Cigarette Consumption and Quitting Behaviour Among Smokers in China: Findings from ITC China Survey

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Outline

• Background
• Research Questions/Objectives
• Methods
• Results
• Discussion
• Conclusions/Implications
BACKGROUND: Key Message from WHO, 2013

• Tobacco kills up to half of its users.

• Nearly 80% of the world's one billion smokers live in low- and middle-income countries.

• Consumption of tobacco products is increasing globally overall
  • Decreasing in high-income countries
  • Increasing in medium- and low-income countries
BACKGROUND: Benefits of quitting smoking

• Quitting smoking reduces the risk of smoking attributable cancer and other diseases, such as lung cancer, heart disease and Chronic Obstructive Pulmonary Disease (COPD).

• People who quit smoking, regardless of their age, are less likely than those who continue to smoke to die from smoking-related illness.
**BACKGROUND: USA and Canada vs. China in Smoking Prevalence and Quit Intentions**

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<tr>
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<th>U.S.A.</th>
<th>Canada</th>
<th>China</th>
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<tbody>
<tr>
<td>Overall Smoking Prevalence</td>
<td>20.8% ¹</td>
<td>16.7% ²</td>
<td>28.1% ³</td>
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<tr>
<td>Intention to quit in the next 6-12 months</td>
<td>68.8% ⁴</td>
<td>65.8% ²</td>
<td>16.1% ³</td>
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BACKGROUND: Cigarette Consumption and Quitting

• Cigarette consumption (measured by cigarettes smoked per day) is a strong predictor of quitting smoking:
  Higher cigarette consumption → higher nicotine uptake → higher level of nicotine addiction → more difficult to quit

• Heavy smoker (cigarette consumption >20 / day)
  – Canada: 23.5% (Male) vs. 14.2% (Female) ¹
  – China: 51.3% (Male) vs. 30.0% (Female) ²

¹ Statistics Canada (2011) Canadian Community Health Survey.
• Doctor’s advice and smoking cessation medication both significantly increase quit rates in high-income countries.
  - Brief advice: RR=1.66, (95% CI =1.42 to 1.94)\(^1\).
  - Intensive advice RR=1.84, (95% CI= 1.60 to 2.13)\(^1\)
  - Nicotine Replacement Therapy RR=2.06, (95% CI=1.34 to 3.15)\(^2\)

1. Cochrane Database Syst Rev. 2013 May Physician advice for smoking cessation
BACKGROUND: Doctor Advice and Medication

- Available evidence in China:
  - Doctor’s advice increased quit attempts, but not associated with higher quit rate \(^1\)

  - The long-term effectiveness of smoking cessation medication in China:
    - The quit rate in NRT group (40%) was greater than that of the non-NRT group (25%) \((P<0.001)\) at 12 month follow up. \(^2\)

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Research Questions

1. What is the relation between daily cigarette consumption and intention to quit in China?

2. What is the relation between daily cigarette consumption and the likelihood of receiving:
   • Advice from doctors to quit smoking?
   • Use of stop smoking medication?
METHODS: Study Design of the ITC China Survey

- Prospective cohort study
- Face to face interview
- Analyses of two waves of the ITC China Survey:
  - Wave 2: October 2007 to January 2008
  - Wave 3: May to October 2009.
- 6 participating cities at both Wave 2 and Wave 3: Beijing, Shanghai, Guangzhou, Shenyang, Changsha, Yinchuan.
  - Selected based on geographical representativeness and levels of economic development.
METHODS: Sampling

• Multistage cluster sampling design
  • 10 street districts (Jie Dao) randomly selected in each city
  • 2 residential blocks (Ju Wei Hui) randomly selected in each of the 10 districts
  • At every stage: probability of selection proportional to the population size

• About 800 adult smokers in each of the 6 cities (Total = 4,843)

• The respondents included in this study were smokers at Wave 2 who were successfully re-surveyed at Wave 3 (N=3,894): approximately 78% retention rate
METHODS: Key Measures

• Quitting status: “Do you currently smoke or have you quit?”
  If “yes” → quitter; If “no” → smoker

• Intention to quit: “Are you planning to quit?”
  If planning to quit within the 6 months → “intending to quit”

• Daily Cigarette Consumption: “On average, how many cigarettes do you smoke each day, including both factory-made and hand-rolled cigarettes?”
  \[ CPD \leq 10 \rightarrow “light smoker” \]
  \[ 11 < CPD \leq 20 \rightarrow “medium smoker” \]
  \[ CPD > 20 \rightarrow “heavy smoker” \]

• Visiting doctor: “Since we last talked to you, have you visited a doctor or other health professional?”
 RESULTS--Sample Characteristics

N = 3,714 smokers* (Male = 3,515, Female = 199)

CPD \leq 10 \rightarrow 38.4\% \text{ “light smoker”}
11 < \text{CPD} \leq 20 \rightarrow 47.6\% \text{ “medium smoker”}

\text{CPD} > 20 \rightarrow 14.0\% \text{ “heavy smoker”}

* Lower than the total of 3,894 due to missing responses
RESULTS: Sample Characteristics

- Distribution of light, medium, and heavy smokers are significantly different by age group ($p < 0.005$ for all the pairwise contrasts).
  - No heavy smokers in 18-24 age group
  - Older age groups (40-55; 55+) were significantly more likely to be heavy smokers.

