

Message Framing to Promote Tobacco Cessation

Benjamin Toll, Ph.D.

Assistant Professor of Psychiatry
Yale School of Medicine
Yale Comprehensive Cancer Center
Program Director, Smoking Cessation Service
Smilow Cancer Hospital at Yale-New Haven

Collaborators, Funding, & COI

- Lisa Fucito, Ph.D., Amy Latimer, Ph.D., Peter Salovey, Ph.D., K. Michael Cummings, Ph.D., Steve Martino, Ph.D., Stephanie O'Malley, Ph.D., Ran Wu, M.S., Shannon Carlin-Menter, Ph.D., Andrew Hyland, Ph.D., Jessica Hopkins, B.A., Paula Celestino, Srinivasa Seshadri, Nicole (Katulak) Elbertson, B.S.
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What Messages Are Best for:

- 1) Preventing Smoking Initiation and**
- 2) Promoting Quitting?**

Do Messages Alone Increase Rates of Smoking Cessation

- Convincing evidence that mass media campaigns help prevent initiation and encourage cessation
 - Heaton (2012); Hyland et al. (2006) *HER*; Sly et al., (2001) *AJPH*
- Cochrane review by Stead (2008) showed convincingly:
 - Physician advice is better than no advice
 - More intensive advice is better than minimal advice
- But what **types** of messages are best?
- Very few studies that test **content** of tobacco control messages

Types of Framed Messages

- Gain-framed = Benefits of quitting smoking
- Loss-framed = Costs of continuing smoking



KENT

Smoking can cause a slow and painful death

KENT

Smokers die younger

KENT

Smoking may reduce the blood flow and causes impotence

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Smoking may reduce the blood flow and causes impotence



© U.S. HHS

WARNING: Cigarettes
cause fatal lung disease.

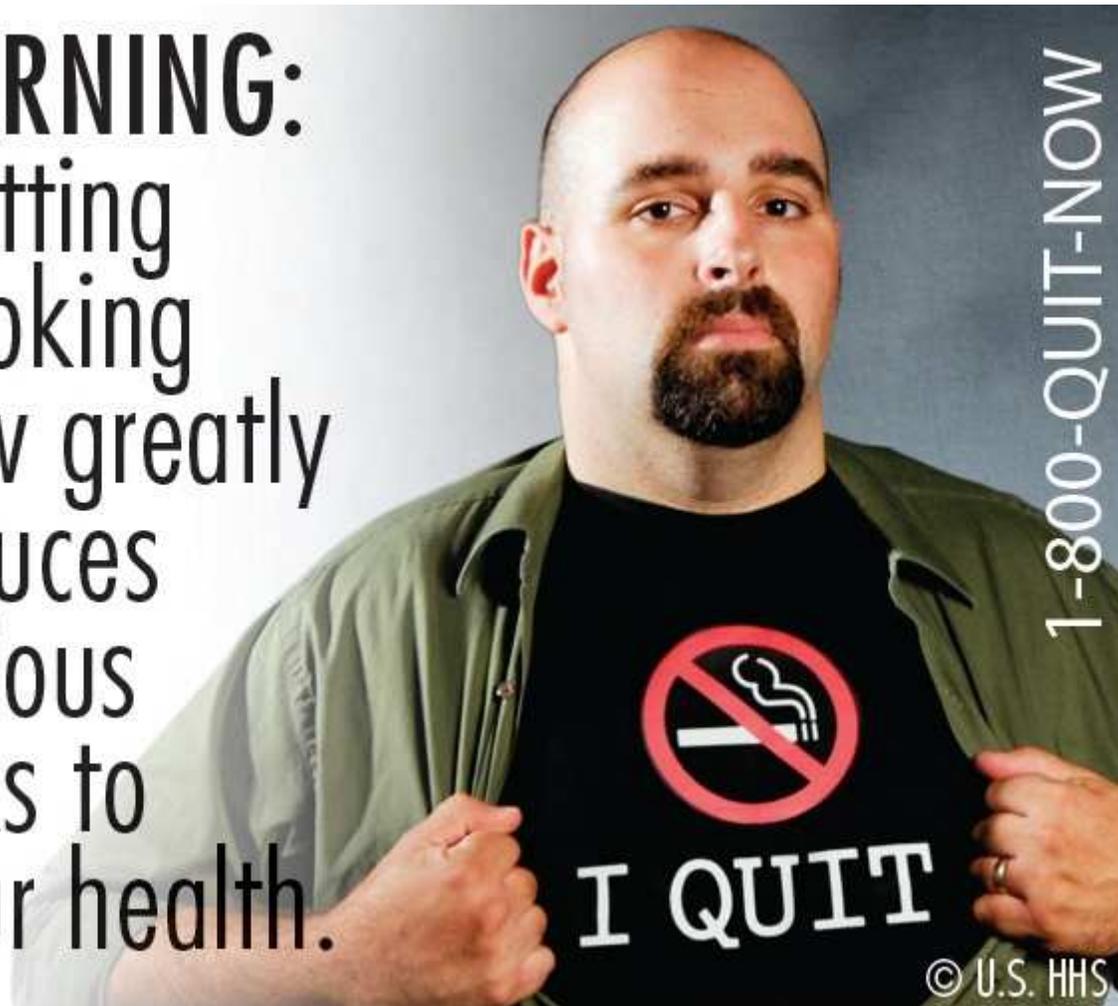
Dr. Lawrence Deyton, Director of the Center for Tobacco Products, FDA



