'Hardcore' smoking
Is it real and does it matter?

Medicine

National Drug and Alcohol Research Centre

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Background

'Hardcore' smoking

- Reviews focussing on operational definitions, usually made up of:

  - Dependence

  - Lack of intention to quit

  - No recent quit attempts

- Most direct research however has focussed on less direct measures:

  - Psychological distress

Socioeconomic Status and Smoking

- In Western countries people from low socioeconomic backgrounds are more likely to be smokers

- The exact mechanism behind this is unknown

- Past evidence has shown low-socioeconomic status smokers are:

  - Less likely to intend to quit

  - Less likely to succeed when making a quit attempt

- The overlap with 'hardcore' smoking suggests that low-SES smokers may be more likely to be 'hardened' than high-SES smokers

This paper

Aims

- Examined prevalence and change in 'hardcore' smoking over time

    - If the hardening hypothesis is correct, the population prevalence of 'hardcore' smoking will remain stable, while the proportion of smokers who are 'hardcore' smokers will increase

- Investigated predictors of 'hardcore' smoking

    - In particular, we investigated whether socioeconomic status is linked to 'hardcore' smoking

What we did

- Took data from a public dataset

    - NDSHS is a large, stratified sample survey of drug use conducted every 3 years

- Constructed a variable of 'hardcore' smoking

    - Smoked at least 15 cigarettes a day

    - Had no intention to quit in the next year

    - Had not made a quit attempt in the past year

What we did

- Used regression modelling to examine the predictors of 'hardcore' smoking and of the separate components

    - Controlled for socioeconomic variables such as education, employment status and SEIFA

    - Controlled for demographic variables such as age, sex, and main language
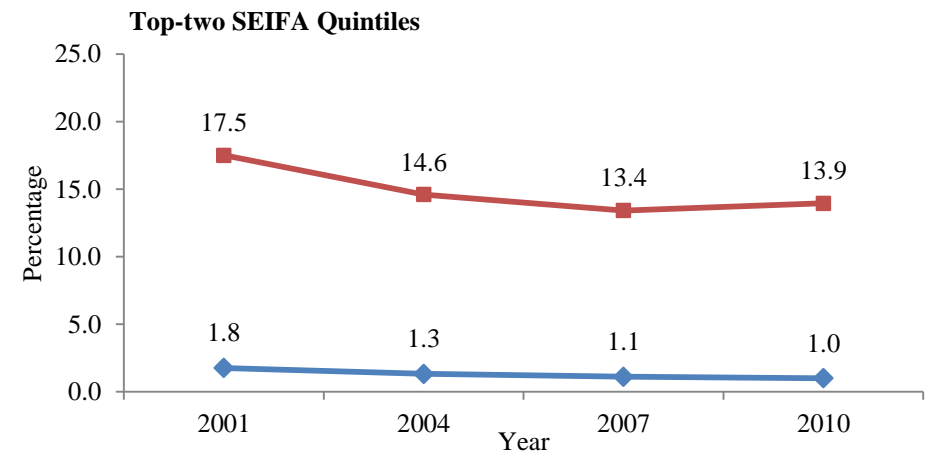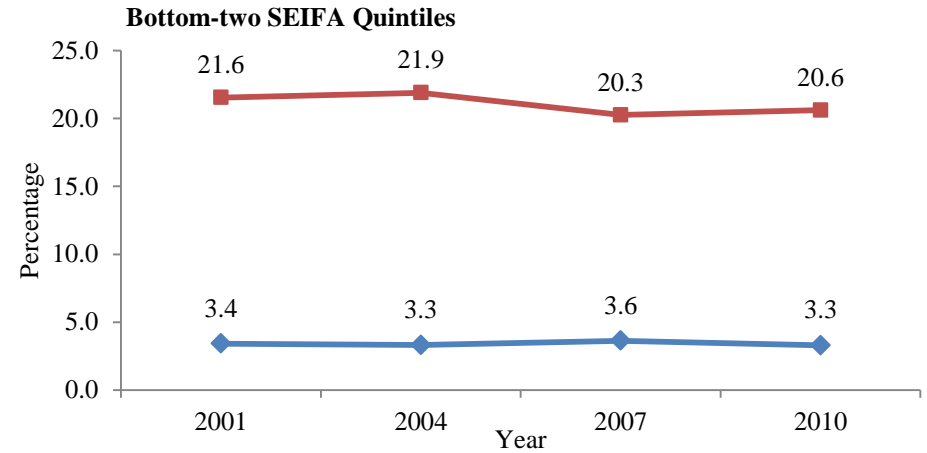
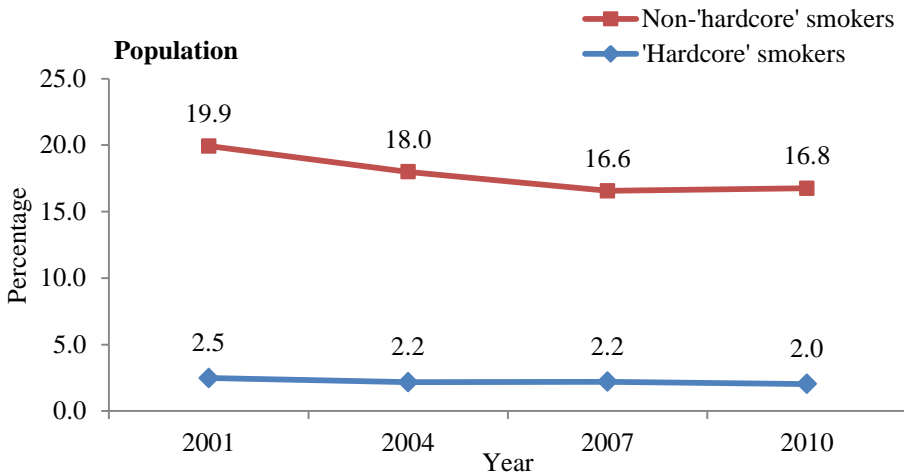- Much more detail on the variables is in the paper

