Public Health on Demand

Issue 1: Smoking and income

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Introduction to Public Health on Demand

Public Health on Demand (PHoD) is a new bite-size ‘must-read’ service from the UK Health Forum (UKHF).

The aim for these briefings is to provide those working in public health with a brief summary of a selected topical area covering the latest published peer-reviewed and grey literature resources. The subject topic will vary in each PHoD.

The objective of PHoD is to make public health workers aware of current hot topics and to give a flavour of the themes covered in current literature. This is not a systematic review but a selection of the latest literature.

Each issue is compiled by qualified information professionals. The search strategy can be found at the end of the document and a full bibliographic list of resources discovered can be downloaded as a text file from the Prevention, Information & Evidence Library on the UKHF website.

The UKHF hopes PHoD will serve as an introduction to the topic and support your work in this area, and look forward to receiving feedback on this new service. Please email emma.hughes[@]ukhealthforum.org.uk to suggest a topic for review to be included in a forthcoming PHoD publication or with your comments.

These references have been separated into the following themes:

- Area or community
- Disease risk
- Individual income
- Intervention success
- Low-middle income countries (LMIC)
- Other references of interest

Not all references included are open access and unfortunately the UK Health Forum is not able to provide full text papers of these.

About the UK Health Forum (UKHF)

The UKHF is both a UK forum and an international centre for the prevention of non-communicable diseases, including coronary heart disease, stroke, cancer, diabetes, chronic kidney disease and dementia through a focus on up-stream measures targeted at the four shared modifiable risk factors of poor nutrition, physical inactivity, tobacco use and alcohol misuse.

The UKHF recognises that tackling the risk factors for NCDs demands action to address the wider economic, social and environmental determinants of disease, and that doing so will have potential co-benefits for health inequalities, sustainable development, climate change and social justice.

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Introduction

Smoking prevalence is particularly high amongst deprived social groups and areas (Bhakta 2014). Although statistics show that in general the smoking rate is in decline, this rate is not seen in groups with low level education, income and occupation status (Orchard 2014). The Adult Smoking Habits survey 2015 (Orchard 2014) showed that the northern regions of England as well as Wales and Scotland had the highest levels of smoking and also had the highest levels of unemployment, lower than average income and lower levels of education. In deprived urban and rural areas of Glasgow, smoking was more common than in less deprived areas (Bond 2013). Perceived and objective neighbourhood disorder has also correlated with tobacco use (Brown 2014).

Although decreased personal income is associated with decreased odds of smoking (Blakely, van der Deen et al. 2013), young people living in deprived areas are more likely to smoke (Levin, Dundas et al. 2014) and childhood socioeconomic disadvantage influences adolescent smoking (Poonawalla, Kendzor et al. 2014).

The level of income dictates purchasing behavior, where lower income smokers choose a brand because of its low cost in China (Huang, Zheng et al. 2014). Studies show that poorer areas and communities are also more susceptible to targeted marketing from the tobacco industry and also tend to have a higher density of tobacco retailers (Rodriguez 2014) which can often account for the higher levels of smoking rates.

It is estimated that 80% of 1.3 billion people who smoke tobacco live in low-to-middle income countries (LMICs). The World Health Organization estimates that 10% of the household income of those living in LMICs is spent on tobacco products (Tobacco Atlas). Smoking in pregnancy is also more prevalent in LMICs with an estimated 2.6% of pregnant women smoking (Caleyachetty 2014).

In Turkey smoking has decreased by nearly 15% due to a 45% increase in cigarette prices as a result of a tax hike. (Kostova, Andes et al. 2014). The USA and Ukraine has had similar results with high cigarette prices (Vijayaraghavan, Messer et al. 2013) (Krasovsky 2013). Whereas in other areas of Europe, higher income people purchase cigarettes across borders where prices are lower (Nagelhout, van den Putte et al. 2014).

Studies show that those in low income areas are less likely to adhere to recommendations regarding smoking cessation and also less likely to participate in health behaviour changes, which makes them more susceptible to smoking-related diseases (Campbell 2014) (Yong, Siahpush et al. 2013). The two most common barriers to smoking cessation were perceiving it to be too difficult and not wanting to quit (Rosenthal, Carroll-Scott et al. 2013).

It is thought that those with low socioeconomic status have a low health literacy, and this is uniquely associated with poorer cessation outcomes (Stewart, Cano et al. 2014). There is evidence that precarious workers, those unemployed, those in insecure employment and homeless people are more likely to be smokers with less likelihood of quitting smoking (Jung, Oh et al. 2013) (Baggett, Lebrun-Harris et al. 2013) (Businelle, Cuate et al. 2013).

Smoking cessation interventions are not readily available and affordable in low and middle income countries, where cost-effective and culturally appropriate interventions should be introduced (Owotomo 2014). It is argued that targeted cessation services to low-SES smokers will reduce inequalities in smoking (Brown, Platt et al. 2014).
Bibliography

The bibliography divides the references into themes. Some references are repeated through the document as they fall into more than one theme.

You can download the text file of this PHoD [here](http://1.usa.gov/1PveIJy).

**Area or community**


**Objective**: The objectives are to assess the prevalence and determinants of cardiovascular disease (CVD) risk factors among the residents of Community Housing Projects in metropolitan Kuala Lumpur, Malaysia.

**Conclusion**: In Conclusion, the low-income individuals were at higher risk of developing CVDs. Prospective policies addressing preventive actions and increased awareness focusing on low-income communities are highly recommended and to consider age, gender, ethnic backgrounds, and occupation classes.


**Objective**: Susceptibility to smoking is defined as an absence of firm commitment not to smoke in the future or when offered a cigarette by best friends. Susceptibility begins in adolescence and is the first step in the transition to becoming an established smoker. Many scholars have hypothesized and studied whether psychosocial risk factors play a crucial role in preventing adolescent susceptibility to smoking or discourage susceptible adolescents from becoming established smokers. Our study examined sociodemographic and family and childhood environmental factors associated with smoking susceptibility among adolescents in a peri-urban area of Nepal.

**Conclusion**: Smoking susceptible adolescents are prevalent in the JD-HDSS, a peri-urban community of Nepal. Several family and childhood environmental factors increased susceptibility to smoking among Nepalese non-smoking adolescents. Therefore, intervention efforts need to be focused on family and childhood environmental factors with emphasis on impact of role models smoking, refusal skills in social gatherings, and discussing harmful effects of smoking with family members and during gatherings with friends.


