



Baseline study of alcohol dependence among general drivers and drunk driving offenders in Guangzhou, China

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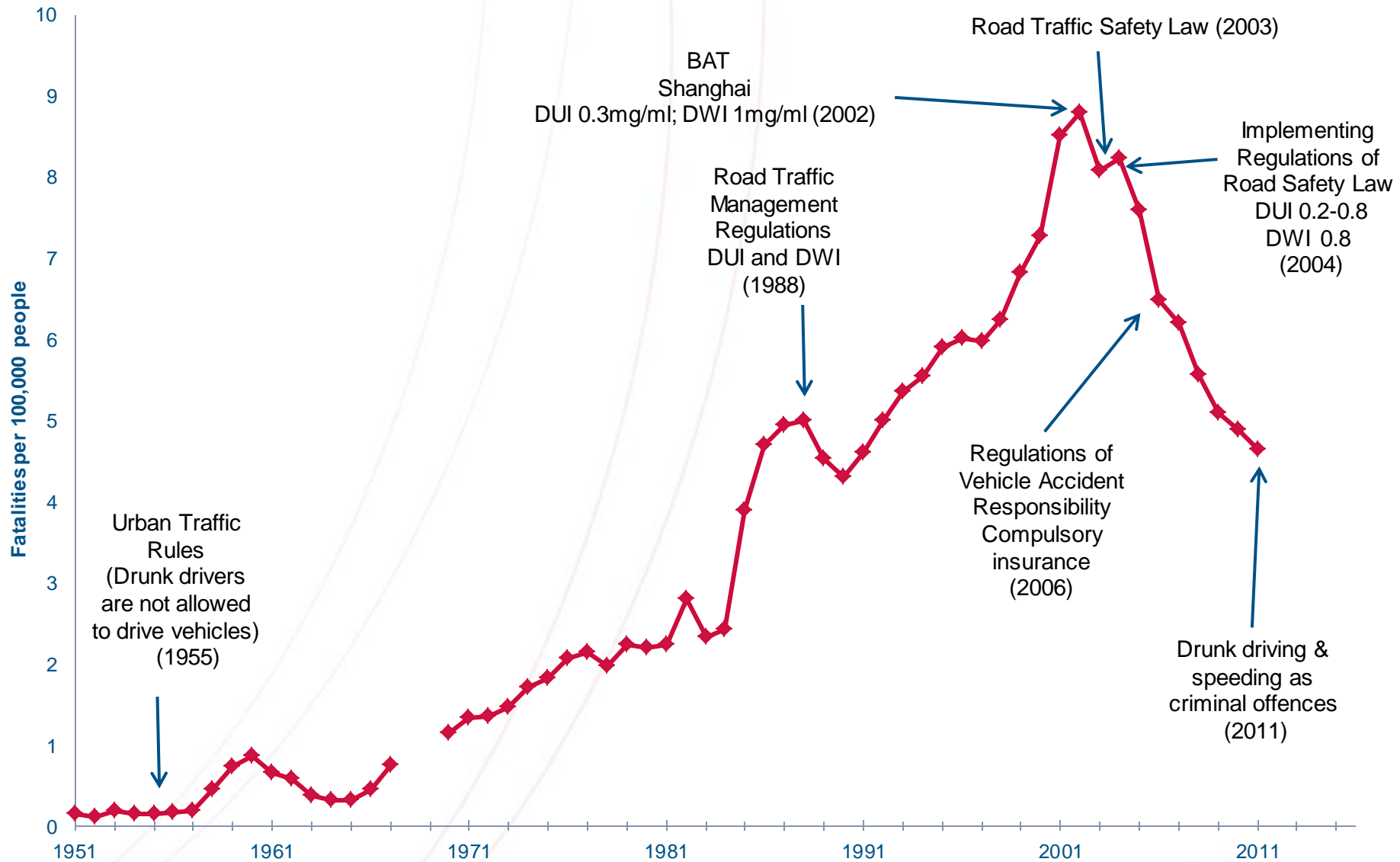
Overview

- Road safety situation in China
- Drink driving in Guangzhou, China
- Study design and methods
- Study results
- Summary of findings
- Limitations



