

BEHAVIORAL RESEARCH

CANCER CONTROL AND POPULATION SCIENCES

The presentation will begin shortly

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Decision-Making Steering Committee Speaker Series

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June 30, 2014



National Institutes of Health



Lung Cancer Screening and Self-Determination

NCI Behavioral Research Program
Decision Making Steering Committee
University of Rochester

June 30, 2014

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MELIORA
Ever Better

Overview

- Lung Cancer Screening Opportunities and Dilemma's
 - Informing Patients of Risks and Benefits
 - Lung Cancer
 - Tobacco Dependence and Abstinence from Tobacco
 - Cardiovascular disease
 - COPD
 - Three models that inform the process
 - Informed Decision Making
 - Goals of Medical Professionalism/Medical Ethics
 - Smokers' Model
 - Self-Determined Motivation
 - Assumptions: innate aspects of self, needs
 - Internalization
 - SDT Model for Health Behavior Change
- Implications for research, medical ethics, clinicians and policy.
 - Redefining success

Case

- 56 y/o WF. Smokes 1.0 pkd/dy since 16- 40 pk-years
 - preDM (HbA1c 6.0), RA
 - HTN (BP 130/84- on lisinopril and HCTZ)
 - hypercholesterolemia (TC =210; HDL 45; LDL 135; TG 150).
 - Flu shot 10/2013, no pneumococcal vaccine
- Presents for Tobacco Dependence Treatment
- Agrees to Spiral CT for Lung Cancer screening:
 - Results show no suspicious lesions for cancer
 - Coronary calcium +
 - Emphysematous changes
- What is presented to the patient?

Follow-up Case

- Cholesterol on atorvastatin on 20 mg

TC 121 LDL 64 HDL 38 TG 95

BP 132/78 Stopped smoking 10 weeks ago

Summary 59 y/o woman with 40 + pack years of smoking

Continue LC screening – risk will fall in half by 10 years

CVD risk falls from 11.2% to 2.4% in 2 years

Less leg and joint swelling

COPD stable

Walking 40 minutes per day and working to increase fiber

Lung Cancer Screening

- Why did she agree to the screening?
- Why do we recommend it?
- Why did she stop smoking?
- What benefits come from the test?

Lung Cancer Screening

- Why did she agree to the screening?
 - Told she might live longer/find cancers earlier –that is hard to understand
 - Smokers are afraid of lung cancer – the test does good job of excluding cancers if test negative >99% Neg Pred value
 - Only 2-5% were found to have cancer

Lung Cancer Screening

- Why do we recommend it?
 - US PSTF – B level evidence for 20% reduction in lung cancer mortality – hard to understand
 - Finds non small cell cancers at earlier stages
 - T1 = 27% pos. (2.4%), T2=17% (5.2%)
 - Cost effectiveness is about \$200,000 per QALY
 - Cessation Services are \$1500 to 3500 per QALY

Lung Cancer Screening

- Why did she stop smoking?
 - She was already in treatment for cessation
 - This result may have motivated her more- ‘don’t like going through this”, or could have lowered it -
 - DLCST 17% stopped in 5 yrs, and more likely if motivated at baseline (Thorax. 2014) no diff bet gp
 - Small study (18) suggested counseling before might be more effective (Lung Cancer, 2012)

Lung Cancer Screening

- What benefits come from the test?
 - Reduced anxiety –better quality of life?
 - ? Longer life expectancy
 - Also identifies CVD, and COPD
 - Tx lowers risk for MI, CVA by 70% in 2 years.
 - Cessation stops progression of COPD

Smokers' Model

- Live fast, die young with a good looking corpse – smokers taught me long ago, it isn't length of life that motivates them its quality of life (Arch Int Med, 2011).
- They like to see the damage before they believe it- this test shows CVD, COPD and cancers.

Informed Decision Making

- 1478 MD-patient encounters audiotaped
- 91% of the time, MDs don't support autonomy
- Most frequent error is providing **too little structure**, not too much

Patient (Pt) role	5%
Nature of decision	75%
Alternatives	16%
Pros and Cons	12%
Uncertainties	6%
Pt understands	2%
Pt preference	24%
Overall Complete	9%

Medical Professionalism – A Physician Charter & Biomedical Ethics

- **Primacy of patient welfare:** a dedication to serving patients' interests
- **Patient autonomy:** to empower patients to make informed decisions
- **Social justice:** to eliminate discrimination

ABIM Foundation. *Ann Intern Med.* 2002;136:243-246
Beauchamp & Childress. *Biomedical Ethics* 2009.