**Objective**: People living in areas of multiple deprivation are more likely to smoke and less likely to quit smoking. This study examines the effect on smoking and intention to quit smoking for those who have experienced housing improvements (HI) in deprived areas of Glasgow, UK, and investigates whether such effects can be explained by improved mental health.
Conclusion: Providing residents in disadvantaged areas with better housing may prompt them to consider quitting smoking. However, few people actually quit, indicating that residential improvements or changes to the physical environment may not be sufficient drivers of personal behavioural change. It would make sense to link health services to housing regeneration projects to support changes in health behaviours at a time when environmental change appears to make behavioural change more likely.


Objectives: In the US, past month tobacco use is higher among young adults aged 18-25 years than among any other age group. Neighborhood disorder may be a malleable environmental determinant of tobacco use among young adults; its correlation with tobacco use is understudied. The purpose of this study is to examine whether perceived and objectively measured neighborhood factors are associated with tobacco use among young adults in Baltimore City.

Conclusion: Understanding the correlation between perceived and objective neighborhood disorder, and their independent association with tobacco use can potentially lead to environmentally based interventions aimed at reducing tobacco use among young adults who live in urban environments.


Summary: has not been seen among individuals who have the lowest levels of education, income, and occupational status. Therefore, it is crucial to build and empirically refine comprehensive conceptual models that elucidate pathways between SES and tobacco cessation. Despite the fact that we live in a new age that emphasizes the importance of genetics, it is also vital to underscore the importance of neighbourhood contextual factors that influence health behaviours and overall health. Useful conceptual models should facilitate the development and implementation of multifaceted interventions that target both individual and neighbourhood factors.


Summary: Covers the proportion who smoke cigarettes, cigarette consumption and type of cigarette smoked (packeted or hand-rolled). Includes preliminary findings from analysis of e-cigarette data. Trends and demographic breakdowns are provided.


Objective: Smokers and ex-smokers are at risk of many chronic diseases. However, never smokers and never smokers exposed to environmental tobacco smoke (ETS) are also at risk. Additionally, smoking behaviours and their associated disease risk are socially patterned and positively associated with health inequalities. However, other lifestyle choices also contribute to health inequalities. We aim to assess the contribution of other lifestyle behaviours pertaining to alcohol, physical inactivity and weight to smoking-related disease risk across (i) the socioeconomic spectrum and (ii) smoking status.
Conclusion: The results are of policy interest as they suggest that to reduce inequalities in smoking-related diseases, interventions reducing both smoking and other unhealthy behaviours are required.


Objective: To explain the regional variation in smoking-attributable mortality in Poland by selected environmental characteristics.

Conclusion: At the NUTS-4 level, the territorial variation in male and female SAM can be partially explained by the variation in regional characteristics indicating unfavourable economic and social conditions.

Smoking and Tobacco Use; Fact Sheet; Adult Cigarette Smoking in the United States. (2013). Centers for Disease Control and Prevention [http://1.usa.gov/1NeseiB](http://1.usa.gov/1NeseiB)

Summary: Data and statistical information for adult cigarette smoking in the United States.


Summary: The outcomes to date illustrate that poverty does not limit tobacco consumption and this may lead to a doubling of the disease burden from chronic illnesses related to tobacco consumption as well as from communicable and nutrition related diseases, which still account for a large share of total disease burden among the tribal communities. Thus, there is an urgent need for tribe focused interventions to control tobacco use.


Objective: The objective of the study was to present socioeconomic and geographic inequalities in adolescent smoking in Scotland.

Conclusion: Odds of smoking were higher for girls living in remote and rural parts of Scotland than for those living in urban areas. Schools in rural areas were no more or less homogenous than schools in urban areas in terms of smoking prevalence. The authors discuss possible social and cultural explanations for the high prevalence of boys' and girls' smoking in low SES neighbourhoods and of girls' smoking in rural areas.


Objective: This study provides the first quantitative examination of knowledge, attitudes and practices of Dominican Republic Health Care Workers regarding tobacco use.

Conclusion: Overall, results demonstrate a disconnect between HCW belief and practice. Though most agreed that always asking about tobacco was important, fewer than half did so. Gaps in HCW knowledge and practices suggest a need for education and policy/infrastructure support.

Before taking tobacco expenditure into account, the overall household poverty rate is 16.8% of households—just over 4.5 million households in poverty. After taking tobacco expenditure into account, the number of households in poverty increases to 18.8%—just over 5 million households. The inclusion of tobacco costs moves an extra half a million households into poverty.


**Objective:** Here is great disparity in tobacco outlet density (TOD), with density highest in low-income areas and areas with greater proportions of minority residents, and this disparity may affect cancer incidence. We sought to better understand the nature of this disparity by assessing how these socio-demographic factors relate to TOD at the national level.

**Conclusion:** We demonstrated the utility of classifying census tracts on heterogeneity of tobacco risk exposure. This approach provides a better understanding of the complexity of socio-demographic influences of tobacco retailing and creates opportunities for policy makers to more efficiently target areas in greatest need.


**Objective:** Many people continue to smoke tobacco products despite known negative health consequences, including increased risk of chronic disease and death. Disparities exist in rates of smoking and chronic disease, underscoring the importance of understanding the barriers and motivations to smoking cessation among vulnerable populations, such as socioeconomically disadvantaged people of colour.

**Conclusion:** Understanding barriers and motivations to quitting among disadvantaged populations is crucial. Financial issues, social support, and social norms should be targeted in promoting cessation among disadvantaged, urban populations. Programs, interventions, and policies can also use research about specific barriers and motivations for sociodemographic sub-groups to be tailored, targeted, and more effective.


**Objective:** Smoking rates have long been noted to vary by neighborhood, but little is known about how neighborhood characteristics shape individual smoking cessation effort.