- Female smokers were more likely to be light smokers (medium vs. light: $p < 0.001$; heavy vs. light: $p = 0.001$), but no gender difference of being medium versus heavy smokers ($p = 0.59$)
RESULTS: Quit intentions and relation with cigarettes per day

• Overall: 14.1% of Chinese smokers indicated intentions to quit in the next 6 months
  • Close to the quit intentions in the next 12 months (16.1%) found in GATS China

• But intentions to quit varied by cigarettes per day:
  – Light smokers: 20.4%
  – Medium smokers: 11.0%
  – Heavy smokers: 7.2%

• Light smokers are more likely to intend to quit smoking, but no significant difference between medium and heavy smokers ($p = 0.054$).
RESULTS: Quit attempts and relation with cigarettes per day

• Overall quit rate between Wave 2 and Wave 3 (19 months later) = 6.7%

• But quit rate varied by cigarettes per day:
  – Light smokers: 10.2%
  – Medium smokers: 4.7%
  – Heavy smokers: 3.7%

• Light smokers were more likely to quit than heavy and medium smokers, but no significant difference between medium and heavy smokers (p = 0.62).
RESULTS: Doctor Visits and Quit Advice

- Total of 35.2% of smokers (N=1,249) visited the doctor in the past year, and 51.1% of them (N=638) received advice about quitting.
- Visiting doctor: Light smokers--41.6%; Medium Smokers-- 32.4%; Heavy Smokers—27.5%
- Of those smokers who visited a doctor: 49.9% of light smokers; 54.1% of medium smokers; 45.4% of heavy smokers received doctor advice
- Of those smokers who visited a doctor: 4.43% of light smokers; 4.07% of medium smokers; 3.45% of heavy smokers used stop smoking medication
RESULTS: Doctor Visits and Quit Advice

• Heavy smokers were significantly less likely to visit the doctor than medium smokers ($P=0.0172$) and light smokers ($P<0.001$)

• Among smokers visiting doctor, there was no significant difference in receiving doctor advice among light, medium and heavy smokers ($P_{\text{light vs. medium}}=0.642$; $P_{\text{light vs. heavy}}=0.788$; $P_{\text{heavy vs. medium}}=0.434$)

• Among smokers who visited doctor, there was no significant difference in using smoking cessation medication among light, medium and heavy smokers ($P_{\text{light vs. medium}}=0.962$; $P_{\text{light vs. heavy}}=0.905$; $P_{\text{heavy vs. medium}}=0.953$)
DISCUSSION

• There was a lower proportion of heavy smokers (14.0% overall; 14.1% among males; 8.0% among females) than in past studies
  – Much lower than the proportion of heavy smokers between 1993 and 2003 from the National Health Service Survey (Male vs. Female = 51.3% vs. 30.0%) ¹

• Could reflect a general time-related trend of lighter smoking since 1993 to 2003.

• Could also reflect an urban-rural difference: The ITC Survey was conducted only in cities, where there may be fewer heavy smokers compared to rural areas.

DISCUSSION

• Light smokers

  – More likely visit doctor, but no significant difference in receiving quitting advice and using stop smoking medication, compared with medium and heavy smokers

  – More likely intending to quit and being abstinent at follow up
DISCUSSION

• Only 35.4% of smokers in China reported visiting a doctor in the past 12 months (13th of 15 ITC countries)
• But 51.1% of smokers who visited received quit advice, which was relatively high (6th of 15 ITC countries)

So in all: 18% of adult smokers in China received quit advice from a doctor (9th of 15 ITC countries)

DISCUSSION

• China is in the early stages of the smoking epidemic and has not yet experienced the peak of smoking-attributable disease burden

• It will be critically important for the healthcare system to increase the capacity to assist smokers in quitting

• In China, there is very low access to the healthcare system. WHO (2000) ranked China healthcare system 188th out of 191 member countries in terms of access to healthcare, equality, and financial investment.
DISCUSSION

• Low use of stop smoking medications
  – Only 3% (N=125) smokers in China reporting use medication during quitting;
  – There was no significant difference in heavy, medium and light smokers.

• Reasons:
  – No smoking cessation medication intervention routinely available in healthcare system in China
  – Medications are expensive
  – Few smokers regard smoking cessation medication effective
CONCLUSIONS/IMPLICATIONS

- The findings highlighted:
  - light smoker in China is significantly different from medium and heavy smokers by intention to quit and quitting.
  - Overall smoking cessation medication use is too low in China to detect the difference among light, medium and heavy smokers.
- The evidence is important for planning effective smoking cessation intervention at population level.