Sample - Demographics

Demographic Characteristics	Smokers	Non-smokers	Total
	n=14,507	n=57,143	n=71,650
Age			
18-24	15.3%	12.4%	13.0%
25-39	36.3%	26.1%	28.1%
40-54	31.2%	27.7%	28.4%
55+	17.1%	33.8%	30.5%
Sex			
Female	46.4%	52.4%	51.2%
Male	53.6%	47.6%	48.8%
Aboriginal/Torres Strait Islander (ATSI)			
Non-ATSI	97.1%	99.0%	98.6%
ATSI	2.9%	1.0%	1.4%
Main language spoken not English			
English	94.4%	91.4%	92.0%
Language other than English	5.6%	8.6%	8.0%
Migrant (not born in Australia)			
No	77.0%	72.6%	73.5%
Yes	23.0%	27.4%	26.5%
Marital Status			
Married/de facto	56.5%	69.5%	67.0%
Widowed/divorced/separated	14.9%	11.2%	11.9%
Never married	28.6%	19.2%	21.1%
Single parents with dependent children			
No	91.9%	96.2%	95.3%
Yes	8.1%	3.8%	4.7%

Smoking Prevalence by SES

'Hardcore' characteristics by Year

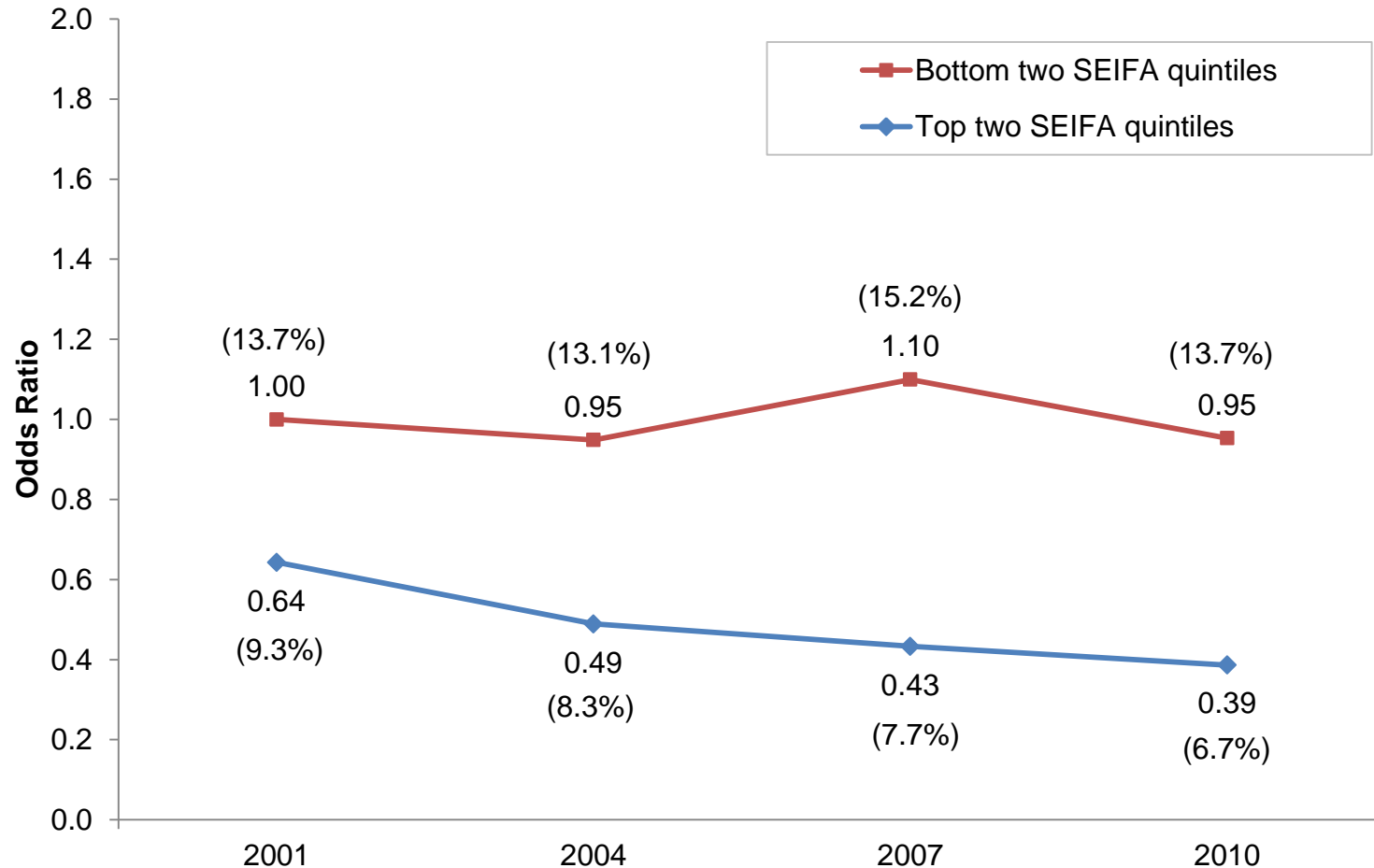| Hardcore Smoking Characteristics	Total	2001	2004	2007	2010
'Hardcore' smoker	11.3%	11.9%	10.9%	11.8%	10.7%
No quit attempt in past 12 months	55.8%	54.3%	57.1%	55.5%	56.4%