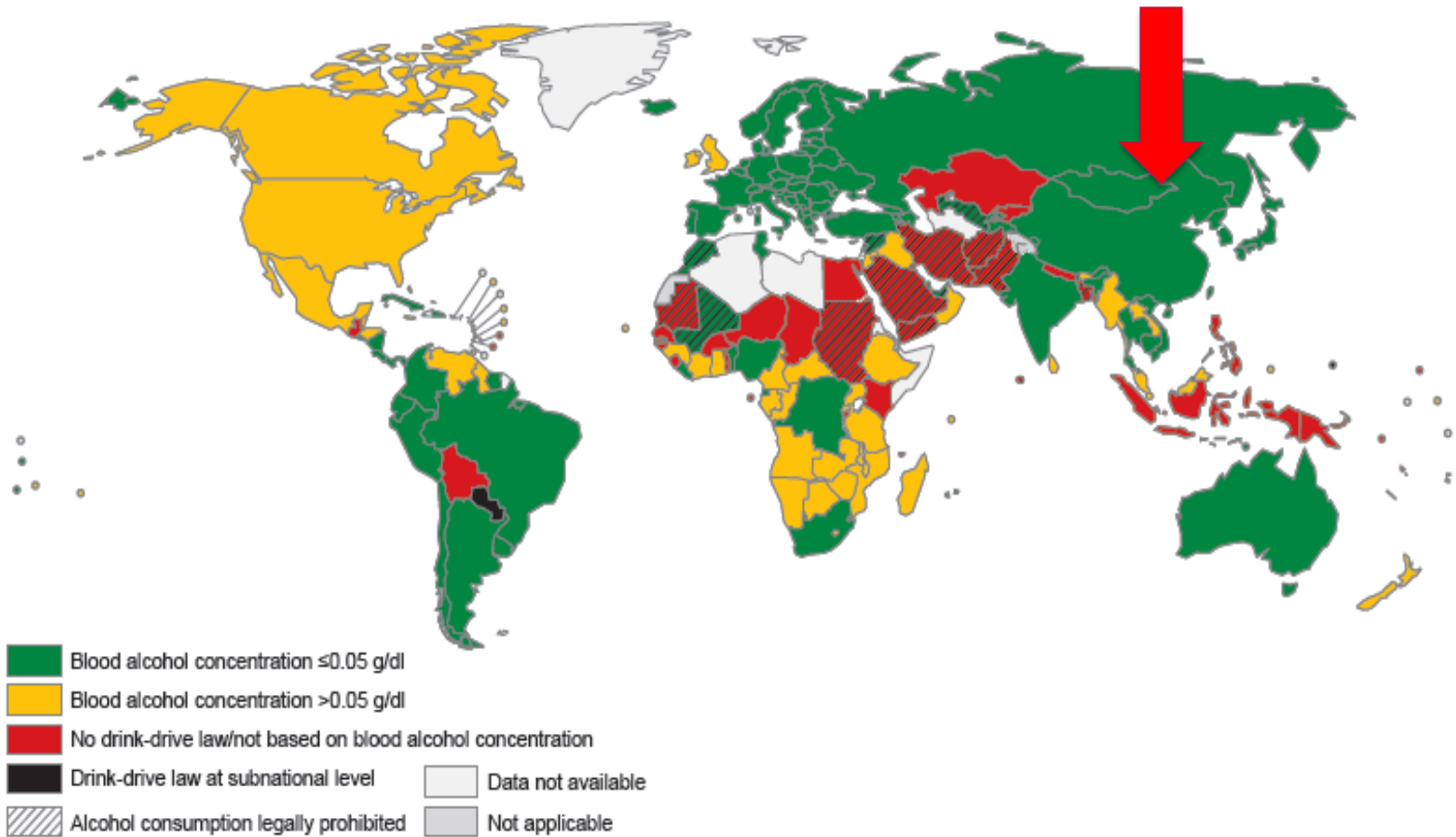
China road fatalities per head of population: 1951-2011

(MPS,2012)



China and international drink driving laws

Drink driving $\geq 20\text{mg}-80\text{mg}/100\text{ ml}$
Drunk driving $\geq 80\text{mg}/100\text{ml}$, 1st May, 2011



Drink driving and drunk driving

- **Drunk driving: BAC \geq 80mg/100ml, as a criminal offence, 1st May, 2011.**
- **Drink driving: BAC \geq 20mg-80mg/100ml illegal.**

Guangzhou

- Capital of Guangdong province
- The third largest city in China
- Population: 12.78M (2011)
- GDP 912.27 Million Yuan
- 2,145,000 Motor vehicles (2011)
- 300,000 newly registered vehicles 2011 & 2012.



