Health Status Affecting Patterns of Tobacco Use and Readiness to Quit

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Background

- Effective smoking cessation strategies targeting Chinese American smokers, especially new immigrants, are scarce.
- Almost 70% of Chinese Americans are first generation immigrants with over 90% originating from China where smoking prevalence among men is high.
- The prevalence rates of smoking ranged from 9.7% among English-speaking Chinese to 34% among Chinese men residing in Chicago.

Abstinence Rates x Interventions

Intervention Type	# of Studies	Odds Ratio	Abstinence Rate (95% CI)
Structure and Intensity			
MD Advice to Quit	7	1.3 (1.1, 1.6)	10.2 (8.5, 12.0)
High Intensity Counseling (>10 min)	45	2.3 (2.0, 2.7)	22.1 (19.4, 24.7)
Total Contact Time (31-90 min)	35	3.0 (2.3, 3.8)	26.5 (21.5, 31.4)
Number of sessions (4-8)	45	1.9 (1.6, 2.2)	20.9 (18.1, 23.6)
Telephone counseling	58	1.2 (1.1, 1.4)	13.1 (11.4, 14.8)
Behavioral Counseling			
Problem solving & Skill Training	62	1.5 (1.3, 1.8)	16.2 (14.0, 18.5)
Intra-treatment social support	62	1.3 (1.1, 1.6)	14.4 (12.3, 16.5)
Extra-treatment social support	62	1.5 (1.1, 2.1)	16.2 (11.8, 20.6)
Pharmacotherapy			
Nicotine patch	32	1.9 (1.7, 2.2)	17.7 (16.0, 19.5)
Nicotine gum	18	1.5 (1.3, 1.8)	23.7 (20.6, 26.7)

Design

5-Year Prospective study:

- To test the efficacy of a multi-component, smoking cessation and relapse prevention intervention
- To examine a set of measures (e.g. psychosocial and smoking process) that are associated with smoking cessation

Randomized clinical trial to compare:

Minimal vs. Intensive interventions

Follow-up to assess smoking status:

6-, 12- and 24-month assessments

Study Sample

- A convenience sample of 464 adult Chinese smokers who have smoked in the last 3 months
- Willing to quit smoking
- Have a medical condition

Minimal Intervention

- Scripted MD advice
- Nurse/health educator strong message
- *Victory over Smoking* self-help manual
- Smoking cessation medication supplement
- Community resources for smoking cessation programs

Intensive Intervention

- Minimal Intervention +
- 45-min counseling and skill-building session
- Nicotine replacement therapy for high-risk patients

Intensive Intervention

- *Victory over Smoking* videotape
- Relaxation audiotape
- Five 15-minutes telephone calls at 2, 7, 21, 45, and 90 days
- For slipper/relapser

  one additional intervention phone call


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Presentation

- Health Status – Inpatient and Outpatient status and Medical Diagnosis
- Baseline Patterns of Tobacco Use – average daily use, addiction behavior, past quit attempts
- Readiness to Quit – Confidence to stay off cigarettes, Self-Efficacy, Abstinence Goal and Stages of Change

Research Question 1?

Are there differences in patterns of tobacco use (amount of tobacco use, nicotine addiction and quit attempt past year) by health status?

Background on Tobacco Use among Chinese Smokers

- Current smoking status was associated with older age, being single, lower education and less acculturation [Zhu et. al, 2007; Carr et al, 2005;] .

- Quit behavior was related to older age, higher income, higher education and more acculturated [Fu et. al, 2002 Ma et al., 2002].

- Health concerns associated with cigarette smoking are the most cited reasons for wanting to stop smoking [Ferketich et al.; Shelley et al., 2004].

- Previously population based studies on Chinese Americans had not examine the effects of ill health on tobacco use.

