RESEARCH PAPER

Smoking and financial stress

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Aim: Stress relief is commonly provided as a reason for smoking. However, it is plausible that the cost of smoking may create financial stress, particularly among the poor. The aim of the study was to examine the relationship between smoking and financial stress.
Design: Cross sectional survey of households from private dwellings conducted by the Australian Bureau of Statistics (ABS), using a stratified multistage area sample design.
Setting: Australia, 1998-99.
Participants: Nationally representative sample of households (n = 6892).
Main outcome measures: The outcome measures of objective financial stress were two dichotomous variables indicating whether the household had experienced any financial stress or severe financial stress in the past 12 months.
Results: The odds of experiencing any financial stress were 1.5 (95% confidence interval (CI) 1.3 to 1.7) times greater, and the odds of severe financial stress were twice (95% CI 1.6 to 2.5) as large for smoking households than non-smoking households. The effect of smoking on financial stress did not vary significantly across categories of income. Among smoking households, higher percentage of total household expenditure on tobacco was significantly related to financial stress.
Conclusions: Given data were cross sectional, firm conclusions cannot be drawn about the causal relationship between smoking and financial stress. It is likely that they both affect each other. Undoubtedly, expenditure on tobacco will reduce available funds that could otherwise be used to ameliorate financial stress.

Stress relief is commonly provided as a reason for smoking. It is argued that socioeconomic differentials in smoking are caused by differences in financial and/or psychological stress.[1–5] However, it is plausible that the cost of smoking may create financial stress, especially among the poor. There is scant empirical work on this topic and most regard material hardship as a cause of high smoking prevalence and low cessation rates. Graham, using cross sectional and qualitative data from a sample of mothers from working class households, reported that material disadvantage and financial stress (poor housing conditions, long term unemployment, and low income) were highly associated with smoking status and were the major barriers to quitting.[1 6] Similarly, Dorsett and Marsh, using a sample of disadvantaged lone parents in Britain, found that financial hardship (experiencing financial anxiety, being in debt, and being unable to afford consumer items such as food and clothing) was the main reason for being unable to quit smoking.[3] Stewart and colleagues' qualitative study of a group of disadvantaged Canadian women also identified smoking as a mechanism for coping with stress and the daily struggle for survival.[2] Finally, Stronks and associates' Dutch study found that financial stress (difficulty in payment of bills, food, rent, etc) was a significant determinant of smoking cessation.[4]

While these works suggest that stress leads to smoking, Marsh and McKay's study of low income British families[7] examined the effect of smoking on financial stress. They found that smoking is a strong predictor of material hardship independently of marital status, lack of educational qualifications, low income, manual work, claiming welfare benefits, and social tenancy. We know of no other study that investigates smoking as a predictor of financial stress. Furthermore, there is no work examining this relationship among more well off segments of the population. The purpose of the current research was to examine this relationship using a national sample of Australian households from a wide range of income groups.

METHODS

We used data from the 1998-99 Household Expenditure Survey collected by the Australian Bureau of Statistics (ABS), which provide detailed information on expenditure, income, and household characteristics of a national sample of 6892 households from private dwellings.[8] A stratified multistage area sample design was utilised in which collection districts were selected at the first stage, blocks at the second stage, and dwellings at the last stage. The strata were local government areas in capital cities, and major urban centres, minor urban, and rural parts in other regions. Data collection involved personal interviews and two week expenditure diaries distributed among all residents aged 15 and over from selected households. Response rate was 77%.