One of the Cigarette Pack New Warnings Is Gain-framed

WARNING:
Quitting
smoking
now greatly
reduces
serious
risks to
your health.

Yale
A Comprehensive Center
by the National Cancer



1-800-QUIT-NOW

© U.S. HHS

Prospect Theory

- Nobel prize winning theory developed by Daniel Kahneman and Amos Tversky
 - Prospect theory suggests:
 - Gains = people averse to risk
 - Losses = individuals seek risk
- Tversky & Kahneman (1981) *Science*.

Prospect Theory and Smoking Cessation

- Prospect theory suggests:
 - Gain-framed messages = more persuasive for prevention of smoking initiation and promotion of smoking cessation
 - Some research on framed warning labels
 - Several studies have supported the effect of gain-framed messages for promotion of smoking cessation

Adolescent Perceptions of Graphic Warning Labels

- Canadian graphic warning labels focusing on health consequences of smoking (loss-framed) were digitally manipulated into gain-framed warnings
 - Goodall & Appiah (2008) *Health Communication*.
- High school students ($N = 210$) attitudes, perceptions of the warnings, and behavioral intentions were measured via questionnaire

Adolescent Perceptions of Graphic Warning Labels

- Loss-framed text: “cigarettes cause mouth diseases” and “cigarettes leave you breathless”
- Gain-framed benefit text: “by not smoking you improve your health and appearance” and “if you quit smoking you will breathe easier”

Adolescent Perceptions of Graphic Warning Labels

- Adolescents reported more favorable attitudes toward loss-framed warnings and rated them as more effective
- Small sample of smokers exposed to the loss-framed version featuring decaying teeth had significantly lower intentions to smoke in the future

Message Framing with Bupropion

- Randomized clinical trial (N=258) of framed messages encouraging smoking cessation
- All participants received bupropion SR (300 mg/daily)
- Framed messages delivered by 2 brief videos and print media