**Conclusion:** Concentrated neighborhood poverty was not significantly associated with individual smoking cessation effort, although there was a trend towards more past quit attempts in neighborhoods with higher concentrated poverty. It is possible that individuals in areas of concentrated poverty report a greater number of quit attempts because they are less likely to quit successfully. Future research should be aimed at identifying the nature of barriers to smoking cessation in high-poverty neighborhoods.
Objective: Secondhand smoke exposure (SHSe) has been identified as a distinct risk factor for adverse obstetric and gynecological outcomes. This study examined the prevalence of SHSe reduction practices (i.e., home and car smoking bans) among pregnant women in a large U.S. prenatal clinic serving low-income women.

Conclusion: SHSe among low-income pregnant women is high, and interventions to raise awareness and increase the establishment of smoking bans in homes and cars are warranted.

Objective: Some previous studies have suggested that area-level characteristics have effects on smoking. The aim of this study was to evaluate the associations between household income and area income on smoking in Korean adults.

Conclusion: The results showed that smoking is strongly associated with household income status in both men and women, and area-level income is partly associated with smoking. Effects of area-level income on smoking differed by sex and region. These findings suggest that area characteristics have contextual effects on health related behavior independent of individual characteristics.
Disease risk


Objective: Chronic obstructive pulmonary disease (COPD) is a commonly reported cause of death and associated with smoking. However, COPD mortality is high in poor countries with low smoking rates. Spirometric restriction predicts mortality better than airflow obstruction, suggesting that the prevalence of restriction could explain mortality rates attributed to COPD. We have studied associations between mortality from COPD and low lung function, and between both lung function and death rates and cigarette consumption and gross national income per capita (GNI).

Conclusion: Smoking remains the single most important cause of obstruction but a high prevalence of restriction associated with poverty could explain the high 'COPD' mortality in poor countries.


Objective: Management of chronic diseases requires patients to adhere to recommended health behavior change and complete tests for monitoring. While studies have shown an association between low income and lack of adherence, the reasons why people with low income may be less likely to adhere are unclear. We sought to determine the association between household income and receipt of health behavior change advice, adherence to advice, receipt of recommended monitoring tests, and self-reported reasons for non-adherence/non-receipt.

Conclusion: There are important income-related differences in the patterns of health behavior change and disease monitoring, as well as reasons for non-adherence or non-receipt. Among those with low income, adherence to health behavior change and monitoring may be improved by addressing modifiable barriers such as cost and access.


Objective: Smokers and ex-smokers are at risk of many chronic diseases. However, never smokers and never smokers exposed to environmental tobacco smoke (ETS) are also at risk. Additionally, smoking behaviours and their associated disease risk are socially patterned and positively associated with health inequalities. However, other lifestyle choices also contribute to health inequalities. We aim to assess the contribution of other lifestyle behaviours pertaining to alcohol, physical inactivity and weight to smoking-related disease risk across (i) the socioeconomic spectrum and (ii) smoking status.

Conclusion: The results are of policy interest as they suggest that to reduce inequalities in smoking-related diseases, interventions reducing both smoking and other unhealthy behaviours are required.
**Individual income** (≈35)

**Cigarette Smoking in the United States.** (n/a) Centers for Disease Control and Prevention. [http://1.usa.gov/1KbvM08](http://1.usa.gov/1KbvM08)

**Summary:** Data and statistics on cigarette smoking among adults in the United States. Part of the Tips from Former Smokers campaign, which features real people suffering as a result of smoking and exposure to secondhand smoke.

**Reductions in smoking can reduce health gaps between the rich and the poor.** (n/a) Treattobacco.net [http://bit.ly/1NJszqi](http://bit.ly/1NJszqi)

**Summary:** Smoking is more common among the poor than among the rich in most developed countries. Smoking is also more common among poor men than among rich men in almost all developing countries while the situation is more variable amongst women. Tobacco use among groups that are already disadvantaged is likely to exacerbate existing health disparities. Individuals living in poverty in the US have a median duration of smoking of 40 years as opposed to 22 years among those with incomes three times greater than poverty level.


**Summary:** Tobacco use statistics by country in the UK, age and trends over time are presented here. These data are collected annually in the four constituent countries of the UK, from representative population samples. There are also data on socio-economic variation, ethnicity, geographic variation, and second-hand smoke. Statistics on childhood smoking are also available.


**Objective:** Studies in India have identified marked variations in overall tobacco use between socio-economic groups. The authors examined whether associations between socio-economic status (SES) and tobacco use varied across individual Indian states by tobacco type.

**Conclusion:** SES has a varying impact on different types of tobacco use in Indian states. Policy makers should consider socio-economic patterning of tobacco use when designing, implementing and evaluating tobacco control interventions in different states of India.

Atari, D. O. (2014). **Gender differences in the prevalence and determinants of tobacco use among school-aged adolescents (11-17 years) in Sudan and South Sudan.** The Pan African Medical Journal 18: 118. [http://1.usa.gov/1LcarYx](http://1.usa.gov/1LcarYx)

**Objective:** Tobacco use is one of the leading and preventable causes of global morbidities and premature mortalities. The study explores gender differences in the prevalence and determinants of tobacco use among school-aged adolescents (11-17 years) in Sudan and South Sudan.

**Conclusion:** School programs that focus on health messages alone may not work for the adolescent population. Legislations that ban all types of tobacco advertisements, promotions, and sponsorships among adolescents are needed in the 2 countries.

**Objectives:** The authors determined whether or not homelessness is associated with cigarette smoking independent of other socio-economic measures and behavioural health factors, and whether homeless smokers differ from non-homeless smokers in their desire to quit.

**Conclusion:** Among patients of US health centers, a history of homelessness doubles the odds of being a current smoker independent of other socio-economic factors and behavioral health conditions. However, homeless smokers do not differ from non-homeless smokers in their desire to quit and should be offered effective interventions.


**Objectives:** In 2011/12 approximately 2.3 million children, 17% of children in the UK, were estimated to be in relative poverty. Cigarette smoking is expensive and places an additional burden on household budgets, and is strongly associated with socioeconomic deprivation. The aim of this study was to provide an illustrative first estimate of the extent to which parental smoking exacerbates child poverty in the UK.

**Conclusion:** Smoking exacerbates poverty for a large proportion of children in the UK. Tobacco control interventions which effectively enable low income smokers to quit can play an important role in reducing the financial burden of child poverty.


**Objective:** To study the factors impacting on the tobacco use patterns and tobacco related behavior among lower middle and lower classes in a resettlement colony in Delhi.