No plan to quit	33.5%	33.2%	34.4%	35.1%	31.4%
Heavy smoker	42.3%	42.0%	42.4%	43.9%	41.2%

Predictors of 'hardcore' smoking

Variables	Adjusted OR (95% CI)	p-value
Age	0.99 (0.99 to 1.00)	p<0.001
Sex		
Female	1.00	p<0.001
Male	1.57 (1.38 to 1.77)	
ATSI Status		
Non-ATSI	1.00	p<0.001
ATSI	2.02 (1.49 to 2.74)	
Main language spoken		
English	1.00	p<0.001
Language other than English	0.54 (0.39 to 0.77)	
Migrant (not born in Australia)		
No	1.00	p=0.047
Yes	1.17 (1.00 to 1.37)	
Employment status		
Employed	1.00	p<0.001
Student	0.31 (0.18 to 0.51)	
Not employed - in workforce	1.76 (1.37 to 2.26)	
Not employed - not in workforce	1.07 (0.90 to 1.26)	
Other	1.26 (0.78 to 2.03)	
Marital Status		
Married/de facto	1.00	p<0.001
Widowed/divorced/separated	1.90 (1.64 to 2.21)	
Never married	1.18 (0.99 to 1.42)	
Single parents with dependent children		
No	1.00	p=0.049
Yes	1.25 (1.00 to 1.57)	
Education		
High school or lower	1.00	p<0.001
Diploma or certificate	0.69 (0.61 to 0.78)	
University degree	0.27 (0.21 to 0.35)	

