A comparison of telephone and in-person treatment for tobacco dependence: Participant characteristics, treatment choice, and treatment outcomes

Christine Sheffer, PhD
Associate Medical Professor
Community Health and Social Medicine
Sophie Davis School of Biomedical Education
City College of New York
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– Arkansas quitline and associated programs

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Telephone Versus In-Person Treatment

• Cognitive-behavioral treatment for tobacco dependence widely available US, UK, CA
  – Characteristics of who chooses what type of treatment
  – Comparative effectiveness

• Tobacco use leading contributor to socioeconomic health disparities in US
Reaching Lower SES Smokers

Lower socioeconomic groups
– Income and educational level

CDC BRFSS, 2011
Telephone Versus In-Person Treatment

- Modalities have obvious strengths and weaknesses
- Telephone treatment purported to be more accessible to lower SES groups
  - Little data to support this contention
- Both modalities attract a high proportion of lower SES smokers in some studies
  - Telephone attracts higher proportion of higher SES smokers (Niederdeppe 2008, Siahpush 2007)
  - Some lower SES groups experience significant barriers to using telephone treatment (Sheffer 2011)
    - Media, access to private telephone, trust in treatment provider
- Existing comparisons are limited
  - Lack of comparable groups
  - Lack of control over important factors such as proximity as well as demographic, clinical, environmental, and treatment utilization
The Comprehensive Approach to Treatment Delivery

Recruitment Programs
- Quitline Media Promotional Program
- Smoke-free Workplace Assistance Program
- Provider Training Program
- In-person Treatment Sites
- Fax-back Referral Program

Method of Initial Contact
- In-person/walk-in
- Telephone
- Fax
- Online

Shared Electronic Contact, Scheduling, and Treatment Database

Outcome Assessment
- Centrally Administered
- Specially Trained Outcome Interviewers
- Protocol Driven
- Attempt to Contact All Participants by Telephone

Treatment Modality
- In-person or Telephone

- Protocol Driven Discussions
- Participants Offered Both Treatment Modalities

- Same Treatment Protocols
- Certified Tobacco Treatment Specialists
## In-person versus Telephone Treatment

### Demographic Factors
- Age
- Education
- Income
- Sex
- Pregnant
- Partnered

### Clinical and Environmental Factors
- CPD
- Years smoking
- Age started smoking
- FTND
- Motivation
- Confidence
- Concern about weight gain
- BMI
- PSS-4
- Psychiatric dx
- Partner smokes
- Smokeless use

### Treatment Utilization Factors
- Number of contacts
- Amount of content
- Completed treatment
- Patch use (yes/no)
- Number of patches dispensed
- Menthol use
- Ready to set quit date
- Sought help in past
- Smoking policy at work
- Smoking policy at home
- Timing of last quit attempt
- Stage of change
- Referral source
In-person versus Telephone Treatment

• Developing sample controlling for proximity
  – In-person (n= 2,732)
  – Telephone (n= 4,535)
  – SES composite scale was developed using values for income and educational level (2 lowest – 10 highest)
    – SES1 = 2-4
    – SES2 = 5-7
    – SES3 = 8-10

• Modeled treatment choice and the effect of treatment modality on treatment outcomes using logistic regression
### In-person versus Telephone Treatment

**In-person Treatment (n=2,732)**
- More likely to be male
  - 38% versus 31%
- Older
  - Mean of 46 versus 43 yrs
- Higher SES
  - Mean 5.7 versus 5.2
- More likely to make > $34,999 per year
  - 22% versus 30%
- More likely to be working or retired
  - 59% versus 50%
- More likely to have private health insurance
  - 43% versus 35%

**Telephone Treatment (n=4,535)**
- More likely to make less than $14,999 per year
  - 46% versus 38%
- More likely to be African American
  - 18% versus 13%
- More likely to have Medicaid and/or Medicare
  - 30% versus 27%
- More likely to have no insurance
  - 35% versus 31%
- More likely to be unemployed
  - 13% versus 10%
- More likely to be homemaker
  - 10% versus 5%
- More likely to be pregnant
  - 2% versus 1%
In-person versus Telephone Treatment

**In-person Treatment**

- Smoked more years
  - 28 versus 25 years
- Less motivated (0-10 scale)
  - Mean 9.1 versus 9.5
- More in contemplation
  - 9% versus 5%
- Less likely to set quit date
  - 83% versus 91%
- Less likely to have recent quit attempts
  - 62% versus 56% >6 months ago
  - 9% versus 14% within 30 days
- More likely to have no smoking inside and outside home
  - 3% versus 2%

**Telephone Treatment**

- Higher FTND scores
  - 5.6 versus 5.4
- More stressed (PSS-4)
  - 7.8 versus 7.3
- More likely to use Menthol products
  - 33% versus 24%
In-person versus Telephone Treatment

In-person Treatment
• More likely to be referred by workplace
  – 10% versus 3%

by word-of-mouth
  – 26% versus 17%

Telephone Treatment
• More likely to be referred by TV/radio advertisement
  – 26% versus 9%
In-person versus Telephone Treatment

**In-person Treatment**
- More content covered
  - Mean of 3.6 versus 3.1 sessions
- More likely to complete treatment (5 of 6 sessions of content)
  - 41% versus 30%
- More likely to receive nicotine replacement
  - 40% versus 27%

**Telephone Treatment**
- More treatment contacts
  - Mean of 5.0 versus 4.4 treatment contacts
In-person versus Telephone Treatment