**Conclusion:** There was a statistically significant decline in tobacco expenditure with rise in income levels and decline in tobacco consumption among the friend circle. Peer pressure and easy availability were among the two commonest reasons for people to get hooked on the tobacco use. After meals, while resting and when in a happy mood were the three commonest occasions in that order, when people indulged in tobacco usage. Implications of these findings have been discussed in detail.


**Objective:** Improving social circumstances (eg, an increase in income, finding a job or moving into a good neighbourhood) may reduce tobacco use, but robust evidence on the effects of such improvements is scarce. Accordingly we investigated the link between changing social circumstances and changing tobacco smoking using repeated measures data.

**Conclusion:** Worsening social circumstances over the short run are generally associated with higher smoking risk. However, there were counterexamples: for instance, decreasing personal income among young people was associated with decreased odds of smoking, a
finding consistent with income elasticity of demand (the less one's income, the less one can consume).


**Objectives:** In Southern Europe, smoking among older women was more prevalent among the high educated than the lower educated, we call this a positive gradient. This is dominant in the early stages of the smoking epidemic model, later replaced by a negative gradient. The aim of this study is to assess if a positive gradient in smoking can also be observed in low and middle income countries in other regions of the world.

**Conclusion:** A positive socio-economic gradient in smoking was found among older women in two regions, but not among younger women. But contrary to predictions derived from the smoking epidemic model, from a worldwide perspective the positive gradients are the exception rather than the rule.


**Objective:** Smoking is the leading cause of health inequalities in Europe. Adults from lower socioeconomic status (SES) groups are more likely to smoke and less likely to quit than adults from higher SES groups. Smoking cessation support is an important element of tobacco control; however, the equity impact of individual-level cessation support is uncertain.

**Conclusion:** Untargeted smoking cessation interventions in Europe may have contributed to reducing adult smoking but are, on balance, likely to have increased inequalities in smoking. However, UK NHS stop-smoking services appear to reduce inequalities in smoking through increased relative reach through targeting services to low-SES smokers. More research is needed to strengthen the evidence-base for reducing smoking inequalities.


**Summary:** The authors compared characteristics of homeless smokers and economically disadvantaged domiciled smokers (Dallas, TX; August 2011-November 2012). Although findings indicated similar smoking characteristics across samples, homeless smokers (n = 57) were exposed to more smokers and reported lower motivation to quit, lower self-efficacy for quitting, more days with mental health problems, and greater exposure to numerous stressors than domiciled smokers (n = 110). The sample groups reported similar scores on measures of affect, perceived stress, and interpersonal resources. Results may inform novel cessation interventions for homeless smokers.


**Summary:** In sum, although the prevalence of smoking in the U.S. has declined sharply among the general population, the same rate of decline has not been seen among individuals who have the lowest levels of education, income, and occupational status. Therefore, it is crucial to build and empirically refine comprehensive conceptual models that elucidate pathways between SES and tobacco cessation. Despite the fact that we live in a new age that emphasizes the importance of genetics, it is also vital to underscore the importance of
neighborhood contextual factors that influence health behaviors and overall health. Useful conceptual models should facilitate the development and implementation of multifaceted interventions that target both individual and neighborhood factors.


**Objective:** Smoking prevalence is particularly high amongst more deprived social groups. This cross-sectional study uses the Mosaic classification to explore socioeconomic variations in the delivery and/or uptake of cessation interventions in UK primary care.

**Conclusion:** Wide socioeconomic variations exist in the delivery and/or uptake of smoking cessation interventions in UK primary care, though encouragingly the direction of this variation may help to reduce smoking prevalence-related socioeconomic inequalities in health. Groups with particularly low intervention rates may be best targeted through broadsheet media, the internet and perhaps workplace-based interventions in order to increase the delivery and uptake of effective quit support.


**Summary:** Covers the proportion who smoke cigarettes, cigarette consumption and type of cigarette smoked (packeted or hand-rolled). Includes preliminary findings from analysis of e-cigarette data. Trends and demographic breakdowns are provided.


**Objective:** Associations between social status and health behaviours are well documented, but the mechanisms involved are less understood. Cultural capital theory may contribute to a better understanding by expanding the scope of inequality indicators to include individuals’ knowledge, skills, beliefs and material goods to examine how these indicators impact individuals’ health lifestyles. We explore the structure and applicability of a set of cultural capital indicators in the empirical exploration of smoking behaviour among young male adults.

**Conclusion:** Cultural capital measures that include, but go beyond, educational attainment can improve prediction models of smoking in young male adults. New measures of cultural capital may thus contribute to our understanding of the social status-based resources that individuals can use towards health behaviours.

**Smoking and Tobacco Use; Fact Sheet; Adult Cigarette Smoking in the United States.** (2013). Centers for Disease Control and Prevention [http://1.usa.gov/1OHRHT3](http://1.usa.gov/1OHRHT3)

**Summary:** Data and statistical information for adult cigarette smoking in the United States.


**Objective:** The aim of the present study was to examine the extent and determinants of cost/price-related purchase behaviours, and estimate the impact of these behaviours on cigarette prices paid by Chinese smokers. It also assesses the socioeconomic differences in
compensatory purchase behaviours, and examines how they influence the relationship between purchase behaviours, cigarette prices and cigarette consumption.

Conclusion: A significant portion of Chinese urban adult smokers engaged in cost/price-reducing purchase behaviours. Such behaviours reduce cigarette purchase prices and are associated with increased cigarette consumption. Smokers of different socioeconomic status engaged in different purchase behaviours to mitigate the impact of higher cigarette prices. Reducing tobacco use through raising tobacco taxes/prices in China needs to take into account these cost/price-reducing behaviours.


Objective: The neoliberal policies and its socioeconomic consequences in Korea have made employment conditions insecure and affected employees' health as well.

Conclusion: Precarious workers were more likely to be smokers and heavy smokers than standard workers. Unemployment is also a significant risk factor for decreased quitting and smoking relapse. However, insecure employment was an even more consistent determinant of current smoking behavior than unemployment.