Demographic Profile By Patient Status

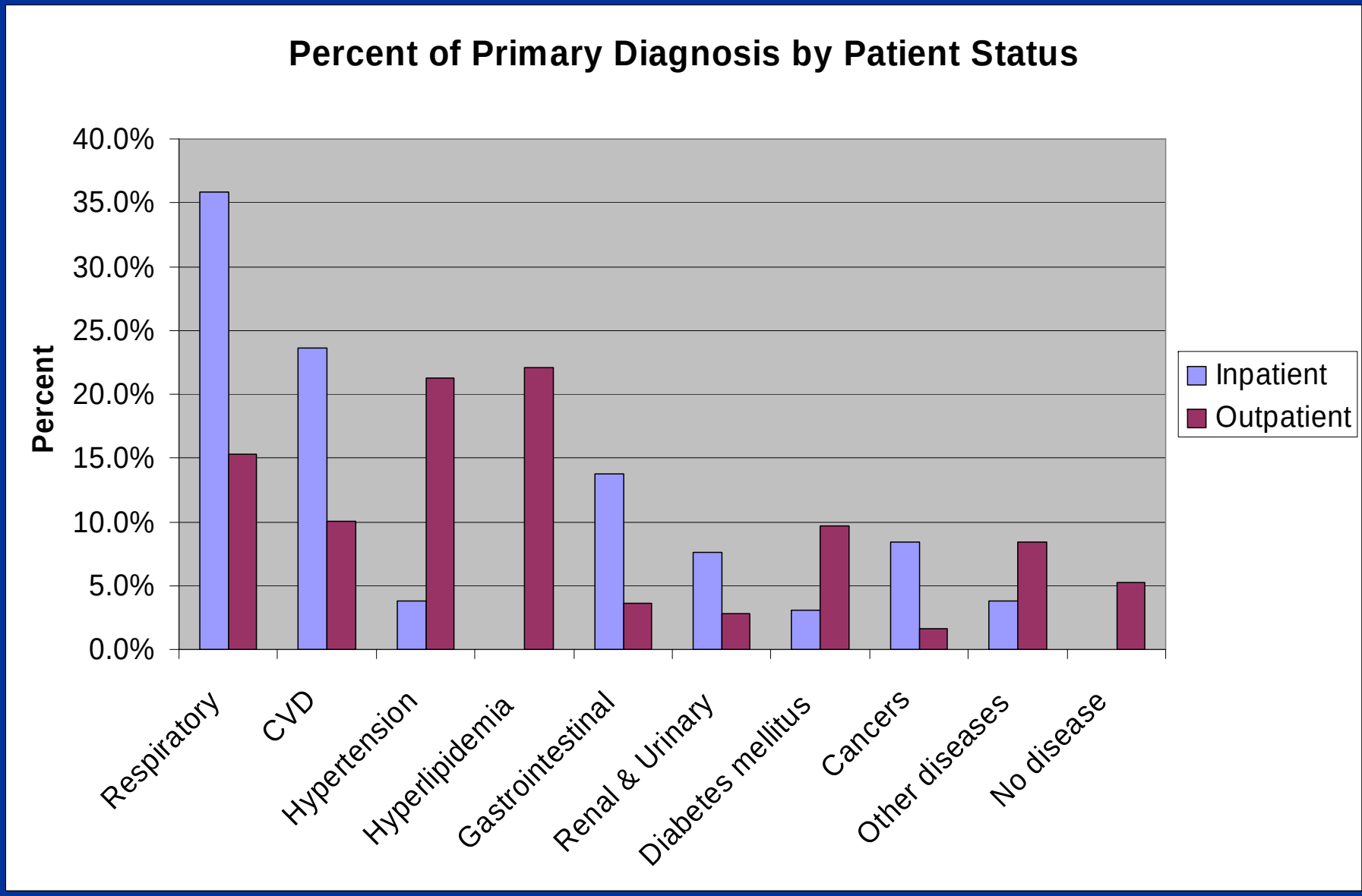
	In-Pt n=175	Out-Pt n=289	*p* value
Mean Age (yrs)	66.7	53.2	0.000
Acculturation score	1.9	2.4	0.000
Education			0.000
< high school	77.7	57.9	
High school/some college	15.4	39.8	
Bachelor and above	6.9	14.2	
Employment			0.000
Full time/part time	22.9	52.2	
Unemployed	7.4	15.6	
Retired/other	69.7	32.2	