- Telephone Treatment
  - More participants lost to follow-up
    - 3 months
      - 40% versus 33%
    - 6 months
      - 46% versus 38%
In-person versus Telephone Treatment

- Modeled choice of treatment
  - Included all demographic, clinical, and environmental factors in which the two modalities differed
  - DV = Treatment modality (ref in-person)
  - Backward conditional process (p > 0.10 eliminated)
## Modeling Choice of In-Person Treatment

<table>
<thead>
<tr>
<th>Demographic</th>
<th>Sex****</th>
<th>Female (Ref)</th>
<th>1.00</th>
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<tbody>
<tr>
<td></td>
<td>Male****</td>
<td>Male (Ref)</td>
<td>1.32 (1.18, 1.49)</td>
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<tr>
<td>Ethnicity*</td>
<td>White (Ref)</td>
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<tr>
<td></td>
<td>African American**</td>
<td>0.80 (0.68, 0.93)</td>
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<tr>
<td></td>
<td>Other</td>
<td>0.92 (0.71, 1.20)</td>
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<tr>
<td>Work status***</td>
<td>Disabled (Ref)</td>
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<tr>
<td></td>
<td>Full/part-time*</td>
<td>1.21 (1.04, 1.41)</td>
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<tr>
<td></td>
<td>Retired</td>
<td>1.01 (0.79, 1.30)</td>
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<tr>
<td></td>
<td>Unemployed</td>
<td>1.10 (0.91, 1.34)</td>
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<tr>
<td></td>
<td>Homemaker*</td>
<td>0.77 (0.61, 0.99)</td>
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<tr>
<td>Age****†</td>
<td>1.02 (1.01, 1.02)</td>
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<tr>
<td>SES****†</td>
<td>1.05 (1.02, 1.08)</td>
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</tr>
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</table>

### Clinical and environmental

| FTND****† | 0.95 (0.93, 0.97) |
| Motivation level****† | 0.88 (0.84, 0.91) |
| PSS-4 level****† | 0.96 (0.94, 0.98) |
| Ready to set a quit date**** | Yes (Ref) | 1.00 |
| | No*** | 1.69 (1.43, 1.99) |
| Smoking policy in the home*** | Allowed (Ref) | 1.00 |
| | None inside and outside** | 1.79 (1.22, 2.63) |
| | None inside only* | 0.88 (0.78, 0.99) |
| Last quit attempt**** | Never (ref) | 1.00 |
| | Within 30 days** | 0.70 (0.55, 0.89) |
| | 1-3 months ago | 1.04 (0.82, 1.32) |
| | 3-6 months ago | 0.89 (0.70, 1.14) |
| | >6 months ago | 1.06 (0.88, 1.28) |
| Stage of change* | Action/Preparation | 1.00 |
| | Contemplation** | 1.37 (1.09, 1.71) |
| | Pre-contemplation | 0.69 (0.31, 1.57) |
| Referral source**** | HCP (Ref) | 1.00 |
| | Workplace **** | 1.76 (1.39, 2.27) |
| | Print, website** | 1.31 (1.08, 1.59) |
| | TV/radio**** | 0.36 (0.30, 0.42) |
| | Word-of-mouth**** | 1.53 (1.33, 1.75) |

† A difference of +1 in the measure increased or decreased the odds of choosing in-person treatment by the AOR; . *p<0.05; **p<0.01; ***p<0.001; ****p<0.0001.
A difference of +1 in the measure increased or decreased the odds of choosing in-person treatment by the AOR;
*p<0.05; **p<0.01; ***p<0.001; ****p<0.0001.
In-person versus Telephone Treatment
Unadjusted Abstinence Rates

- **In-person ITT**
- **Telephone ITT**
- **Telephone CCA**
- **In-person CCA**

End of Treatment:
- In-person ITT: 38%
- Telephone ITT: 19%
- Telephone CCA: 17%
- In-person CCA: 15%

3 months after treatment:
- In-person ITT: 31%
- Telephone ITT: 29%
- Telephone CCA: 28%
- In-person CCA: 20%

6 months after treatment:
- In-person ITT: 29%
- Telephone ITT: 27%
- Telephone CCA: 29%
- In-person CCA: 17%
In-person versus Telephone Treatment

• Modeled the effect of treatment modality on DV = treatment outcomes (ref in-person)
• Included all demographic, clinical, environmental, and treatment utilization factors in which the two modalities differed
• Developed models for all three outcome points and ITT and CCA approaches for 3 and 6 month outcomes
Modeling the Effect of Treatment Modality on Abstinence End of Treatment

More likely with telephone
Less likely with telephone

Abstinence

Entire Sample  SES1  SES2  SES3*

*p<0.05
Modeling the Effect of Treatment Modality on Abstinence Three Months after Treatment

Abstinence

More likely with telephone

Less likely with telephone

*p<0.05, **p<0.01
Modeling the Effect of Treatment Modality on Abstinence Six Months after Treatment
In-person versus Telephone Treatment

- When all other factors are accounted for, modality unrelated to long-term treatment outcomes
  - Good example of why you can’t just compare programs by quit rates
- When all other factors are accounted for, choice of modality related to important subgroups of smokers
  - Interesting patterns of self-selection
    - SES - lower telephone, higher in-person
    - Men, working, older, ambivalent smokers
- No one characteristic overwhelmingly associated with one modality
- Certain important communities were unrepresented in this data and might have preferences for their community
  - Community preferences can be important for attracting underserved, marginalized groups
  - Hybrid, community connected telephone treatment
- Promotion is related to treatment choice
  - Referral patterns might change if TV/radio promoted in-person and telephone