث، نوصي بإجراء مسح وطني عن التدخين بين النساء يغطي مجالاً أوسع من القضايا المتعلقة بصحة المرأة وقضايا أكثر تحديداً، مثل النساء الحوامل والتدخين.

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Abbreviations:

W.H.O	World Health Organization
PCBS	Palestinian Central Bureau of statistic
USHSS	United State Health and Human Services
UNSCO	United Nations Economic and Social Council
EMR	Eastern Mediterranean Region
SES	Socio-Economical Status

Chapter 1

1.1 Background

1.1.1 Historical background of tobacco use

The deadly plant of tobacco is believed to have grown natively in America about 6,000 B.C. Christopher Columbus brought to Europe from the new world a seed gift of tobacco from the American Indians, who were the first known to use tobacco as cure from everything as early as 1 B.C. With its different mode of delivery, from smoking tobacco leaves in the form of a cigar or cigarettes, to smoking in a pipe, or in a water pipe to tobacco chewed, and sniffed into the nose as finely powdered snuff; and its curative reputation, tobacco plant and within 150 years spread all over the big blue marble (the earth). It wasn't until 1600's that some of tobacco use health effects were being noticed (Randal, 1999).

The arrival of smoking diseases to the developing world was announced by (WHO, 1983) report, with high numbers of lung cancer deaths and increased numbers of other smoking related diseases from several developing countries. Now, at the turn of the twenty-first century; tobacco is the foremost public health enemy, although it's one of the chief preventable causes of death in the world. It is an epidemic (WHO, 1979). Women's death rates for lung cancer increase since 1950 by 600-percent, a disease which is primarily caused by cigarette smoking (USHSS, 2001).

A literature review on changes in cigarette smoking by gender in different populations of the developed world after 1980 reveals that smoking is almost uniformly declining in men, but trends are much more diverse in women (Haidinger, Waldhoer,&Vutuc, 1998); Osler, et al,1998). Numbers of women smokers was very low at the beginning of the last century, and women smoking was considered as immoral and a sign of bad character (Herrera, 1999). However the gap that was once wide in smoking prevalence is been constant now after being narrowing up till mid-1980s, the same year when the first signs of tobacco epidemic among women was noticed (USHSS , 2001). Although fewer adult women than men smoke, the gender gap is decreasing as the number of male smokers declines at a rate faster than the number of female smokers (Osler, Prescott, Godtfredsen, Hein, & Schnohr, 1999; American Lung Association, 2002). Despite the moral, the cost, and the medical risks of smoking that affects smokers and non smokers(passive smoking), tobacco consumption increased and still increasing among women around the world especially in developing countries (WHO, 2001).

1.1.2 The global spread of tobacco epidemic

According to (W.H.O, 2002) estimates, 26% of male deaths and 9% of female deaths can be attributed to smoking. The number of premature deaths related to tobacco epidemic is expected to rise from 4-million to 10 million every year within the next 30 years or so (WHO,1999), of which 70%will occur in developing countries (WHO,1996.); women account for 500,000 of the 4 million tobacco-related deaths that occur every year(WHO,1999) . By the 2020s, the annual death will increase by 50% to about three million per year in high-income countries, but will jump by 350% to seven million deaths per year in low-income countries (Mackay and Eriksen, 2002).

Worldwide, tobacco consumption caused an estimated 100 million deaths in the last century and if current trends continue it will kill 1,000 million in the 21st century. Around 50% of all regular smokers will die from smoking habit, half of these in middle age (Peto, 1994**)**, women smokers are expected to triple by the year 2025 (WHO, 1999). 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).

Historically and culturally in our Middle Eastern societies, smoking has always been men habit, with strong taboos against women smoking ; this could account for the much higher numbers of men smokers in the last century. But this might not be the case in the near future, since evidence suggest an increase in tobacco consumption among women in most of the developing countries; at least not for water pipe smoking where evidence show more lax in family attitudes with this method of tobacco use among young women, despite the fact that water pipe (Narghil) like cigarette smoking may be associated with many significant health risks (WHO, 1997; Nuwayhid, Yamout, Azar, and Kambris, 1998; Slama,1998; Shafagoj, 2002; Shihadeh,2003; Maziak, et al, 2004).

Studies about the issue of women smoking are rare in developed countries, most published studies on women's smoking showed that it mostly comes from developed countries. For example in searching the medical line using special terms for smoking and pregnancy, the gathered articles were 3884, only 103 focused on developing countries. This reflects the fact that women smoking are not yet of concern in developing countries (Chaaya, Awwad , Campbell , Sibai, and Kaddour, Sep 2003).

Arab countries as part of our Region, the Eastern Mediterranean Region (EMR) faces a major challenge with high rates of tobacco consumption. In most of the countries of the Region, the rates of smoking reach up to 50% among men and around 10% among women. With some exceptions in countries as Yemen, where the prevalence of tobacco use among women is 29%, in this country profile the West Bank and Gaza strip were included. In Lebanon, smoking cigarettes and Nargil appear to be rising among women, in the capital Beirut, and the prevalence of smoking among women age (18-39) increased from 22% in 1984 to 28% in 1993. Also, in Syria smoking among women was shown to be in the direction of rising in the past 10 years, a rise predicted to be the first sign of tobacco epidemic among women in Syria. Studies from Jordan –the closest Arabic country-are also rare. A 2002 survey found smoking prevalence to be 51%among men, and 8% among women. In a health survey conducted by Palestinian Central Bureau of Statistics figures indicated that 39.9% of males 14 year and over showed a practice of smoking habit and 2.7% among females in the Palestinian Territory. Data of Palestine Country profile on Tobacco Control in the Eastern Mediterranean Region, for the year 1997, showed that smoking prevalence among adult females in Gaza/West bank was 3.2%; and in female health professionals 7.7 in the year 1999; then the last smoking prevalence done in the year 2001 among the youth (grades 8-10) among females was 8.3. Despite the use of different population age groups at each study, and despite the low prevalence of smoking among female gender in Palestine, yet we can detect a trend increase in female prevalence of smoking, since studies showed that women's smoking continues to increase with age(Zurayk and Armenian, 1995; Maziak, 2002; PCBS, 2002;

American Cancer Society, 2003; PCBS, country profile, 2007; Jordan country profile, WHO, 2007).

The recent 2004 Palestinian survey reported a slight decrease from 2000 survey in smoking rate among men and women in Palestine, with 25.6% of survey persons 18 years and over were reported as smokers, 47.9% among men and 2.8% among women; while 26.0% reported as smokers 48.0% among males and 4.3% among females age 18 and more; for the year 2000(PCBS, 2004).

Results from Israel were similar in the gab difference between men and women smoking prevalence, but higher among Arabic women inside Israel; total adult smoking rates was 27% among Arabs. (Israel, State of Health, 2005), when examining each sex separately, there was significant difference. The EUROHIS[1]survey found that among men, the smoking rate is much higher; men prevalence was (45%). In contrast, among women, the smoking rate among Arab women was 7% (for the age groub21+).

1.1.3 The burden of "tobacco smoking among women"

For many reasons, women smokers share much burden of smoking related diseases than men smokers. Smoking during pregnancy is a leading cause of low birth weight, intrauterine growth retardation, preterm birth, and prenatal death (Steer, 1999).
Women smoking also increase probability of infertility and higher risks of earlier menopause among women smokers as mentioned in US Surgeon General report (Report of US Surgeon General,2001).Passive smoking is also considered a problem rising from smoking itself. Non smoking infants and children who are chronically exposed to uterus and environmental smoke have an increased risk of respiratory diseases, malignancy, and other health problems that result in the increased hospitalization and days lost from school (White, Froeb, and Kulik,1991). In addition to the health hazards; tobacco use overburden the economy of countries as a result of the increased costs it entails to the health sector and to the misuse of agricultural lands (EMRO reports, 2007).

1.2 Problem Statement

Jerusalem, the divided capitol of divided country, where part of it in developing world and other part in developed one contain 10.8% of the total population in the Palestinian Territory with sex ratio of 102.1 males per hundred females where 25.6% of persons aged 18 years and over practice smoking habit (PCBS, 2004).The continuous dynamic changes in the social economic demographic and cultural factors, and its effect on women smoking habits in the Capitol is our concern.

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[1] A national health survey, which was conducted in 2003-2004 and published by the National Disease Control Center in 2005. It was conducted as a part of the European Health Interview Survey, an international survey developed by the European section of the World Health Organization.

Despite the fact that rates of women smokers still low and lower than men smokers in our region; the change in women's role and the change in cultural morale against women smoking that is accompanied with the scarcity of local studies, and the national figures that candidate our region to have future increase in the prevalence of women smokers; all these factors enhance the need for gender specific study to meet the lack of research and reliable data in the issue of social economic and cultural determinants of smoking and smoking habits among female gender in our country; aiming to decrease then hopefully free the society from the bad habit that burden the individuals, society, health sector and economy of an occupied surrounded city of occupied country.

A better understanding of the social context of smoking in our country should be a great help to enhance our tobacco control research and practice (Poland, Frohlich , Haines, Mykhalovskiy, Rock, and Sparks, Feb 2006).

Changes in the Palestinian society especially after al Alaqsa-intifadah 2 were remarkable. One noticeable change is in women role; women participation in workforce reached 17.5% in the 4th quarter 2006(PCBS, country profile,2006), where total percentage of participation in labor force is 43.0%, number of families headed by women reached 9.0% of the total number of Palestinian households (PCBS, 2004). Since they enter the workforce our women experienced many workloads, and experience different types of stress that might affect their smoking behavior (Thomsson, 1997).With an incidence of poverty among female headed household 1.3 times higher than that of males (UN, 2004), and with the increasing poverty in the Palestinian society (Al-Rifai & Roudi-Fahimi, 2006), as a whole, that is accompanied with higher Unemployment [2] rate among females than that of males (PCBS, 2004), when knowing that smoking among women and poverty are now known to be associated (Bostock, 2003); with all the changes in Palestinian society, the role of socioeconomic, demographic and psychosocial factors on the smoking behavior of women living in Jerusalem is a question to be answered in our research.

Some rare studies, investigated the determinants of women smoking around the Arab world. A study in Syria assessed the socio-demographic determinants of women smoking found that current smoking prevalence among low income groups was higher from that of women smoking prevalence in other higher social strata (Maziak, Asfar, &Mzayek, 2001). Smoking also known to increases the risk for cardiovascular disease. In PalestineThe leading cause of death—heart disease, accounts for 19 percent of Palestinian deaths annually (Palestine, MOH, 2004). As far as we could know, almost all studies about smoking in Palestine were concerned with schoolchildren. A report published by the Ministry of Education showed that 49.8% tried to smoke cigarettes at least once, and regular smoking prevalence rate was 14.7% (Palestine, Ministry of Education, 2000). Another report found that 80% of the children smokers have at least one of the parents is a smoker (Sandoukah, 2005).

The shortage in data might reflect under appreciation for the harmful consequences of women smoking, and ignorance for the increasing numbers of women smokers. We

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[2] Unemployment rate in Jerusalem Govornorate for persons aged 15 years and over was 24.5 % in the executive summery of PCBS done in 2003

also can safely add that smoking still tends to be regarded as a mainly male problem, in spite of the national and international figures (mentioned earlier) of continuous increase in the prevalence of women smokers in our area.

As a researcher concerned with women health one can not just ignore the noticeable increase of the numbers of smoking women. Not when we witness social ease towards women smoking especially "water pipe" or "agile" smoking in upscale cafes and restaurants of the capitol, it's a double hazard habit to be studied especially if literature says that Arab women new little about the health risks of smoking in general and "argil " smoking in particular (Chaaya, Jabbour, El-roueiheb, and Chemaitally , 2004).

Research on determinants of women smoking behavior should be included for any successful control program as advised twenty years ago by an "Expert Committee" that met in World Health Organization Headquarters in Geneva in November 1982 to discuss Smoking Control Strategies in Developing Countries "(WHO, 1983). The research data we will provide will be baseline data that would enable us to determine the potential policies and strategies that should be set to target these women in order to control smoking, and decrease the rate of smoking among the Palestinian women, which is the goal of our study.

1.3 Study Justification

In Palestine, there is a lack of data about smoking and smoking habit determinants among women. To our knowledge, there is no gender specific study for the determinants of smoking behavior in Palestine**.** Most of our understanding of women smoking determinants is based mainly on Western studies. While initiation and continuation determinants of women smoking differ from one country to another, depending on different psychosocial and environmental factors**.** In our research, we advocate taking a gender sensitive approach to identify women smoking determinants in Jerusalem; a public health issue with scarcity of "gender studies" then analyzes these determinants to investigate their impact on women smoking behavior. Gender approach contributes to a better understanding of the epidemiological trends, social and economical policies relating to women and the tobacco epidemic in each country; we certainly lack woman-specific health education and cessation programs at local levels.

The importance of this subject comes also from the tremendous effect of the economical changes in the community behavior, Residents of east Jerusalem who are in direct contact with another culture at which cigarette smoking prevalence among women age 21+ is 20% (EUROHIS1 survey); they also suffer from huge economic burden that is added to the social changes. According to the PCBS (2005) survey, extreme poverty has increased in Palestine since 2001, it reached 53.7% of the households living below national poverty line in the year 2005. In Jerusalem Extreme poverty has also increased since 1998.The United Nations Office of the Special Coordinator in the Occupied Territories reported that there was a rise in unemployment (affecting 38% of the labor force) and poverty (43.8% by the end of 2001), and a dramatic drop in the Gross Domestic Product (GDP), (50.7% of the GDP produced in the period October–November 2000) (UNSCO, 2000), thus worsening

living conditions. The World Bank study-analysis suggests that smoking prevalence in most developing countries is highest among the poor (World Bank report, 2000)

Economical changes in Palestinian society are accompanied by social changes. Cultural constraints, which might have prevented many women smoking in the past years has weakened, we now whiteness an increase in numbers of women smokers in upscale cafés of the city. Society also witness changes in women role as house wives to an effective partner in labor force, which might have an influence on the smoking behavior of women. The finance independence of working women night surpass the social refusal of women smoking (Algi et al, 1999) The changes in women role is now accompanied with dangerous marketing stratigies adressed to women around the world that-according to studies- associated women smoking with slimness or success or even picturing smoking as a sign of liberation (Carpenter, Wayne,& Connolly,2005). The quantum of these marketing strategies on the attitudes and believes of Palestinian society towards smoking behavior is to be answered in our research. The sum of knowledge about health risks for different smoking patterns among our women needs clearance; since research evidence suggests that" the public in most developing countries are unaware of the dangers of tobacco" (WHO,1983).

The changes in believes and attitudes towards women smoking, and the role of tobacco marketing strategies in these changes would inevitably lead to increase in numbers of women smokers in our region. A report of the surgeon general 2001;draw the attention to dangers of current advertising strategies that underestimate the health risks of women smoking while picturing women smokers as symbol of liberated socially accepted women (Report of US Surgeon General, 2001). Moreover, recent political situation increased stress level, violence and the loss of loved ones which affected women and their families, in particular children. Such conditions lead to unhealthy behavior of smoking especially among women (Pogun, 2001).Wheather this build up socioeconomic and political stress were crucial determinants that affected our women smoking behavior or not, questions to be answered in our study.

Hence, determinants for smoking and smoking habits should be explored in the Palestinian community, from which we can help in decreasing and preventing the epidemic of women smoking and its effects on the health of women themselves and their children and the surrounding community.

The tremendous burden of tobacco related diseases to women, children and health sector and devastating health consequences would be the alternative. The research for the goal of control strategy is guided by the WHO (2001). With proper intervention that is based on research studies as our own, numbers of women smokers should be decreased. Evidence showed that the risk of dying prematurely among women smokers is greatly reduced when women stop smoking, and quitting smoking is beneficial to women at all ages (Report of US Surgeon General, 2001).

Reliable data harvested from the study is necessity for any implementation of a comprehensive tobacco control program that contains continuous surveillance and monitoring, as called for by the Framework Convention on Tobacco Control (FCTC)" to prevent the deaths of thousands and even millions of deaths in the developing countries" (Mackay & Eriksen , 2002).

The overall goal of the study is to set an appropriate policy (s) needed to prevent and decrease smoking rates among women in the Arab city of Jerusalem, by providing a theoretical foundation for potential intervention approaches and strategies specifically targeted to this group: the women.

1.4 Aim of the study

To examine possible determinants of smoking behavior, as a serious public health issue among the Palestinian women in Jerusalem.

1.5 Objectives of the study:

To investigate the associations between smoking behavior and the various socio-economical, demographic factors, psychological indicator, and the cultural norms, attitudes and beliefs of women .

1.5.1 Specific objectives:

1- To examine the association between smoking behavior with the various demographic variables, i.e. age, place of residence, marital status, number of children.

2- To examine the association between smoking behavior and several indictors for socioeconomic status, i.e. type of work, position at work, and monthly salary.

3- To examine the association between smoking behavior and stress as a psychological factor.

4- To examine the association between smoking behavior with selected indicators for the norms, attitudes and beliefs about women smoking, i.e.

1.6 Questions of the study

1- Is there a change in smoking behavior among Palestinian women due to the socio-cultural changes?

2- Is there a change in smoking behavior among Palestinian women due to the recent socioeconomic conditions?

3- Is there a change in smoking behavior among Palestinian women due to changes in their role as non-working women to an effective partner in labor force and community activities?

1.7 Constrains and limitations of the study

1. For political reasons the study covers only one area of east Jerusalem classified as (area J1) in PCBS or what is known as Jerusalem behind the Separation Walls. Therefore results generalized only to this area (PCBS, 2007).[3]

2. Response rate was low, especially from schools, this is because the questionnaire was handed through the students to the women at home but not directly, which decreases the sample size and might have negative effect on the credibility of the study.

3. The distribution of the questionnaire, mostly through school children, might have bias against nonworking non child-bearing women.

4. The study is compacted with a whole package of smoking determinants, unlike most of the studies that concentrate mostly on one determinant at a time, which give restricted availability of thorough investigation for each determinant branch.

5- The questionnaire topic is a bit sensitive to women in our society, and self reported smoking status for some women who smoke secretly might not be possible, which would affect negatively the outcome of the study.

6- Due to many political and social influences, legislations and regulations determinants are not included in the research, which might be a shortage in the addressed determinants.

7- Shortage in questions about smoking health consequences

1.8 Thesis chapter's description

Chapter 1: The study background, problem statement, significance, aim and objectives of the study, questions then constrains of the study

Chapter 2: Review for the literature and previous studies related to the study on determinants of smoking among women

Chapter 3: Conceptual framework, that includes definitions of smoking, smoking behavior and smoking determinants, and the study smoking model.

Chapter 4: The used methodology, the study design, sample size, pilot study, data collection and analysis method, constrains of the study, and ethical considerations

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[3] "Area J1", it includes those parts of Jerusalem, which were annexed forcefully by Israel following its occupation of the West Bank in 1967. These parts include the following localities: Beit Hanina, Shufat Refugees Camp, Shufat, Al Isawiya, Sheikh Jarrah, Wadi Al - Joz, Bab Al-Sahira, As Suwwana, At - Tur, Jerusalem Al-Quds, Ash-Shayyah, Ras Al-Amud, Silwan, Ath Thuri, Jabal Al Mukabbir, As Sawahira Al Gharbiya, Beit Safafa, Sharafat, Sur Bahir, and Um Tuba

Chapter 5: Main results of the study that is divided into four parts. The first is the study descriptive analysis. The second part presents the univariate analysis; the third part is special descriptive analysis for multi- response related variables, and in the last part, multivariate regression models. All results are presented in tables and graphs.

Chapter 6: It contains main results of significant determinants for women smoking behavior and conclusion of the study. At the end of the chapter, recommendations suggested by researcher to control women smoking behavior and its related determinants were presented.

Chapter 2: Literature review

2.1 Introduction

Looking for the logical explanations for the new women epidemic of smoking that continues to increase around the world (Dananeiet,2005), world health organization(WHO), called for thorough investigation and gender specific studies to support national women smoking control programs (USDHHS, 2001).

Gender specific studies were and still low, mostly because of shorter history of women smoking and hence its health hazards on women was delayed; it wasn't until 1964 when probable connection between women smoking and lung cancer was announced (Walker, 1984; Robbins, 2000). Gender Studies that followed were concerned only about the effect of women smoking on fetus health primarily not on mothers health (Murray and Lopez,1996), till recently, gender specific approaches for smoking prevention efforts has been addressed in the literature, yet still low, mostly interested in social and behavioral smoking determinants among women , since studies showed that better understanding of the social context of smoking in each country enhances tobacco control research and practice (Poland et al, 2006).