Medicine's Social Surround is our Code of Biomedical Ethics

- These “ethics” are stated obligations of the health profession and its professionals, and are intended to ensure that patients who enter relationships with physicians will find them competent and trustworthy to provide expert advice to the patient and society on matters of health.

The Contract with Society

- Nonmaleficence (a norm of avoiding the causation of harm)- Hippocrates 400 BC
- Beneficence (a group of norms of pertaining to relieving, lessening, or preventing harm and providing benefits and balancing benefits against risks and costs). Percival 1802
- Justice (a group of norms for fairly distributing benefits, risks, and costs) - 2000 Medical Ethics & Professionalism
- Respect for Autonomy (a norm of respecting and supporting autonomous decisions). 2000 AD

Ethics & Motivation

Biomedical Ethics

- Respect for autonomy
 - Med Ethics 2000 AD
- Perception of practitioner competence
 - Percival 1802 AD
- Trustworthiness
 - Hippocrates 400 BC

SDT Psychological Needs

- Autonomy support
 - Deci & Ryan 1970 AD
- Competence support
 - Deci & Ryan 1975 AD
- Relatedness
 - Rogers 1940 Deci & Ryan

Self-Determination Theory

- An organismic dialectic
- Motivation is human energy directed to a goal
- Uses free choice paradigm
- Assumptions: Humans are innately motivated toward well-being (e.g., health) and personal growth.

Patients Want Physician Input

- Patients who are asked what they want to do (e.g. no change, lifestyle/medications, or both), frequently answer, *“You are the doctor, you tell me.”*
 - Several studies demonstrate 50 to 70% of patients want their doctor to decide for them (Schneider *The Practice of Autonomy*, 1998).
 - Direct physician statements to stop smoking increase 6 month cessation by 30 to 60%.
- It can be autonomy supportive to make a direct recommendation: *“I recommend that you make lifestyle changes for 3 months and we recheck your tests. Are you willing to do that?”*

Psychological Needs: Supporting Optimal Motivation

- **Autonomy**
 - The need to feel choiceful and volitional in one's behavior
- **Competence**
 - The need to feel optimally challenged and capable of achieving outcomes
- **Relatedness**
 - The need to feel connected to and understood by important others

Deci & Ryan, 1991, 2000

Ryan & Deci, 2000

Internalization

An inherent, proactive process by which autonomous and competence motivations are increased naturally over time

Table 1

A list of need-supportive behaviors derived from self-determination theory.

Autonomy Support

1. Elicit and acknowledge the patient's perspectives and feelings
2. Explore the patient's values and how they relate to the behavior being addressed
3. Provide a clear rationale for advice given
4. Provide effective options for change and acknowledge the option of not changing
5. Support the patient's self-initiation for change
6. Minimize pressure and control