The analysis also included SEIFA, year and a SEIFA by year interaction, but it wouldn't fit in the table
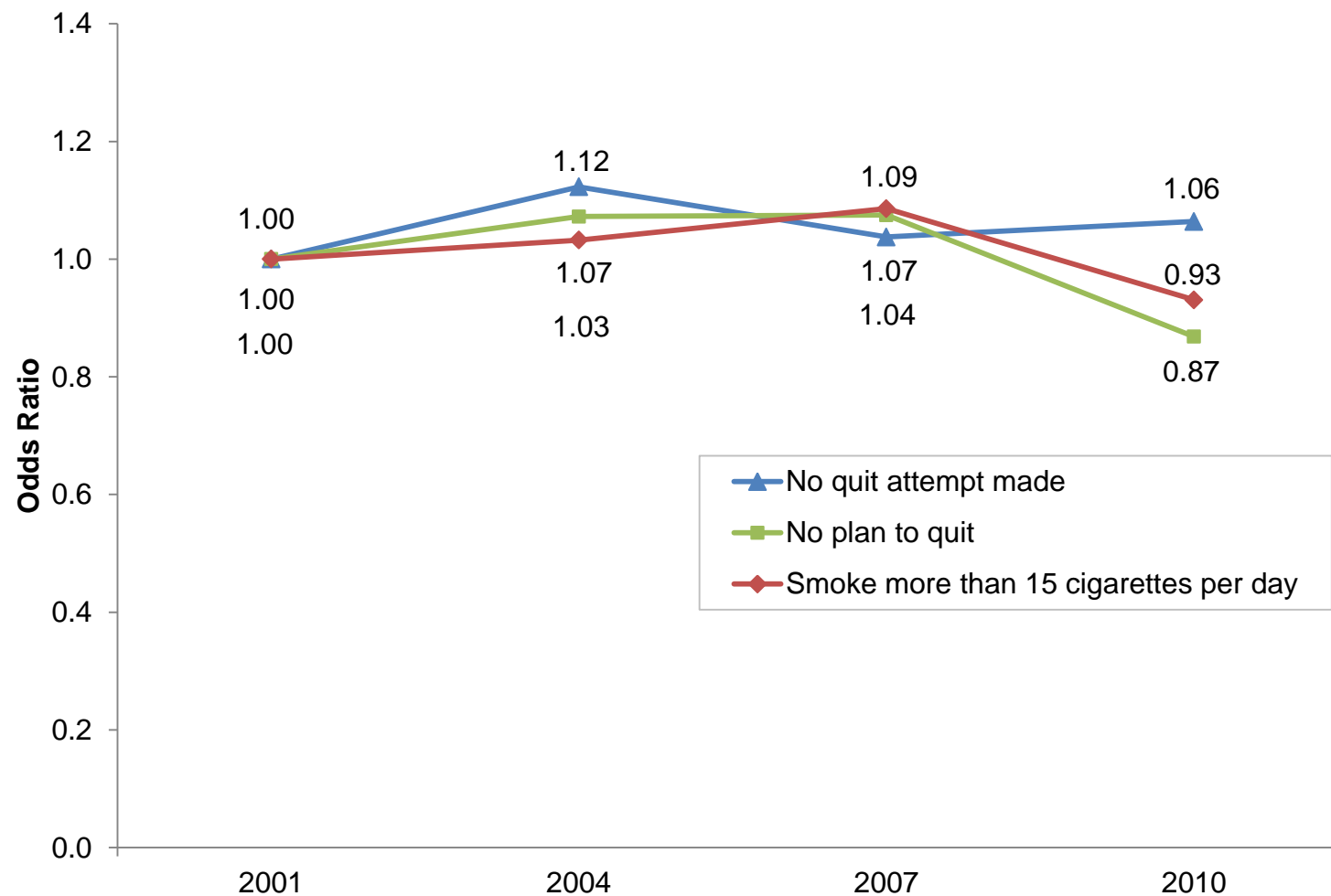
Odds of 'Hardcore' smoking by SES

Note: Prevalence of hardcore smoking for each data point are shown in brackets.