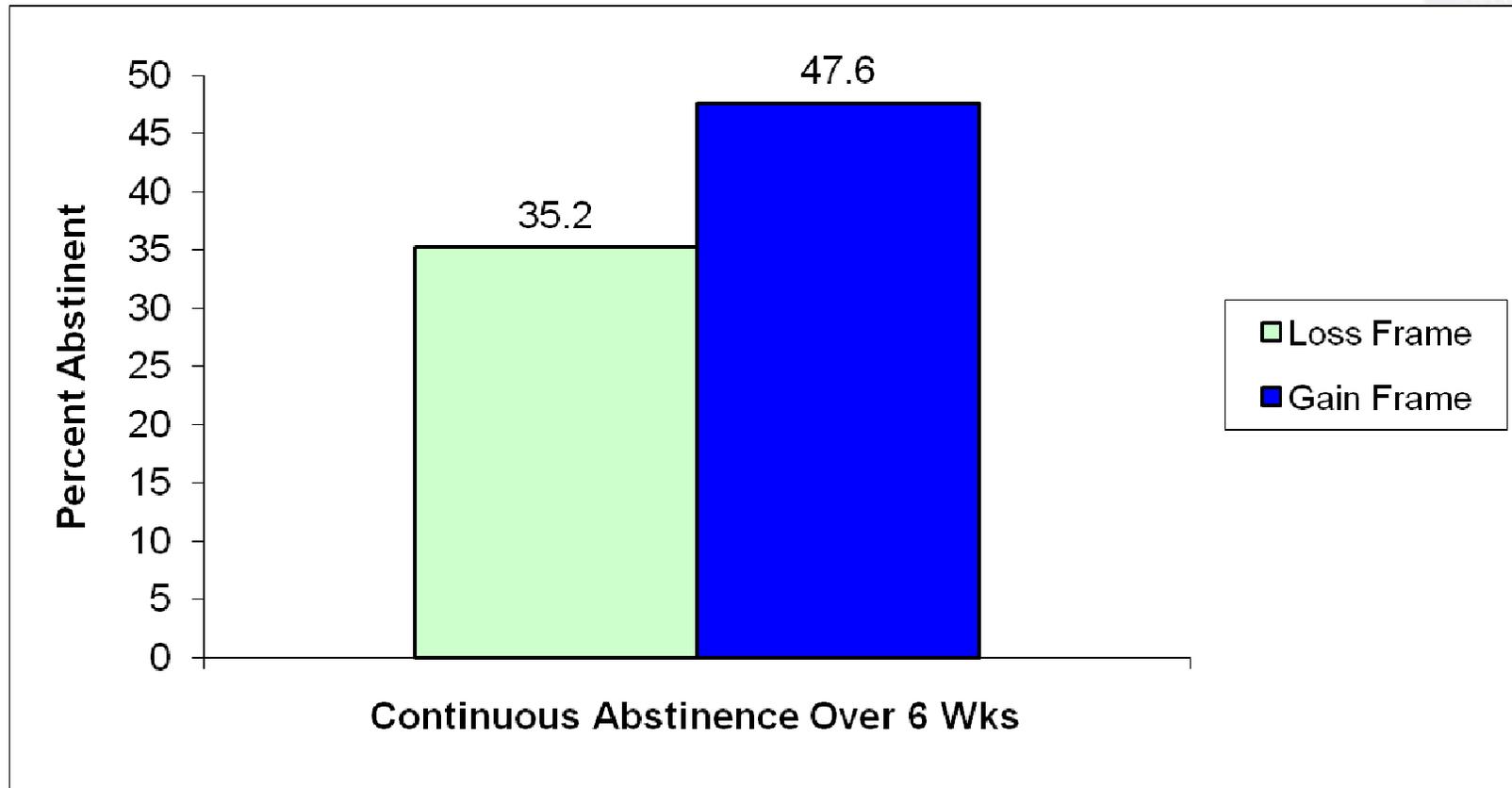
Examples of Framed Messages

Gain-framed Messages

Loss-framed Messages

<p>If no one smoked, 430,000 <u>lives would be saved</u> in the United States each year.</p>	<p>Because people smoke, 430,000 <u>lives are lost</u> in the United States each year.</p>
<p>In addition to the <u>physical benefits of quitting smoking</u>, it can have a <u>positive impact</u> on one's social life.</p>	<p>In addition to the <u>negative physical effects of smoking</u>, it can have a <u>negative impact</u> on one's social life.</p>

Percent Abstinent for Treatment Completers



$p = .027$; Toll et al. (2007) *Psychology of Addictive Behaviors*.

Do Nicotine Dependence and Intentions Moderate Message Effects?

- Moorman and van den Putte examined effect of nicotine dependence and intentions as moderators of message effects in non-treatment seeking smokers
 - Moorman & van den Putte (2008). *Addictive Behaviors*.
- Loss-framed text: “Smoking damages your health and costs you a pretty penny”
- Gain-framed text: “Quitting smoking improves your health and saves you a pretty penny”