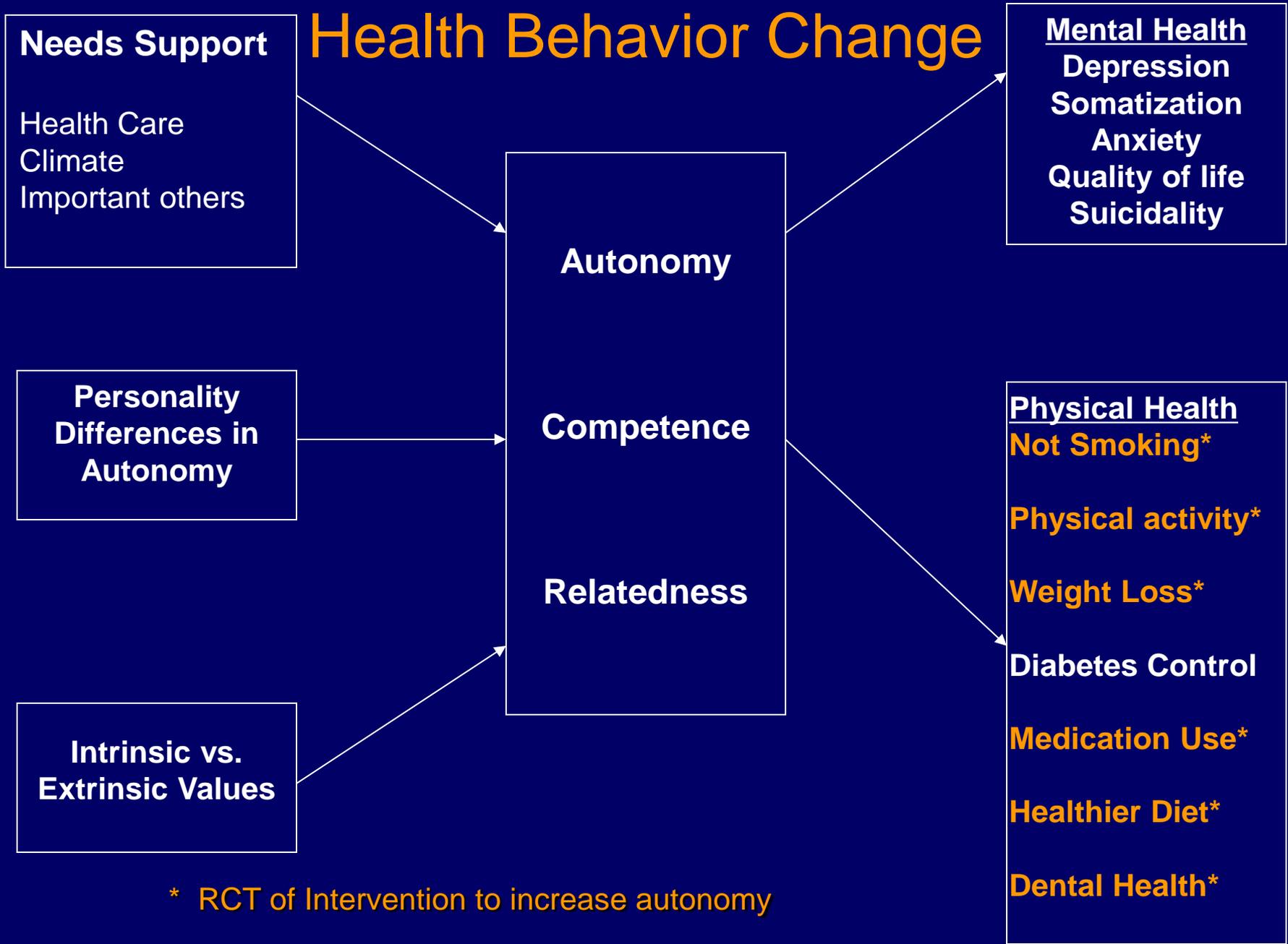
Competence Support

1. Be positive that the patient can succeed
2. Provide accurate, effectance-relevant feedback
3. Identify barriers to change
4. Engage the patient in skills-building and problem-solving
5. Develop a plan that is appropriate for the patient's abilities
6. Reframe failures as short successes