Drink/drunken driving in China and Guangzhou

(MPS, 2012)

	National	Guangzhou
Alcohol-related driving offences (Drink/drunken driving)	368,000 ^a	4750 ^a (1.3%)
Drunk driving	56,000 ^a	877 ^a (1.6%)
Alcohol related crashes	4912 ^b	37 ^b
Alcohol related fatalities	1957 ^b	21 ^b

^a Data from 1st May, 2011 to 30 April, 2012, In the first year of Drunk driving amended into criminal offence in Criminal Law of China.

^b Data from January – December 2011.

Study design and methods and aims



AUDIT: Alcohol Use Disorders Identification Test

- AUDIT (Babor, 1989; Conley, 2001) to assess possible drinking problem
- Chinese Version previously used but not in relation to driving (He, 1997; Ma, 1998; Tasi, 2005; Guo, 2008)
- 4 levels of alcohol problem severity

Alcohol problem severity	Range of AUDIT scores
Low	0-7.9
Medium	8-15.9
High Level	16-19.9
Need further diagnostic evaluation for alcohol dependence	20 or more

Attitude towards drink driving

- **Assess using 11 items**
 - Scale format: *Strongly agree; Agree a little; Neutral; Disagree a little; Strongly disagree (1- 5).*
 - Score range: 11-55.
- **Examples:**
 - *I think it is safe for me if I drive after drinking alcohol.*
 - *You will have a good time when you drive after drinking.*
 - *I think it is safe if I am a passenger of a driver who has been drinking.*
 - *If I am completely honest with myself, I will probably drink and drive in the future.*

Recruitment

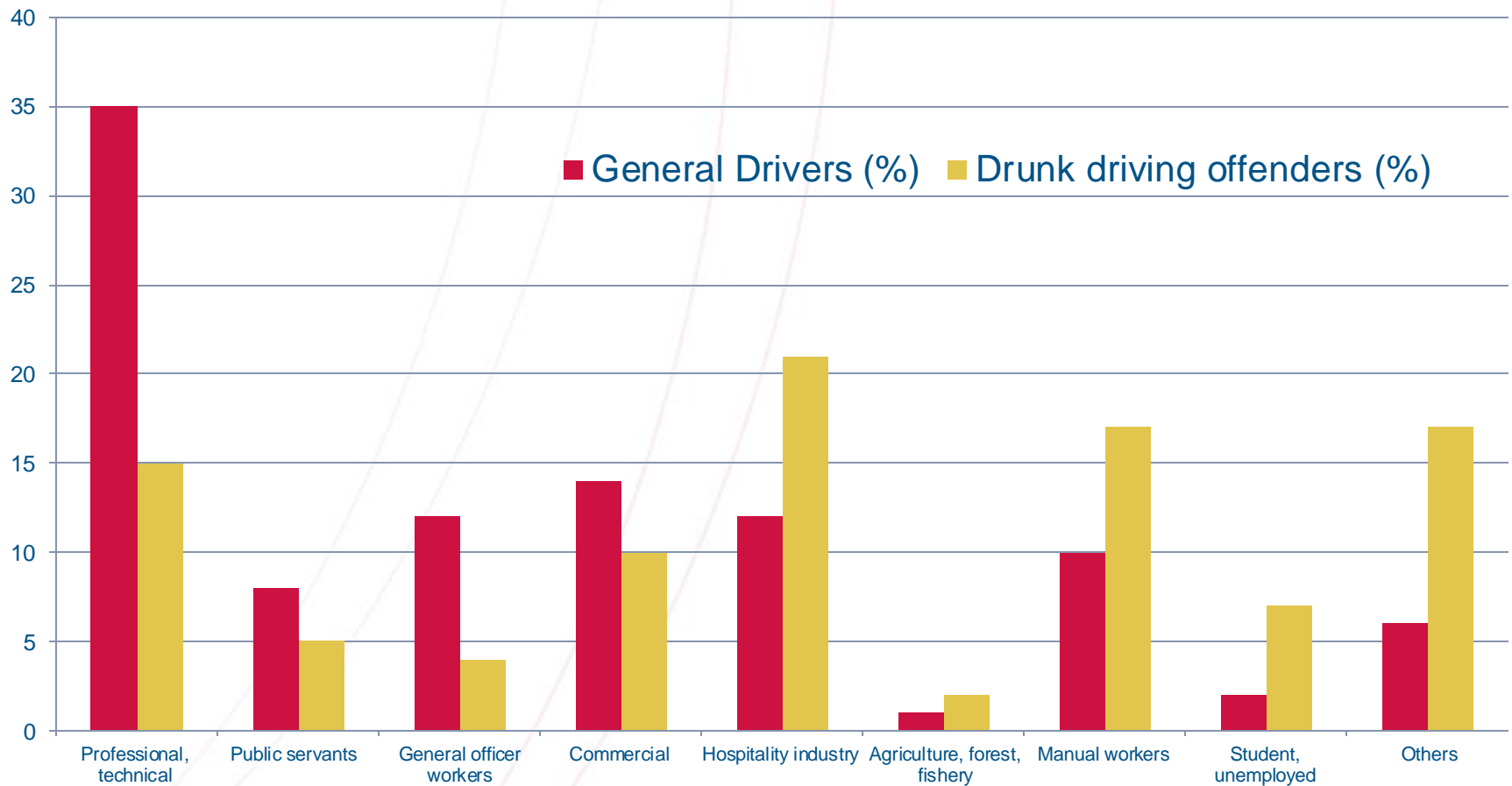
- May 2012 to October 2012
- First author and three research assistants from Guangdong Institute of Public Health, Guangdong CDC and 2 research assistants from local Public Security Bureau - jail authority
- Participants:
 - 406 general drivers (convenience sample)
 - 101 drunk driving offenders (while in detention)
- Ethical approval (QUT Human Research Ethics Committee)