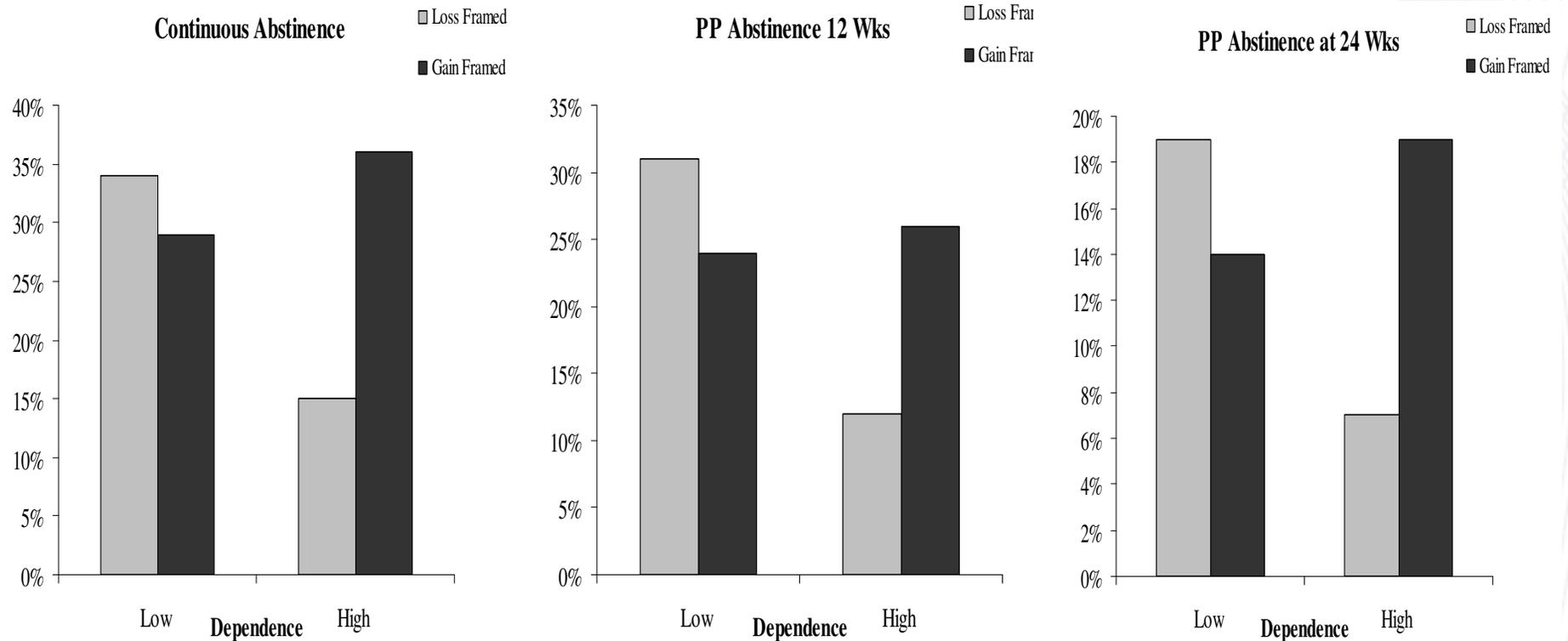
Do Nicotine Dependence and Intentions Moderate Message Effects?

- For participants with low nicotine dependence or weak baseline intentions to quit gain-framed messages associated with:
 - Greater increase in intentions to quit and
 - Positive attitudes toward quitting
- Loss-framed messages were more persuasive for smokers' with both high dependence and strong quit intentions

Smoking Outcomes by Framing Condition & Nicotine Dependence

- Gain- and loss-framed smoking messages were associated with relatively similar rates of smoking abstinence among low dependent smokers
 - Fucito et al. (2010) *Annals of Behavioral Medicine*.
- High dependent smokers exposed to gain-framed messages had higher rates of smoking abstinence across all time-points

Smoking Outcomes by Framing Condition & Nicotine Dependence



Fucito et al. (2010) *Annals Behavioral Medicine*.



GET PATCH FREE

**Call 1-866-NY-QUITS
(1-866-697-8487)**

See if you are eligible for a
FREE 2-week supply of nicotine patches

Yale
A Comprehensive Care
by the National Cancer

Intervention Developed in 4 Focus Groups



Know the Facts About Smoking

Tobacco kills more Americans each year than alcohol, cocaine, crack, heroin, homicide, suicide, car accidents, fire and AIDS combined.

The most common diseases caused by smoking are:



Lung Cancer is caused by the tar in tobacco smoke. A healthy lung is pink. Years of smoking cause your lungs to turn black.



Smoking also increases your chances of developing cancers of the lip, mouth, throat, larynx, bladder, pancreas, stomach, kidney and cervix.