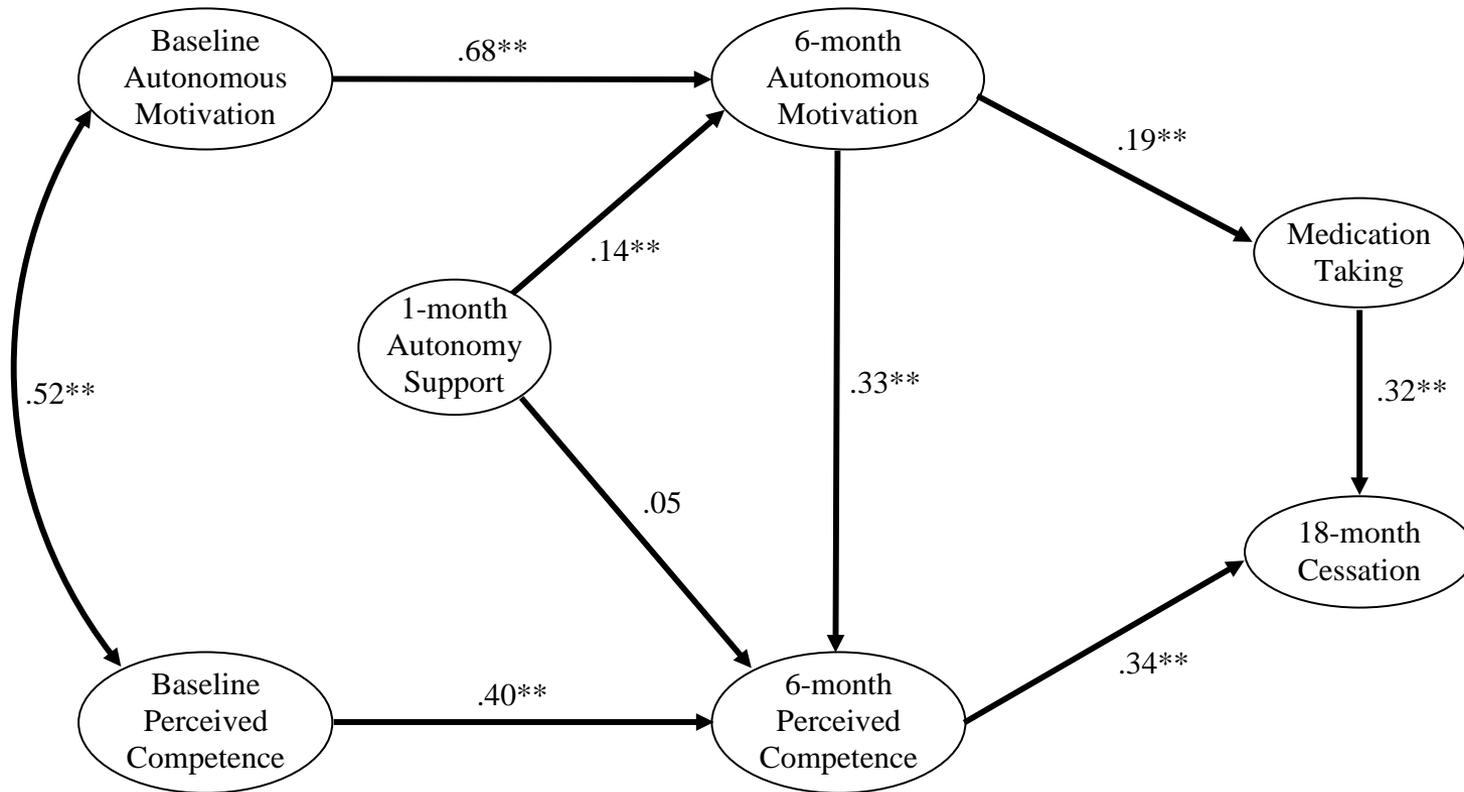
Relatedness Support

1. Develop empathy
 2. Develop a warm, positive interpersonal relationship
 3. Remain non-judgmental and provide unconditional positive regard
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SDT Model of Health Behavior Change