Measurement of financial stress

Twenty five financial stress items were included in the survey. These items were mainly based on living standard research in the 1990s including the Australian Living Standards Study conducted by the Australian Institute of Family studies and the Deprivation Standards Research Project conducted by the Flinders University of South Australia.[8] The items relate to the household as a whole and were answered by the head of the household. Following an examination of bivariate correlations, 11 items with weak correlations were excluded. The remaining 14 items, which were used to create three measures of financial stress, are as follows. One item evaluated whether the household had any cash flow problems over the last 12 months. Another determined whether the household could obtain, within a week, A$2000 for something important. One set of questions assessed whether the household had a holiday

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Table 1 Household characteristics and financial stress (n=6892)

Household characteristics	% in sample	Financial stress index* average	% reporting any financial stress†	% reporting severe financial stress‡
Smoking status				
Smoking household	33.2	2.4	58.5	11.2
Non-smoking household	66.8	1.3	39.9	3.9
Education				
No qualifications	45.9	2.0	53.2	8.5
Diploma	35.2	1.5	43.3	4.8
Degree	15.8	0.8	28.3	1.9
Unknown	3.1	2.9	62.2	15.3
Occupation				
Blue collar	22.2	1.8	52.8	4.8
White collar	14.1	1.5	48.2	5.4
Professional	29.2	0.8	29.8	1.9
Not applicable	34.5	2.3	54.7	12.2
Unemployment				
One or more unemployed persons	9.1	3.6	75.2	18.5
No-one unemployed	90.9	1.4	43.2	5.1
Pension				
One or more persons on pension	57.0	2.3	59.7	9.8
No-one on pension	43.0	0.7	28.0	2.0
Type of housing occupancy				
Renter	28.2	3.0	66.0	16.3
Purchaser	29.8	1.4	46.3	2.8
Owner	39.6	0.8	31.6	1.5
Other	2.4	1.9	46.2	7.3
Index of relative socioeconomic disadvantage				
First quintile (high disadvantage)	19.8	2.5	60.6	11.2
Second quintile	20.4	1.9	51.3	8.0
Third quintile	19.6	1.5	47.8	5.0
Fourth quintile	19.8	1.3	40.8	4.6
Fifth quintile (low disadvantage)	18.0	0.8	28.1	2.7
Unknown	2.4	1.6	45.4	6.3
Age of head of household				
15–34 years	25.1	2.2	55.5	10.3
35–54 years	42.8	1.7	47.3	6.2
55+ years	32.1	1.1	37.1	3.0
Lone parenthood				
Lone parent	5.0	4.5	84.6	27.8
Other	95.0	1.5	44.0	5.0

Source: 1998-99 Household Expenditure Survey, Australian Bureau of Statistics.
*The values of the scale range from 0–14 depending on the number of items to which the respondent gave a response indicating financial stress.
†Percentage who indicated having experienced financial stress in response to at least one of the 14 financial stress items.
‡Percentage reporting any of the following happened in the past year because of a shortage of money: "Went without meals"; "Unable to heat home"; and "Sought assistance from welfare/community organisations".

away from home for at least one week a year; a night out once every two weeks; friends or family over for a meal once a month; a special meal once a week; new and not second hand clothes, most of the time; or had spent time on leisure or hobby activities. Following this it was determined whether an absence of each activity resulted from lack of financial resources.

A second set of items pertained to whether or not, in the past year, certain behaviour was deemed necessary because of shortage of money. These items encompassed two degrees of severity. First, being unable to pay electricity, gas, or telephone bills on time; pawning or selling something; and seeking financial help from friends or family, were interpreted to involve a lesser degree of financial stress. Second, going without meals, being unable to heat the home, and seeking assistance from welfare/community organisations assessed severe financial stress.

We created three measures of financial stress from these 14 items, which were reflected as binary variables in the dataset. First, a "financial stress index" was created ranging in values from 0–14, depending on the number of items to which the household gave a response indicating financial stress. Second, a financial stress indicator, "any financial stress", was constructed to indicate whether the household reported having experienced financial stress in response to at least one of the 14 items. Finally, a "severe financial stress" indicator was created to distinguish households who had experienced any of the three situations mentioned above (that is, going without meals, being unable to heat the home, or seeking outside assistance). In addition to indicators measuring any stress or severe stress, we experimented with indicators distinguishing households that experienced at least a medium level of stress (for example, households that indicated having experienced stress in response to at least five of the questionnaire items listed above). All of these indicators resulted in similar findings to what is reported below.