Heart Disease and Stroke are caused by nicotine and carbon monoxide in tobacco smoke.



Emphysema and Chronic Bronchitis can make it very difficult to breathe.



A healthy, pink lung



A black lung after years of smoking

by the National Cancer Institute

Know the Benefits of Quitting Smoking

The number of Americans whose lives would be saved by quitting smoking is greater than the number of lives that would be saved if all deaths from alcohol, crack, heroin, homicide, suicide, car accidents, fire and AIDS combined were prevented.

By quitting smoking, you can prevent these common diseases:



Lung Cancer

If you quit smoking, your lungs will be healthier.



Cancers of the Lip, Mouth, Throat, Larynx, Bladder, Pancreas, Stomach, Kidney and Cervix

Quitting smoking decreases your chances of developing these diseases.



Heart Disease and Stroke

Decrease your risk by avoiding nicotine and carbon monoxide in tobacco smoke.



Emphysema and Chronic Bronchitis

You will be able to breathe easier if you quit smoking.



Quit smoking to keep your lungs pink and healthy.

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/E

Specialist Sample

- Quitline specialists were randomized to provide either:
 - Gain-framed counseling (n=14)
 - Standard Care counseling(n=14)
- Weekly supervision of Quitline Specialists
- n=2,032 smokers exposed to the intervention

Call Volume Alert - HIGH

Name: Call: During the week Morning 9a-12p

1. Start 2. Insurance 3. Intake 4. Smoking Hist 5. Willing to Quit 6. NRT Eligibility 7. Background 8. Mails / Mailing 9. Closing

On a scale of 1 to 7, with 1 being no chance and 7 being certain to happen, how likely do you think the following statement if you were to stop smoking: "I will be healthier."

0 (1-7 rating)

On a scale of 1 to 7, with 1 being strongly agree and 7 being strongly disagree, how much do you agree with the following statement: "I intend to completely quit smoking in the next 2 weeks."

0 (1-7 rating)

How did you find the Quitline Number to call today?

if Other:

What Number did you call today?

1-866-NY-QUITS (697-8487)

Did your doctor refer you to the Quitline?

Yes No

Who is your Doctor and in what city/town is he/she located?

Doctor's Name
City / town

2) Do you currently use Tobacco Products?

Yes No (Former-Smoker)

2a) What tobacco products have you used in the last 30 days? (check all that apply)

- Bidis
- Cigarettes
- Chewing Tobacco
- Cigars
- Cigarillos
- Clove Cigarettes
- Herbal Cigarettes
- Moist Snuff
- Pipe Tobacco