Tobacco Use By Patient Status

	In-Pt	Out-Pt	*p* value
	n=175	n=289	
Age of first smoke; M	17.8	18.3	0.438
Years smoke regularly; M	47.5	33.2	0.000
No. quit attempt past year	1.1	1.5	0.077
Average Use (cigs/day); %			0.000
≤ 5	68.0	22.1	
6-10	18.9	33.2	
11-19	7.4	18.0	
≥ 20	5.7	26.6	
Nicotine Dependence			
Hate to give up 1st cigarette	46.9	59.5	0.008
Smoke when ill	12.0	24.2	0.001
Smoke more in AM	50.9	55.7	0.310
Difficulty refraining	20.0	26.6	0.105

Proportions of Disease Distribution

Primary Diagnosis	%
CVD & risk factors	44.8
Pulmonary disease	26.6
GI	7.0
Diabetes mellitus	6.9
Renal	2.0
Cancer (other than lung)	2.0
Other diseases	8.0


Percent of Primary Diagnosis by Patient Status
Percent
40.0%
35.0%
30.0%
25.0%
20.0%
15.0%
10.0%
5.0%
0.0%
Respiratory
CVD
Hypertension
Hyperlipidemia
Gastrointestinal
Renal & Urinary
Diabetes mellitus
Cancers
Other diseases
No disease
Inpatient
Outpatient

Multiple Regression Assessing the Influence of Health Status on Tobacco Use

	Average Cig. Use	Nicotine Addiction	Quit attempts Past Year
Age	-.063	-.119	.097
Education	.079	.078	-.002
Employment	.205***	.077	-.044
Marital status	-.077	-.080	-.010
Acculturation	.079	-.029	.071
Years of smoking	.110	.200	-.280*
Patient status	-.414***	-.318***	.022

*p<.05, ***p<.001

<high school=1, employed=1, married or partnered=1, inpatient=1

Research Question 2?

What are the characteristics of smokers who are in the *Preparation* stage of change? Do health status matters?

Background on Readiness to Quit

- Chinese smokers have the highest rate of not wanting to quit (38%) compared to Cambodians (9%), Vietnamese (22%) and Koreans (23%) [Ma et al, 2003].

- Age, education and length of stay had been reported to be associated with stages of change [Carr et al, 2005] [Ma et al, 2003][Moeschberger et al, 1997]. Lower English proficiency associated with higher average daily use [Fu].

- Stages of change predict quitting and had been used to tailor cessation intervention [Prochaska 1983][Critten et. al, 1998].

Five Stages of Cessation*

Precontemplation – not thinking of quitting w/i 6 months.

Contemplation – seriously consider quitting w/i 6 months.

Preparation – seriously thinking of quitting w/i next month and made a recent attempt

Action - the period from 0-6 months after smokers have quit

Maintenance – 6 months after action until smoking is no longer a problem

*Prochaska

Stages of Change and Demographic Profile

	PreC n=33	Contmp n=292	Prep n=139
Age, years†			
<50	21.2	26.7	35.3
50-64	21.2	30.8	31.7
65+	57.5	42.4	33.1
Employment†			
Employed	24.2	40.4	46.8
Others	75.8	59.6	53.2
Education*			
<high school	72.7	59.9	50.4
≥high school	27.3	40.1	49.6

†$p<0.1$, *$p<0.05$

Stages of Change and Demographic Profile (cont.)