The items used here are similar to those in the financial stress scale developed by the Policy Studies Institute in the UK.[3 7 9] This scale includes having problem debts, and not being able to afford such things as food, clothing, and leisure pursuits. It also includes a subjective measure of financial anxiety. The items are also similar to those used by Feather,[10] to assess behaviour change following job loss, and by Mallinckrodt,[11] to assess the impact of job loss. Most financial stress scales assess either one's ability to afford certain things,[12] or concern/satisfaction surrounding the ability to afford such things.[13] The items used in the present research are all objective. As shown below, the financial stress indicators developed here are strongly associated with household income. All items correlated moderately or strongly with one

Table 2 Tobacco expenditure (A$) by quintile of household income

	Income quintile*					All households	P for χ^2 or F†
	1	2	3	4	5		
All households (n=6892)							
Average weekly tobacco expenditure	8.61	9.45	12.18	12.10	11.31	10.73	<0.001
Average weekly per person tobacco expenditure	4.68	3.77	4.76	5.30	5.49	4.80	<0.001
Households reporting tobacco expenditure (n=2291)							
Average weekly tobacco expenditure	26.09	29.89	36.27	34.59	34.46	32.32	<0.001
Average weekly per person tobacco expenditure	14.20	11.94	14.17	15.16	16.72	14.46	0.004

Source: 1998-99 Household Expenditure Survey, Australian Bureau of Statistics.
*First quintile represent lowest level of income and fifth quintile represent highest level of income.
†The tobacco expenditure variables have a J shaped distribution in the full sample. Thus before examining their relationship with income, they were trichotomised. The reported χ^2 pertains to the cross tabulation of these variables and income quintiles. The tobacco expenditure variables have a positively skewed distribution in the part of the sample limited to smoking households. To test for the significance of their relationship with income, they were first transformed to a natural logarithmic scale. The reported significant of F statistic pertains to the regression of the logarithm of tobacco expenditure variables on income.

another. The Cronbach's α reliability statistic for the financial stress index is 0.84 and the lowest item-rest correlation[14] was 0.33.

Smoking expenditure, income, and other covariates

Respondents were asked to report expenditure on tobacco in the past two weeks. For each household the dataset provides a single tobacco expenditure variable, which is the sum across household members. This was halved to represent weekly expenditure. About 92.5% of reported tobacco expenditure pertained to cigarettes, and nearly all to smoking tobacco. Thus we use the phrases tobacco consumption and cigarette smoking interchangeably. The financial stress indicators described above were based on questions pertaining to the previous 12 months. Thus, in using expenditure as a correlate of financial stress, we assumed that consumption in the previous two weeks is a fair representation of consumption in the past year.

We employed seven measures of socioeconomic status: income, education, occupation, unemployment, pension, type of housing occupancy, and index of relative socioeconomic disadvantage (IRSD).

The sample was divided into quintiles of equivalent household after tax income. Household income in the Household Expenditure Survey refers to gross receipts of recurring and usually regular cash flows.[8] It includes employee, own business, property, and cash transfer income. It was set to zero when a household had a negative income. This occurred in 40 cases where there were losses from business or property. In order to adjust for family size and composition we used the updated Organisation for Economic Cooperation and Development (OECD) equivalence scale of 1.0 for the first adult, 0.5 for each subsequent adult, and 0.3 for each child.[15] The application of equivalence scales allows for a comparison of the standards of living of households with varying size and composition. Many Australian income studies have used Henderson equivalence scales developed by the Commission of Inquiry into Poverty.[16] However, since these scales only apply to families (income units) and not to households, we used the OECD scale.