Gender base studies, interested in behavioral differences in smoking among men and women include: smoking initiation (Perkins, Levine, and Marcus , 2000; Perkins, 2001; Perkins et al, 2001; Pogun, 2001; Perkins , et al ,2002) and quitting factors (Mizes,et al,1998;Perkins,2001; Scharf and Shiffman,2004) ,differential product preferences among female smokers (National Women's Law Center,2003; Richmond,2003; Boyd et al,2003), determinants of women smoking behavior and predictors of smoking among women (McCormick, et al, 1990; Winkleby , et al, 1992; Henningfield, 1996), including attitudes and believe towards smoking and the effect of new marketing strategies on women smoking behavior(Curry et al,1993; Carpenter , et al , 2005;WHO 2005).

In this chapter the major studies in the above topics will be summarized, besides the role of genetics on women smoking behavior.

2.2   Smoking initiation and quitting patterns and differential product preferences among female smokers

In the following sections we will be presenting the major studies concerning with initiation and continuation factors for smoking among women. Also smoking cessations factors will be presented in details. In the third part we will be showing the tobacco types preferred by women.

2.2.1   Smoking Initiation and continuation factors

Several Studies promote for the importance of biological influence on smoking initiation that differs according to gender. Among women, heritability estimates for smoking initiation have ranged from 32% to 70%, and smoking persistence estimates have ranged from 4% to 49%, while among men, estimates ranged from 31% to 61% for smoking initiation and from 50% to 71% for smoking persistence (Hamilton, et al, 2006).

The effect of environmental determinants on women smoking behavior over the hereditable tendency was also studied. In (32,359)_twin pairs cohort study done in California(USA),the conclusion was that environmental interventions could reduce the heritable influence on smoking initiation among women, while continuing smoking is unaffected by the heritable tendency (after adjusted for gender, age, birth cohort, or closeness between twins) **(Hamilton, et al,2006)**.

External factors for initiation of smoking differ from men to women. Several studies in the USA found that smoking initiation among women is affected by the smell and the taste of cigarettes more than men (Perkins, Levine, and Marcus, 2000; Perkins, 2001; Perkins et al., 2001; Perkins, Jacobs, Sanders, and Caggiula, 2002). Dr. Kenneth Perkins of the University of Pittsburgh, Perkins (1996) explained that women may smoke less for nicotine and more for non-nicotine effects of smoking or they call it "external stimuli." These influences might include sensory effects like the effect of seeing and smelling tobacco smoke only in women (Perkins, 1996).

Several studies concluded that women smoke for different "psychological reasons." Graham (1998) found that many English women with little time to themselves see cigarettes as their only luxury and the only thing that they buy for themselves (Graham, 1989)**.** Older women of Switzerland, smoke mostly for relaxation, pleasure, and out of habit (Donzé, et al, 2007).

2.2.2 Smoking cessation factors

Although some studies concluded that women and men are equally likely to intend to quit (Mullens, Borland, and White, 1991; Mullins, Borland, and Hill, 1992), several others concluded that quitting smoking was positively associated with male sex (Osler, et al, 1999). In general**,** females were less successful in quitting smoking than males, regardless of types of nicotine replacement therapies (Perkins,2001; Scharf and Shiffman , 2004), and quitting was much difficult for women than men, as mentioned in Action of Smoking and Health (ASH, 2003).

Factors includes menstrual cycle phase and weight gain fears are found to influence quitting smoking among women in several Perkins studies (Perkins, Levine, and Marcus, 2000; Perkins, 2001; Perkins et al, 2001; Perkins, et al, 2002).

In a literature search study that includes 4421 participants (males and females) in 12 randomized smoking cessation trials of cessation aid treatment "Bupropion" 300 mg, versus placebo, results showed that, regardless of treatment, women were less successful at quitting than men, (OR = 0.79, 95% CI = 0.65-0.95)(Deborah and Sau, 2004*)*, and quitting was much difficult for women than men (ASH, 2003). Although other studies concluded that women and men are equally likely to intend to quit (Mullens, Borland, and White, 1991; Mullins, Borland, and Hill, 1992).

2.2.2.1 Smoking cessation and weight concerns

Many studies assured that women gain more weight when quitting smoking (Williamson, Madans, Anda, Kleinman, et al., 1991), and the majority of women are perfectly aware of this linkage between smoking and lower body mass (Copeland and

Carney , 2003). Earlier studies concluded that girls believe that smoking helps to control weight by suppressing the appetite (USDHHS 1980; Klesges, Meyers, Klesges, and LaVasque, 1989). George and Johnson (2001) concluded in their study that significantly high percentage of women believe that smoking would help them in weight control rather than men (George and Johnson, 2001).

Sorensen et al. (1992) discuss how smoking used by women as weight control device to keep the slim look that is known as a norm of attractiveness in society. Later study concluded that relapse rate during smoking cessation treatment are higher among women than men (Borrelli et al., 2001), and that quitting programs failed, and women quitting relapse rates are also higher than men's, due to the same reason of weight gain. Katz et al. (2003) found that success in a smoking cessation program is associated with addressing the issue of weight gain after quitting Bowen and colleagues (2000), found that especially women who are concerned about cessation-induced weight gain are more likely to drop out of treatment, being afraid to gain weight after quitting (Mizes,et al,1998; Osler, et al, 1999).

2.2.2.2 Smoking cessation and other factors

Results of Asian study revealed that there is a belief in some parts of Asia that sudden quitting can be harmful to health (Woodward, 2005). This meth among other factors are barriers to women quitting smoking. Several studies lightened the relation between quitting and number of daily cigarettes. Average daily consumption has been identified as predictor of cessation. Light smokers report more quit attempts and has higher cessation rates and lower relapse rates than heavy smokers (COMMIT Research Group, 1995; Jarvis, 1997). A tow years follow up cohort of Sorensen et al. (1992), for 874 women employed as nurses in USA, finds out that heavy smoking was a barrier to quitting smoking compared to light smokers and heavy smokers were described as more dependable to nicotine. (Sorensen, Goldberg, Ockene, Klar, Tannenbaum , and Lemeshow ,1992). Smoking intensity in women was associated with psychological demand and with effort/reward imbalance in a cross-sectional study done among 1,101 working Australians men and women subjects (Radi, et al, 2007)Other factors that affect smoking cessation were analyzed in a cohort study in Lebanon where 4660 pregnant women were included. Results reveled that among other factors, high education (OR = 2.03, 95 % CI: 0.99–4.15), and mild not heavy smoking smoking at baseline (OR = 2.35, 95 % CI: 1.36–4.09) were main determinants of successful cigarette smoking cessation, which agrees with Sorensen *et al.* (1992) study results,. Whereas for narghile smoking, to have a non-smoking partner (OR = 7.57, 95 % CI: 2.31–24.78), among other factors, was a necessity for successful quitting (Yunis ,et al,2007).

2.2.3 Tobacco types preferred by women

Several studied adressed the type of cigarettes women prefered. They concluded that women are more likely than men to choose low-tar cigarettes known as "light", slimmer and longer-style cigarettes (USDHHS, 2001; National Women's Law Center, 2003; Richmond, 2003; Boyd, et al, 2003). A research done in 1978 on Alternate Flavors and Sensations (AFS) concluded that the groups most likely to be attracted to AFS included female menthol smokers who disliked the taste of tobacco. Marketing companies used this scientific research to manipulate products for female smokers

with increased smoothness and mildness and reduced tobacco taste and strength, since cigarettes with special flavors as Menthol seemed like womens favourates. (Carpenter, Wayne , and Connolly ,1978).

A cross sectional study in Florida, USA done among black and white women after race adjustment (Clark, Gautam, and Gerson, 1996) concluded that women might not be aware that the use of menthol may be associated with increased health risks of smoking (Clark, et al, 1996).

A more recent clinical research study concluded that women who smoked Menthol Cigarettes have greater nicotine exposure and a significantly shorter time to first cigarette (19.0 vs. 37.4 min, p = .02) compared to non menthol smokers (Ahijevych and Parsley, Jan 1999).

A comprehensive review of" Medline" search using as keywords "waterpipe", was conducted in 2004 founds that the Eastern Mediterranean witnesses noticeable increase in Waterpipe use, besides its global use. Health effects and treatment of watepipe is still not fully examined or understood (Maziak, et al, 2004).

A national survey of tobacco smoking for adult women smokers attending cafes in Cairo was conducted recently by "The Egypt Smoking Prevention Research Institute" one of its aims was to survey female waterpipe smokers, results showed that <2% of the females in the cafe survey admitted to be smokers, (49 %) of them were exclusive cigarette smokers, they were younger on average than cigarette users (29 vs. 37 yrs, p<0.001). Unmarried women were more likely than others to believe that waterpipe smoking is less harmful than cigarettes (Loffredo, 2006)

2.3 Smoking determinants among women

Several research arguments indicate that men and women differ in their smoking behavior. According to Spielberger (1986), smoking behavior may be viewed as a response to factors both in smokers' environments and in their internal psychological and physiological states (Spielberger, 1986).

Known factors include socioeconomic status, psychosocial factors as stress, parental and peer influence and beliefs, attitudes cultural and community norms.

2.3.1 Socio Economical factors

A growing literature suggesting that social and economic disadvantage influences individual smoking behavior (Winkleby , et al, 1992; CDC, Nov, 1999). Traditional indicators of socio economic status are income, occupational status and educational level (Liberatos, link, and Kelsey, 1988). One or more indicators were addressed in different studies to access the effect of SES on women smoking behavior. Markers of low SES has been addressed in literature to increase the odds of being current smokers (Graham and Der, 1999**;** Mathews, 2001; Shohaimi, et al, 2003).

In a cross sectional study done in the year 200-2001 of 6243 employed women in Helsinki aged 40–60 years , association between smoking behavior with several socioeconomic indicators was addressed. Low income women and economic

difficulties were positively associated with smoking behavior after mutual adjustment for all socioeconomic indicators (Laaksonen , Rahkonen, Karvonen, and Lahelma, 2005).

In a cohort study for international comparison for the association between smoking and educational level in 12 European countries, results were not conclusive. For some countries higher rates of current and ever smoking was found among lower educated subjects aged 45-74, while results from other countries were the exact opposite for the same age group; while for the age group 20-44 smoking rates were higher among lower educated people in most countries. No association was found in a second study done in Barcelona (Spain) between smoking and level of education in women as part of Population study for older than 15 years at the year1993 (Espinas, Moreno , Borras , Pujol,and Marti ,Mar 1999).

Several cross sectional studies from Estonia, concluded that lower educational level among women was the strongest predictor of smoking initiation among women and persistent smoking rates for women at all ages except women above age 50 (CDC,Nov 1999*; Leinsalu**, Tekkel, and Kunst, Apr 2007).

 In another cross sectional study in Lebanon, Pre-pregnancy smoking was associated with low and medium education [OR = 2.22, 95% CI (1.22, 4.04)]. Continued smoking during pregnancy was associated with younger age [OR = 1.11, 95% CI (1.02–1.20)] and low medium education [OR = 3.77, 95% CI (1.31, 10.8)] (Chaaya , Awwad, Campbell, Sibai, and Kaddour 2003).

The association between women occupational status and daily smoking was tested also. In a cross sectional postal questionnaire study with total of 5180 subjects aged 18–64 years in Scania-Sweeden, where employed and unemployed subjects were included, Low occupational status and unemployed categories had significantly higher odds ratios of daily smoking among both men and women compared to jobs in higher occupational status (Lindström ,2004).

Different patterns in men and women was observed in a cross-sectional study done among working Australians of men and women subjects (N= 1,101). Results showed that active and high strains jobs were associated with decreased odds of smoking, but only among "women". In men, extreme and moderate job pressure were related to current smoking compared to current non-smoking, and moderate job pressure was associated with current smoking compared with former smokers (Radi, et al, 2007).

Average daily consumption of cigarettes is also mediated by SES among both men and women (Künst, 1997; Son, 1997). In a woman study done in United Kingdom, proportion of women smoking 20 or more cigarettes a day rises from 23% in the highest socio-economic group to 41% in the lowest socio-economic group (OPCS, 1996).

2.3.2 Psychosocial factors of smoking (stress)

Several studies correlate stress with smoking initiation and quitting rates by evaluating economical stress, stress of job loss and social stress (Niaura, Shadel, Britt,

and Abrams, 2002). An early study for Schachter et al. (1977) found out that intensity of smoking increase and rise with intensified stressors.

In a study done in Syria, Current smoking and daily smoking were found among respectively 16.5% and 7.5% of those investigated. Smokers were economically better and came from smaller households ($P < 0.05$ for all) than non-smokers (Maziak; Asfar; and Mzayek, 2001).

A study survey in Australia for association between women smoking and financial stress finds that there is an increase in odds of smoking among women with financial stress. The study also concluded that rates of relapse among x- smokers were higher among those with financial stress (Siahpush and Carlin, 2006).

In a clinical US study of males and females(64%) smokers, for acessing the influence of social stress over the smoking urge, using Borkovec social anxiety induction procedure in a lab, results find out a positive association between stressful social encounter and smoking urges and negative association with self-efficacy to resist smoking (Niaura, Shadel, Britt, and Abrams,2002).

Unemployment was addressed much as part of stress that would increase the likely hood of women smoking. Studies indicate that cigarette smoking is strongly associated with unemployment, and increases the likelihood of smoking among men and women (Espinas, Moreno, Borras, Pujol, and Marti, Mar-Apr 1999; De Vogli and Santinello, 2005).

In a cross sectional study done among young adulthood males and females in US, strong association between unemployment and smoking was found among women smokers (Weden , Astone,and Bishai, 2006).

The effect of stress on Lebanese women smoking behavior was addressed in a cross sectional study. The study concluded that pre-pregnancy smoking was associated with increased psychiatric distress [OR = 3.11, 95% CI (1.77, 5.46)], (Chaaya, et al, 2003).

2.3.3 Parental, peers, and partner smoking

Research result stressed on the importance of parental smoking as determinants of smoking behavior (Kestila, et al, Dec 2006). A 14 years follow up birth cohort of 7223 mothers and children done in Australia at 1981 found that the proportion of regular young adults smokers, was greater among those whose mothers had smoked during pregnancy (Al Mamun, et al, Dec 2006).

The partner smoking effect on women smoking behavior was addressed in some studies. A cross sectional study in Lebanon found that Pre-pregnancy smoking was associated with a husband who smoked with OR = 5.00, 95% CI (2.98, 8.39) (Chaaya, et al, 2003). Another study analysis indicated that smoking cessation was less likely in women who have a husband or partner who smoked (Judith, et al, Oct 2002). In third study for the predisposing factors for cigarettes smoking among Chinese women; having a husband who smoked among other factors was found to be significant for cigarette smoking (Lau, Lee, et al, 2003)

Using data from female twins and their male spouses, a study results revealed that women smokers tend to marry men smokers, but married couples do not modify each other smoking behavior after marriage (Agrawal1, et al, 2006).

a cross sectional study in Sweden for 5180 persons aged 18–64 years that contain employed and unemployed subjects, to investigate the associations between psychosocial factors ,social participation, and daily smoking, found significant positive association found between daily smoking and social participation at all working or nonworking participant (Lindstro, 2004).

2.3.4 Beliefs, attitudes and cultural norms

Several study results suggested that community influence personal attitudes towards smoking(Curry, et al,1993), in fact community norms explains the USA map differences in lung cancer, in traditional Mexican, families where smoking is mainly men behavior and women stigma, women lung cancer was lower than in other areas(Where smoking kills women, 1997).

Several American studies done among migrant women, concluded that less traditional women are more likely to be non-smokers (Centers for Disease Control and Prevention, 1992a; Moeschberger et al., 1997; Lee et al., 2000). A special US Cross-sectional survey among Muslim Arab-American adolescents, sample of 480 males and females, concluded that Culturally based gender-specific norms were significantly associated with increased risk of susceptibility to smoking for males only (OR=3, 95% CI=1.3-7), while religious influence was protective against susceptibility to smoking for females only (OR=0.6, 95% CI=0.4-0.8)(Islam and Johnson, 2003).

Among Arab women in many countries, studies reveled that considering narghile smoking, there is less of a stigma associated with narghile than with cigarette smoking and therefore less of a gender differential (Asfar, et al,2005), and this ancient tradition has become fashionable again not only in Arab world (Kandela, 2000).

In Aleppo Household Survey (2038 men and women subjects), smoking waterpipe was described in the Syrian study interview results as an aesthetic enjoyable experience", while smoking cigarettes "as a mundane anxiety-relieving addiction" (Ward, et al, 2006). Data from other two cross-sectional surveys conducted in 2003 in Aleppo, Syria were used to study the social attitudes and perceptions regarding smoking narghile, found out that among older and married participants, there were more positive attitudes towards Narghile smoking. More positive attitudes toward smoking in general were associated also with Smoking status of participants (Maziak, et al, 2004).

2. 3.5 Religion and women smoking

One of the cultural factors to be addressed is "religion". Several western studies that examined the relationship between religion commitment among Christian males and females and its effect on smoking behavior concluded that lack of religious attitudes among women contributes to smoking more than it does among males (Gottlieb and Green 1984; Krohn et al. 1986; Waldron, 1991).

In a cross-sectional survey done in Islamic Academy in Fairfax County, Virginia. Among Muslim Arab-American adolescents, found out that religious influence and perceived negative consequences of smoking were protective against ever smoking for both genders (OR=0.7, 95% CI=0.5-0.9; OR=0.8, 95% CI=0.7-0.9, respectively). Culturally based gender-specific norms were significantly associated with increased risk of susceptibility to smoking for males only (OR=3, 95% CI=1.3-7), while religious influence was protective against susceptibility to smoking for females only (OR=0.6, 95% CI=0.4-0.8) (Islam and Johnson, 2003).

A more recent cohort study results among Students at the American University of Beirut suggest that religious identity is inversely is associated with regular smoking among male and female adolescents (Adel, et al, 2004).

In another gender study done in Syria, results concluded that Christian women were more likely to be smokers than Muslim women (Maziak , et al,2001) . A following Maziak study concluded that Christian individuals in general, have more positive attitudes toward all form of smoking (Maziak, et al, 2004).

A lower smoking prevalence among strong Moslem identification in general was also found among Turkish minority in Netherlands; a cross sectional study of 439 Turkish adult (van Oort, Ende, Crijnen, Verhulst, Mackenbach, and Joung, 2006).

2.3.6 Socio demographic factors and smoking

Several studies investigated the association between socio-demographic factors as age, marital status with smoking behavior.

2.3.6.1 Marital status and women smoking

A cross-sectional study of 11967 western men and women, aged 20–65 years found that older and married persons had a higher likelihood of quitting for both men and women (Jeanne, et al, 2005).

A western women cross-sectional study found that relative to childless women, early motherhood, and lone motherhood increased the odds of smoking; and decreases the odds of former smoking (Graham, et al, 2006).

Results from recent cross-sectional study in Estonia found highest initiation rates and lowest cessation rates among divorced women (Leinsalu, Tekkel , and Kunst, 2007).

In another eastern study for the predisposing factors for cigarettes smoking among Chinese women; to be divorced, to have a smoker husband -among other factors- were found to be significant for cigarette smoking (Lau, Lee, Lynn, Sham, and Woo, 2003).

Results of a cross-sectional survey done in 1996 in Kuwait among 4000 adults of men and women, showed that among other factors, being a separated, divorced, or widowed woman (OR = 4.9; 95% CI = 2.0–11.8) was independently associated with smoking. (Memon,et al, 2000).

In a national survey of tobacco smoking for adult women smokers attending cafes in Cairo, found out that, among other results, Unmarried women were more likely than

others to believe that water-pipe smoking is less harmful than cigarettes (Loffredo, 2006).

2.3.6.2 Age and women smoking

Young women aged 18 to 24 have higher ability than young men of their age to nicotine addiction. Visalpattanasin et al (1987) agrees that women initiation age can be used as smoking predictor (Visalpattanasin, Wearne, and Armstrong, 1987; USDHHS, 2001).

In low- and middle income countries, results showed that smokers start smoking in their late teens or early twenties although the initiation age of women is getting younger (Sri, et al, 2001).

In recent three years follow up cohort study for smoking behavior and redness to quit among older women done in Switzerland, older women reported only 15% quitting rates, and reported having no benefits from quitting at old age (Donzé, Ruffieux , and Cornuz, 2007).

2.3.6.3: Place of residence

Residency was addressed in several studies as a factor that has influence at smoking status.

Results fom a cross-sectional study done in Syria showed that Current smoking and daily smoking were found among respectively 16.5% and 7.5% of those investigated. Smokers were older, ($P < 0.05$ for all) than non-smokers. They also were more likely to be city residents than non-smokers ($P < 0.05$ for all). (Maziak; Asfar; and Mzayek, 2001)

Results from recent cross-sectional study in Estonia found that besides other factors, highest initiation rates were among women living in the capital city (Leinsalu, Tekkel, and Kunst, 2007).

 In a cohort study done in China among 4,000 households to explore factors associated with cigarette smoking over 13 years between 1991 and 2004, results show that urban residence among other factors, have no significant impact on smoking (Pan and Hu, 2008).