Demographics of participants

Measurements	Items	General drivers	Drunk driving offenders
Gender	Males	270 (67%)	91 (90%) ^{***1}
	Females	136 (33%)	10 (10%) ^{***}
Mean Age	In Years (SD)	35.7 (9.1)	33.6 (8.7)*
Marital status	Married	76%	63% *
	Single	21%	29%
	Divorced	2%	6%*
	Widowed	1%	2%
Education level	Primary school	4%	11% ^{***2}
	Middle School	6%	22% ^{***}
	High school	29%	34%
	Bachelor degree or above	61%	33% ^{***}
Driver's licence	Licensed	93%	92
	Mean years licensed (SD)	8.6(7.3)	8.4(6.8)
Professional drivers		13%	20%

^{***1} $p < 0.001$, $X^2 = 21.963$, $df = 1$; * $p < 0.05$, $t = 2.05$; $df = 505$; ^{***2} $p < 0.001$, $X^2 = 43.641$, $df = 3$.

Occupations of general drivers and drunk drivers



Vehicle driven most often

Vehicle driven	General drivers	Drunk driving offenders
Company car	70 (17%)	27(27%)*
Private car	264(65%)	51(50%)*
Other	71(18%)	23(23%)

* $P < 0.05$, $X^2 = 8.023$, $df = 2$

Knowledge about drink driving

Key measures	General drivers %	Drunk driving offenders %
Know drunk driving amendment in Criminal Law (May 2011)	84	84
Knowledge of Current drink driving BAC level (20-80mg/100ml)	19	28*
Knowledge of Current drunk driving BAC level (80mg/100ml or more)	21	41**
Correct answers for the amount of alcoholic beverages that could be consumed to remain under the legal limit	4 spirits 6 wine 3 beer	2 spirits 7 wine 1 beer

* $P < 0.05$, $X^2 = 13.056$, $df = 5$; ** $P < 0.01$, $X^2 = 19.205$, $df = 5$

Self-report Alcohol-related driving behaviours

Key measures	General drivers %	Drunk driving offenders %
Mean age (in years) first consumed alcohol	19.7 (4.5)	19.5 (4.1)
Reported previously having driven over the legal limit		
car	15	42*
Motorbike	11	48*
Another vehicle	8	14
Last 12 months, had driven motor vehicle on a public road while over the legal BAC	13	39*
Last 12 months, being a passenger of a drunk driver	18	36*
Try to keep track of the amount of alcohol they had consumed if they were driving	50	78
In the previous year, average numbers of BAT	0.7 (1.6)	1.5 (1.3)*
In the last three years, have you been caught for an alcohol related driving offence?	1%	21%* ^a
Have you been jailed for an alcohol related driving offence?	2%	22%*(Recidivist)