Educational qualification of the head of the household was divided into: without post-school qualification; basic/skilled vocational qualification, or undergraduate/associate diploma; and bachelors degree or higher. Occupation of the head of household was coded based on the Australian Standard Classification of Occupations[17] and divided into: blue collar, including tradespersons, production and transport workers, and labourers; white collar, including clerical, service, and

Table 3 Financial stress, smoking, and income (n=6892)

Financial stress	Household income					All households
	1	2	3	4	5	
Financial stress index average*						
Total	2.8	2.4	1.6	1.0	0.4	1.6
Smoking	3.9	3.7	2.3	1.5	0.6	2.4
Non-smoking	2.3	1.8	1.2	0.8	0.3	1.3
p for χ^2	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Percentage reporting any financial stress†						
Total	64.7	58.7	51.3	38.4	17.2	46.1
Smoking	77.7	76.4	67.5	49.2	22.8	58.5
Non-smoking	58.3	50.5	43.2	32.6	14.4	40.0
p for χ^2	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Percentage reporting severe financial stress‡						
Total	13.4	9.7	4.4	2.6	0.6	6.2
Smoking	22.7	17.8	9.6	5.1	1.1	11.2
Non-smoking	8.8	6.0	1.8	1.2	0.4	3.7
p for χ^2	<0.001	<0.001	<0.001	<0.001	0.272	<0.001

Source: 1998-99 Household Expenditure Survey, Australian Bureau of Statistics.
*The values of the scale range from 0–14 depending on the number of items to which the respondent gave a response indicating financial stress.
†Percentage who indicated having experienced financial stress in response to at least one of the 14 financial stress items.
‡Percentage reporting any of the following happened in the past year because of a shortage of money: "Went without meals"; "Unable to heat home"; and "Sought assistance from welfare/community organisations".

Table 4 Adjusted odds ratios* (OR) and 95% confidence intervals (CI) from logistic regression of financial stress on smoking status, income, and other covariates (n=6892)

Variables	Any stress OR (95% CI)	Severe stress OR (95% CI)
Smoking status		
Smoking household	1.6 (1.4 to 1.8)	2.0 (1.6 to 2.5)
Non-smoking household	1.0	1.0
Household income		
First quintile	7.9 (6.2 to 10.2)	8.9 (2.5 to 31.4)
Second quintile	5.1 (4.0 to 6.4)	6.8 (2.1 to 21.5)
Third quintile	3.8 (3.1 to 4.6)	4.1 (1.2 to 13.8)
Fourth quintile	2.4 (2.1 to 2.8)	3.2 (1.0 to 11.0)
Fifth quintile	1.0	1.0
Education		
No qualifications	1.4 (1.1 to 1.6)	1.8 (0.9 to 3.4)
Diploma	1.1 (1.0 to 1.4)	1.6 (0.9 to 2.9)
Degree	1.0	1.0
Unknown	1.4 (0.8 to 2.2)	2.9 (1.3 to 6.5)
Occupation		
Blue collar	1.5 (1.2 to 1.8)	1.2 (0.8 to 2.0)
White collar	1.3 (1.0 to 1.6)	1.1 (0.6 to 2.1)
Professional	1.0	1.0
Not applicable	1.4 (1.0 to 1.9)	2.3 (1.5 to 3.7)
Unemployment		
One or more unemployed persons	1.7 (1.3 to 2.1)	1.3 (0.9 to 1.9)
No-one unemployed	1.0	1.0
Pension		
One or more persons on pension	2.0 (1.8 to 2.2)	1.6 (1.2 to 2.3)
No-one on pension	1.0	1.0
Type of housing occupancy		
Renter	3.6 (3.0 to 4.3)	7.4 (4.7 to 11.4)
Purchaser	2.4 (1.9 to 2.9)	2.4 (1.4 to 4.1)
Owner	1.0	1.0
Other	1.5 (1.1 to 2.1)	3.7 (1.7 to 8.2)
Index of relative socioeconomic disadvantage		
First quintile (high disadvantage)	1.8 (1.5 to 2.1)	1.0 (0.6 to 1.7)
Second quintile	1.5 (1.2 to 1.8)	1.0 (0.6 to 1.5)
Third quintile	1.5 (1.2 to 1.8)	0.8 (0.4 to 1.3)
Fourth quintile	1.3 (1.1 to 1.6)	0.9 (0.6 to 1.5)
Fifth quintile (low disadvantage)	1.0	1.0
Unknown	1.9 (1.4 to 2.5)	1.1 (0.5 to 2.1)
Age of head of household		
15–34 years	2.2 (1.7 to 2.9)	2.3 (1.4 to 3.7)
35–54 years	2.1 (1.6 to 2.6)	2.5 (1.6 to 3.9)
55+	1.0	1.0
Lone parenthood		
Lone parent	2.2 (1.5 to 3.0)	1.8 (1.2 to 2.7)
Other	1.0	1.0