2.3.7 Knowledge and Health concerns

Health awareness of tobacco related health hazards is important determinant in smoking behavior, studies revealed that educational program should focus on increasing knowledge and attitudes of women to decrease smoking prevalence (Kurtz,et al**,** 2003)

In a five years follow up cohort study that included 13415 cigarette smokers aged 25-64 years from Canada and USA, health concern was the most common reasons given for quitting smoking by 91% of the subjects(Hymowitz , Cummings , Hyland , Lynn , Pechacek ,and Hartwell , 1997)

The Smoking Cessation Action in Primary Care, (Scape) surveyed 1,757 men and women who were smokers or ex-smokers in the United Kingdom, found great shortage in awareness of smoking risks among women subjects, not aware of health risks on their health nor their children's health (Scape,2001), results agree with the cross sectional study survey of Brownson(1992), where, among other findings, health hazards knowledge of smoking was generally lower among women and current smokers in the tow cities in USA included in the study (Brownson, et al,1992).

Similar results from the Arab world where in a cross-sectional interview survey in Egypt for tobacco use among women, never smokers were significantly more knowledgeable than current smokers about tobacco-related health hazards, and holding university degree was not associated with knowledge about health hazards (Youssef, Abou-Khatwa_, and Fouad, 2003), although women care to stop smoking if and when they have the knowledge about smoking health risks on the baby (Barbour, Bukovic, and Ziadeh, 2006).

2.3.8 Smoking and the job demands

Nesbitt (1973), found that smoking helps smokers coping with more intensified stress exposure. He also concluded that people working under stressful and high job demands tend to find that smoking helps them face demands and stress (Nesbitt, 1973). The argument is agreed by Perkins et al., (1992) studies that found out that smoking causes an immediate stress reduction. Besides this the study of Parrott (1993) mentioned earlier that also supports the argument Job demands were associated with the odds of smoking among women in several studies. Graham (1987) found that in caring jobs as nursing, smoking can provide a strategy for coping with job demands (Graham, 1987). In a later study Graham found that many working women spoil and luxuries themselves through buying themselves cigarettes (Graham, 1989).

In a cross sectional postal questionnaire study in Scania, Sweeden, a total of 5180 persons aged 18–64 years, with different working conditions and unemoloyeed included in this study. Positive association was found between high demands/low control jobs and daily smoking among both men and women (Lindström, 2004).

2.3.9 Tobacco prices and restrictions on cigarette smoking

The positive effect of smoking restrictions in public places including workplaces encourages researchers and scientists to study household's awareness of the role of bans in homes and other private places. Study of Lewit and his colleagues in the early 1980's found that the smoking behavior among women was not affected by restrictions on cigarette smoking; in fact, increased cigarette prices had no impact on smoking among women (Chaloupka, 1992).

A more recent study review that included 26 studies reported in 24 papers concluded that the smoke-free workplaces encourage women smokers to quit or to reduce consumption. In other words reduction in Prevalence of smoking and in numbers of cigarettes smoked per day was associated with totally smoke-free workplaces. The

study was done among unrestricted Smoke-free workplaces in the United States, Australia, Canada, and Germany, (Fichtenberg and Stanton, 2002).

2.4 Risk difference among women smokers

Main goal of different tobacco control programs has always been trying to cause a change in smoking habits directly using common method as restrictions of smoking in common places or price restrictions and others (U D H H S,2000; Hills, et al,2006) and have succeeded to do so (Townsend, et al,1994; Gilpin and Pierce,2002; Hills, et al, 2006), but only partially (Escobedo and Peddicard, 1996;ONS,2004), since the decline was lower among women for instance, especially disadvantaged young women, they have a continuous increase (Pierce, , *et al,*1989; Graham, 1996; Cavelaars, , *et al,2000,*U D H H S,2001).Obviously, any successful program needs to take into consideration several factors about women smoking behavior specifically
Gender-specific differences have been studied and differences were found in the subjective, behavioral, or physiologic effects of nicotine on men and women (Pearkins1996). Earlier some researchers argued that gender-specific differences in the physiologic response to nicotine have a major influence on differences in smoking behavior of women and men (Schachter, et al, 1977), some thought that women have greater sensitivity to nicotine, which might be a direct result for women smaller size and hence slower body nicotine clearance (Gorrod and Jenner 1975; Benowitz and Jacob 1984; Grunberg , Winders, and Wewers ,1991).Others thought that it has a limited response -difference if any (Waldron, 1991) while an old theory was that a difference in the effect of nicotine to gender is due only to differences in smoking patterns (Schievelbein, Heinemann, Loschenkohl, Troll, and Schlegel, 1978).

The Copenhagen-based Institute of Preventive Medicine reported in May 1997 that a study indicate the possibility that smoking is more hazardous to women's health than men's health, females appear to be more sensitive to second-hand smoke than males, the result of cohort study of 30,000 men and women smokers in Denimark , where women have a double risk of dying from respiratory diseases(Bolego Poli , and Paoletti,2002), and hence women benefit from quitting smoking more than men.. A recent five years follow up for more than 5,300 middle-aged smokers in the US indicates that women lungs benefit more than men lungs from smoking cessation. Clinical results for lung function remained greater for women who quit than for men who quit throughout the study (NIH, 2003).

Smoking related cancers especially lung cancer, was much addressed in studies. A Case-Control Analysis by histological type was conducted during 1981-1985 in Toronto, resulted in higher susceptibility among female smokers for lung cancer, than male smokers, the association between lung cancer and smoking was significantly ($p = 0.010$) stronger for females than for males(Risch,et al, 1993).

On the other hand, Prescott et al (1998) found that the relative risks associated with smoking for respiratory and vascular deaths were higher among women than men, but they found no gender differences in relative risks of smoking-related cancers (Prescott et al., 1998) including lung.

In a cohort study of almost 500,000 Asians and 100,000 Australasians, results show that women have greater relative risks of cardiovascular disease from smoking than men (Woodward, 2005).

Several other studies found that the relative risks associated with smoking were higher among women than men, for cardiovascular disease and (COPD) or chronic obstructive pulmonary disease (Prescott, et al, 1998). Smoking also appears to increase the risk of stroke in women two- to four-fold, in proportion to the amount smoked, while male smokers have a three-fold increased risk (Bolego, 1996; Njolstad, 1996).

Another case-control study of lung cancer in three German and three Italian centers, all conclude that for comparable exposure to tobacco smoke, the risk of lung cancer is comparable in women and men (Kreuzer, et al, 2000).

2.5 Smoking and pregnancy

Most of research done on pregnant women was concerned mostly with the effect of smoking on infants and newborn's health, since several studies have shown that active maternal smoking increased the risk of spontaneous abortion (Kline, et al, 1977; Himmelberger, Brown, and Cohen, 1978; Chatenoud, et al, 1998). In fact studies found out that smoking is greater threat to survival and health of newborns, and increased possibility of spontaneous apportion than using cocaine during pregnancy (Slotkin, 1998; Ness, 1999).

Studies about smoking behavior among pregnant women reviled significant reduction in the proportion of pregnant smokers in the last few years (Wisborg, et al, 1998). In a cross sectional study done in Australia, one of the findings was that pregnant women of higher socio-economic status, showed an increased likelihood of smoking cessation during pregnancy (Mohsin and Bauman, 2005). A there'd study reviled that the proportion of pregnant women who smoked during pregnancy was higher among urban women (Strinic, et al, 2005). In another cross sectional study in Lebanon, the prevalence of smoking decreased through pregnancy from 32% before pregnancy, to 20% during pregnancy (Chaaya, Awwad, Campbell, Sibai, and Kaddour, Sep 2003).

A cross sectional study among 1748 female Japanese nurses results agrees that pregnancy provides a good opportunity for smoking cessation, but he also finds out that relapse rate after cessation increased among women after delivering the babies(Maenot, et al, 2005).

Considering argileh smoking among pregnant women in Lebanon, despite the fact that the prevalence of tobacco use in general has increased in Lebanon among pregnant women and reached 27% in Beirut and 25% in the suburbs yet still the study find it is still lower than before pregnancy (Chaaya, Awwad , Campbell , Sibai, and Kaddour,Sep 2003).

Mother's knowledge about the health consequences of smoking on themselves did not seem to affect their practice while the knowledge about the health consequences of smoking on their baby did (Barbour, Salameh, and Ziadeh, 2006). In a cross-sectional study of 1000 Lebanese mothers, a negative association between smoking during

pregnancy and mother knowledge about smoking risks on the baby. Continued smoking during pregnancy was associated with low and medium education [OR = 3.77, 95% CI (1.31, 10.8)], younger age [OR = 1.11, 95% CI (1.02–1.20)], and a heavy pre-pregnancy smoking pattern [OR = 13.9, 95% CI (1.40, 137.4)]. (Chaaya, Awwad , Campbell , Sibai,& Kaddour,Sep 2003).

Pregnant mother smoking is found to be associated to biological gene differentiation of their offspring's, make them more vulnerable to tobacco addiction. Dr. Buka of Harvard who led the study says: "Early exposure to tobacco during pregnancy apparently affects the individual's response to cigarettes in later adolescence and adulthood" (Mann, 2004).

But one amusing study done in Liverpool for 9000 pregnant women could make a difference for some women who like to have only boys. The study results showed that mothers who smoked during pregnancy were one-third less likely to have" male "children and more likely to have a female child than mothers who did not smoke (Woolf, 2007).

2.6 Summery

The review of literature cleared the need for gender study for better understanding of women smoking behavior, which proven to have greater dangers on women's health besides its known environmental and economical dangers. For smoking behavior among women, gender difference was clear in initiation, continuation and cessation factors that affect smoking behavior. Women smoking initiation and cessation have different pattern than men, either for weight concern or some other studied reason. Women also differ in type of tobacco types preferred, and the effect of advertisement on women choice will be discussed later.

In order to rationalize the decrease in gender gap, and for any successful smoking prevention efforts, studied for the combination of different risk factors that influence smoking behavior that includes environmental, behavioral, personal and socio-demographic factors is a must. Each risk factor has different influences through research studies (Slovic, 2001). Evidence through the years suggested that there is a gender difference in smoking addiction that must be recognized as prerequisite for treatment or prevention program. Some studies discussed the impact of role change among men and women on women smoking behavior as a main factor of influence (Gritz, 1984; Gilchrist, Nurius, 1989). Other studies suggested a genetic influence among females (Chassin, et al, 1986).

Whether the gap decrease of smoking prevalence among men and women is due to the continued increase in female smokers or because females were found to be less successful in quitting smoking than males, (Perkins, 2001; Scharf and Shiffman, 2004), or because women have higher relapse rate, regardless of the reason "weight gain "or other(Osler, et al, 1999). The fact build on literature results remains that there is gender differences in smoking behavior where women smoking behavior is affected differently by external and internal factors (Waldron ,1991) and we should look for the proper intervention programs accordingly, and if women are at higher risk from tobacco as literature showed (Bolego, et al, 2002; NIH, 2003) logically its more important to reduce smoking in women by special prevention programs.

Chapter 3: Conceptual framework

3.1 Introduction

In this chapter we will be presenting the definition of the major variables in the conceptual model. In addition, the conceptual model will be explained.

3.2 Definitions

3.2.1 Smoking

Definition of tobacco smoking as known to public, and in encyclopedias is the act of direct inhalation of tobacco smoke that is known to cause many health hazards.

Smoking is now understood by researchers to be a complex behavior of nicotine addiction that is influenced by a wide range of interacting factors. These factors, besides pharmacologic effects of nicotine; including both psychosocial and other environmental factors, as well as genetic factors; and determinants other than addiction ought to trigger the initiation then the continuity of women smoking (U.S. D.H.H. S., 19881; Batra et al., 2003). Jarvis (2004) agrees that women patterns of smoking prevalence is influenced by package of personal, socioeconomic and political determinants that explain why women choose to be addicted to tobacco (Jarvis, 2004).

3.2.2 Smoking as health behavior

In literature, there are a lot of theories regarding smoking behavior as a health behavior, trying to explain factors that determine the behavior, as a prerequisite for behavior modification that is composed of two main processes, up taking smoking and quitting smoking (Pirce et al., 1987a; Peirce et al,. 1989; Elder et al., 1999).

Smoking behavior can be identified as a response to several factors present in both smokers' environments and smoker's internal psychological and physiological states that interact to result a certain smoking pattern. These factors play a fundamental role in the development of nicotine dependence and form significant barriers to achieving tobacco cessation (Spielberger, 1986; Henningfield, et al, 1995; Henningfield, 1996).

3.3 Smoking determinants

3.3.1 Socio- economical and demographic factors

Women smoking behavior is shaped according to gender and social structure that includes social class and ethnicity (Graham and Der, 1999). A growing literature suggesting that social and economic disadvantage influences individual smoking behavior (Winkleby et al., 1992; CDC, 1999), and that smoking is most prevalent among the poor (Yach, 1986). Typically, smoking occurs first among the wealthier and among men, but later is more popular among low-income populations of both sexes (World Bank 1999; WHO 2001). Traditional indicators of socio economic status (SES) are income, education and job status (Liberatos, et al 1988; Winkleby, et al, 1992) has been addressed in literature to cause an increase in the odds of being

current smokers (Graham and Der, 1999**;** Shohaimi, et al, 2003). Higher odds of continued smoking was found among women with social and economic disadvantage, and high smoking rates was found among poor and less-educated women (Petersen ,et al,1992;Geronimus,et al,1993; Mathews, 2001). In general, smoking now is more prevalent among women with lower socioeconomic class (U.S. Surgeon General's Report, 2002a). Smoking prevalence among pregnant women or at reproductive age was generally lower than other women (UDHHS, 2001), probably because of known harmful effects of smoking during pregnancy on infants and children (Kendrick, et al, 1990). Socio-economic status has its effect on pregnant women too.   Women in higher socio-economic groups are more likely to reduce consumption and to give up smoking in pregnancy than women in lower socio-economic groups (Waterson and Murray-Lyon, 1989; Graham, 1993; Ockene, 1993). Also, young women aged 18 to 24 was shown to have higher ability than young men of their age to nicotine addiction (USDHHS, 2001).

The socio-demographic factors affecting smoking among women was addressed in the study first part of the questionnaire. It includes: age, marital status, number of children (if available), religion, education, working status, economical status and residency.

3.3.2 Psychosocial effect

Direct association between stress and smoking behavior among women was found (McCormick, et al, 1990). Women smoking have been addressed as way to manage and cope with stress in cumulative amount of literature (Wills and Shiffman 1985; UDHHS, 1988; Kassel, 2000; Pogun, 2001). Smoking among disadvantaged women living in poverty, isolation, care giving, are used as a mechanism for coping with stress and loneliness, which could apply to lone single women (Stewart, et al, 1996). A 1992 WHO report pointed that women smoking helps them to cope with loneliness, sadness and grief (WHO, 1992). Low income mothers appreciate smoking time as the only time spend for themselves, to overcome daily stress (Graham, 1987; Graham, 1993) , since parenthood affects the mental well being of parents (Naerde, et al, 2002), especially among low income women since poverty and low level recourses adds to stressors of child care (Umberson, ,1989; Naerde, et al,2002). Greaves(1996) suggests that, mothers may turn to smoking as anger management instead of other actions against there children .

Questions in different parts of the study questionnaire evaluated the type of stressors in ones life either direct questions like why women smoke and whether the subject is happy in the life despite everything. And, it was evaluated indirectly through questions about the socio-economical status and demographic questions

3.3.3 The new Marketing Strategies and cultural norms, believes and attitudes

During their growing up, women experience several social and physical environmental challenges that influence their attitudes believes and behavior towards smoking, differently than men (Columbia University, 2006). One of these factors that affect women smoking behavior is the cultural norms. Influential characteristics towards smoking behavior vary from community to other with unique features related to each community (Diehr, et al, 1993). Hence, any successful control program should

take into consideration the effect of social norms on individual smoking behavior (Ross and Taylor, 1998).

For many years, social and cultural norms in our Arabic world, have been protective shield against women smoking, but new studies showed that women in poor countries along with Arab countries, are the new target for tobacco marketing strategies (News and Names, 2005; Milenkovich, 2004), that have an impact to persuading women to smoke. A report of the surgeon general "Dr. Koplan" in 2001;draw the attention to dangers of current advertising strategies that underestimate the health risks of women smoking while picturing women smokers as symbol of liberated socially accepted women (USDHHS, 2001). The new marketing strategies target particular brands and messages to women (Amos 1992; Amos and Bostock 1992a; USDHHS 1994). Among our area, the effect of new marketing strategy could be disastrous, since the expansion of the tobacco industry target the social taboos against smoking by women to open up a new market, they help to change cultural believes on women smoking and to overcome the health and economical consequences of smoking (Curry, et al, 1993), Carpenter, et al ,2005;WHO 2005), which weakens our cultural taboos against women smoking.

Although traditions and cultural habits sometimes doomed to die, scientists believe that one of the cultural factors that might protect Muslim women from smoking is the strong Muslim Religious influence (Islam and Johnson, 2003).

 Part of the substantial differences in smoking prevalence was by educational attainment, which is clear in literature review, and could be related to the effect of the new marketing strategies that shield smoking health consequences, although Whilkinson (1996), argues that increased prevalence of smoking doesn't reflect ignorance of the health risks of smoking, more like it, it reflects chronic stress in high levels (Lazenbatt, 2002).

The second part of the questionnaire was guided by the above facts. It includes questions about personal attitudes and believes about women smoking. It contains questions about the health consequences of smoking to the smoker, the surrounding people (negative smokers) and to the infants. Also contains question about the Islamic opinion towards smoking, and why women smoke, why don't they stop, weather they can stop easily or not.

3.3.4 Smoking and surrounding environment

Since smoking behavior is socially mediated, smoking habits of surrounding people from beers, parents and husband" if available" have direct effect on ones smoking behavior(Jackson, et al , 1997; Harakeh, et al, 2004).

The third part of the questionnaire was about the smoking habit of surrounding people from family and friends. It contains questions about, who smokes in the family, parents, husband if available, and children if available and how many as a whole are smokers in the family.

3.4 Women's Smoking history

The age of smoking initiation among women could be a predictor for smoking intensity (Visalpattanasin, Wearne, and Armstrong, 1987). World Bank data shows that 70% of women smokers who try smoking at younger age become addicted (World Bank, 1999). The intensity of smoking has proven to be associated with low SES (Künst, 1997; Son, 1997), and would be reflected by increase in risk of certain diseases to the women smokers and there offsprings (Tager, et al, 1995; Bolego, 1996), and would also lower quitting rates (Jarvis, 1997). New study related faster addiction among young women than men to genetic differences (Al-Quds newspaper, 2008).

The fourth part of the questionnaire is about the smoking behavior of the subject. The subject answered questions that decide their smoking status, weather regular smoker or occasional smokers ever or never smokers, smoking intensity, types preferred, age at first smoke, number smoked daily or monthly, availability of smoking at home, why do they smoke, why do women stop smoking, behavior of subject if offered a smoke from friend.

3.5 Smokers and tobacco

Due to several reasons and influences of marketing (WHO 2005)and lack of the complete awareness of health risks(Clark, et al, 1996), women apparently prefer certain types of cigarettes that contain low tar and nicotine (WHO, 1992).The use of water pipe among women is increasing with social acceptance, while its health risks are not studied completely yet (Maziak, et al, 2004), and with the danger of a myth among some women that its health risks are less than cigarette smoking (Loffredo,2006).

Bans on smoking at home and restrictions, may have greater influence on family health status, regarding secend hand smoking according to a first-study-of-its kind study published in the May/June 2007 issue of The Journal of Urban Health (JUH), a bi-monthly publication of The New York Academy of Medicine, and of course restrictions have prooven to encourrage women not to smoke (Fichtenberg and Stanton ,2002).

The fifth part was directed specifically to women smokers to re-access and underline certain questions as smokers health, weather the subjects tried quitting or not, how many times and for how long, and why can't the smoker woman quit. It also contains questions about types of tobacco preferred and access and availability to tobacco by women. The last question was about the preferable place for smoking.

3.6 Models of smoking behavior

Smoking behavior as a risky health behavior can be changed if well understood by proper interventions. The study aim is to build a model that contains all the factors that determine women smoking behavior in our region, depending on our general knowledge from the literature review and analysis, and then with proper analysis of the determinants, predict suitable intervention.

Most of the public health models and theories can be applied to smoking behavior as they are general models. Similarities between the study with one of the models of change in health behavior" the PRECEDE Model" is observed. PRECEDE is shortening for "Predisposing, Reinforcing and Enabling factors, and Causes in Educational Diagnosis and Evaluation" (Green, 1984).With the help of Green's model along with needed changes, we developed our model of smoking determinants .The aim is that any national strategy to control smoking behavior among Palestinian women should start first with identifying then analyzing the behavioral and the environmental factors involved, then to maximize the impact of any future intervention the most effective ones (determinants) should be identified and given priority as a focus of intervention. Then, others are considered. According to Green, factors that affect health behavior as smoking are divided to three major groups Predisposing, Reinforcing, and enabling factors (Green, 1992; Gold et al., 1997; Green and Kreuter, 1999).