Summary: This report uses data from GATS Turkey to examine how cigarette prices changed after the 2010 tax increase, describe the temporally associated changes in smoking prevalence, and learn whether this smoking prevalence changed more in some demographic groups than others. From 2008 to 2012, the average price paid for cigarettes increased by 42.1%, cigarettes became less affordable, and smoking prevalence decreased by 14.6%. The largest reduction in smoking was observed among persons with lower socioeconomic status (SES), highlighting the potential role of tax policy in reducing health disparities across socioeconomic groups.


Objective: The comparative assessment of mental and health level in shipbuilding industry workers and general population and its relationship to social and economic parameters.

Conclusion: Health level and its individual dimensions are both associated with health self-assessment and occupational and economic status. The coexistence of chronic diseases and smoking dependence affects emotion and social functioning of individuals.


Objective: The objective of the study was to present socioeconomic and geographic inequalities in adolescent smoking in Scotland. The international literature suggests there is no obvious pattern in the geography of adolescent smoking, with rural areas having a higher prevalence than urban areas in some countries, and a lower prevalence in others.
**Conclusion**: Odds of smoking were higher for girls living in remote and rural parts of Scotland than for those living in urban areas. Schools in rural areas were no more or less homogenous than schools in urban areas in terms of smoking prevalence. The authors discuss possible social and cultural explanations for the high prevalence of boys’ and girls’ smoking in low SES neighbourhoods and of girls’ smoking in rural areas.


**Objective**: Social differences in mortality have increased in high-income countries, but the causes of these changes remain unclear. The authors quantify the contribution of alcohol and smoking to trends in income differences in life expectancy from 1988 through 2007 in Finland.

**Conclusion**: Alcohol and smoking have a major influence on income differences in mortality and, with the exception of smoking among men, their contribution is increasing. Without alcohol and smoking, there would have been little change in life expectancy differentials.


**Objective**: To describe socioeconomic and country variations in cross-border cigarette purchasing in six European countries.

**Conclusion**: Cross-border cigarette purchasing is more common in European regions bordering countries with lower cigarette prices and is more often reported by smokers with higher education and income. Increasing taxes in countries with lower cigarette prices, and reducing the number of cigarettes that can be legally imported across borders could help to avoid cross-border purchasing.


**Objective**: This study evaluated the influence of common trajectories of family income during childhood on smoking and alcohol use during adolescence.

**Conclusion**: Findings indicate that childhood socioeconomic disadvantage influences adolescent smoking, while downward socioeconomic mobility influences adolescent alcohol use.


Before taking tobacco expenditure into account, the overall household poverty rate is 16. 8% of households–just over 4.5 million households in poverty. After taking tobacco expenditure into account, the number of households in poverty increases to 18.8% -just over 5 million households. The inclusion of tobacco costs moves an extra half a million households into poverty.

Objective: There is great disparity in tobacco outlet density (TOD), with density highest in low-income areas and areas with greater proportions of minority residents, and this disparity may affect cancer incidence. The authors sought to better understand the nature of this disparity by assessing how these socio-demographic factors relate to TOD at the national level.

Conclusion: The authors demonstrated the utility of classifying census tracts on heterogeneity of tobacco risk exposure. This approach provides a better understanding of the complexity of socio-demographic influences of tobacco retailing and creates opportunities for policy makers to more efficiently target areas in greatest need.


Objective: Mexico implemented annual tax increases between 2009 and 2011. The authors examined among current smokers the association of price paid per cigarette and daily cigarette expenditure with smoking-induced deprivation (SID) and whether the association of price or expenditure with SID varies by income.

Conclusion: Tax increases in Mexico have resulted in smokers paying more and spending more for their cigarettes. Those with higher cigarette expenditure experience more SID, with no evidence that poorer smokers are more affected.


Objective: Current data indicate that under conditions of poverty, tobacco is consumed at the expense of basic needs. In a large national sample from Cambodia, the authors sought to determine whether tobacco consumption declines under extreme conditions of no income and malnutrition.

Conclusion: Among the poorest and malnourished Cambodian adults, lack of resources did not appear to prevent them from obtaining smoked or smokeless tobacco.


Objective: Nearly half of U.S. adults have difficulties with health literacy (HL), which is defined as the ability to adequately obtain, process, and understand basic health information. Lower HL is associated with negative health behaviors and poor health outcomes. Racial/ethnic minorities and those with low socioeconomic status (SES) are disproportionately affected by poor HL. They also have higher smoking prevalence and more difficulty quitting smoking. Thus, lower HL may be uniquely associated with poorer cessation outcomes in this population.

Conclusion: Findings suggest that lower HL may serve as an independent risk factor for smoking relapse among low-SES, racially/ethnically diverse smokers enrolled in treatment.
Future research is needed to investigate longitudinal relations between HL and cessation outcomes and potential mechanisms of this relationship.


**Objective:** Secondhand smoke exposure (SHSe) has been identified as a distinct risk factor for adverse obstetric and gynecological outcomes. This study examined the prevalence of SHSe reduction practices (i.e., home and car smoking bans) among pregnant women in a large U.S. prenatal clinic serving low-income women.

**Conclusion:** SHSe among low-income pregnant women is high, and interventions to raise awareness and increase the establishment of smoking bans in homes and cars are warranted.


**Objective:** Smokers with diabetes have more problems with dental disease, bleeding gums and ulcers than their non-diabetic counterparts. Quitting smoking is an important and effective approach to improving diabetes management. Little is known about the influence of smoking status and cessation services on health-related quality of life (HRQoL) among low income diabetic patients. Thus, it is of particular interest to better understand smoking cessation behavior among these lower-income diabetic patients.

**Conclusion:** Smoking status is significantly and negatively associated with health-related quality of life among low income diabetic patients. Future study should consider how quality of life among diabetic patients may be affected by smoking status and past quitting behaviors.


**Objective:** A national survey in Japan reported that the prevalence of smoking among high school students has sharply decreased in recent years. However, the survey only considered students who attended regular high schools (RHSs), and Japan offers part-time high schools (PHSs) that are often attended by academically and socioeconomically disadvantaged youth. Therefore, we examined the smoking prevalence and smoking-related factors among PHS students.

**Conclusion:** The smoking prevalence among PHS students was remarkably higher than that among RHS students. These findings suggest that marginalized and disadvantaged youth should be targeted for tobacco control, and intervention is needed to protect youth from tobacco sales and advertising at convenience stores.