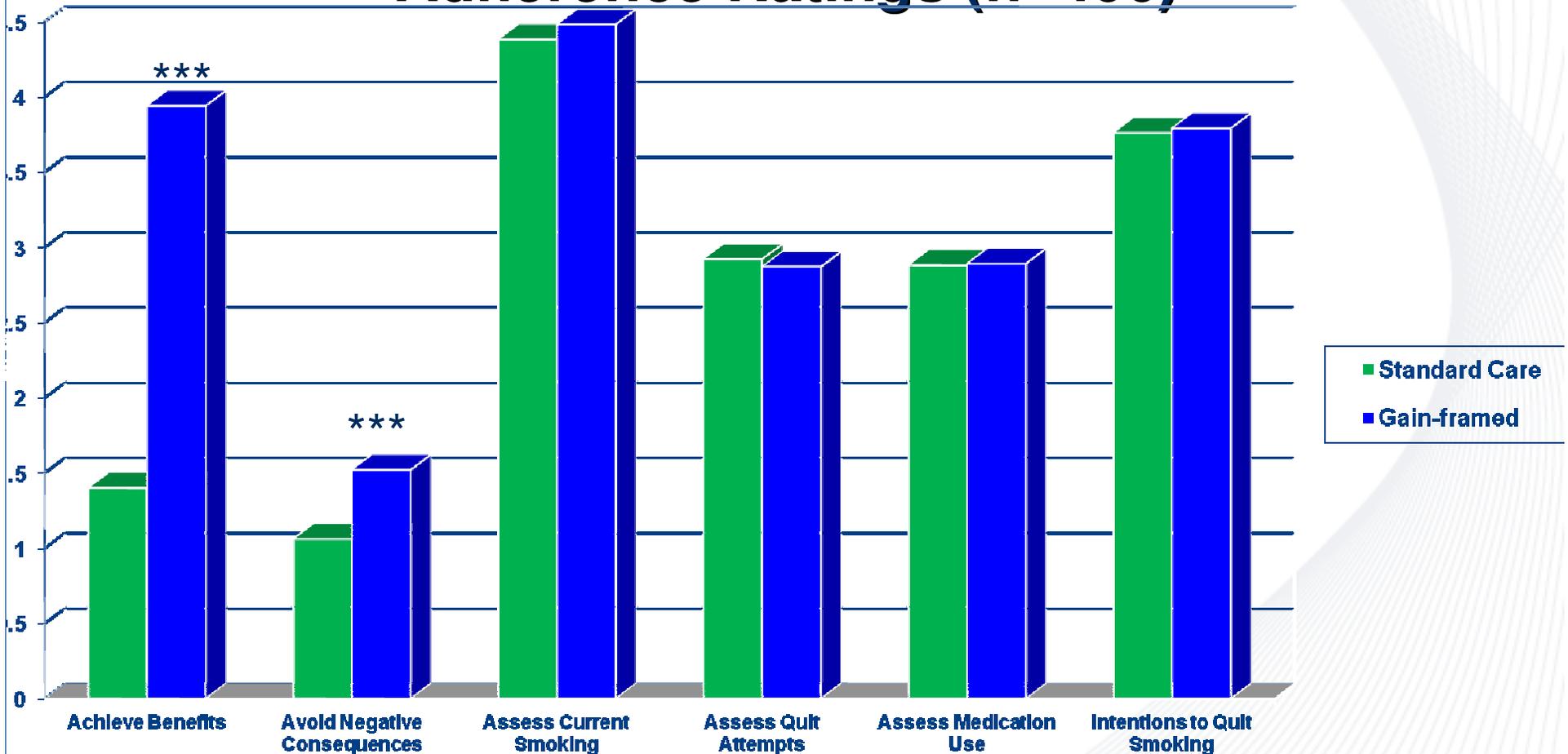
3) Are you currently using any Nicotine Replacement medication such as the patch, gum, lozenge, spray or inhaler?

What benefits do you expect to get from quitting smoking?