Predisposing factors are those antecedents to behavior that either increase or decrease motivation for the behavior. They include attitudes and knowledge of the adverse health affects of tobacco use, social norms and cultural or personal beliefs, values, perceptions including demographic factors and social structure (Encyclopedia of Public Health, 2008)

Enabling factors are the antecedents to behavior that makes it easier or able to be changed. They are the skills, resources, or barriers that can help or hinder the desired behavioral changes as well as environmental factors, accessibility, availability of cigarettes at home and work. Referrals, rules of restrictions at home or work or laws are also considered enabling factors (Encyclopedia of Public Health, 2008).

 Reinforcing factors are those factors that continue to enhance reward and encourage the continuity and repetition of certain behavior.

The survey questionnaire contains specific questions about predisposing factors, such as participants' knowledge about adverse health effects of smoking to smokers, to surrounding people and to infants. It also contains questions about social norms and believes as religious and smoking, initiation and quitting believes, types and intensity of tobacco used.

The survey asked questions about the availability of cigarettes and cigarettes smoking at home, work and social events, parent's approval of women smoking, how and from where women participant had their tobacco from; to examine the impact of enabling factors on smoking behavior.
The survey included questions to examine the impact of reinforcing factors with smoking behavior, questions include smoking behavior by family members, and surrounding people, husband, children, friends, smoking in social events and family gathering

The study conceptual model grouped the determinants into five; that includes most of the studied factors in several countries in psychosocial factors literature review and found to have great influence on smoking behavior: socioeconomic factors, cultural and social believes and norms, family and beer effect, and demographic factors.
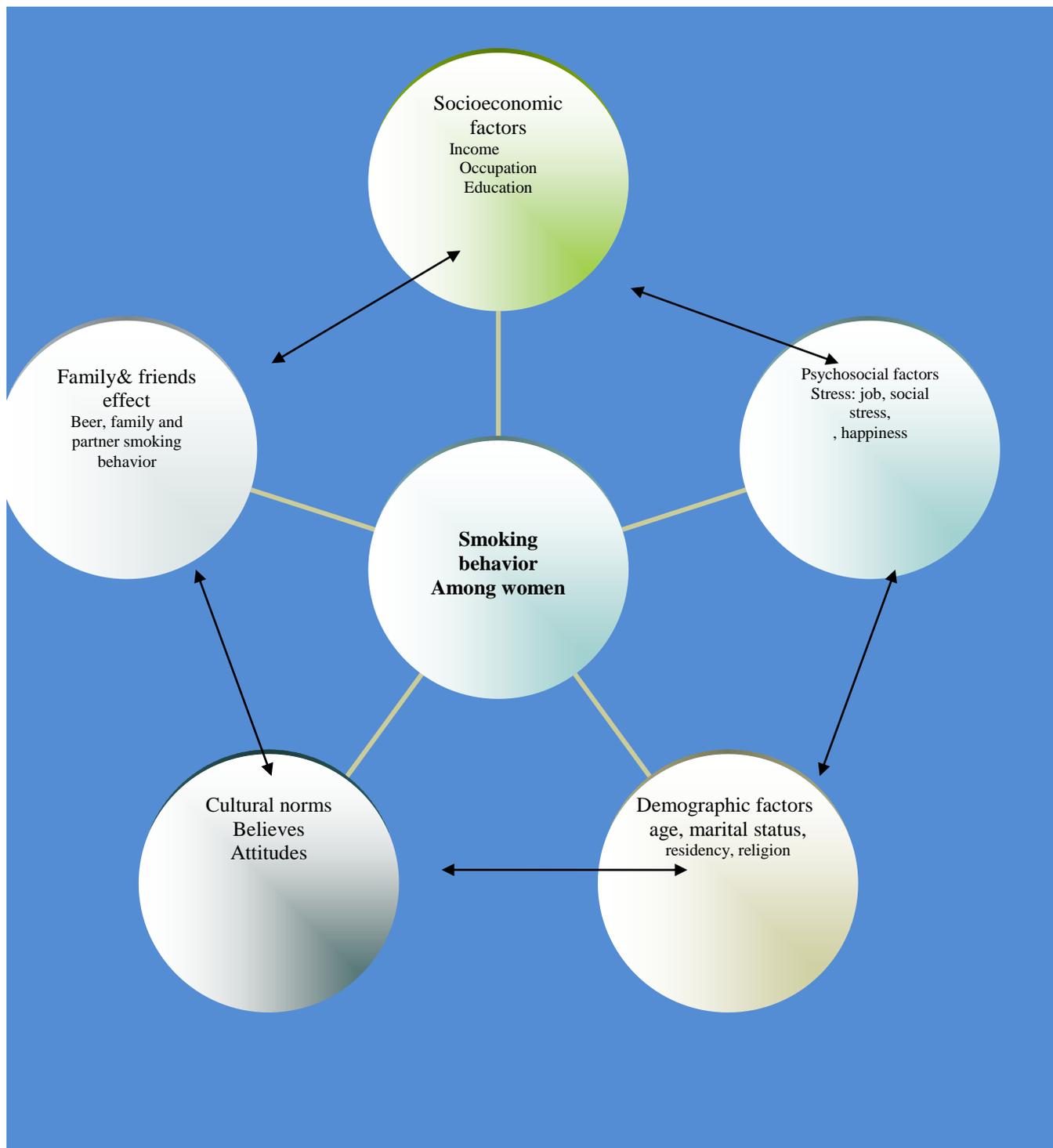
Figure 3.1: The study conceptual model

3.7 Summary

Women smoking behavior as a health behavior is influenced by several factors that determine the smoking pattern in its initiation continuation and quitting. These determinants are proven to be gender specific and culture specific." Stress" is one major determinant that explains continuous increase of smoking prevalence among women of different socioeconomic status (Lazenbatt, 2002).

Smoking determinants could be grouped and summarized in many different ways to produce a model, we choose the most prevalent determinants that literature studied and grouped them in five categories to include factors that affect the smoker external environmental and internal state.

Chapter 4: Methodology

4.1 Introduction

In this chapter, study population, study design, the questionnaire preparation, piloting, sampling, ethical consideration, and statistical analysis methods are presented.

The study questionnaire was a self administered questionnaire for women above 18 living in Jerusalem area, i.e. "Jerusalem behind the Separation Walls". Using this developed questionnaire, data collection was carried out in seven months, starting at November 2006. Data entry and data analysis was carried out using the statistical software package SPSS 12 (SPSS Inc., 2003). Only 306 out of 400 of the approached women answered the questionnaire, i.e. the response rate 76.5%. Descriptive analysis, univariate analysis and multivariate models were used to examine the strength of associations between the various study variable and covariates with smoking and smoking habits.

4.2 Study design and sample size

4.2.1   Study design

According to the study aim and objectives, a cross sectional study design for women above 18 years old residing in East Jerusalem was used.

4.2.2   Study sample and sample size determination

The sample contains working and non-working women. Researcher reaches directly to working women at their site of work at different organizations and schools. Non-working women were approached through school students. Each child at the 6th grade was given a questionnaire to be given to his family, and any female older than 18 years of age can fill up this questionnaire. Schools and organizations were selected randomly using random tables. Therefore, the study sample frame was:

1   Mothers or adult relative of schoolchildren in the 6th grade in each selected school
2   Teachers working at the same selected schools
3   Women working in a selected non-governmental organizations/institutes
4   Women working in a selected hospitals and primary health care centers.

With an estimate prevalence rate of smoking among women of 10% and a 95%confidance interval with a 5% significant level, and considering the sampling procedure and study objectives to analyze certain smoking determinants among women in Jerusalem-behind Separation Walls- procedure; a sample size of 400 women was assumed satisfactory.

4.3 Study area and settings

East Jerusalem" behind the Separation Walls", defined by PCBS as area "J1", it includes those parts of Jerusalem, which were annexed forcefully by Israel following its occupation of the West Bank in 1967 (PCBS, 2007).

The study settings were: randomly selected schools, governmental schools (Palestinian and Israeli schools) two each, two private schools and two UNRWA schools. A second setting was two randomly selected hospitals and a third setting was four randomly selected non-governmental organizations. All settings sited in "East Jerusalem behind Separation Walls".

4.4 Study tool and questionnaire preparation

A self administered questionnaire was used. This questionnaire was built on using previously validated questionnaires (MONICA, 1992; CDC, 2001; Maziak, et al, 2004).

The questionnaire was sent to 3 experts in the field of tobacco research, who approved the questionnaire suitability, clarity in its terminology, and examine if its content reflects the study objectives (see appendix 4.1).

The questionnaire contained closed and open questions that were divided into:

1-Demographic and social structure information that includes age, religion, marital status, working status, type of work, place of residence, level of education, personal and family income

2- Questions that examined women's attitudes and knowledge about health effects of smoking, believes and social norms, beliefs about smoking effect on smoker health, infant health and the health of the surrounding people; questions about media role in knowledge, reasons of initiation and reasons in quitting , beliefs about quitting and believes about smoking being "accepted by religion" or not.

3- Questions about the smoking behavior of surrounding people, partner, family member's sons or husband and the presence of other smokers in the family..

4- Questions about participant smoking history: the participants who answered that they smoked or tried smoking even once; if they are currently smokers; how often in a day or week or month and if were once smokers (cigarettes or water-pipe, availability and acceptance of women smoking at home, and accessibility to tobacco

4.5 Study piloting

The study questionnaire was tested before use among 15 women, members of the target population, in the health clinic of Shu'fat camp, UNRWA related clinic, to maximize item clarity and relevance and was modified accordingly.

4.6   Data collection and Sampling

4.6.1 Data collection

Data collection for women working in the selected institute/organizations was carried out between -November 2007 to January 2008-. However, data collection from the schools, were only possible between -Marchs till May 2008-.

4.6.2 Sampling

A   -Schools' selection:

In this study, school lists were divided by the supervised bodies into four separate lists; i.e. governmental schools list of the schools supervised by the Palestinian government and those under the supervision of the Israeli Municipality of Jerusalem (as one list), private schools list and list of schools supervised by the UNRWA. Two schools were selected randomly from each list; i.e. 8 schools were included in the sample. All students at the 6th grade were selected, in addition to the teachers of the same schools. The selection of 6th grade students decision was done on the assumption that children of this age always deliver to their families any closed envelop given to them by their schools, in particular if instructed by their teachers.[4]

B -Organizations selection

The list of all non-governmental organizations located in East Jerusalem was obtained from welfare organization. According to the sample size determination, sample selection contains also 6 non-governmental organizations and was selected randomly to be included in the sample using the random tables.[5]

C   -Medical organizations selection

Two of the major Palestinian hospitals out of 5 hospitals located in East-Jerusalem "behind The Separation Wall", were selected randomly to be included in the

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[4] Al Nizameieh School in Beit hanina, Shu'afat elementary school for boys in Shu'fat, Jerusalem elementary UNRWA school for girls in Silwan, Al Aisaweieh school for girls in Al Aisawieh, Shu'fat preparatory school for boys (UNRWA) in Shu'afat camp, Al Ibraheemieh school in Siwwaneh (Al Tour), Al Frair secondary school for boys in the old city, and Dar el Aytam al islamieh preparatory school for boys in the Old City .

[5] The selected organizations were Aum Tooba, Shu'afat camp women institution, Young Muslim Women, and Jabal el Mukabber institution.

sample using the random tables.[6]

Table 4.1 sample distribution among study population

	Total number	Distributed questionnaires	Received questionnaires	Response rate (%)
Schools	8	310	231	74.5
NGOs	6	37	35	94.6
Health care institutions	2	53	40	75.5
	16	400	306	76.5

Schools were selected randomly using random tables. From each list, we selected 2 schools using the random tables. Therefore, 8 schools were included in the survey. To select the organizations, four local Palestinian institutions located in East Jerusalem were selected randomly from a list obtained from the Welfare organization data base using random table numbers.

The researcher visited first the principal of each school with cover letter from the school of public health in Jerusalem-University , signed and approved by Ministry of Education in Ram-Allah (see appendix 4.2), to conduct the study at the needed schools. The researcher discussed with the school principal the class that was chosen, the dates of distributing and gathering of the questionnaire. The questionnaire was then distributed with brief explanation to the students about the research from the teacher with the presence of the researcher, and then collected by the teacher on a fixed date. In these schools, all children at the 6th grade were given a questionnaire to be given to their mothers through the class responsible and they were given instructions to bring it back to the class responsible, so any women living in their households and over 18 years should fill in the questionnaire after signing the explanatory letter for approval to participate in the study (see appendix 4.3). The schools teachers were approached and were asked to fill in the questionnaire that will be collected in the second occasion the research will visit the school.

The researcher agreed on fixed dates to distribute and collect the data, and was committed to these dates always. In some cases the schools were not as committed, for being busy in mid-term exams, so the researcher would come back on another fixed date. The researcher makes sure to collect the data by himself for accuracy considerations.

As for the institutions, the researcher visited each institution with a cover letter from the university handed to the manager, and after verbal approval, the questionnaires were distributed to all eligible women found after brief explanation from the researcher, then collection of the questionnaires at certain approved time, that might not exceeds few hours. The research visited these institutions in a fixed

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[6] The selected health Organizations were Augusta Victoria hospital and Al Maqasid Hospital.

agreed upon day. At all institutions included in the study, the questionnaire was filled under the observation of the researcher, which took about 15-20 minutes to fill and gathered by the researcher, except for the two hospitals, where the head nurse at each section had the responsibility of distributing and gathering of the questionnaire and retained to researcher at an agreed upon day.

4.7 Inclusion Exclusion criteria

Questionnaires included in the study apply to 4 major conditions at time of study. Conditions are gender (female), age (> 18 years old), and residency (Jerusalem behind Separation Walls), along with being signed for approval to participate willingly in the study. Only questionnaires from women who singed the consent form, and above age 18 years old living inside east Jerusalem –behind the Separation Walls- at the time of study, were included in the analysis.

After finishing the field work and data analysis and cleaning, 4 out of 310 questionnaires were excluded since they were for women younger than 18 years of age.

4.8 Ethical considerations

The study was approved by the gradate studies committee at Al-Quds university after having its acceptance for research at the Faculty of public Health research committee.

An official letters were sent to school's principals and head of the selected institutes/organizations inviting them to participate in this study. Moreover, the Ministry of Higher Education approved the study and accepted carrying it out in the schools under this supervision. This procedure delayed starting the study at the schools at the same time we started at the selected institutes/organizations

Before the questionnaire was distributed, the students were given information about the purpose of the survey. A sealed envelop containing the questionnaire was given to each student were asked to deliver it to their mothers. A cover letter was attached to each questionnaire and it had all the instructions for filling the questionnaire. Only a woman above age 18 years was asked to fill in the questionnaire.

A written consent was attached to each questionnaire explaining the aims and objectives of the study, importance and confidentiality. This was signed by each woman who agreed to be part of the study (see Appendix 4.3). Informed consent was attached also with the questionnaire, and the participating women were asked to sign in this form before answering the study questionnaire.

4.9 Obstacles and limitations of the study

1- Al-Quds University approval for the study was not accepted for the schools, under the supervision of the Palestinian Ministry of education, so the principals asked us to get the approval from the Palestinian Ministry of higher education. This long process delayed the study at these schools for

almost 6 months.

2- Due to incomplete cooperation of the school teachers, the study researcher was forced to distribute questionnaire to only to one class of the several 6th grade classes in some schools, although most of schools had more than one 6th grade class, which decreases the sample size.

4.10 Methods of data analysis

All data was entered, cleaned and analyzed using "statistical package for social sciences SPSS version 12 (SPSS Inc., 2003). The data entry and data cleaning were done under the researcher supervision.

Smoking in this study was defined as three major outcomes. First: frequency of smoking status that includes ever smoker (smoker even once at lifetime at time of survey) and never smoker. Second major outcome is history of smoking that includes current smoker (current smoker is sum of daily smoker and occasionally smoker), and the third is current smoking status at time of survey that contain current smokers, and non smoker (non smoker= never smoker + used to smoke).

Smoking intensity was categorized into three, those who smoked less than 10 a week considered light smokers, those who smokes 10-60 cigarette a week were considered moderate smokers, and those who smoked more than 60 a week were considered heavy smokers.

Data analysis was divided into three parts:

Part 1: The descriptive frequencies for the study population.

Part 2: The univariate analysis in which the association between major outcome of the study (smoking status at time of survey) and several determinants; demographic variables, economical variables and attitudes & norms and some cultural determinants was examined, using Chi-Square test of a p-value <.05 for the significance of association

Part 3: The multivariate regression models were tested for two smoking outcomes; i.e. smoking frequency (ever smoking) and current smoking status. The variables that were included in the model were: marital status, parental approval on women smoking, number of smokers in the family, age, education, and residency. Variables added for non-single women are: working and smoking status of husband, and number of children.

4.11 Summary

As shown above, this study tool the questionnaire was developed using validated questionnaires. Sample frame could not real be specific but we did our best to get a possible secondly study base. Data analysis was done in three stages, descriptive analysis, univarite analysis and multi-variate analysis. Analysis will be presented in chapter 5 of this thesis.

Chapter 5: Results

5.1 Introduction

Results of this study are divided into four parts. The first is the study descriptive analysis. The second part presents the univariate analysis that associates the various determinants with smoking status, smoking history and frequency using chi-square. In the third part, a special descriptive analysis for multi- response related variables, and in the last part, multivariate regression models will be presented.