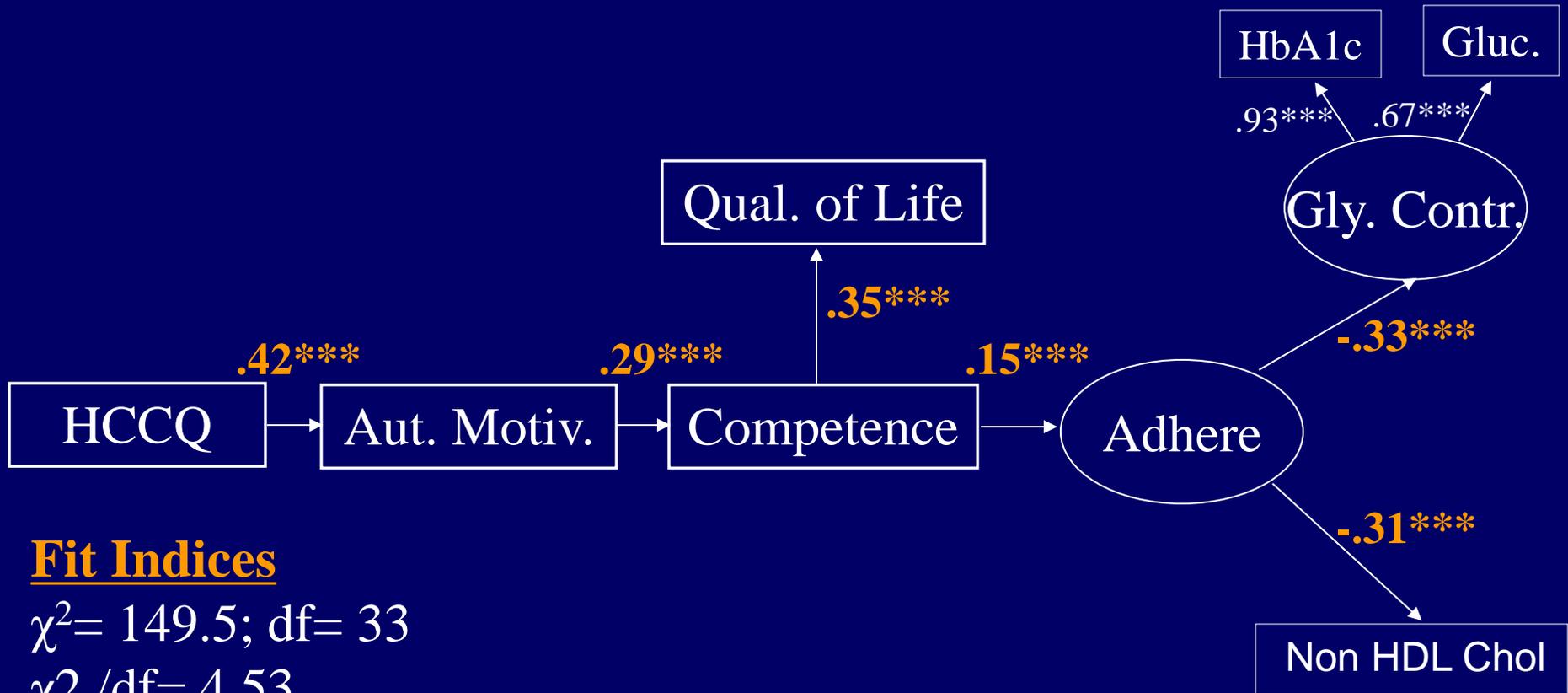


* RCT of Intervention to increase autonomy



Note: Model Fit: adequately $\chi^2(248) = 1193.14$, $p < .001$, CFI = .92, IFI = .92, RMSEA = .066 ;
 Values represent standardized path estimates.
 + $p = .10$; * $p < .05$; ** $p < .01$.

Path Model: Motivation, Adherence, Health



Fit Indices

$\chi^2 = 149.5$; $df = 33$

$\chi^2 / df = 4.53$

IFI/CFI = .97

TLI = .94

RMSEA = .03

Research Implications & Summary

- Interventions may have a greater impact if centered around facilitating internalization of patient autonomy and competence rather than just doing the behavior.
- Research may not inform clinical care until it includes the following:
 - Autonomy as an outcome of care
 - A free choice period is needed to be relevant to care
 - Includes those that don't want to change

Questions about Lung Cancer Screening

- Why limit it only to ≥ 55 y/o- if someone has more pack years and they are 50- should we not offer it?
- How do we best present a potential benefit of a decrease in mortality by 20%?
- Do we bundle cessation with it?
- Is it ok for radiology to not report CAC score?

Health Policy Implications

- Health policy interventions may have a greater impact if delivered in a manner that supports patient autonomy, competence and relatedness that would facilitate the internalization of a value for the health behavior.
- “We recommend smokers over 55 have lung cancer screening yearly AND consider other ways to improve health. Are you willing to do this?”

Clinical Implications

- Medical Professionalism, and biomedical ethics indicate that promoting patient autonomy is a goal of the clinical encounter.
- Empirical evidence from multiple behavior change studies based on SDT indicates that focusing on enhancing need support motivates change by increasing autonomy and competence. These are not static
- Re-categorize informed patients who don't want screening as successful

Clinical Implications

- Health Care Practitioners who learn to support psychological needs:
 - Elicit perspectives (listen)
 - Acknowledge affect (reflect)
 - Provide effective options for change
 - Provide clear advice (rationale) for change
 - Support initiative for change
 - Minimize control and remain non-judgmental
 - Skills build/problem solve with those willing
 - Provide a positive relationship
- Are more likely to motivate change, health, and quality of life.

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Open Discussion



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Thank You

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