Objective: This paper sought to determine whether nicotine dependence, quitting self-efficacy, quitting interest differ by socio-economic status (SES), and whether they mediate the relationship between SES and quitting behavior of urban Chinese smokers.

Conclusion: Urban Chinese smokers from lower socio-economic backgrounds experience greater levels of psychological and behavioral barriers to quitting than their counterparts from higher socio-economic backgrounds and as such, they need more help to quit and do so successfully.


Objective: Some previous studies have suggested that area-level characteristics have effects on smoking. The aim of this study was to evaluate the associations between household income and area income on smoking in Korean adults.

Conclusion: The results showed that smoking is strongly associated with household income status in both men and women, and area-level income is partly associated with smoking. Effects of area-level income on smoking differed by sex and region. These findings suggest that area characteristics have contextual effects on health related behavior independent of individual characteristics.


Objective: To determine the associations of socio-economic and psychosocial factors with active and passive smoking in older adults.

Conclusion: Older Chinese had a higher level of smoking and passive smoking than those in high income countries, reflecting China's failures in controlling smoking. The associations with low SES and different psychosocial aspects and sex differences suggest preventative strategies for active and passive smoking.
Intervention success  (=15)


Objective: Despite decades of tobacco use decline among the general population in the United States, tobacco use among low-income populations continues to be a major public health concern. Smoking rates are higher among individuals with less than a high school education, those with no health insurance, and among individuals living below the federal poverty level. Despite these disparities, smoking cessation treatments for low-income populations have not been extensively tested. In the current study, the efficacy of 2 adjunctive smoking cessation interventions was evaluated among low-income smokers who were seen in a primary care setting.

Conclusion: Integrating therapeutic approaches that promote use of and adherence to medications for quitting smoking and that target stress management and reducing negative affect may enhance smoking cessation among low-income smokers.


Objective: Smoking is the leading cause of health inequalities in Europe. Adults from lower socioeconomic status (SES) groups are more likely to smoke and less likely to quit than adults from higher SES groups. Smoking cessation support is an important element of tobacco control; however, the equity impact of individual-level cessation support is uncertain.

Conclusion: Untargeted smoking cessation interventions in Europe may have contributed to reducing adult smoking but are, on balance, likely to have increased inequalities in smoking. However, UK NHS stop-smoking services appear to reduce inequalities in smoking through increased relative reach through targeting services to low-SES smokers. More research is needed to strengthen the evidence-base for reducing smoking inequalities.


Objective: To conduct a systematic review and meta-analysis examining the effectiveness of behavioural interventions targeting diet, physical activity or smoking in low-income adults.

Conclusion: Behaviour change interventions for low-income groups had small positive effects on healthy eating, physical activity and smoking. Further work is needed to improve the effectiveness of behaviour change interventions for deprived populations


Objective: This study aimed to determine whether certain types of anti-smoking advertisements are more likely to be accepted and perceived as effective across smokers in 10 low to middle income countries. 2399 18–34 year old smokers were recruited in
Bangladesh, China, Egypt, India, Indonesia, Mexico, Philippines, Russia, Turkey and Vietnam to view and rate 10 anti-tobacco ads.

**Conclusion**: Ads that did not emphasize the health effects of smoking were most prone to inconsistent impact across countries and population subgroups. Graphic ads about the negative health effects of smoking may be most suitable for wide population broadcast in low and middle income countries.


**Summary**: This report uses data from GATS Turkey to examine how cigarette prices changed after the 2010 tax increase, describe the temporally associated changes in smoking prevalence, and learn whether this smoking prevalence changed more in some demographic groups than others. From 2008 to 2012, the average price paid for cigarettes increased by 42.1%, cigarettes became less affordable, and smoking prevalence decreased by 14.6%. The largest reduction in smoking was observed among persons with lower socioeconomic status (SES), highlighting the potential role of tax policy in reducing health disparities across socioeconomic groups.


**Objective**: The aim of the current research was to investigate how smoking prevalence in various gender, social and income groups in Ukraine changed in response to differing tobacco taxation policies in 2008–2012.

**Conclusion**: Short-term and long-term price responsiveness of tobacco demand by socioeconomic status of population groups in low--and middle--income countries like Ukraine could be rather different for poor and more affluent people. Tobacco excise tax hikes have great potential in reducing smoking prevalence, especially in young and less affluent people, however they should also be supported by effective and available smoking cessation services.


**Summary**: This report describes an innovative pilot project implementing a systems change model that involves multiple stakeholders in integrating evidence-based cessation strategies into federal Head Start programs, which serve low-income adults and their children.


**Objective**: This study examined possible income differences in the impact of a national reimbursement policy for smoking cessation treatment and accompanying media attention in the Netherlands in 2011.
Conclusion: The Dutch reimbursement policy with accompanying media attention was followed by an increase in quit attempts and quit success, but use of cessation treatment remained stable. The impact of the policy and media attention did not seem to have decreased or increased socioeconomic inequalities in quit attempts, use of cessation treatment, or quit success.


Objective: This study aims to systematically review the existing literature on the current developments and impact of smoking cessation interventions targeted toward adult smokers in low and middle income countries (LMICs).

Conclusion: Smoking cessation interventions are not readily available and affordable in LMICs. Extensive research is needed to determine the most cost-effective and culturally appropriate smoking cessation interventions for adult smokers in LMICs.


Objective: Many people continue to smoke tobacco products despite known negative health consequences, including increased risk of chronic disease and death. Disparities exist in rates of smoking and chronic disease, underscoring the importance of understanding the barriers and motivations to smoking cessation among vulnerable populations, such as socioeconomically disadvantaged people of color.

Conclusion: Understanding barriers and motivations to quitting among disadvantaged populations is crucial. Financial issues, social support, and social norms should be targeted in promoting cessation among disadvantaged, urban populations. Programs, interventions, and policies can also use research about specific barriers and motivations for sociodemographic sub-groups to be tailored, targeted, and more effective.


Objective: Mexico implemented annual tax increases between 2009 and 2011. We examined among current smokers the association of price paid per cigarette and daily cigarette expenditure with smoking-induced deprivation (SID) and whether the association of price or expenditure with SID varies by income.

Conclusion: Tax increases in Mexico have resulted in smokers paying more and spending more for their cigarettes. Those with higher cigarette expenditure experience more SID, with no evidence that poorer smokers are more affected.