Source: 1998-99 Household Expenditure Survey, Australian Bureau of Statistics.
*Odds ratios pertain to the odds of having experienced financial stress in the past year.

sales workers; and professional, including managers, administrators, professionals, and associate professionals.

We created an indicator of unemployment distinguishing households with one or more unemployed persons. Similarly we included a variable distinguishing households with one or more persons receiving government pension. Type of housing occupancy was divided into renter, purchaser, outright owner, and other (for example, rent-free occupation).

IRSD is an area socioeconomic index compiled at the collection district level by the ABS. It includes such variables as the income, education, occupation, housing, household composition, and English fluency of residents.[18] IRSD was classified into quintiles and attached to the household individual records.

Age of head of household and whether the household was headed by a lone parent were included in multivariate analysis. Lone parenthood is strongly related to financial stress, low income, and smoking prevalence.[1 3 19]

Analysis
The unit of analysis is the household. The statistical package Stata was used for all analyses.[20] Jackknife replicate weights provided by the ABS were employed for the computation of

standard errors.[8] This technique involves a data dependent way of estimating standard errors and takes into account the complex sample design.[21 22] Although computation of standard errors using replicate weights is labour intensive it does not require information on primary sampling units and stratification, which is not normally provided by the ABS.

RESULTS
Table 1 shows the sample characteristics and how financial stress varies by categories of smoking status (whether or not the household reported tobacco expenditure) and across categories of socioeconomic variables. The bivariate results in this table indicate that smoking households and those from lower socioeconomic backgrounds experience considerably more financial stress. Table 2 gives average tobacco expenditure by income quintile for all households and for smoking households only. Table 3 summarises the relationship between financial stress, smoking status, and income. The pattern of results clearly shows that financial stress diminishes with higher level of income, and that smoking households have notably higher levels of financial stress than non-smoking ones regardless of income level.

Table 5 Adjusted odds ratios* (OR) and 95% confidence intervals (CI) from logistic regression of financial stress on tobacco expenditure as a percentage of household expenditure, income, and other covariates (n=2291)