* $p < 0.05$, ^a = not including the most recent offence

Alcohol Use Disorder Identify Test (AUDIT)

Measures	General drivers	Drunk driving offenders
Average & SD	7.4 (5.4)	11.1(5.9) ^a

Alcohol problem severity	AUDIT Scores	General drivers %	Drunk driving Offenders%
Low	0-7.9	63	38 ^b
Medium	8-15.9	29	50 ^b
High level	16-19.9	6	8
Need further diagnostic evaluation for alcohol dependence	20 or more	2	4

^a $P < 0.001$, $t = 5.75$; ^b $P < 0.001$, $X^2 = 17.197$, $df = 3$

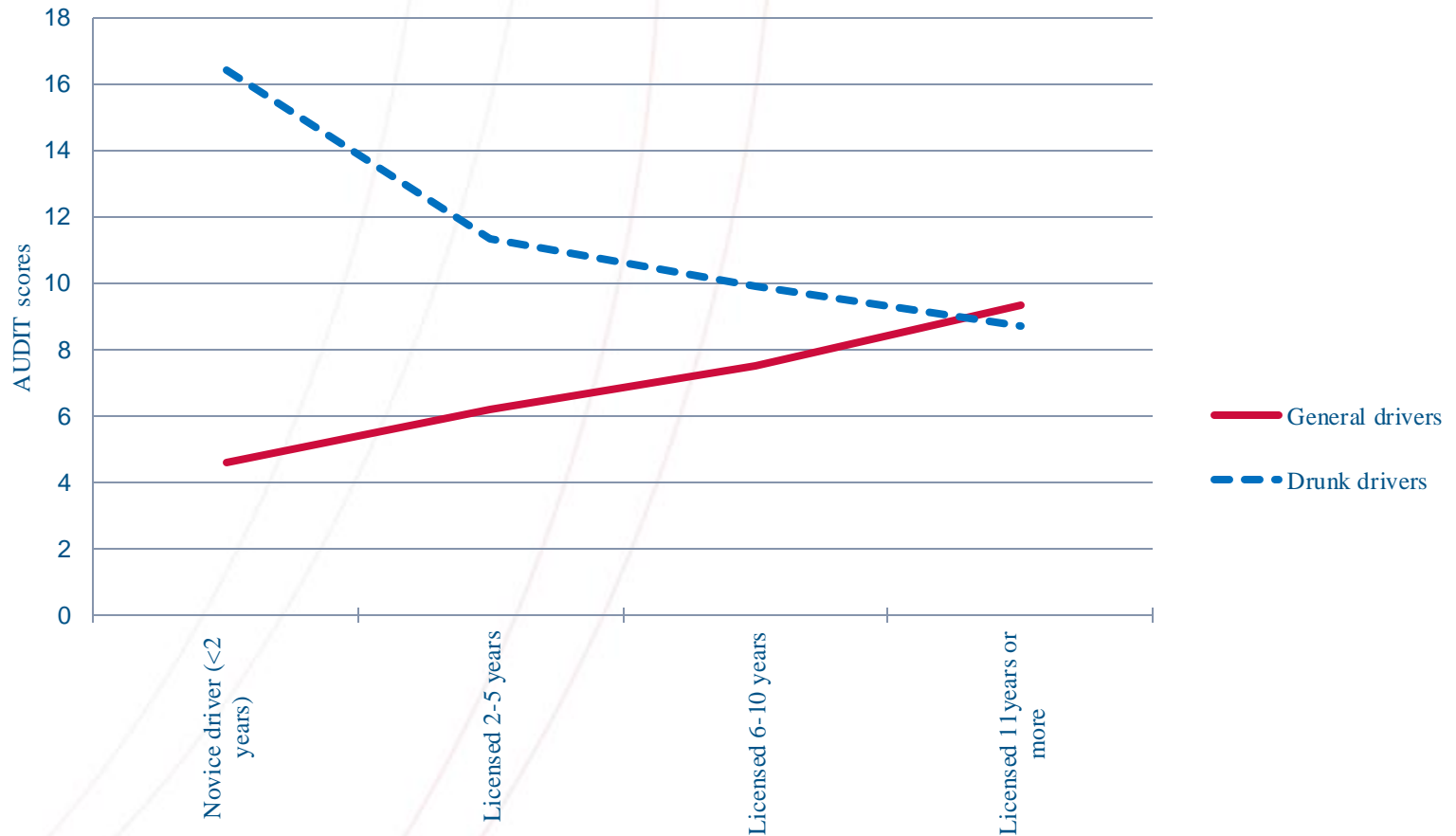
Relationship between AUDIT & other variables