Objectives: Health informatics systems are a proven tool for tobacco control interventions. To address the needs of low-income groups, the Tobacco Control Initiative was established in
partnership with the Louisiana State University Health Care Services Division to provide cost-effective tobacco use cessation services through the health informatics system in the state public hospital system.

**Conclusion:** A health informatics system that efficiently tracks trends in readiness to quit can be used in combination with other strategies and thus optimize efforts to control tobacco use. Our data suggest that a cigarette tax increase affects smokers' readiness to quit and provides an opportunity to intervene at the most beneficial time.


**Objective:** The authors examined the effectiveness of state cigarette price and smoke-free homes on smoking behaviors of low-income and high-income populations in the United States.

**Conclusion:** High cigarette prices and especially smoke-free homes have the potential to reduce smoking behaviors among low-income individuals. Interventions are needed to increase adoption of smoke-free homes among low-income populations to increase cessation rates and prevent relapse.


**Objective:** The authors examined whether exposure to high-performing schools reduces the rates of risky health behaviors among low-income minority adolescents and whether this is due to better academic performance, peer influence, or other factors.

**Conclusion:** Increasing performance of public schools in low-income communities may be a powerful mechanism to decrease very risky health behaviors among low-income adolescents and to decrease health disparities across the life span.


**Objective:** This paper sought to determine whether nicotine dependence, quitting self-efficacy, quitting interest differ by socio-economic status (SES), and whether they mediate the relationship between SES and quitting behavior of urban Chinese smokers.

**Conclusion:** Urban Chinese smokers from lower socio-economic backgrounds experience greater levels of psychological and behavioral barriers to quitting than their counterparts from higher socio-economic backgrounds and as such, they need more help to quit and do so successfully.
Summary: In this edition of The Tobacco Atlas, the authors invite colleagues tackling closely-related challenges—including protecting the environment, promoting equality, engendering development and fighting non-communicable diseases (NCDs)—to explore common interests, ideas, and strategies to find far-reaching solutions.


Objective: This study compared data from 32 countries to assess predictors and patterns of cigarette and smokeless tobacco (SLT) use among students aged 13-15 years old.

Conclusion: Region-specific patterns of tobacco use were noticed. Furthermore, it is alarming that in several low- and middle-income countries, the prevalence of SLT use among females did not differ from that among males, suggesting the possibility of a future shared burden of disease between both males and females.


Objective: In Southern Europe, smoking among older women was more prevalent among the high educated than the lower educated, we call this a positive gradient. This is dominant in the early stages of the smoking epidemic model, later replaced by a negative gradient. The aim of this study is to assess if a positive gradient in smoking can also be observed in low and middle income countries in other regions of the world.

Conclusion: A positive socio-economic gradient in smoking was found among older women in two regions, but not among younger women. But contrary to predictions derived from the smoking epidemic model, from a worldwide perspective the positive gradients are the exception rather than the rule.


Objective: Worldwide, use of tobacco is viewed as an important threat to the health of pregnant women and their children. However, the extent of tobacco use in pregnant women in low-income and middle-income countries (LMICs) remains unclear. We assessed the magnitude of tobacco use in pregnant women in LMICs.

Conclusion: Overall, tobacco use in pregnant women in LMICs was low; however high prevalence estimates were noted in some LMICs. Prevention and management of tobacco use and exposure to second-hand smoke in pregnancy is crucial to protect maternal and child health in LMICs.
Objective: Knowledge on the health effects of tobacco use deters initiation and is associated with cessation, and is important for developing anti-smoking educational programs. However, few studies have examined factors associated with knowledge about these risks in low- and middle-income countries. The authors sought to determine: 1) levels of knowledge about health effects of tobacco use, and 2) demographic, behavioral, and environmental factors associated with knowledge towards tobacco use.

Conclusion: Identifying knowledge gaps on the health impact of tobacco use and its associated risk factors will strengthen anti-smoking educational messages and can inform tobacco control policies and programs for more effective interventions.

Objective: Smoking prevalence is particularly high amongst more deprived social groups. This cross-sectional study uses the Mosaic classification to explore socioeconomic variations in the delivery and/or uptake of cessation interventions in UK primary care.

Conclusion: Wide socioeconomic variations exist in the delivery and/or uptake of smoking cessation interventions in UK primary care, though encouragingly the direction of this variation may help to reduce smoking prevalence-related socioeconomic inequalities in health. Groups with particularly low intervention rates may be best targeted through broadsheet media, the internet and perhaps workplace-based interventions in order to increase the delivery and uptake of effective quit support.

Summary: This paper analyzes smoking prevalence and smoking behaviors in Papua New Guinea. Using the 2009–10 Papua New Guinea Household Income and Expenditure Survey, the paper analyzes the determinants of tobacco use and tobacco choices in Papua New Guinea. The results show that adults (18 years and above) in the poorest quartile are more likely to smoke. Tobacco consumption imposes a large financial burden to poor households. Tobacco consumption accounts for about 23 percent of total household food expenditure for households in the poorest quartile, compared with 15 percent for the entire sample. However, most of these households consume non-processed tobacco. The study reveals the urgency to control tobacco consumption in Papua New Guinea and considers some practical challenges that the country may face.

Objective: Evidence on the relationship between cigarette prices and adult smoking in low- and middle-income countries (LMICs) is relatively limited. This study offers new descriptive evidence on this relationship using data from a set of 13 LMICs.

Conclusion: After controlling for a set of individual demographic and country characteristics, cigarette prices retain a significant role in shaping cigarette demand across LMICs. Because higher SES is associated with a reduced chance of smoking overall but also with increased
daily consumption among current smokers, optimal tobacco tax policies in LMICs may face an added need to accommodate to shifting SES structures within the populations of these countries.


**Objective:** To examine the relationships between income, income inequality and current smoking among youth in low- and middle-income countries.

**Conclusion:** There is a positive association between gross domestic product and the odds of a young person in a low- and middle-income country being a current smoker. Given the causal links between smoking and a wide range of youth morbidities, the association between smoking and income inequality may underlie a substantial portion of the health disparities observed that are currently experiencing rapid economic growth.