Fidelity Outcome

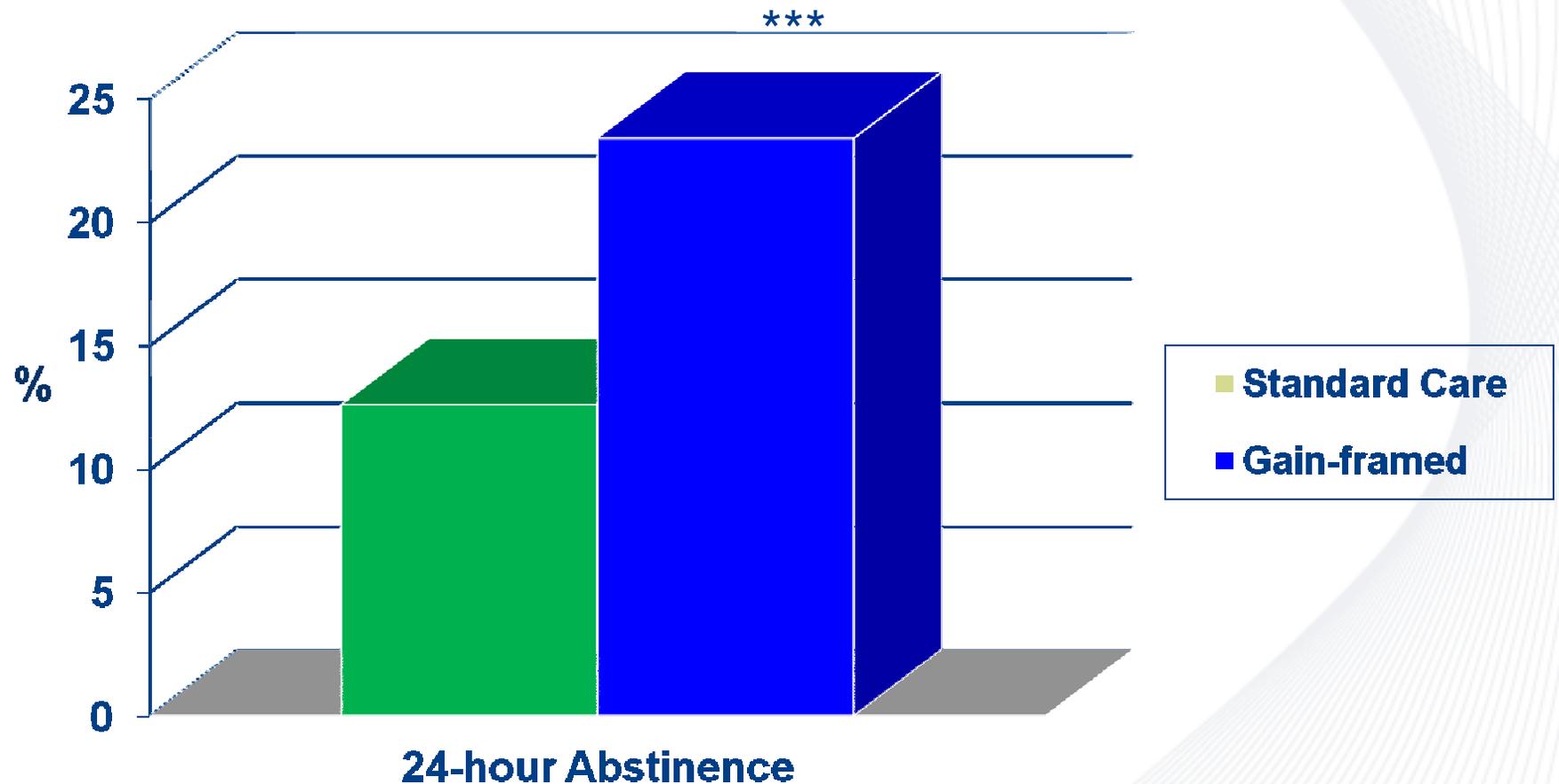
- Random sample of 20% of tapes (N=400) coded by 8 raters
- Validated adherence system evaluated difference:
 - Use of 2 gain-framed items
 - Use of 4 standard items
- Sample of 10 tapes showed high inter-rater reliability
 - Mean ICC ranged .87 - .99

Mean Specialist Gain-framed and Standard Care Adherence Ratings (n=400)



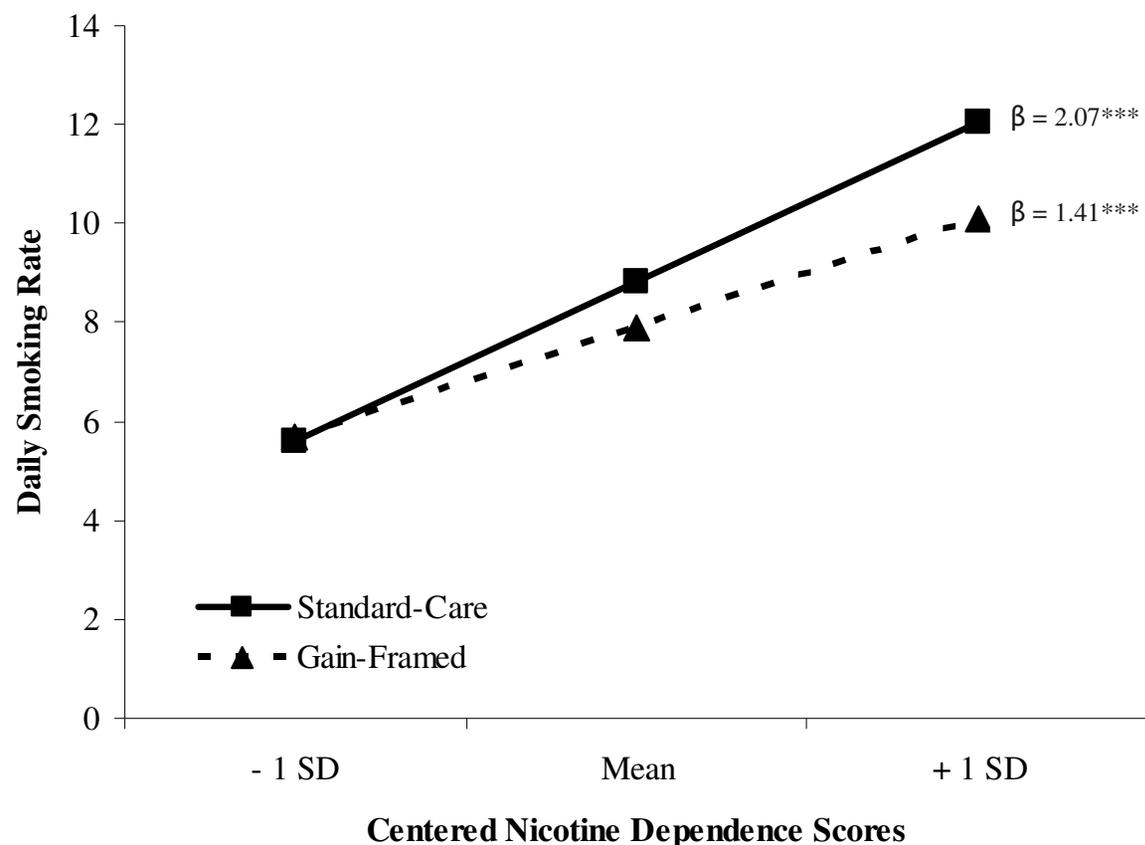
*** $p=0.000$; 7-point scale, higher values = higher adherence; Toll et al. (2010) *JNCI*.