Components of 'hardcore' smoking

Variables	Adjusted Odds - Smoker who has not made quit attempt		Adjusted Odds - Smoker with no plan to quit		Adjusted Odds - Smoker who smokes more than 15 cigarettes per day	
	Coefficient (95% CI)	p-value	Coefficient (95% CI)	p-value	Coefficient (95% CI)	p-value
Survey Year						
2001	1.00	p=0.213	1.00	p=0.004	1.00	p=0.126
2004	1.12 (1.01, 1.25)		1.07 (0.95, 1.21)		1.03 (0.92, 1.16)	
2007	1.04 (0.92, 1.17)		1.08 (0.95, 1.22)		1.09 (0.96, 1.23)	
2010	1.06 (0.95, 1.19)		0.87 (0.77, 0.98)		0.93 (0.83, 1.05)	
SEIFA						
Bottom two SEIFA quintiles	1.00	p=0.698	1.00	p<0.001	1.00	p<0.001
Top two SEIFA quintiles	1.02 (0.93, 1.11)		0.78 (0.71, 0.86)		0.67 (0.62, 0.74)	
Employment status						
Employed	1.00	p=0.159	1.00	p<0.001	1.00	p<0.001
Student	0.91 (0.73, 1.12)		0.90 (0.69, 1.17)		0.55 (0.42, 0.71)	
Not employed - in workforce	1.04 (0.86, 1.26)		1.31 (1.07, 1.61)		1.46 (1.21, 1.77)	
Not employed - not in workforce	0.92 (0.83, 1.02)		1.39 (1.24, 1.55)		1.15 (1.03, 1.28)	
Other	0.72 (0.50, 1.03)		1.04 (0.70, 1.54)		1.02 (0.70, 1.48)	
Marital Status						
Married/de facto	1.00	p=0.047	1.00	p=0.006	1.00	p=0.004
Widowed/divorced/separated	0.97 (0.86, 1.09)		1.04 (0.92, 1.17)		1.20 (1.06, 1.36)	
Never married	1.13 (1.02, 1.27)		1.21 (1.08, 1.37)		0.95 (0.85, 1.07)	
Education						
High school or lower	1.00	p=0.003	1.00	p<0.001	1.00	p<0.001
Diploma or certificate	0.90 (0.83, 0.99)		0.75 (0.68, 0.83)		0.88 (0.80, 0.97)	
University degree	0.80 (0.70, 0.92)		0.84 (0.72, 0.98)		0.50 (0.43, 0.58)	

Components of 'hardcore' smoking

So what have we learned?

Is 'hardcore' smoking real?

- Simple answer: Yes

- Hardening appears to be happening among lower-SES smokers, but NOT among higher-SES smokers

And does 'hardcore' smoking matter?

- On the one hand:

  - Very small group – only about 20% of low-SES smokers (3-4% of whole low-SES population) are hardcore

- BUT

  - The group it does apply to are already disadvantaged, and this will only get worse

  - Eventually, if the hypothesis holds, 'hardcore' smokers will be the only smokers left – so at some point we will need a strategy to deal with this

Where to from here?

- It is not clear what the mechanisms behind the SES difference in smoking are

    - The gap is growing

    - Need to understand it better in order to address it

- Lots of possible explanations:

    - Access to services

    - Understanding/engagement with health messages

    - Stress (particularly financial stress)

Some next steps

- Links to other drug use

  - Daily alcohol drinkers are twice as likely to be 'hardcore'

  - Recent marijuana users are twice as likely to be 'hardcore'

- Use of and access to quit smoking services and support - paper currently under review

  - Broadly, the paper doesn't support the use of/access to services as an explanation of SES differences

  - This suggests that use of services is low across the board, and improving this is worthwhile

Some next steps

- Clinical work

    - Currently a clinical trial looking at the combination of NRT with a novel support program is being conducted at NDARC

    - Another grant has been submitted (fingers crossed)

Acknowledgements