Variables	Any stress OR (95% CI)	Severe stress OR (95% CI)
Percentage of expenditure spent on tobacco		
≤2%	1.0	1.0
Between 2–5%	1.4 (1.0 to 1.8)	1.1 (0.7 to 1.7)
≥5%	1.7 (1.2 to 2.4)	2.1 (1.3 to 3.2)
Household income		
First quintile	5.8 (3.6 to 9.4)	10.8 (1.2 to 94.6)
Second quintile	4.7 (3.0 to 7.3)	8.2 (1.1 to 62.6)
Third quintile	4.1 (2.8 to 6.1)	6.2 (1.0 to 39.5)
Fourth quintile	2.8 (2.1 to 3.7)	4.9 (0.7 to 32.4)
Fifth quintile	1.0	1.0
Education		
No qualifications	1.1 (0.6 to 1.8)	1.6 (0.5 to 5.1)
Diploma	0.9 (0.6 to 1.4)	1.7 (0.5 to 5.4)
Degree	1.0	1.0
Unknown	1.1 (0.4 to 2.7)	2.4 (0.8 to 7.1)
Occupation		
Blue collar	1.7 (1.2 to 2.3)	1.4 (0.7 to 2.8)
White collar	1.4 (1.0 to 2.0)	1.1 (0.6 to 2.2)
Professional	1.0	1.0
Not applicable	2.2 (1.3 to 3.7)	2.2 (1.0 to 4.5)
Unemployment		
One or more unemployed persons	1.9 (1.4 to 2.5)	1.4 (0.8 to 2.5)
No-one unemployed	1.0	1.0
Pension		
One or more persons on pension	2.0 (1.6 to 2.4)	1.2 (0.7 to 2.1)
No-one on pension	1.0	1.0
Type of housing occupancy		
Renter	3.5 (2.3 to 5.2)	8.4 (4.4 to 15.8)
Purchaser	2.5 (1.6 to 3.8)	2.3 (1.1 to 4.8)
Owner	1.0	1.0
Other	2.3 (0.9 to 5.7)	2.5 (0.6 to 10.4)
Index of relative socioeconomic disadvantage		
First quintile (high disadvantage)	1.6 (1.1 to 2.5)	0.5 (0.2 to 1.1)
Second quintile	1.7 (1.2 to 2.5)	0.6 (0.3 to 1.0)
Third quintile	1.5 (1.0 to 2.2)	0.4 (0.2 to 0.9)
Fourth quintile	1.4 (0.9 to 2.0)	0.5 (0.3 to 1.1)
Fifth quintile (low disadvantage)	1.0	1.0
Unknown	1.5 (1.0 to 2.5)	0.6 (0.2 to 1.2)
Age of head of household		
15–34 years	2.6 (1.7 to 3.8)	2.4 (1.1 to 5.2)
35–54 years	2.1 (1.4 to 3.1)	2.7 (1.3 to 5.7)
55+ years	1.0	1.0
Lone parenthood		
Lone parent	2.1 (0.9 to 4.8)	2.3 (1.4 to 3.9)
Other	1.0	1.0

Source: 1998-99 Household Expenditure Survey, Australian Bureau of Statistics.
*Odds ratios pertain to the odds of having experienced financial stress in the past year.

Table 4 presents the relationship between smoking status and financial stress, adjusting for socioeconomic variables, age of head of household, and lone parenthood. The odds of experiencing any financial stress were 1.5 times greater and the odds of severe financial stress were twice as large for smoking households in comparison to non-smoking households. There was a significant financial stress gradient across categories of income with low income groups experiencing substantially more stress. There was no interaction between smoking status and income in their effect on financial stress. The effect of other indicators of socioeconomic status (SES) were either significant or such that lower status was associated with higher probability of financial stress.

We now consider the relationship between tobacco expenditure and financial stress among smoking households. We measured tobacco expenditure by using it as a percentage of total household expenditure on goods and services. This percentage was 7.7%, 6.4%, 4.7%, 3.5%, and 2.4% for households in the first, second, third, fourth, and fifth income quintiles, respectively. For analytical purposes, and because percentage of tobacco expenditure had a J shaped distribution, we divided it into: ≤ 2%; between 2–5%; and ≥ 5%. There

were nearly an equal number of households in each category. Table 5 shows the effect of percentage of tobacco expenditure on financial stress, controlling for income and other covariates. The experience of financial stress was associated with higher percentage of tobacco expenditure and with lower income. There was no interaction between tobacco expenditure and income. The odds of experiencing any stress were 1.7 times greater, and the odds of severe financial stress were over twice as large for households that spend 5% or more of their total household expenditure on tobacco, compared to those that spend 2% or less on tobacco.

Tables 4 and 5 pertain to indicators of any financial stress and severe financial stress. Due to the J shaped distribution of the "financial stress index", it was trichotomised and generalised logit models were estimated.[23] However, the results are not presented as they did not reveal additional information to what is reported above.

DISCUSSION

This was the first study to examine the association of smoking and financial stress in Australia. The findings were consistent with previous work in other countries.[7 24 25] This was also the

first study to investigate this association across a range of income groups. Results revealed that smoking households with a higher percentage of expenditure on tobacco face an increased chance of experiencing financial stress. Even among high income households smoking was a significant predictor of financial stress. This association held independent of a host of SES and demographic indicators.