5.2 Study descriptive analysis

5.2.1   Demographic characteristics

Of study populations 96.4% were Muslims. In Figure 5.1, 39.2% of the study population is in the age group (32-38) years of age. Most of the participants were married women (75.8%) and 17.6% were singles (see Figure 5.2), and 33.7% of them were working women (Figure 5.3). Figure 5.4 shows that 20% had education less than 9 years of education and about 50% had more than 12 years of education.
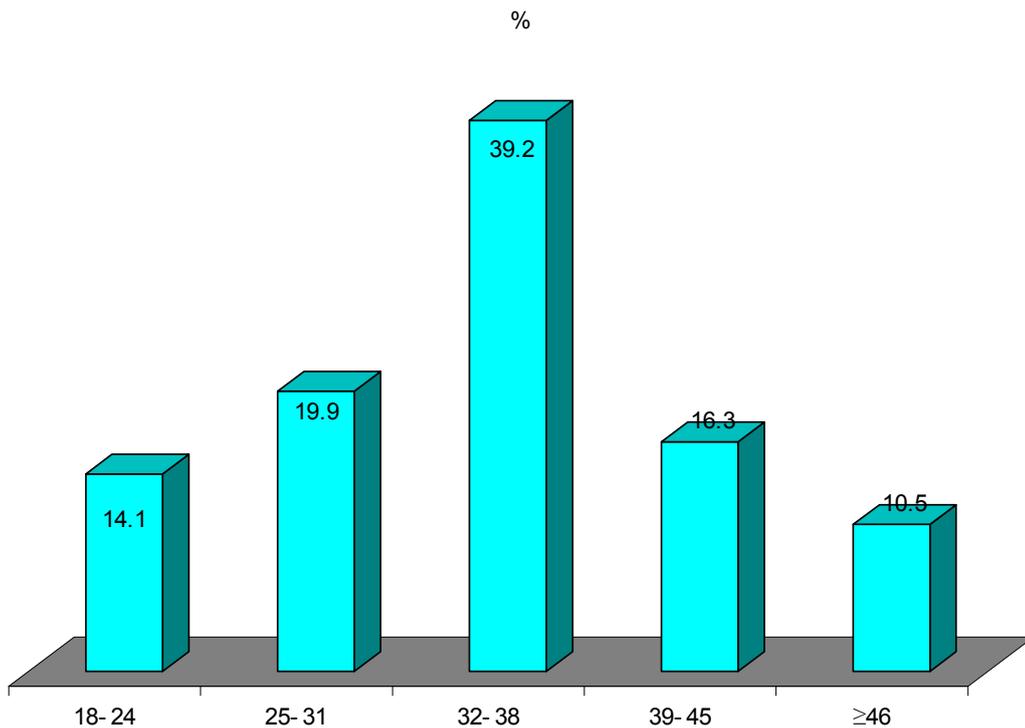
Figure 5.1: Distribution of study population by age groups
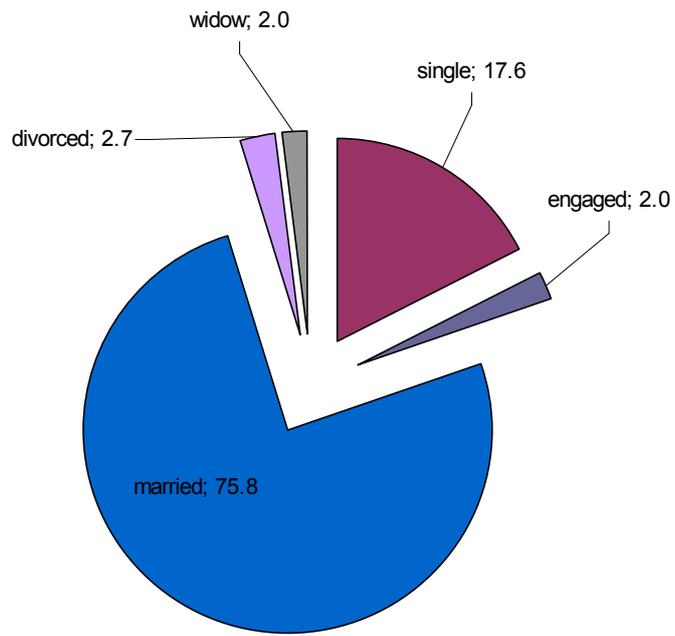
Figure 5.2: Distribution of study population by marital status
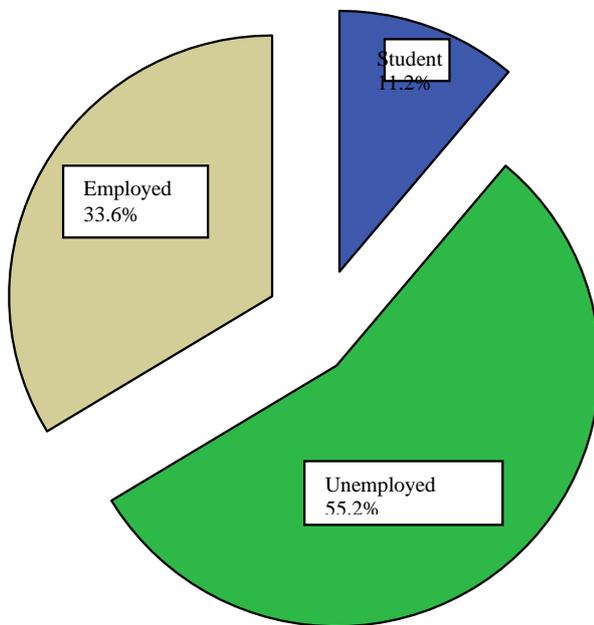
Figure 5.3: distribution of the study population by working status
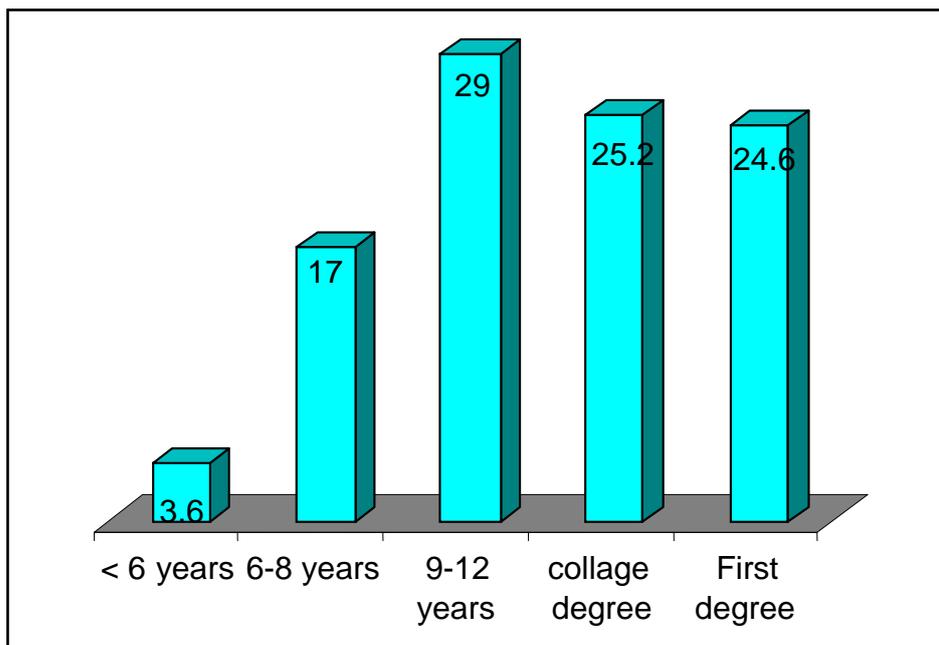
Figure 5.4: distribution of study population by educational level

5.2.2 Smoking status

Of the participated women, 45.1% (138 women) reported that they tried to smoke at least once in their life (See figure 5.5). Out of the 138 women who tried smoking at least once, only 111 remember the age at first smoke. Most of the women (60.4%, n=138) tried smoking after becoming 21 years old or more (Figure 5.6). Cigarettes was the first type of smoking used by 83.5%, the rest tried Nargilah (Figure 5.7). Husband (30.4%) and friends (29.6%) were the main source of first smoke (Figure 5.8).
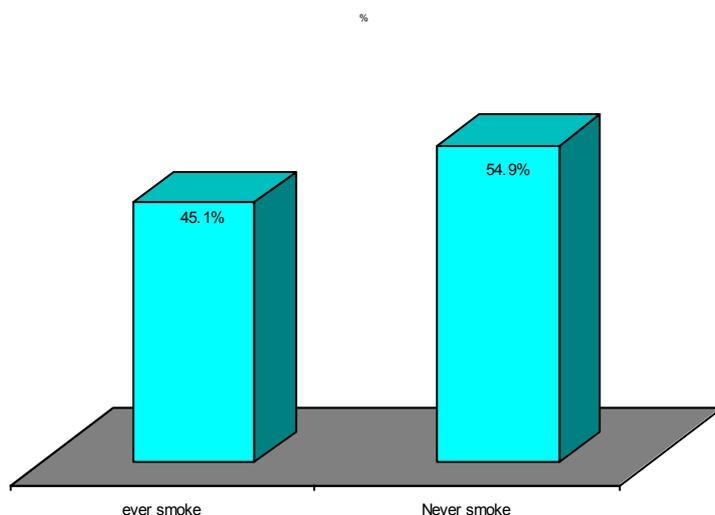
Figure 5.5: Distribution of smoking status among study population
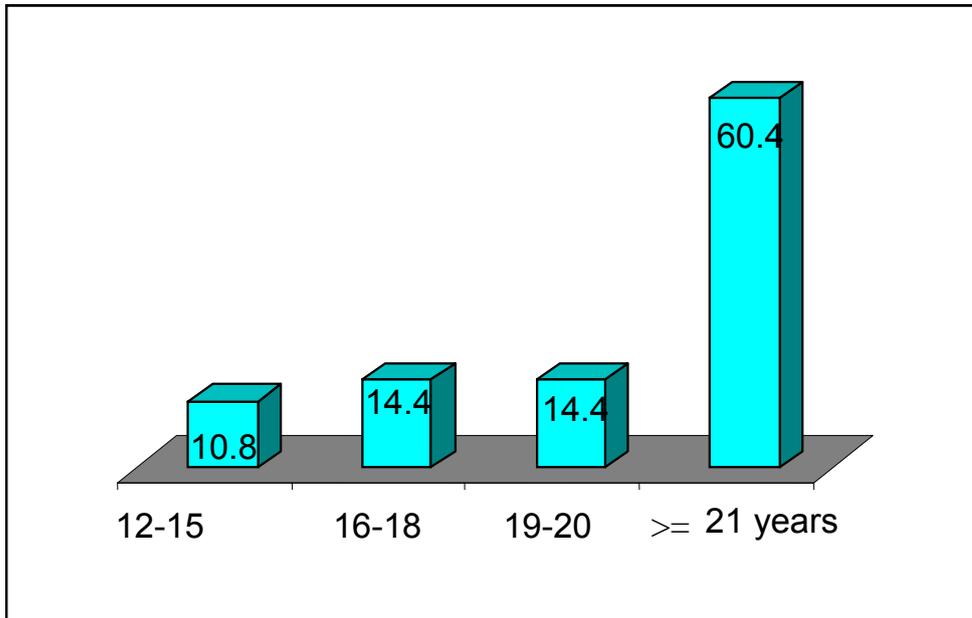
Figure 5.6: Distribution of ever smoker population by the age at first smoking trial
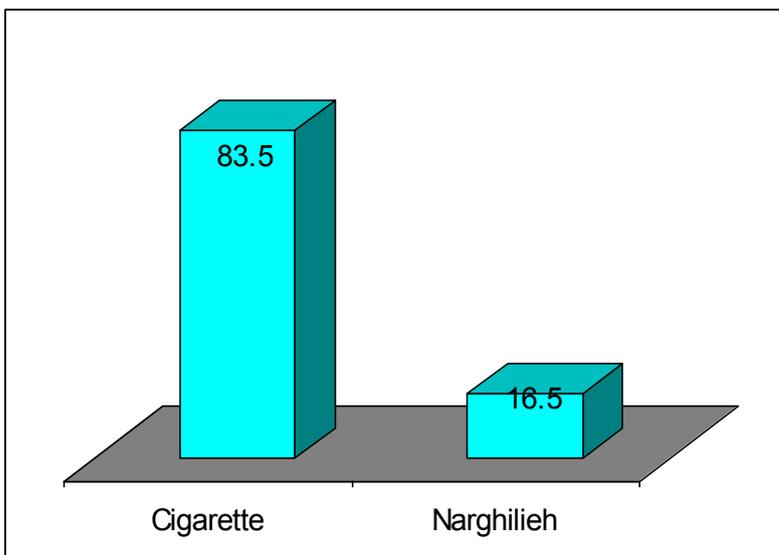
Figure 5.7: percentage of type of tobacco smoked first time
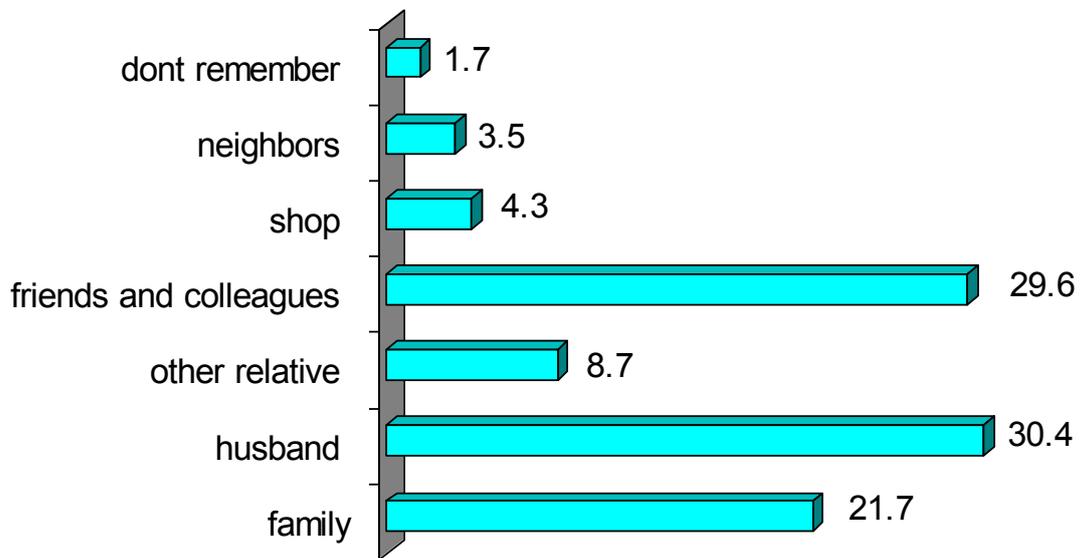
Figure 5.8: Distribution of source of first smoke among smoking women

5.3 Bivariate analysis

In this part we represent in tables results for association among selected variables with smoking outcomes (frequency, history and current smoking status).

5.3.1: Association between different variables with smoking frequency outcome

As shown in table 5.1, a statistical significant relationship ($p < 0.05$) was found between smoking frequency and marital status ($p < 0.03$) and residency ($p < 0.01$). Also, in table 5.2 significant association found between working status ($p < 0.04$), parental smoking ($p < 0.02$) and number of smokers in the family ($p < 0.002$).

Of women living in the city, 51.4% tried smoking at least once, while camp residents had the lowest smoking trials among their group with 6.5% (Table 5.1).

Table5.1: Association between smoking frequency and demographic variables.

demographic variables	ever smoker N= 138* n (%)	never smoker N=168* n (%)	p-value
Age:			
18-24	13 (9.4)	30 (17.9)	0.12
25-31	27 (19.6)	34 (20.2)	
32-38	54 (39.1)	66 (39.3)	
39-45	29 (21)	21 (12.5)	
≥46	15 (10.9)	17 (10.1)	
Marital status			
Single or engaged	19(13.8)	41(24.4)	0.03
Married	110(79.7)	122(72.6)	
Other(widow, divorced, separated)	9(6.5)	5(3.0)	
Residency			
City	71 (51.4)	79 (47)	0.01
Village or town	58 (42)	58 (34.5)	
Refugee Camp	9(6.5)	31(18.5)	

* Missing answers are less than 0.5%. Statistically significant association (p<.05)

Ever smoking was highest among unemployed women, more than 50% of them tried smoking at least once, while in family income (p<.05), 67.5% women family income =<5000 shekel have tried smoking at least once. Number of smokers in the family (p<.002) was highest among families with one child (44.8), and lowest among families with >2 child (8.8%) (See table: 5.2).

Table5.2: Association between smoking frequency and social/economical variables.

Social and economic variables	ever smoker N= 138*	never smoker N=168*	p-value
Family income			
<3000	29 (25.4)	45 (34.1)	0.05
>3000-≤5000	48 (42.1)	57 (43.2)	
>5000-≤7000	18 (15.8)	22 (16.7)	
>7000	19(16.7)	8(6.1)	
Education			
Up to 6th grade	6 (4.3)	5 (3)	0.89
7th to 9th	25 (18.1)	27 (16.1)	
10th to 12th	38 (27.5)	52 (31)	
Collage	34(24.6)	44(26.2)	
First degree	31(22.5)	33(19.6)	
more than 16 years	4(2.9)	7(4.2)	
Working status			
Student	9 (6.5)	25 (14.9)	0.04
unemployed women	76 (55.1)	93 (55.4)	
employed	53 (38.4)	50 (29.8)	
do parents smoke?			
both smoke	12 (8.7)	3 (1.8)	0.002
mom	5 (3.6)	2 (1.2)	
dad	68 (49.3)	71 (42.3)	
no	53 (38.4)	92 (54.8)	
no of smokers in family	125	152	0.001
0	34 (27.2)	64 (42.1)	
1	56 (44.8)	73 (48)	
2	24 (19.2)	10 (6.6)	
>2	11 (8.8)	5 (3.3)	

* Missing answers are less than 0.5%. Statistically significant association (p<.05)

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In table 5.3, health beliefs does not seem to have any statistical significance over smoking frequency

Table 5.3: Association between health beliefs and smoking frequency.

Health-belief variables	ever smoker N (%) n=138	never smoker N (%) n=168	p-value
passive smoking is bad			0.56
never bad	2 (1.4)	3 (1.8)	
i think not	6 (4.3)	3 (1.8)	
i think bad	34 (24.6)	38 (22.6)	
sure is bad	96 (69.6)	124 (73.8)	
pregnant smoking bad for infant?			
i think bad	30 (21.7)	34 (20.2)	0.43
sure is bad	108 (78.3)	134 (79.8)	
Smoking is bad to health?			0.43
i think not	1 (.7)	1 (.6)	
i think bad	25 (18.1)	27 (16.1)	
i don't know	2 (1.4)	0	
sure is bad	110 (79.7)	140 (43.3)	
heard about smoking hazard recently?			
yes	118 (85.5)	130 (77.4)	0.19
no	15 (10.9)	30 (17.9)	
do not remember	5 (3.6)	8 (4.8)	

Statistically significant association (p<.05)

In table 5.4, several believe factors have significant association with smoking frequency including parent's approval on smoking (p<0.00), taking a smoke from a friend (p<0.00) and believes on quitting smoking whenever a smoker choose to (p<0.00). Believes about smoking being "accepted by religion" or not seemed almost have significant association with smoking frequency (p<0.05).71.4% of ever smokers believe that smoker can quit if wanted to.

Table 5.4: Association between several beliefs and smoking frequency

believes and norms variables	ever smoker N (%) n=138	never smoker N (%) n=168	p-value
is smoking "accepted by religion?"			0.05
Yes	21 (15.2)	11 (6.5)	
no	72 (52.2)	95 (56.5)	
I don't know	45 (32.6)	62 (36.9)	
parents agree on your smoking			0.00
Yes	57 (41.3)	15 (8.9)	
no	69 (50.0)	124 (73.8)	
I don't know	12 (8.7)	29 (17.3)	
do you accept smoke offered by a friend			0.00
i surely refuse it	43 (31.2)	128 (76.2)	
i refuse it	64 (46.4)	37 (22)	
i don't know	13 (9.4)	3 (1.8)	
i take it	16 (11.6)	0	
i surely take it	2 (1.4)	0	
Smoker can quit whenever Chooses to?			0.00
don't know, never smoked	3 (2.2)	32 (19)	
don't know if can	11 (8)	12 (7.1)	
she can not	11 (8)	9 (5.4)	
can if wanted to	99 (71.7)	114 (67.9)	
she can	7 (5.1)	1 (.6)	
I already stopped	7 (5.1)	0	
Are you happy?			0.12
very happy	16 (11.9)	29 (18.6)	
happy	68 (50.7)	89 (57.1)	
miserable	10 (7.5)	5 (3.2)	
very miserable	4 (3)	4 (2.6)	
I don't know	36 (26.9)	29 (18.6)	

Statistically significant association (p<.05)

5.3.2: Association between different variables with smoking history (Current smoker, used to smoke and never smoke) outcome

Current smokers constitute 16.1% of study population n=306, and women who quit smoking (used to smoke) constitute 24.6%, and those who never smoke constitute 59.3%, of the same population. Association between smoking histories with several factors was studied.

As shown in table 5.5, a statistically significant association found between residency (p<.03) marital status (p<0.05) with smoking history. Highest quitting rate (used to smoke) was among married women (77.3%) and lowest (4%) among widowed, divorced and separated women (others).

Table 5.5: association between demographic variables and smoking history

	Current smoker n=49* N (%)	Used to smoke n=75* N (%)	Never smoke n=181* N (%)	p-value
Age:				
18-24	3 (6.1)	12 (16)	28 (15.5)	0.61
25-31	11 (22.4)	15 (20)	34 (18.8)	
32-38	17 (34.7)	28 (37.3)	75 (41.4)	
39-45	12 (24.5)	11 (14.7)	27 (14.9)	
≥46	6 (12.2)	9 (12)	17 (14.4)	
Marital status				0.05
single or engaged	6(12.2)	14(18.7)	39(21.5)	
married	37(75.5)	58(77.3)	137(75.7)	
others(widow, divorced, separated	6(12.2)	3(4.0)	5(2.8)	
Residency				.03
City	27 (55.1)	37 (49.3)	86 (47.5)	
Village or town	20 (40.8)	33 (44)	62 (34.3)	
Camp	2 (4.1)	5 (6.7)	33 (18.2)	

* Missing answers are less than 0.5%. Statistically significant association (p<.05)

Among social/economical variables, parental smoke (p<.004), and number of smokers in the family (p<0.0), showed statistically significant association (p<.05) with smoking history. Highest quitting rate among social/economical variables was among unemployed women and lowest was among low education level (< 6th grade) p<.0, n=75.Dad smoking seemed to have the highest effect on women current smoking (49%, n=49) and women used to smoke (46.7%, n=75). Unemployed women (52%) and women with family income =<3000 shekel have the highest quitting rate in their groups (Table5.6).

Table 5.6: association between social/economical variables and smoking history

Social/economical variables	Current smoker n=49*	Used to smoke n=75*	Never smoke n=181*	p-value
	N (%)	N (%)	N (%)	
Parents smoke?				.004
both smoke	5 (10.2)	6 (8)	4 (2.2)	
mother smoke	4 (8.2)	1 (1.3)	2 (1.1)	
father smoke	24 (49)	35 (46.7)	80 (44.2)	
No they don't	16 (32.7)	33 (44)	95 (52.5)	
smokers in family				.00
0	7 (15.9)	23 (34.3)	67 (40.6)	
1	14 (31.8)	32 (47.8)	83 (50.3)	
2	17 (38.6)	7 (10.4)	10 (6.1)	
>2	6 (13.6)	5 (7.5)	5 (30	
Family income				.15
<3000	14 (35)	11 (18)	49 (33.8)	
>3000-≤5000	12 (30)	31 (50.8)	62 (42.8)	
>5000-≤7000	7 (17.5)	11 (18)	22 (15.2)	
>7000	7 (17.5)	8 (13.1)	12 (8.3)	
Education				.06
Up to 6th grade	6 (12.2)	0	5 (2.8)	
7th to 9th	8 (16.3)	13 (17.6)	31 (17.1)	
10th to 12th	12 (24.5)	20 (27)	58 (32)	
Collage	10 (20.4)	21 (28.4)	45 (24.9)	
First degree	11 (22.4)	19 (25.7)	34 (18.8)	
more	2 (4.1)	1 (1.4)	8 (4.4)	
Working status				.47
Student	2 (4.1)	10 (13.3)	22 (12.2)	
unemployed women	28 (57.1)	39 (52)	102 (56.4)	
Employed women	19 (38.8)	26 (34.7)	57 (31.5)	

* Missing answers are less than 0.5%.Statistically significant association (p<.05)

In table 5.7, believes about passive smoking hazards (p<.001), and pregnant woman smoking hazard to infant (p<.04), seem to have significant association (p<.05) with smoking history.