	General drivers	Drunk driving offenders
Age	A slight correlation $r = 0.1$	A moderate negative correlation $r = -0.3$
Genders	Males (M = 8.4) > Females (M = 4.2)	No difference
	Males DD (M = 11.1) > Males GD (M = 8.4) Female DD (M = 11.6) > Female GD (M = 4.2)	
Knowledge of legal limits	No difference	With knowledge has a lower AUDIT scores (M: 12.2: 9.8)
Recidivist offenders	No difference	Higher M = 15.1 than first offenders M = 9.9
Monthly income	With high monthly income, a high AUDIT scores (10000 RMB)	No difference

Attitude towards drink driving

- General drivers ($M = 48.7$, $SD = 6.3$) higher than offenders ($M = 43.2$, $SD = 9.2$, $t = 4.916$, $p < 0.01$).
- The attitude score and AUDIT score had a medium negative correlation for general drivers ($r = -0.35$, $p < 0.01$) and for drunk driving offenders groups ($r = -0.526$, $p < 0.01$).

Years licensed and AUDIT scores for general drivers and drunk drivers



Standard multiple regression

- AUDIT and age, gender, attitude, marital status and education level
 - Drunk driving offenders group, 79% ($F = 52.565$, $p < 0.001$). All variables significant
 - General drivers, 67.1%, ($F = 61.228$, $p < 0.001$). Attitude was not significant, other predict contributor

Summary of findings

- General drivers:
 - Males had higher level of alcohol problems than females
 - The prevalence of alcohol problems increase with age; experience drivers had medium alcohol problems.
 - Knowledge about two level limits lower than drunk driving offenders.
 - Had more positive attitude (safer) towards drink driving.
- Drunk driving offenders:
 - Younger than general drivers.
 - Young offenders had higher alcohol problems; especially, novice driver had even high level of alcohol problems.
 - Males accounted for high proportion in drunk driving offenders.
 - Recidivist offenders had a higher level of alcohol problems

Summary of findings (Cont.)

- For both samples
 - Majority knew amended law of drunk driving as criminal offence in May, 2011
 - Both had very limited knowledge about:
 1. legal BAC levels
 2. safe drinking levels

Limitations

- Convenience sampling
- The number of offenders was relatively small, limiting the degree to which findings could be generalised to large offender populations.
- Self-reported data, may have been subject to reporting bias or lapses in memory.
- Police officer assisted with offenders survey-may have led to under-reporting.

However, important information obtained to begin to quantify knowledge and risky behaviours of drivers in China.

- Acknowledgement

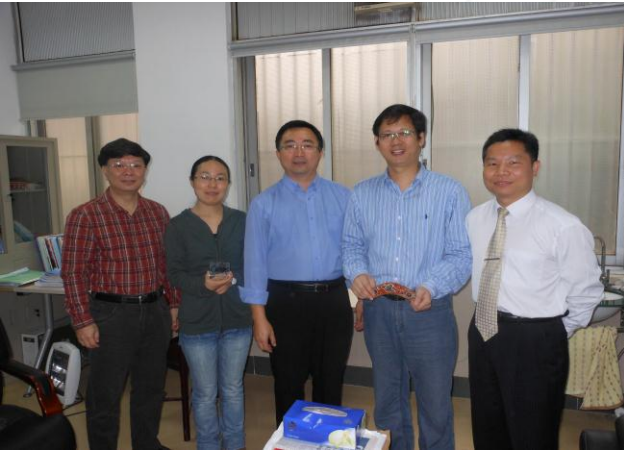
Staff from Guangdong Institute of Public Health,
(Guangdong CDC)

Police officers from the local Jail Authority.

- Funding

Australian Postgraduate Awards (APA)

2012 Prime Minister's Australia Asia Endeavour
Postgraduate Award(Outgoing)



珍爱生命，杜绝酒驾， 预防为主

Questions?

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