The association of smoking and financial stress among high income groups may seem difficult to explain at first. However, the reader is reminded that although the percentage of total household expenditure on tobacco is higher among households in the top (high income) than the bottom (low income) quintiles, the difference is only 5 percentage points. Also it will be remembered that as much as 17% of households in the top quintile (high income) reported having experienced financial stress in the past year (table 2). Many of these households reported not being able to afford a night out or to have a special meal once a week. These activities are not very costly and it is plausible that the money spent on tobacco could prevent such experiences of financial stress.

Because of the cross sectional nature of the data, we are unable to draw definite causal inferences. While it is plausible that financial stress may lead to continued smoking, money spent on cigarettes will diminish available income and thus can contribute to financial stress. In all likelihood the relationship between smoking and financial stress is non-recursive, such that tobacco expenditure contributes to stress and stress in turn encourages smoking. Cross sectional data cannot fully disentangle the complex relationship between smoking and financial stress. Only longitudinal data can provide an accurate specification of causal mechanisms, by specifying the temporal ordering of variables. A prospective study can analyse changes in financial stress in relation to changes in smoking status. Other life course factors such as marital dissolution, loss of job, and unexpected medical expenses can also be modelled in longitudinal studies to provide a fuller picture of the determinants of financial stress and how they are related to smoking status.

High smoking prevalence has been associated with low SES in Australia and many other countries.[4 26–28] We and others have argued that policies aimed at improving the material conditions of low income and disadvantaged groups such as low skilled manual workers or lone mothers can be effective in reducing SES differentials in smoking prevalence and cessation rates.[7 19 24 25] Given the present findings that suggest that a reduction in tobacco consumption can ameliorate financial stress, we further argue that campaigns and interventions aimed at reducing smoking prevalence may improve standards of living. The material benefits of such interventions will also occur indirectly because of the short and long term health benefits of smoking cessation,[29–31] which translate into lower household spending on medical services and a host of other financial benefits.[32] Furthermore, programmes that specifically target smoking among disadvantaged and lower SES groups may reduce material disparities. The equalising effect of the decline in prevalence among these groups is not only caused by the link between smoking and financial stress, but also because much of the ubiquitous SES differentials in morbidity and mortality are attributed to pronounced SES gradients in smoking.[27 33]

Households that experience financial stress or are faced with the prospect of future financial problems may often reduce or eliminate expenditure on non-essential items. However, tobacco is typically an exception to this rule because of its addictive qualities or because smokers believe it helps cope with and relieve stress.[6] The uniqueness of the relationship between tobacco expenditure and financial stress is evident in the finding (not shown here) that financial stress has a significant negative association with expenditure on nearly all household items, including clothing, footwear, food, meals at restaurants, household furnishings, alcohol, and gambling.

What this study adds?

We found only one empirical study on the impact of smoking on financial stress. This British study used a sample of low income families and showed that smoking is a strong predictor of financial stress. In Australia, being a smoking household and, among smoking households, spending more on tobacco is associated with an increased chance of experiencing financial stress. Even among high income households, smoking was a significant correlate of financial stress. The effect of smoking did not vary significantly across categories of income.

Given the positive relationship between smoking and financial stress, a policy that aims to increase the tobacco excise, which is recognised as one of the most effective means of reducing smoking prevalence,[34–36] may in fact have a deleterious impact on the material wellbeing of low income smokers who already face financial difficulties. More research is required to determine the impact of tobacco price increases on cessation and level of consumption among low SES groups. If research shows that demand for tobacco has a low price elasticity among these groups, special programmes such as providing subsidised nicotine replacement therapies should be implemented to counter the potentially negative effect of price increases on their material wellbeing.

In short, household tobacco expenditure is related to financial stress among all income groups. Thus anti-smoking campaigns and policies can effect improvements in material conditions and social disparities. However, if such policies involve tobacco price increases, special programmes may have to be implemented to counter the potentially adverse effects on the financial conditions of low income households that fail to reduce tobacco expenditure.

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