Table 5.7: Association between health believe variables and smoking history

health believes variables	Current smoke N=49*	Used to smoke N=75*	Never smoke N=181*	p-value
Passive smoking bad to health				0.001
Never bad	2 (4.1)	0	3 (1.7)	
I think not	6 (12.2)	1 (1.3)	2 (1.1)	
I think bad	13 (26.5)	20 (26.7)	39 (21.5)	
Sure is bad	28 (57.1)	54 (72)	137 (75.7)	
Pregnant smoking bad to infant?	49	75	181	0.04
Never bad	0	0	0	
I think not	0	0	0	
I think bad	17 (43.7)	13 (17.3)	34 (18.8)	
Sure is bad	32 (65.3)	62 (82.7)	147 (81.2)	
Smoking is bad to smoker health?	49	75	181	0.16
I think not	1 (2)	0	1 (.6)	
I think bad	13 (26.5)	11 (14.7)	28 (15.5)	
I don't know	1 (2)	1 (1.3)	0	
Sure is bad	34 (69.4)	63 (84)	152 (84)	
heard about smoking hazards	49	75	181	0.45
yes	44 (89.8)	61 (81.3)	143 (79)	
no	3 (6.1)	11 (14.7)	31 (17.1)	
do not remember	2 (4.1)	3 (4)	7 (3.9)	

* Missing answers are less than 0.5%. Statistically significant association (p<.05)

In table 5.8, several variables are statistically significant with smoking history including parental agree on smoking (p<.00), quitting believes (p<.0) and accepting a smoke from a friend (p<.0).

Being happy in general have significant association (p<.05) with smoking history (table 5.8), while no significant association (p<.12) with smoking frequency in (Table 5.4) above was observed.

5.8: association between attitudes believes & norms variables and smoking history.

Attitudes, believes& norms variables	Current smok N=49*	Used to smoke N=75*	Never smoke N=181*	p-value
smoking accepted by religion"?				0.10
yes	9 (18.4)	10 (13.3)	13 (7.2)	
no	25 (51)	35 (46.7)	107 (59.1)	
don't know	15 (30.6)	30 (40)	61 (33.7)	
Parents agree to you smoke?				0.00
yes	32 (65.3)	19 (25.3)	21 (11.6)	
no	14 (28.6)	49 (25.3)	130 (71.8)	
don't know	3 (6.1)	7 (9.3)	30 (16.6)	
Do you accept an o to smoke from friend?				0.00
I surely refuse it	10 (20.4)	27 (36)	134 (74)	
I refuse it	20 (40.8)	37 (49.3)	24 (44.3)	
I don't know	6 (12.2)	6 (8)	3 (1.7)	
I take it	11 (22.4)	5 (6.7)	0	
Surely I take	2 (4.1)	0	0	
smoker can quit whenever choose				0.00
Don't know never smoked	0	0	35 (19.3)	
Don't know if he ca	5 (10.2)	6 (8)	12 (6.6)	
He can not	5 (10.2)	7 (9.3)	8 (4.4)	
Can if wanted to	35 (71.4)	54 (72)	123 (68)	
He can	3 (6.1)	2 (2.7)	3 (1.7)	
I already stopped	1 (2)	6 (8)	0	
are you happy?				0.02
very happy	6 (12.8)	6(8.3)	33(19.3)	
happy	17(36.2)	44(61.1)	96(56.1)	
miserable	5(10.6)	3(4.2)	7(4.1)	
very miserable	3(6.4)	1(1.4)	4(2.3)	
don't know	16(34.0)	18(25.0)	31(18.1)	

*Missing answers are less than 0.5%. Statistically significant association (p<.05)

5.3.3: Association between different variables with current smoking status outcome

Current smokers constitute 16.1%0 of study population .When we test for significant association between current smokers (n=49) against non smokers (used to smoke& never smoked), n=256, marital status (p<0.01), while no significant association was found with place of resident (p<.12), as shown in (Table 5.9).

Table5.9: Association between demographic variables and current smoking status.

demographic variables	current smoker N=49*	non-smoker N=256*	p-value
	n (%)	n (%)	
Age:			0.22
18-24	3 (6.1)	40 (15.6)	
25-31	11 (22.4)	49 (19.1)	
32-38	17 (34.7)	103 (40.2)	
39-45	12 (24.5)	38 (14.8)	
$\geq$46	6 (12.2)	26 (10.2)	
marital status			0.01
single/ engaged	6(12.2)	53(20.7)	
married	37(75.5)	195(76.2)	
others(widow, divorced, separated)	6(12.2)	8(3.1)	
residency			0.12
city	27 (55.1)	123 (48)	
village or town	20 (40.8)	95 (37.1)	
camp	2 (4.1)	38 (14.8)	

Statistically significant association (p<.05)

Social/economical variables that have significant association with current smoking status are: parents smoke (p<0.000), number of smokers in the family (p<0.00) and educational level (p<0.02). Highest current smokers are unemployed women (57.1%) and lowest shared among women with highest educational status and students (4.1% each). (See table 5.10).

Table5.10: association between social/economical variables and current smoking status

Social/economical variables	current smoker n=49*	non-smoker n=256*	p-value
Do parents smoke?			0.00
both smoke	5 (10.2)	10 (3.9)	
mom	4 (8.2)	3 (1.2)	
dad	24 (49.0)	115 (44.9)	
no	16 (32.7)	128 (50.0)	
smokers in family			0.00
0	7 (15.9)	90 (38.8)	
1	14 (31.8)	115 (49.6)	
2	17 (38.6)	17 (7.3)	
>2	6 (13.6)	10 (4.3)	
family income			0.25
<3000	14 (35)	60 (39.1)	
>3000-≤5000	12 (30)	93 (45.1)	
>5000-≤7000	7 (17.5)	33 (16)	
>7000	7 (17.5)	20 (9.7)	
education			0.02
Up to 6th grade	6 (12.2)	5 (2)	
7th to 9th	8 (16.3)	44 (17.3)	
10th to 12th	12 (24.5)	78 (30.6)	
collage	10 (20.4)	66 (25.9)	
first degree	11 (22.4)	53 (20.8)	
more	2 (4.1)	9 (3.5)	
working status			0.21
Student	2 (4.1)	32 (12.5)	
unemployed women	28 (57.1)	141 (55.1)	
Employed women	19 (38.8)	83 (32.4)	

Statistically significant association (p<.05)

Health believes that are statistically significant (p<0.05) with smoking status at time of survey are: effects of passive smoking (p<.00), hazards of pregnant smoking on infant health (p<.01). Highest current smokers are women who said they heard about smoking hazards recently (89.8%), and lowest among women who think that smoking is never bad to health (see Table 5.11).

Table 5.11: Association between health believes variables and current smoking status at time of survey

Health believe variables	Current smokers N=49* n (%)	Non smokers N=256* n (%)	p-value
Is passive smoking health hazard?			0.00
never bad on health	2 (4.1)	3 (1.2)	
i think not	6(12.2)	3(1.2)	
i think bad	13(26.5)	59(23.0)	
sure is bad	28(57.1)	191(74.6)	
Smoking in pregnancy bad to infant health?			0.01
I think bad	17(34.7)	47(18.4)	
Sure is bad	32(65.3)	209(81.6)	
is smoking bad to smoker health?			0.06
i think not	1(2.0)	1(.4)	
i think bad	13(26.5)	39(15.2)	
I don't know	1(2.0)	1(.4)	
sure is bad	34(69.4)	215(84.0)	
heard about smoking hazards recently			0.18
yes	44 (89.8)	204 (79.7)	
no	3 (6.1)	42 (16.4)	
do not remember	2 (4.1)	10 (3.9)	

Statistically significant association (p<.05)

Table 5.12: Association between beliefs & norms variables with current smoking status at time of survey

Attitudes, believes& norms variables	current smokers N=49*	non smokers N=256*	p-value
	n (%)	n (%)	
is smoking "accepted by religion"?			0.14
yes	9(18.4)	23(9.0)	
no	25(51.0)	142(55.5)	
don't know	15(30.6)	91(35.5)	
Parents agree to you smoke?			0.00
yes	32(65.3)	40(15.6)	
no	14(28.6)	179(69.9)	
don't know	3(6.1)	37(14.5)	
accept offer to smoke from friend?			0.00
i surely refuse it	10(20.4)	161(62.9)	
i refuse it	20(40.8)	81(31.6)	
i don't know	6(12.2)	9(3.5)	
i take it	11(22.4)	5(2.0)	
surely I take	2(4.1)	0	
smoker can quit whenever he choose			0.05
don't know never smoked	0.0	35 (13.7)	
don't know if he can	5 (10.2)	18 (7.0)	
he can not	5 (10.2)	15 (5.9)	
can if wanted to	35 (71.4)	177 (69.1)	
he can	3 (6.1)	5 (2.0)	
i already stopped	1 (2)	6 (2.3)	
Are you happy?			0.01
very happy	6 (12.8)	39 (16.0)	
happy	17 (36.2)	140 (57.6)	
miserable	5 (10.6)	10 (4.1)	
very miserable	3 (6.4)	5 (2.1)	
don't know	16 (34.0)	49 (20.2)	

Statistically significant association (p<.05)

Current smoking status at time of study survey seemed to have significant association (p<.05) with all the following factors: parents agrees (p<.00), acceptance of friends offer to smoke (p<.00) and being happy (p<.01). Believes on quitting have p< .05.highest current smokers were among women who believe that a smoker can quit if wanted to (71.4 %), and lowest were among very miserable women (6.4%). (See table 5.12).

5.3.4: special factors related to working women

For working women n=103, only 94 told their income. No significant association was found between any factor of woman work (income, work type, working hours and continuing work at home and smoking outcomes. (See Appendix 5.1, Appendix 5.2, appendix 5.3).

5.3.5: Associations among smoking outcomes and several factors related to non-single women (married, widowed, divorced).

Table 5.13: association between multi-variables with smoking frequency- by marital status-

demographic variables	ever smoker N=118* n (%)	never smoked N=128* n (%)	p-value
No. of children			0.04
<3	24 (20.3)	15 (11.7)	
3-5	72 (61)	74 (57.8)	
>5	22 (18.6)	39 (30.5)	
Have son/s smoker			0.07
yes	15 (13)	8 (6.5)	
no	100 (87)	116 (93.5)	
Do husband smoke?	113	129	0.02
yes	72 (63.7)	62 (84.1)	
no	41 (36.3)	67 (51.9)	
Husband work?	108	127	0.43
Yes	92 (85.2)	106 (83.5)	
No	16 (14.8)	21 (16.5)	

Statistically significant association (p<.05)

In table 5.13 above, significant association (p<.05) was found with husband smoking status (p<.02), highest among women with smoker husband, and number of children a woman have (p<.04), highest among women with3-5 children.

Table5.14: Association between multi-variables with current smoking status -by marital status-

demographic variables	Current smoker N=42*	Non smoker N=204*	p-value
No. of children			0.3
<3	10 (23.8)	29 (14.2)	
3-5	23 (54.8)	123 (60.3)	
>5	9 (21.4)	52 (25.5)	
Have son/s smoker	42	198	0.36
yes	5(12.2)	18(9.1)	
no	36(87.8)	180(90.9)	
Do husband smoke?			0.01
yes	28 (73.7)	106 (52)	
no	10 (26.3)	98 (48)	
Husband work?			0.10
Yes	28 (75.7)	170 (85.9)	
No	9 (24.3)	28 (14.1)	

*Statistically significant association (p<.05)

In table 5.14 above, significant association (p<.05) was found only among women whose husband do smoke (p<.01).

In table (5.15), we can see significant association (p<.05) I smoking history found only with number of children (p<.03) and husband smoking (p<.04), where highest percentage of women used to smoke was among women whom their husband do work (91.1%).

Table 5.15: association between multi-variables with smoking history -by marital status-

	Current smoker n=42* N (%)	Used to smoke n=61* N (%)	Never smoker n=143* N (%)	p-value
No. of children				0.03
<3	10(23.8)	13(21.3)	16(11.2)	
3-5	23(54.8)	40(65.6)	33(83.0)	
>5	9(21.4)	8(13.1)	44(30.8)	
Have son/s smoker				0.13
yes	5(12.2)	9(15.3)	9(6.5)	
no	36(87.8)	50(84.7)	130(93.5)	
Do husband smoke?	38	60	144	0.04
yes	28(73.7)	33(55.0)	73(50.7)	
no	10(26.3)	27(45.0)	71(49.3)	
Do husband work?	37	56	142	0.13
Yes	28(75.7)	51(91.1)	119(83.8)	
No	9(24.3)	5(8.9)	23(16.2)	

*Statistically significant association (p<.05)

5.3.6: Association between factors related to quitting trials among current smoker population

57.4% out of current smokers (n=49) tried to quit, 60.4 of current smokers were never advised by their medical Dr. to stop smoking, although 53.1% of them were asked whether they smoke or not by their medical Dr. 40% are heavy smokers, and 36.7% were light smokers.

Table (5.16): Association between quitting trial among current smokers and several factors

	Tried to quit N=27*	Didn't try N=20*	p-value
	n (%)	n (%)	p-value
Family income e			.01
<3000	4(19.0)	8(47.1)	
>3000-≤5000	10(47.6)	1(5.9)	
>5000-≤7000	2(9.5)	6(35.3)	
>7000	5(23.8)	2(11.8)	
Smoking intensity /week			.06
<10 (light)	5(21.7)	4(33.3)	
10-60(moderate)	11(47.8)	1(8.3)	
>60(heavy)	7(30.4)	7(58.3)	
Advised by M.D to quit?			.14
yes, always	6(23.1)	5(25.0)	
yes, sometimes	7(26.9)	1(5.0)	
no	13(50.0)	14(70.0)	

*Statistically significant association (p<.05)

In Table (5.16), family income (p<0.01) was statistically significant factor with quitting smoking (p<0.05) with highest smoking trials among women with family income average 3000-5000 shekels, while smoking intensity was almost significant with p<0.06.

5.4: Descriptive analysis related to multi-variable responses

81% of sample n=306 new about smoking health hazards through the last year. When asked about "from where they got the information's?", 51.2% got it from T.V, 22.1 % from cigarette box, 11% from hospitals or clinics, 7.4% from radio, 1.2% from newspaper, and 7.1% from other places.

When asked about reason (reasons) they believe a woman have to smoke,39.9% of the cases (n=306) believe that its for sharing the family/ the friends a smoke, while 36.6% think that because smoking is on "fashion" and the least responses were given to believes about the good taste and smell of tobacco (see table 5.17).

Table (5.17): frequency table for reasons to smoke among study population (multi-variable responses question)

Why women smoke	N(%) n=306	% responses
I don't know	121 (39.9)	19.4
relaxing	81 (26.7)	13
fashion	111 (36.6)	17.8
sharing	121 (39.9)	19.4
Help weight loss	50 (16.5)	8.0
Have extra time	41 (13.5)	6.6
Hard to loose habit	82 (27.1)	13.1
Taste & smell	13 (4.3)	2.1
other	5 (1.7)	.6
Total	625(206.3)	100

In table 5.18, when sample population were asked of why they think women should not smoke, around 70% choose the choice of health benefit, while the second choice was for money saving.

Table (5.18): frequency table for believes of why women stop smoking (multi-variable responses question)

Why women stop smoking	N(%) n=306	% responses
I don't know	52 (17.2)	8
To keep own health	205 (67.7)	31.5
For infant's health	203 (67)	31.2
To save money	97 (32)	14.9
Family don't like it	77 (25.4)	11.8
Friends don't like it	9 (3)	1.4
Its against religion beliefs	2 (0.7)	0.3
Other reasons	6	0.9
Total responses	651(214.9)	100

Table 5.19: Frequency table of where smoker population usually smoke (multi-variable responses question)

Where you smoke usually	N(%) n=49	% responses
At home	38 (82.6)	51.4
At school/university	2 (4.3)	2.7
At work	10 (21.7)	13.5
At social occasions	11 (23.9)	14.9
At public places (restaurants…)	10 (21.7)	13.5
Every where	3 (6.5)	4.0
total	74(160.9)	100

57.4% of smoker population (n=49) tried to stop smoking at least once before. When they were asked about places they usually smoke in, most responses (51.4%) prefer "home" as the first choice, and the least choice was given to school/university (see table 5.19).

Table 5.20: frequency table for prevent quitting reasons among smoker population(multi-variable responses question)

What prevent you quitting	N(%) n=49	% responses
Used to habit	16 (39.0)	23.2
Boredom	18 (43.9)	26.1
People around	12 (29.3)	17.4
I love smoking	8 (19.5)	11.6
Withdrawal symptoms	6 (14.6)	8.7
pressure	9 (22.0)	13
Total responses	69(168.3)	100

57.4% of smoker population (n=49) tried to stop smoking at least once before. When they were asked about reasons that prevent their quitting smoking, highest responses (26.1%) were "because we are bored and smoking entertains me" the lowest responses were believes about hard withdrawal symptoms of quitting (see table 5.20).

5.5: Multivariate analysis (smoking models)

To investigate most important determinants for smoking and smoking behavior among women, we developed tow multivariate regression models. First one is a model for ever smoking (smoking frequency) outcome, and the second for current smoking outcome.

5.5.1: Smoking frequency (ever smoking) regression model

Variables statistically significant in univirate analysis with p-value< 0.05 were entered in the binary logistic regression model. Some of these variables were not added due to the fact

that number of participants was less than 10, so Pearson calculations cannot be accurate. For accuracy of calculation we summed few variables. For education, we summed the first tow groups into one group of education level $> 9^{th}$ grade, and the last tow groups of educational levels (first degree, more than degree) into one group of first degree and more groups, to be able to add it. For the number of smokers in the family we summed it into three groups of > 2 smokers in the family, 2 smokers and < 2 smokers in the family (see tables 5.1, 5.2).

As seen in table 5.21, not all variables stayed statistically significant, statistically significant variables with p-value$>$0.05 in the model are: number of smokers in the family, parental agrees on smoking age and residency. Women from families with two smokers showed an increase risk for smoking frequency (OR, 2.9; 95% CI, 0.5-.17; p$<$0.05).Women who's parents agree on smoking also showed higher risk for smoking frequency (OR, 15.1; 95% CI, 3.9-58; p$<$0.05), with 15 fold more than women whose parents do not agree on smoking. Age was positively associated with smoking frequency. Women of age group (18-24) were most likely associated with smoking frequency (OR, 16.6; 95% CI, 12-136; p=0.05). Women who lived in the village or town showed higher risk for smoking frequency than city residents (OR, 5.05; 95% CI, 1.7-15.3; p=0.05).

Table (5.21): multivariate logistic regression analysis model for variables associated with smoking frequency adjusted for age, residency and education.

variables	AOR	95% CI	p-value
Marital status			0.29
Single or engaged	.107	.005-2.4	
Married	.256	.01-4.5	
divorced, widowed or separated	1	-	
Working status			0.09
student	.099	.01-.8	
unemployed women	.786	.27-2.3	
Employed women	1	-	
Is smoking accepted in religion?			0.28
yes	2.718	.75-9.8	
no	1.484	.71-3.1	
I don't know	1	-	
Number of smokers in family			**0.009**
<2	.50	.12-2.2	
2	2.9	0.5-17	
>2	1	-	
Parents agree on you smoke?			**0.0**
yes	**15.1**	**3.9-58**	
no	1.8	0.6-5.2	
I don't know	1	-	
family income			0.16
<3000	**.244**	**.06-1**	
>3000-≤5000	.433	.11-1.7	
>5000-≤7000	.746	.18-3	
>7000	1	-	
Age:			**0.05**
18-24	**16.6**	**2-136**	
25-31	**3.9**	**1.1-15**	
32-38	1.8	.54-6	
39-45	3.2	.8-13	
≥46	1	-	
Education			0.27
Up to 9th grade	4.10	1.0-16	
10th to 12th	2.45	.7-8.7	
Collage	1.92	.6-6	
First degree or more	1	-	
Residency			**0.01**
city	2.68	0.9-7.9	
Village or town	**5.05**	**1.7-15.3**	
camp	1	-	

* Significant Adjusted odd ratios (AOR) are bolded

5.5.2: Current smoking regression model

In this regression model, only variables with significance of .05 or less were added, and with least number of 10 women at least at each group for accuracy of Pearson calculation. We had to sum certain variables. For marital status we summed single women with divorced and widowed women. For education, we summed the first two groups into one group of education level $> 9^{th}$ grade, and the last two groups of educational levels (first degree, more than degree) into one group of first degree and more groups, to be able to add it. For the number of smokers in the family we summed it into three groups of > 2 smokers in the family, 2 smokers and < 2 smokers in the family (see tables 5.9, 5.10).