	PreC n=33	Contmp n=292	Prep n=139
Marital Status†			
married/partnered	81.8	80.8	71.9
not partnered	18.2	19.2	28.1
Acculturation, mean	2.3	2.2	2.3
Patient status			
Inpatient	51.5	37.7	34.5
Outpatient	48.5	62.3	65.5

†$p<0.1$, *$p<0.05$

Stages of Change and Tobacco Use

	PreC n=33	Contmp n=292	Prep n=139
# Yrs. Smoke; mean**	43.4	39.6	35.3
Avg. daily use; mean***	9.1	10.3	6.5
FTND score; mean**	5.9	6.5	5.8

**$p<0.01$; *** $p<0.001$

Stages of Change and Readiness to Quit

	PreC n=33	Contmp n=292	Prep n=139
Confidence; mean***	5.5	6.9	7.7
Self efficacy; mean	5.7	5.8	5.9
Goal of abstinence; mean***	1.8	2.9	3.2
no clear goal (%)	41.9	15.5	9.4
slowly cut down (%)	45.2	26.6	16.5
abstinence with slip (%)	3.2	15.5	18.0
complete abstinence (%)	9.7	42.4	56.1

*** $p<0.001$

Multiple Regression Predicting "*Preparation*" Stage of Change

Age	-.088
Education	-.068
Employment	.027
Marital status	-.076
Acculturation	-.036
Years of smoking	-.001
Patient status	-.047
Nicotine addiction score	-.129**
Confidence staying off cigarettes	0.169**
Goal of abstinence	0.201***

**p<.01, ***p<.001

<high school=1, employed=1, married or partnered=1, inpatient=1, complete abstinence=4, extremely acculturated=5

Number (%) Self-reported Abstinence at 6-month Follow up Assessment

	In-Pt n=104	Out-Pt n=229	Total N=333
Intensive Arm	28 (54)	32 (27)*	59 (35)
Minimal Arm	27 (52)	18 (16)*	45 (28)
Total	55 (53)	50 (22)	104 (31)

Number (%) Self-reported Abstinence at 12-month Follow up Assessment

	In-Pt n=89	Out-Pt n=196	Total N=420
Intensive	21 (48)	32 (32)*	53 (37)
Minimal	23 (51)	25 (26)*	45 (34)
Total	44 (49)	57 (29)	101 (35)

Significant Findings

Compared to in-patient smokers, out-patient smokers:

- Younger age, more educated and more acculturated
- More likely to be employed with higher income
- Less years of smoking but smoked more cigs/day
- Higher nicotine addiction score
- Have lower illness burden (e.g. lower rate of CVD but with higher risk factors)
- More likely to smoke when ill
- Less confident to stay off cigarette
- Goal of abstinence is to “Slowly Cut Down”

Significant Findings:

- Age, acculturation, education and marital status were not associated with average daily cigarette use, nicotine dependence and quit attempts last year after adjustment for health status.
- Patients who were employed smoke greater amount of cigarettes. Possibly due to socio-environmental factors (e.g. 75% employed in restaurants or construction businesses).
- Patients with worse ill health smoke lower amount of cigarettes and have lower nicotine addiction score.
- Patients who reported longer years of smoking are less likely to make quit attempt past year.

Significant Findings

Individuals with higher nicotine addiction score were less likely to be in *Preparation* stages of change.

Patients reported greater confidence staying off cigarettes were more likely to be in *Preparation*.

Patients who reported 'complete abstinence' as their goal were more likely to be in *Preparation*.

Age, education, employment, marital status, acculturation, number of years smoked were not related to stages of change.

Patient status or disease burden was not associated with stages of change

Suggestions for Clinicians

Assisting patients to progress from *Pre-contemplation* → *Contemplation* → *Preparation*:

- Increase non-smoking messages at each health care encounter
- Provide warnings on the health hazards of smoking salient to the patient's condition
- Enlist family members to participate in joint counseling session and to assist in removing smoking paraphernalia from home environment
- Emphasize concerns for the health of family members, particularly those of young children
- Prescribe pharmacotherapy for nicotine addiction