**Objective:** The tobacco industry has globalized and tobacco use continues to increase in low- and middle-income countries. Yet, the data and research to inform policy initiatives for addressing this phenomenon is sparse. This study aims to estimate the prevalence of adult tobacco use in 17 Sub-Saharan Africa (SSA) countries, and to identify key factors associated with adult tobacco consumption choices (smoked, smokeless tobacco and dual use) in Madagascar.

**Conclusion:** Tobacco use in Madagascar was higher than the other 16 SSA countries. Although the government continues to enact policies to address the problem, there is a need for effective implementation and enforcement. There is also the need for health education to modify social norms and denormalize tobacco use.


**Objective:** To estimate the long-term and short-term effects on cigarette demand in Argentina based on changes in cigarette price and income per person >14 years old.

**Conclusion:** Econometric analyses of cigarette consumption and their relationship with cigarette price and income can provide valuable information for developing cigarette price policy.


**Objective:** This paper examines the association between teacher smoking at school and student smoking. A growing literature estimates the impact of social influences on youth smoking and finds that youths are more likely to participate in risky behaviors when these risky behaviors are prevalent in their social networks.

**Conclusion:** The findings of this paper have the potential of informing policy on the impact of teacher smoking and school level policies on youth smoking.

**Objective:** This study aims to systematically review the existing literature on the current developments and impact of smoking cessation interventions targeted toward adult smokers in low and middle income countries (LMICs).

**Conclusion:** Smoking cessation interventions are not readily available and affordable in LMICs. Extensive research is needed to determine the most cost-effective and culturally appropriate smoking cessation interventions for adult smokers in LMICs.


**Summary:** In this review, the authors evaluate the epidemiology of tobacco use in low- and middle-income countries and assess the public health policies needed to control tobacco use in such regions for the prevention of cardiovascular disorders and other tobacco-related morbidities and mortality.
Other references of interest


**Objective:** To incorporate gender-related factors into tobacco reduction and cessation interventions, the research team identified the need to clarify the current theoretical and methodological interpretations of gender within the context of tobacco research.

**Conclusion:** Three principles for including gender-related factors in tobacco reduction and cessation interventions were identified: a) the need to build upon solid conceptualizations of gender, b) the importance of including components that comprehensively address gender-related influences, and c) the importance of promoting gender equity and healthy gender norms, roles and relations.


**Objective:** Tobacco use is a major and single most preventable cause of premature death and disease. In Texas, smoking is responsible for 24,500 annual deaths and $12.2 billion in excess medical care expenditures and lost productivity. Many factors influence tobacco use and eliminating tobacco-related disparities is one of the overarching goal of Healthy People 2020. The objective of this study was to assess inequalities in cigarette smoking among low and high income population in Texas by sex.

**Conclusion:** Inequalities exist among current smokers by their income and sex. Lower smoking prevalence was observed with higher education across all income and sex subgroups. Public health initiatives focusing on low-income population and education might help reducing the disparities and lower the overall prevalence of smoking in Texas.


**Objective:** In 2011/12 approximately 2.3 million children, 17% of children in the UK, were estimated to be in relative poverty. Cigarette smoking is expensive and places an additional burden on household budgets, and is strongly associated with socioeconomic deprivation. The aim of this study was to provide an illustrative first estimate of the extent to which parental smoking exacerbates child poverty in the UK.

**Conclusion:** Smoking exacerbates poverty for a large proportion of children in the UK. Tobacco control interventions which effectively enable low income smokers to quit can play an important role in reducing the financial burden of child poverty.


**Objective:** Approximately 90% of adults start smoking during adolescence, with limited studies conducted in low-and-middle-income countries where over 80% of global tobacco users reside. The study aims to estimate prevalence and identify predictors associated with adolescents’ tobacco use in Madagascar.
**Conclusion**: The strong gender gap in the use of non-cigarette tobacco products, and the role of peer smoking and industry promotions in adolescent females’ tobacco use should be of major advocacy and policy concern. A comprehensive tobacco control program integrating parental and peer education, creating social norms, and ban on promotions is necessary to reduce adolescents’ tobacco use.


**Objective**: To set priorities and targets for reducing tobacco use public health professionals need to understand patterns of tobacco use and purchase. The authors conducted this analysis to examine: 1) the prevalence of use of tobacco products, including both smoked and smokeless, and 2) the most common purchase locations for these products.

**Conclusion**: In order of highest to lowest, the majority of those who smoked factory manufactured cigarettes (FMC) cigarettes purchased them from: 1) stores, 2) kiosks, 3) street vendors, or 4) some other location. Information about tobacco product purchase patterns can help guide researchers in selecting intervention targets. Identification of location of the last FMC purchase among current tobacco users is useful to inform tobacco control policy.


**Summary**: Math and science education may be linked to improved health decision making. State-by-state increases in graduation requirements in the mid ‘80s and early ‘90s offer an opportunity to explore this potential effect. To this end, we used two nationally representative samples to examine the effects of higher math and science coursework requirements on smoking initiation, defined as ever smoking 100 cigarettes; we also included several state-level covariates that could affect education quality and funding: cigarette tax rate, political ideology and income disparity.


**Objective**: Knowledge about the harms of tobacco use deters initiation and is associated with cessation. Most studies on this knowledge in the general population have been in high-income countries, but the tobacco use burden is increasing in low-income and middle-income countries. We sought to estimate levels of knowledge about tobacco-related diseases in 22 countries and determine the factors associated with differences in knowledge.

**Conclusion**: Antismoking media messages appear effective for warning the public about the harms from tobacco use in all 22 countries, while warning labels are effective in the majority of these countries. Our findings suggest opportunities to motivate smoking cessation globally.
Search strategy

The following databases and keywords were used to undertake searches.

PubMed

(((income[Title/Abstract]) OR health inequalities[Title/Abstract])) OR ((Poverty[Mesh]) OR Socioeconomic Factors/economics[Mesh])) AND (((Tobacco Use[Mesh]) OR Smoking[Mesh])) OR ((smoking[Title/Abstract]) OR tobacco[Title/Abstract])

Google Scholar

allintitle: income OR Poverty OR health inequalities AND (smoking OR tobacco use)

Google

(smoking OR tobacco use) AND (income OR Poverty OR health inequalities)

Exclusion criteria (eg. date/human/topic)

Not open access

Not looking at the relationships between smoking and income

Human

Publication year 2013-2015

Search results table

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