Table (5.22): Multivariate logistic regression analysis model for factors associated with current smoking status, adjusted for age, educational level and residency**.**

variables	AOR	95% CI	p-value
Marital status			0.24
Single, engaged, widowed, divorced, separated	2.2	0.58-8.2	
Married	1	-	
Parents agree on smoke?			**0.0**
yes	**11.75**	**2.39-58**	
no	.85	.19-3.7	
I don't know	1	-	
Number of smokers in family			**0.0**
<2	**.23**	**.05-.97**	
2	2.45	.51-11.7	
>2	1	-	
Age:			0.25
18-24	.51	.06-4.4	
25-31	3.69	.87-15.7	
32-38	1.52	.42-5.5	
39-45	1.25	.30-5.2	
≥46	1	-	
Education			
Up to 9th grade	**3.9**	**1.1-13.5**	**0.03**
10th to 12th	1.9	.59-6.7	
Collage	.97	.26-3.6	
First degree or more	1	-	
Residency			0.23
city	2.84	.52-15.6	
Village or town	3.75	.67-20	
camp	1	-	

* Significant Adjusted odd ratios (AOR) are bolded

As seen in table 5.22, variables that were run in the model and still statistically significant with p< 0.05 were: Parents agree on women smoking, Number of smokers in the family and educational level. Women whose parents agree on smoking widowed, divorced,

separated showed 12 fold increased risk than women whose parents do not agree on smoking (OR, 11.7; 95% CI, 2.39-58; p<0.05). Women from families with less than 2 smokers showed an inverse association with current smoking outcome (OR, 0.23; 95% CI, .05-.97; p<0.05). Educational status was inversely associated with current smoking outcome, with highest risk among women with lowest level of education (OR, 3.9; 95% CI, 1.1-13.5; p<0.05).

5.5.3: Smoking regression models related to non-single women (married divorced, widowed and separated) women

In this model, variables with significant association of p<0.05 and number of participants more than 10 were added to increase accuracy of Pearson calculation

Table (5.23): Multivariate regression model of smoking frequency for factors related to married, widowed and divorced women.

variables	OR	95% CI	p-value
husband smoke?			.019
yes	1.89	1.1-3.2	
no	1	-	
Number of Childs			.035
<3	2.97	1.24-7.08	
3-5	1.93	1.02-3.65	
>5	1	-	

* Variables with significant odd ratio (OR) are bolded.

As shown in table (5.23), women with smoker husband are positively associated with smoking frequency compared to women who have a non smoker husband (OR, 1.9; 95% CI, 1.1-3.2, p <0.05), and women with less than three child are more likely to be associated with smoking frequency (OR, 2.97; 95% CI, 1.24-7.08, p <0.05), than women with 3-5 Childs (OR, 1.93; 95% CI, 1.02-3.65, p <0.05)
As seen in table (5.24), women with smoker husband were significantly positively associated with current smoker status compared to women who have a non smoker husband (OR, 2.59; 95% CI, 1.2-5.6, p <0.05)

Table (5.24): Multivariate regression model of current smoker status, for factors related to married, widowed and divorced women.

	OR	95% CI	p-value
Do husband smoke?			.016
yes	2.59	1.2-5.6	
no	1	-	

* Variables with significant odd ratio (OR) are bolded.

5.6 Summary

In the first part of this chapter we did descriptive analysis for the study population by age, marital status, working status, and educational level, and then we added some descriptive analysis for the smoker population in the study population, age at first smoke, type smoked and source of first smoke. In the second part of the chapter we analyzed several smoking factors using chi-square association. The third part of analysis was multivariate logistic regression models for tow outcomes i.e. frequency and current smoking status. All results were presented in tables and figurers.

Main results represented in this chapter will be discussed in relation with other study results will also be presented in the next chapter (chapter 6: discussion).

Chapter 6: Discussion and conclusion

6.1: Introduction

This study is the first of its kind done in East Jerusalem in Palestine that aims to explore the determinants of smoking among women. The goal of this research was to provide the policy makers with data to help in setting proper intervention policies for controlling smoking among women and decrease exposure among other community individuals

6.2: Main results

Nearly half of the study population has tried smoking at least once, 60% of the sample population tried their first smoke after 20 years, main source for their first smoke was husband friend and family respectively, most of them tried cigarettes as their first smoke.

16.1% of the study population (n=306) are current smokers, 2.6% of them smoke Nargheileh regularly and 11.6% smoke cigarette regularly. More than half current smokers smoke at home, and only 4.1% smoke at all/any places.

Residency, parental approving on women smoking behavior and number of smokers in the family, were found to have significant association with smoking frequency model. Highest OR for smoking frequency were among age group (18-24). Compared to city residents, town and village residents have higher OR for smoking frequency (OR=5.05, 95%CI (1.7-15.3)). On the other hand, parental approval on women smoking behavior was positively and significantly associated with smoking frequency among women. While less than two smokers in the family has significant lower odds with smoking frequency among women than having two or more smoker in the family (OR= 0.5, 95% CI (.12-2.2)). Married women have higher smoking frequency odds than single women.

For smoking currency model, results showed significant association with education, number of smokers in the family and parental approval on women smoking behavior. Educational level was inversely associated with smoking currency among women. Highest odds of smoking currency was found among women with lowest educational levels (OR=3.9, 95%CI (1.1-13.5)). Number of smokers in the family was negatively associated with smoking currency. Women with < 2 smokers in their family have lower odds for smoking currency (OR=0.23, 95%CI (0.05-0.97)). While parental approval on women smoking behavior was positively associated with women smoking currency (OR=11.75, 95%CI (2.39-58).

Among non single women (married, divorced, separated and widowed), having a smoker partner, and having three and more children, both were positively associated with smoking frequency model. While for smoking currency model, having smoker partner was the only significant factor associated positively with women smoking currency (OR=2.59, 95%CI (1.2-5.6)).

Risk factors that found to have significant association in univariate analysis with all smoking outcomes (smoking frequency, smoking history and current smoking status)

are marital status, parental smoking and number of smokers in the family.

Women work nature, working hours and women income, have no significant association with smoking behavior at all its stages, so is partner work and work related factors.

Health concerns and recent knowledge about smoking hazards have no significant association with smoking frequency, and no significant association found between believes about smoking hazards to women own health against smoking history. On the other hand, significant association between smoking currency and concerns over infant's-health was found, but not with mother's own health.

Believes about smoking being accepted by religion or not, have no significant association with being a current smoker, but is a significant risk factor for ever smoker.

Believes about the ability of a smoker to quit whenever choose to and believes about accepting a friend invitation for a smoke, were high risk factors for smoking behavior, associated with smoking frequency, smoking history and current smoking status. Sharing friends and smoking being "fashionable, are the most frequent believes for being current smokers.

Of the smoker 57.4% tried quitting at least once before. Most frequent reason that prevents them from quitting was related to believe that smoking is a cure for boredom. Women with lower family income were negatively associated with quitting-smoking trials.

In the coming sections, the results of this study will be discussed in details.

6.3: Significant determinants for women smoking behavior

According to the study model, study results for determinants of smoking behavior among women was grouped into: demographic factors, socio-economical factors, family and friends factors, attitudes, norms and believes factors and stress related factors. Results were as followed

6.3.1: Demographic determinants

6.3.1.1: Marital status

In this study, marital status appeared to be one strong predictor of smoking behavior among women. The variable showed significant association with smoking behavior at all stages in univirate analysis even after adjusted for age, residency and education. Married women have higher odds for smoking frequency (OR, 0.256; 95% CI, .01-4.5) compared to single women. In general, married women and women who lost their partner showed higher risks with smoking outcomes than single women. On the other hand, women with no partner (single, divorced, widowed and separated) have higher odds of smoking currency than married women with partner (OR, 2.2; 95% CI, 0.58-8.2).
The study results concerning marital status and smoking behavior among women are

consistent with other study results from Kuwait which showed more positive attitudes and higher odds of smoking among separated, divorced or widowed women (OR , 4.9; 95% CI , 2.0–11.8) compared to married women (Memon, et al, 2000). Higher odds (double) of smoking currency in Kuwaiti study, compared to this study results, might be related to the fact that we include single women in the analysis due to low number of current single-women smokers in the study.

As for non-single women with no partner (separated, divorced or widowed women), the study results were consistence with other western study results, which found that lone motherhood increased the odds of smoking (Jeanne, et al, 2005, Graham, et al, 2006, Leinsalu, Tekkel, and Kunst, 2007). Probable explanation might be related to the stress of raising a child alone with no partner's help.

Concerning the study results where married women with less than three children have higher odds for smoking frequency (OR, 2.97; 95% CI, 1.24-7.08) , the study results agree with other study results done in Syria, where women smoking was more likely found among women that came from smaller households (Maziak; Asfar; and Mzayek, 2001). This result agrees also with other study result that related smoking among women with bordome, where women with less households have extra time managed by smoking.

Probable explanation for the above results could be explained by the presence of social pressure, and higher economical pressure from raising children alone. Much research is needed to fully understand determinants for single motherhood high smoking prevalence.

6.3.1.2 Religion

Believes about smoking being 'accepted by religion' have no significant association with smoking outcomes (smoking frequency and smoking currency) among Muslim women in the study. Hence, a very low percentage of women (0.3%, n=306) think that smokers might consider quitting tobacco because it's not accepted by religion. Also, 51% of current smokers of the study believe that smoking is not accepted by religion, while only 13% of women who use to smoke, believe that smoking is not accepted by religion. Higher association between religious believes towards smoking frequency (p=0.05) than smoking currency (p=0.14) is probably because of the higher influence of smoking addiction or/and other interacting factors like younger age of smoking frequency and social influence (social status), over religious believes among ever smokers.

The study concluded that Muslim religious attitudes have no influence on women smoking behavior, hence, no significant association was found between religious believes about smoking and all smoking outcomes (p>0.05). This study result contradicts other study results done among Muslim adolescents in Netherlands (Islam and Johnson, 2003), which concluded that religious influence was protective against susceptibility to smoking for females (OR=0.6, 95% CI=0.4-0.8). Probable explanation is cultural differences and differences in interpretation of smoking acceptance in Islam. Other reasons that might explain the contradiction could be related to the use of different age groups in the sample.

Most study population is Muslim women, but among the small Christian study population (3.7%, N=308), Christian women have the lowest rate of quitting (0.0%) and a higher rate of ever smoker than Moslem women.

This study results agrees with other studies in Arabic world, a gender study done in Syria concluded that Christian women were more likely to be smokers than Muslim women, which agrees with study results. Another Syrian study concluded that Christian individuals in general, have more positive attitudes toward all form of smoking than Muslims (Maziak , et al,2001; Maziak, et al, 2004).

6.3.1.3 Residency

Town and village residents had significant ($p<0.05$) and highest odds of smoking frequency (OR, 5.05; 95% CI, 1.7-15.3) than city residents (OR, 2.065; 95% CI, 0.9-7.9) in smoking frequency regression model. While in current regression model, results were not significant ($P> 0.05$) but still village and town residents had higher odds for smoking currency also (OR, 3.75; 95%CI,0.67-20), while Camp residency, on the other hand, is a strong predictor for never smoker in univariate analysis.

Camp residents are known for having big households, hence this study result agrees with other study result that concluded lowest odds of smoking among women with big households (having more than 3 children). Village and town residents are well known for fewer activities, less educational status, and hence, more time for themselves with less knowledge. We conclude that this result agrees with other study result that found that women smoke because they have shortage in knowledge about health hazards, and continue smoking to beat boredom.

The study result contradicts study result from Estonia (Leinsalu, Tekkel, and Kunst, 2007), the study found higher initiation rate among women living in urban residents (OR, 0.82; 95% CI, 0.68-1.0). Also, study result contradicts several Arabic and western study results which concluded a higher initiation rate of smoking among city-resident women (Maziak; Asfar; and Mzayek, 2001; Leinsalu, Tekkel, and Kunst, 2007; Pan and Hu, 2008). Also, the study result contradicts recent study done in China and concluded that urban residence -among other factors- has no significant impact on smoking among women (Pan and Hu, 2008).

Probable explanation is the unique classification of the place of resident in Palestine, where camps are not included, as a place of resident, in any other study. Some studies used urban rural division, others use city village division.

6.3.1.4 Age

Concerning age of smoking initiation, study results showed that more than 60% of sample started smoking at a late age of more than 20 years old. Highest odds of smoking frequency were found among the smallest age group age group (18-24) in the sample (OR,16.6; 95% CI,2-36), while in smoking currency highest odd ratio was among age group 25-32, (OR,3.69; 95% CI, 0.87-15.7) and decreases with aging.

concerning late age at first trial, this study results are consistent with other study results for middle and low income countries where women smokers start smoking in

their late teens or early twenties although the initiation age of women in high income countries is getting younger (Sri, et al, 2001).

Concerning the age of smoking currency, the study result contradicts other study result done in Kuwait, where highest smoking prevalence was observed among women in the age groups (46–50 years) (OR,7.1%; 95% CI , 3.1–11.1)(Memon, et al, 2000).

One possible explanation is the fact that smoking is a recent phenomenon in Palestine-Jerusalem, hence, lower odds ratio of smoking currency among older age groups.

6.3.2 Believes attitudes and norms

6.3.2.1 Health believes

Concerning smoking frequency and health believes of women in the study, results showed no significant ($p>0.05$) association between the two variables, which probably means lack of knowledge about smoking health hazards, and the underestimation of smoking addiction among women who try their first smoke. Another study result agrees with this analysis, most women (> 71% of study sample) in this study believe that women smokers can quit whenever they choose to.

We conclude a shortage in knowledge about smoking addiction among the women-sample, since several studies found that generally, females were less successful in quitting smoking than males, and that quitting for women is very difficult (Perkins,2001; ASH news, sep 2003; Scharf and Shiffman , 2004).

On the other hand, study results found significant association ($p<0.05$) between smoking currency and believes that passive smoking is health hazard. Another significant association was found between smoking currencies and believes that pregnant –women smoking is health hazard to infants, while believes that smoking is a direct health hazard to smoker-woman has no significant association with smoking currency, which probably related lack of complete knowledge about smoking health hazard to own health. Also, women care much for infant's health rather than their own. In general, concerns over own health and infant health are the major reasons given by current smokers in the study for considering quitting smoking.

Results of the study concerning quitting for fears over health are consistent with several other study results (Hymowitz , Cummings , Hyland , Lynn , Pechacek ,and Hartwell , 1997; Barbour, Bukovic, and Ziadeh, 2006).

In general, health hazards knowledge of smoking was generally is lower among ever smoker-women and current smokers, although women care to stop smoking if and when they have the needed knowledge, especially when infant's health is questioned. Similar results from the Arab world (Egypt), USA and other European countries (Scape,2001; Youssef, Abou-Khatwa_, and Fouad, 2003; Barbour, Bukovic, and Ziadeh, 2006).

6.3.2.2 Social believes attitudes and norms

Parent's approval on women smoking was significantly associated (p<0.05) with all smoking outcomes, a social norm that appear to influence women smoking behavior at all stages.

Several study results suggested that community influence personal attitudes towards smoking. Social influence as parent's approval and social acceptance are consistence with other study results around the world (Curry, et al, 1993; Lindstro, 2004; Maziak, et al, 2004).

Among other reasons, highest response rates given by study sample for believes of why women initiate smoking, continue and do not quit smoking were given to the following believes: women start smoking to share a smoke with a friend (19.4%) and because its fashionable (17.8%); they continue smoking out of boredom (26.1%) and because of addictive habit (23.1%); while they believe women stop smoking when concerned about own health (31.5%), infant's health (31.2%), or to save money (14.9 %).

Different studies from the Arab world and the rest of the world, gave different believe reasons for women smoking and quitting. Each study result concluded certain different main believe for women smoking. Anxiety-relieving addiction", luxury of time, smell and the taste of tobacco, tobacco being fashionable, all were leading causes for women smoking in the studies. Social and cultural differences probably shape the believe system of women smoking behavior and create that difference (Graham, 1989; Kandela, 2000; Perkins, Levine, and Marcus, 2000; Perkins, 2001; Perkins et al., 2001; Perkins, Jacobs, Sanders, and Caggiula, 2002; Ward, et al, 2006; Donzé, et al, 2007)

More than 51% of current smoker women in the sample feel most comfortable to smoke only at home, while only 4% feel free to smoke every where. Probable reasons might be that social norms are still against women smoking in public, also, encouragement and availability of smoking at home.

 This study results agree with many study results which concluded that culturally, in our Middle Eastern societies, there is still strong taboos against women smoking in public (WHO, 1997; Nuwayhid, Yamout, Azar, and Kambris, 1998; Slama, 1998; Shafagoj, 2002; Shihadeh, 2003).

In this study, 16.5% of the smoker population believes that women smoke to loose weight among other reasons. On the other hand, fears of gaining weight upon quitting smoking were not mentioned as one major determinant for non-quitting among current smoker population in the study.

Concerning the study result that women believe smoking help to loose weight, the study result agrees with other study results that concluded women believe that smoking helps to control weight (USDHHS 1980; Klesges, Meyers, Klesges, and LaVasque, 1989).

Concerning women fears to gain weight if quitting smoking, the study result contradicts other study results that correlate quitting- smoking failure to weight gaining concerns (Osler, et al, 1999; Katz et al, 2003; Mizes,et al,1998). Cultural and social differences are clear in this determinant.

6.3.3: socio-economical determinants

6.3.3.1: Education level

Education level is a significant predictor for current smoking among women in this study. Low and medium levels of education among women were positively associated with smoking outcomes (OR=3.9; 95% CI, 1.1-13.5). Although association between smoking frequency and education was in-significant (p>0.05), higher odds of smoking frequency also were found among women with lowest educational levels (OR, 4.1; 95% CI, 1-16).

Probable explanation for significant association between smoking currency and educational level but not with smoking currency might be underestimation of smoking addiction among women who start their first smoke, regardless of their educational status.

Results of this study concerning educational level and smoking behavior among women are consistent with other study from Lebanon where smoking initiation was associated with low and medium education [OR , 2.22; 95% CI,1.22- 4.04), and continued smoking was associated with low medium education [OR, 3.77; 95% CI, 1.31- 10.8) (Chaaya et al., 2003). Also, the study result is consistent with study results from Kuwait, and some European countries where smoking rates were higher among lower educated people in most European countries for the age group 20-44 and in several countries for all age groups (Cavelaars, et al, 2000; Memon, et al, 2000).

The study result contradicts other study result from Barcelona (Spain) where no association was found between smoking and level of education among women as part of Population study for older than 15 years (Espinas et al. 1999). The two studies used different sample-age , also the study from Spain included men and women.

6.3.3.2: Income occupational status and economical factors

Women own job /income/ and working hours have no significant association with women smoking behavior at any stage in this study (p> 0.05 for all). Family income, on the other hand, as one marker of socio economical status, is statistically significant risk factor for smoking frequency (p=0.05). Women with lowest family income in this study have lower odds for smoking frequency (OR, 0.244; 95% CI, 0.06-1). Also, Quitting smoking was less likely among women with the lowest family income (p<0.050, so was smoking currency, highest among lowest family income (p< 0.05).

The study results agree with several other study results concerning economic disadvantage influences women smoking behavior positively and increase women smoking initiation and currency (Graham and Der, 1999; Mathews, 2001; Shohaimi, et al, 2003; Laaksonen et al, 2005).

Concerning women job (employment status, job strand, demands and working hours) and women smoking behavior, the study results contradict other study results, that found positive association between women daily smoking behavior and their job title (Lindstro, 2004; Laaksonen et al, 2005; Radi, et al, 2007).

Dependency of women in the study at the family income rather than their own might be possible explanation for the result inconvenience, that and the fact that only 33.6% of the sample study is working women. The economical stress could partially be a co-factor that interacts with other factors in the study, direct association is not clear, but indirect association is observed.

6.3.4: Family and partner influence

Parental smoking, partner and friend smoking behavior along with number of smokers in the family appeared as very significant (p<0.05) risk factors associated with women smoking frequency and smoking currency in this study.

Partner smoking behavior was strongly and positively associated with women smoking frequency (OR, 1.89; 95% CI 1.1-3.2) and currency (OR, 2.59; 95% CI, 1.2-5.6).