Smoking Cessation 2-Week Follow-up



*** $p = .000$; 23.3% (99/424) versus 12.6% (76/603); Toll et al. (2010) *JNCI*.

Nicotine Dependence Again Functions as a Baseline Moderator



Note. *** < .001, β = unstandardized regression coefficient

Fucito et al. (2011) *Drug and Alcohol Dependence*.

Nicotine Dependence Interacts with Message Framing to Drive Quitline Calls



Study conducted comparing gain- versus loss-framed messages delivered in 2 separate subway stations in Brazil

Szklo et al. (2009). *International Journal of Epidemiology*.



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A Comprehensive Cancer Center Designated
by the National Cancer Institute

 **SMILOW CANCER HOSPITAL**
AT YALE-NEW HAVEN

Loss-Framed Poster:



Loss-framed text read: “To smoke is to lose breathing capacity”; in the steps, ‘lose sleep, lose smelling good, lose energy, lose a nice smile, lose physical resistance, lose healthy breath, lose beautiful skin, lose money, lose . . . ; on the floor, ‘stop smoking, call 08005100015’”

CANCER HOSPITAL
-NEW HAVEN

Gain-Framed Poster:



Gain-framed text read: “To stop smoking is to gain breathing capacity”; in the steps, ‘gain sleep, gain smelling good, gain energy, gain a nice smile, gain physical resistance, gain healthy breath, gain beautiful skin, gain money, gain . . .’; on the floor, ‘stop smoking, call 08005100015’”

LOW CANCER HOSPITAL
YALE-NEW HAVEN

Nicotine Dependence Interacts with Message Framing to Drive Quitline Calls

- No differences found for heavy smokers
- Light smokers exposed to the gain-framed messages called on average 2.2 times more often than those exposed to loss-framed messages ($p < 0.001$).
 - Szklo & Coutinho. (2010). *Addictive Behaviors*.

Why Is Nicotine Dependence a Moderator?

- Additional research is clearly needed
- It is possible that smokers with high dependence may have
 - Greater involvement with the issue
 - May be experiencing more health consequences
- Thus, they may see smoking cessation as a more certain and effective for health improvement than a less dependent smoker

Why Is Nicotine Dependence a Moderator?

- Importantly, more dependent smokers are often less confident to quit [true in Fucito et al. (2011)]
- Loss-framed messages are more threatening
- Thus, smokers less confident in their ability to avoid this threat may reject/avoid loss-framed messages

Future Research

- We are testing the effect of message framing for couples versus individuals
- We are proposing several studies of texting framed messages to promote smoking cessation
 - Low cost
 - Message content can be tightly controlled

Research Needs and Policy Implications

- Clearly more research is warranted regarding gain-framed warning labels
- Future studies testing message framing to enhance smoking cessation need to have a larger quantity and frequency of messages (e.g., a long-term text intervention)

Contact Information

- benjamin.toll@yale.edu
- 203-974-5767