This study result is consistent with other Lebanese study result where women smoking currency was associated with a husband who smoked (OR, 5.00; 95% CI, 2.98, 8.39) (Chaaya, et al, 2003). Also, the study result agrees with Chinese study result which founds that having a smoker husband -among other factors- was significant risk factor for cigarette smoking among women (p<0.05) (Lauet et al, 2003).

On the other hand, the study results found that women with less than two smokers in the family has significant lower odds of smoking frequency than women with two or more smoker in their family (OR, 0.5; 95% CI, 0.12-2.2). The result agrees with other study results that associate women smoking behavior with social participation (Lindstro, 2004).

Also, parents smoking behavior, was found to be strong risk factor in this study, and was significantly associated with all smoking outcomes (P<0.05 for all). Research result stressed on the importance of parental smoking as determinant of women smoking behavior (Kestila, et al, 2006).

In general, perceived social context seems to be a risk factor and one positive determinant for women smoking behavior in the study

6.3.5: Psychosocial determinants (stress)

Happiness was addressed in this study as marker of psychosocial stress in general. Results showed that happiness have no significant association with smoking frequency among women in the study population (P>0.05), while happiness has significant association with smoking history and smoking currency (P<0.05)..

The study result agrees with other study results that correlate stress with smoking behavior among women in Lebanon. The study concluded that pre-pregnancy smoking was associated with increased psychiatric distress [OR = 3.11, 95% CI (1.77, 5.46)], also agrees with other studies done in several countries in the world (Schachter, et al, 1977; Niaura, et al, 2002; Chaaya, et al, 2003). Stress appeared to be one general risk factor than is not country special risk factor.

6.4 Other determinants of women smoking behavior (average daily consumption)

Average daily consumption of tobacco has been identified as predictor of smoking cessation. In this study, Light smokers report more quit attempts and has higher cessation rates than heavy smokers.

The study results agrees with other study results in the matter (Sorensenet, et al, 1992; COMMIT Research Group, 1995; Jarvis, 1997).

6.5: Conclusion

Results of this study highlighted many important determinants related to women's smoking behavior in East-Jerusalem that relate specifically to the city and call for immediate control strategy and action.

Smoking behavior appeared to be shaped by set of interacting variables. Among the socioeconomic factors, marital status found to be an important risk factor for women smoking behavior in both outcomes (smoking frequency and smoking currency). Divorce, separation and being widow was shown to be an important risk factor for smoking. However, having a smoking partner increased the risk for smoking. Therefore, we conclude that social norms, parental approval on smoking behavior, and partner's smoking behavior are the major determinants that create single/-non single women difference in smoking behavior.

Social network and acceptance is clear determinant for smoking frequency outcome. Family and friend's social influence were main determinants that affect smoking frequency among women. Increased number of smokers in the family and parent smoking behavior are another determinant that represents availability of tobacco at home and place that most study-population prefers for smoking (another study results). The ease and availability of smoking at home benefit women smoking initiation among women.

While social believes of smoking to share friends and accepting a smoke from a friend are associated significantly with smoking frequency among sample population, health believes to women own health, to infant's health and to other's health(passive smoking), all kinds of smoking health hazards-briefs, have no significant association with smoking frequency. We conclude shortage of health education among women, especially health information related to smoking addiction. Women probably start smoking with incomplete or lack of health background about smoking addiction. False believe that smokers can easily quit whenever they choose to, is another study result that highlighted the shortage in health information related to the addictive nature of smoking, and to smoking hazards in general.

While health fears doesn't appear to be significant determinant for smoking frequency or smoking history, most current smokers in the study consider 'health concerns' as first priority for quitting. The study result that agrees with other study results (Hymowitz et al., 1997). Self recognition of smoking hazards at own health and might be suitable explanation.

One important determinant for smoking currency is educational level. Women with lower educational level were found to have much higher odds for smoking currency. Women might start smoking for many different determinants, but education and awareness seem to be most powerful factor for being current smokers. Health knowledge, though not found to be significantly associated to smoking initiation among women, but is powerful restriction associated significantly to women smoking currency as other study result suggests. We conclude a shortage in recent knowledge about smoking hazard among sample population outside educational institutions.

Age appeared to be significant demographic determinant in this study. Most women start smoking at late age of 21 or more, which approves with other related studies in the area. Higher odds of smoking frequency were associated with lower age groups of 18-24, and 25-31, while highest odds of smoking currency was found among age group of 25-31. Smoking behavior might be related to several factors that start to shape women behavior at that age along with social traditions, mostly the marital status.

Residency on the other hand, is a significant determinant for smoking frequency, residents of villages and towns have higher odds of being ever smokers, while city residency is a significant risk factor for smoking history, which points for higher risks of smoking initiation behavior among village and town women than city women and might reflect the value of time use and boredom that majority of women sample expressed in another study result.

Markers of stress were limited in the study. For social stress, having children and "Happiness" were addressed in the study as markers of social stress. Happiness as a clue for least social stress has no significant influence on smoking frequency, but being unhappy was a risk factor for smoking history and current smoking status. Economical stress, on the other hand, has no direct influence on women smoking behavior in this study, but indirect one. Two study results point for the indirect influence of economical stress for the smoking behavior among women: current smoker population in the study with economical stress have the least quitting trials is the first result; believes of 32% of smoker population that economical reasons are most second reason, following concerns over health, to quit smoking.

While believes over acceptance of smoking by religion have a less influence over women smoking behavior. knowing that most of current smokers prefer smoking at home, reflect the importance of social traditions over women smoking behavior, that surpasses the rule of religion that have much less impact .

Some determinants as weight concerns, and women working status, that are significant determinants in some other studies, have no significance in this study. Reasons for that difference might be related to the fact that study sample are smaller

than some other study samples done. Another important interpretation could be the social and cultural differences, regarding smoking determinants with other studies done among different societies. The overlapping of many determinants that affects smoking behavior among women, have negatively affected the analysis of certain determinants, as the economical determinant, in the study.

Narghile smoking appeared as new merging preferred type of tobacco, after cigarettes, among study group, a new Phenomenon that need better understanding and analysis.

6.6: recommendations

The researcher suggests the following recommendations to control women smoking behavior and its related determinants, to be able to reduce smoking prevalence and related health hazards among women in Palestinian community:

1. Study results pointed for shortage of knowledge among women about smoking addiction and other smoking hazards. A need for comprehensive educational program that focus on increasing knowledge and attitudes of women towards smoking.

2. Since around 30% of study population initiates smoking at age less than 18 years old, a need for intense health programs not only at high school, but also at early adolescent is needed.

3. The significant effect of social factors at women smoking behavior- related to parental smoking and number of smokers in the family and partner smoking behavior-reflect the need for family focused health programs that might include all women health centers, and social centers.

4. the presence of a significant effect of health risks to own health calls for immediate thorough investigation for assessing and develop health programs and social myths related to smoking health risks to mother own health, not only to infant health

5. Number of children that have significant influence at women smoking behavior reflect the need of non-working women for time management techniques, a community based programs

6. The fact that women smoke to ease boredom reflect the need for special productive programs directed for non-working women to be more involved in social productive activities

7. The ease of smoking at home, and friends sharing, calls for drawing the attention for the importance of smoking bans at home, and emphasis on health consequences of smoking at home. The media could play major role in the matter.

8. Health team, family medical Dr, mother and child health centers, should be informed to stress on smoking health risks of smoking among women.

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9. A comprehensive study for determinants of Narghile smoking among Palestinian women is recommended, since the study results reveal that around 2.6% of the women smoking population smoke Narghileh.

6.7: Area of future research

A qualitative study to evaluate educational health programs of high schools, regarding smoking health hazards to women specifically.

A comprehensive study for smoking determinants among women at different cities of Palestine; which includes monitoring and follow up intervention programs.

A community base qualitative study for the attitudes and believes of Palestinian community towards women smoking behavior, and possible intervention.

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Appendix 4.1: the study questionnaire

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استبيانة دراسة

مسببات التدخين بين النساء في محافظة القدس

الاسئلة التالية معلومات ديموغرافيه، الرجاء وضع دائرة للجواب الصحيح واكمال الفراغ حين الحاجه

١) عمرك بالسنوات ....

٢) الحالة الاجتماعية :
   ١. عزباء
   ٢. خاطبة
   ٣. متزوجة, عدد الاطفال......
   ٤. مطلقة, عدد الاطفال ......
   ٥. أرملة عدد الاطفال......
   ٦. غير ذلك

٣) الديانة :-
   ١. مسلمه
   ٢. مسيحية
   ٣. غير ذلك حددي: ....

٤) هل أنت :-
   ١. طالبة
   ٢. ربة منزل
   ٣. أمرأة عاملة
   ٤. غير ذلك

٥) مستواكي التعليمي:-
   ١. مرحله ابتدائية(1-6 سنوات مدرسيه
   ٢. مرحله اعداديه(7-9 سنوات مدرسيه)
   ٣. مرحله ثانويه(10-12 سنة مدرسيه
   ٤. معهد أو كلية
   ٥. بكالوريوس
   ٦. أكثر من بكالوريوس

٦) إذا كنت إمرأة عاملة كم يبلغ <u>معدل دخلك</u> بالشيكل؟...................

</div>

٧) كم يبلغ تقريباً دخل **الأسرة الشهري** بالشيكل؟ ....

٨) اذا كنت متزوجه:
هل يعمل زوجك؟.........................

٩) اذا كنت تعملين:
ما عدد الساعات التي تعملين بها . ما هي طبيعه عملك ؟.........................

هل تستكملين عملك في البيت ؟ ....

١٠) اين تسكنين؟
١. مدينـة
٢. قرية, بلـده
٣. مخيـم

الاسئلة التالية عن ارائك الخاصة بالتدخين ، الرجاء وضع دائرة للجواب الصحيح واكمال الفراغ حين الحاجه

١. **خلال العام الماضي هل سمعت أو قرأت أو رأيت نشرة أو محاضرة حول مضار التدخين ؟**
١. نعم
٢. لا
٣. لا أذكر

٢. **خلال العام الماضي اين قرأت أو رأيت نشرة أو محاضرة حول مضار التدخين؟**
١. في التلفزيون
٢. في الراديو
٣. في العياده او المستشفى
٤. على علبة السجائر
٥. من آخرين

٣. **هل تدخين الناس من حولك يضر بصحتك؟**
١. أبداً لا يضر بصحتي
٢. أظن أنه لا يضر بصحتي
٣. أظن أنه يضر بصحتي
٤. قطعاً يضر بصحتي

٤. **هل تدخين المرأة الحامل يضر بالجنين؟**
١. أبداً لا يضر الجنين
٢. أظن أنه لا يضر الجنين
٣. أظن أنه يضر الجنين
٤. قطعاً يضر الجنين

٥. **حسب اعتقادك، هل التدخين مضر بصحة المدخن؟**
١. أبداً لا يضر بالصحة
٢. أظن أنه لا يضر بالصحة

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٣. أظن أنه يضر بالصحة

٤. قطعاً يضر بالصحة

٦. حسب اعتقادك، لماذا تدخن المرأة ؟(ليس أكثر من ثلاث إجابات)

١. لا أعرف أنا لم أدخن يوماً

٢. لأنه يهدي الاعصاب

٣. لأنه علىالموضة

٤. مشاركة الاصدقاء

٥. لأنه يضعف الشهية ويخفف الوزن

٦. طريقة لتضييع الوقت

٧. عادة يصعب تركها

٨. حباً في طعم ورائحة الدخان

٩. سبب آخر أذكريه

٧. هل يستطيع المدخن التوقف عن التدخين حين يريد ؟

١. لا أعرف، أنا لم أدخن يوماً

٢. لا أعرف ان كان يستطيع ذلك

٣. لا يستطيع

٤. يستطيع ان ارد ذلك

٥. لا يستطيع

٦. لقد توقفت فعلاً عن التدخين

٨. حسب اعتقادك، هل التدخين حلال في الدين ؟

١. نعم

٢. لا

٣. لا ادري

الاسئله التاليه حول عاده التدخين لدى المحيطين بك الرجاء وضع دائرة للجواب الصحيح واكمال الفراغ

١. هل أحد والديك مدخن ؟

١. نعم كلاهما مدخنان

٢. نعم أمي مدخنة

٣. نعم أبي مدخن

٤. لا أحد منهما مدخن

٢. اذا كنت متزوجه:

هل زوجك مدخن ؟

١. نعم

٢. لا

هل ابناؤك مدخن؟

a. نعم

b. لا

٣. كم يبلغ عدد المدخنين في أسرتك الصغيرة ؟ ....

الاسئله التاليه حول عاده التدخين لديك، الرجاء وضع دائرة للجواب الصحيح واكملي الفراغ حين الحاجه

١) هل دخنت خلال حياتك ولو مرة واحدة ؟

١. نعم

٢. لا

٢) اذا نعم،

كم كان عمرك عندما بدأت التدخين؟...........

ماذا دخنت في المره الاولى.............(سيجارة، ارجيله،غيره)؟

من اين حصلت عليها؟.................

٣) هل أنت مدخنة خلال الوقت الحالي ؟

١. نعم ، أدخن يومياً

٢. نعم ، أدخن أحياناً

٣. لا، لا أدخن حالياً

٤. لا، أنا لم ادخن ابدا

٤) إذا عرض عليك صديق تدخين أي نوع من أنواع التبغ ماذا تفعلين؟

١. أرفض بشدة

٢. أرفض

٣. لا أعلم

٤. أقبل

٥. أقبل بشدة

٥) هل تدخنين ارجيله بانتظام ؟

١. نعم

كم ارجيله في اليوم؟..... قي الاسبوع؟.........

٢. لا

٦) هل تدخنين السجائر بانتظام؟

١. نعم

كم سيجاره في اليوم؟...... قي الاسبوع؟........

٢. لا

٧) هل يسمح لك اهلك بالتدخين اذا اردت ؟

١. نعم

٢. لا

٣. لا ادري

٨) ما الأسباب التي تدفع المرأة للتوقف عن التدخين بأنواعه (ليس أكثر من ثلاث إجابات)

١. لا أعرف

٢. حفاظاً على صحة المرأة

٣. حفاظا على صحة الجنين

٤. لتوفير المال

٥. لأن العائلة والأهل لا يحبذون التدخين

٦. لأن الاصدقاء لا يحبذون التدخين

٧. اسباب اخرى حدديها..............

٩) ما هو المكان في البيت الذي يسمح التدخين به ؟

١. لا يسمح التدخين في البيت أبداً

٢. المطبخ

٣. غرفة التلفزيون

٤. الحمام

٥. غرفة النوم

٦. مكان آخر

١٠)مع الاخذ بعين الاعتبار كل الظروف المحيطه، هل تعتبرين نفسك:

١. سعيده جدا

٢. سعيده

٣. تعيسه
٤. تعيسه جدا
٥. لا ادري

اذا كنت مدخنه ضعي دائره حول الاجابه الصحيحه:

١) خلال العام الماضي هل سألك طبيبك أو أي أخصائي صحي هل أنت مدخنة؟
١. نعم
٢. لا
٣. لا أذكر

٢) خلال العام الماضي هل نصحك طبيبك أو أي أخصائي صحة بترك التدخين؟
١. نعم ،دائماً ينصحني الاطباء بترك التدخين
٢. نعم،احيانا ينصحني الاطباء بترك التدخين
٣. لا

٣) هل حاولت في الماضي التوقف عن التدخين؟
١. نعم
كم مره؟........ كم الفترة الزمنية التي استمرت فيها اخر محاوله؟.........
٢. لا

٤) الاسباب التي تمنعك من التوقف عن التدخين؟ ضعي X لجميع الاجابات الممكنة
١. العاده والادمان(خرمانه)
٢. الملل(التدخين يسليني)
٣. الناس والاصدقاء من حولي
٤. أحب التدخين كثيرا
٥. الاعراض المزعجه(التعرق،قله التركيز...)
٦. ضغط العمل
٧. اسباب اخرى اذكريها....................

٥) خلال الشهر الماضي ، كيف حصلت على سجائر أو غيرها لتدخينها ؟
١. لم أدخن خلال الشهر الماضي
٢. اشتريتها من أماكن بيع التبغ
٣. أعطيت المال لشخص آخر ليشتريها لي
٤. اعطاني اياها شخص اخر
٥. طريقة أخرى، هي.................

٦) هل تفضلين؟
١. سجائرعاديه،لانها.................
٢. سجائرخفيفه(لايتlight) ،لانها ....
٣. سجائربنكهة،لانها ....
٤. الارجيله،لانها ....
٥. السيجار،لانه ....
٦. غيرة(حددي)......... ،لانه ....

٧) أين تدخنين عادةً ؟
١. في البيت
٢. في الجامعة
٣. في العمل
٤. في المناسبات الإجتماعية

٥. في الأماكن العامة مثل المطاعم والمنتزهات
٦. في أماكن أخرى، مثل ....

اذا لم يكن لديك مانعا

الاسم الاول.............. اسم العائلة.........................
العنوان........................ ....
العنوان....................... التلفون أو البلفون: ....

شكرا لكم للمشاركه في هذا الاستبيان

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Appendix 4.2: A cover letter from the school of public health in Jerusalem-University to conduct the study at the needed schools

Appendix 4.3: The explanatory letter about the study (in Arabic), to be signed for approval.

"مسببات التدخين بين النساء في منطقة القدس"

الاخوات المشاركات في الاستبيان

اود اعلامكم ان هذاالبحث "مسببات التدخين بين النساء في منطقة القدس" يهدف الى العمل من اجل الحد من هذه الظاهره الاخذه بالانتشار،واللتي تحمل الكثير من الاثار السلبيه على المجتمع.من اجل ذلك تم تحضير استبيان يحوي اسئله خاصه بجوانب البحث.
ان جميع البيانات التي سيتم جمعها تبقى سريه ولن تستخدم الا لاغراض البحث فقط .لذا نرجو من حضرتكم قراءة الاسئله جيدا قبل الاجابه،ثم الاجابه بصدق وموضوعيه على جميع الاسئله بهدف انجاح هذا البحث العلمي.

ولكم جزيل الشكر
الباحثه: عبير صندوقه

لقد قمت بدراسة جميع التعليمات الواردة في هذا الاستبيان وعليه قررت المشاركه في هذه الدراسة، وأن وجود اسمي وتوقيعي هو دليل على قبولي للمشاركة في هذه الدراسة.

التاريخ:
الوقت:
اسم المشارك:
التوقيع:
اسم الباحث: عبير صندوقه

Appendix 5.1: Association between economical variables and smoking frequency

	Ever smoker N=53*	Never smoker N=50*	p-value
Work-factors	**n (%)**	**n (%)**	
Woman income	45	49	.86
<=2000	10 (22.2)	11 (22.4)	
>2000-<=2000	17 (37.8)	16 (32.7)	
>3000	18 (40)	22 (44.9)	
Work nature			**0.28**
employee, secretary	12(23.5)	5(10.4)	
health field	14(27.5)	15(31.3)	
teaching	24(47.1)	25(52.1)	
other	1(2.0)	3(6.3)	
Working hours			**0.86**
< 4	5(10.4)	5(10.9)	
4-8	41(85.4)	40(87.0)	
>8	2(4.2)	1(2.2)	
&work home			
yes	31(73.8)	32(72.7)	**0.55**
no	11(26.2)	12(27.3)	

Appendix 5.2: Association between economical variables and smoking history

	Current smoker n=*	Used to smoke n=*	Never smoke n=*	p-value
Work-factors				
Woman income				**0.83**
<=2000	4(26.7)	4(18.2)	13(23.2)	
>2000-<=2000	6(26.7)	9(18.2)	17(23.2)	
>3000	5(33.3)	9(40.9)	26(46.4)	
Work nature				**0.54**
employee, secretary	3(21.4)	.0%	7(28.0)	
health field	4(28.6)	1(25.0)	5(20.0)	
teaching	6(42.9)	3(75.0)	13(52.0)	
other	1(7.1)	.0%	.0%	
Working hours				**0.55**
< 4	3(20.0)	1(4.0)	6(11.3)	
4-8	12(80.0)	23(92.0)	45(84.9)	
>8	.0%	1(4.0)	2(3.8)	
&work home				**0.84**
yes	10(76.9)	16(76.2)	36(70.6)	
no	3(23.1)	5(23.8)	15(29.4)	

Appendix 5.3: Association between economical variables and current smoking status

	Current smoker	Non smoker	p-value
Work-factors	n (%)	n (%)	
Woman income			0.71
<=2000	4(26.7)	17(21.8)	
>2000-<=2000	6(40.0)	26(33.3)	
>3000	5(33.3)	35(44.9)	
Work nature			
employee, secretary			
health field			
teaching			
other			
Working hours			0.35
< 4	3(20.0)	7(9.0)	
4-8	12(80.0)	68(87.2)	
>8	0.0	3(3.8)	
&work home			0.51
yes	10(76.9)	52(72.2)	
no	3(23.1)	20(27.8)	