

Effects of a Decision Aid and Additional Decisional Counseling on Cardiac Risk Reduction Behavior and Health Outcomes

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BACKGROUND

- Coronary artery disease (CAD) is a pathological progression
- Palliative treatments; patients are still at increased risk for new cardiac events
- CAD is highly associated with modifiable risk factors
 - Smoking
 - Obesity
 - Stress
 - Lack of physical activity
- Healthy lifestyle will modify most risk factors for CAD progression



BACKGROUND

- Prevalence of non-adherence to proposed health recommendations is averaging 24.8 %
(Di Matteo, 2004)
- So far interventions to produce lasting behavior change have shown limited effects
(Ebrahim et al., 2006)
- Additional approaches to increase adherence to a healthy lifestyle are needed

BACKGROUND

- One promising approach developed to help patients to understand risks and treatment options are Decision Aids (DAs), a decision support system
- DAs differ because
 - Specific
 - Detailed
 - Individualized focus.....on possible options and outcomes

Decision Aid (DA) - decision support

- There are DAs developed to help CAD patients

(Lalonde et al., 2002)

- So far the effects of DAs in health behavior change interventions are sparse and inconclusive

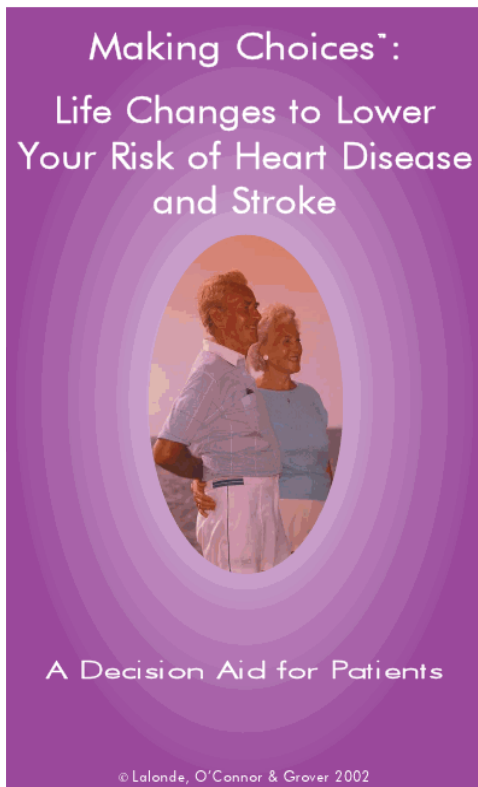
(Koelewijn-van Loon et al., 2009, 2010; Krones et al., 2008, 2010; Lalonde, et al., 2004, 2006; Lenz et al., 2009; Pignone et al., 2004; Sheridan et al., 2006, 2010b; van Steenkiste et al., 2007, 2008)

The DA in this study

- Developed by Ottawa Health Research Institute at Ottawa Hospital in collaboration with investigators from the Division of Clinical Epidemiology at Montreal General Hospital

(Lalonde et al., 2002)

The DA- in this study



- Translated into Norwegian language
- Adjusted to Norwegian treatment recommendations in 2007

Often neglected in current DAs is that patients need:

- Help to prepare for making a choice
- Support to implement this choice in daily life activities

Counseling

- We developed an individual decisional counseling program (DCP) as a supplement to DA to help the patients to:
 - Comprehend the information
 - Adjust the information to personal illness story
 - Elicit their preferences for cardiac risk reduction behavior
 - Help them write a personal action plan.
- The effects of adding counseling to a DA for CAD patients have not been known

Decisional Counseling Program-DCP



A multiple behavior change
intervention based on the
concepts in The Health
Belief Model (Eraker et al., 1984)

Tailor Susceptibility and
Severity of CAD

Eliciting Benefits and Barriers

Design a Preference-based
behavior program

PURPOSE

To evaluate the effects of a DA to assist cardiac patients in lifestyle changes with and without an additional individual decisional counseling program (DCP) on health outcomes and quality of life mediated by adherence to cardiac risk reduction behavior.

METHODS

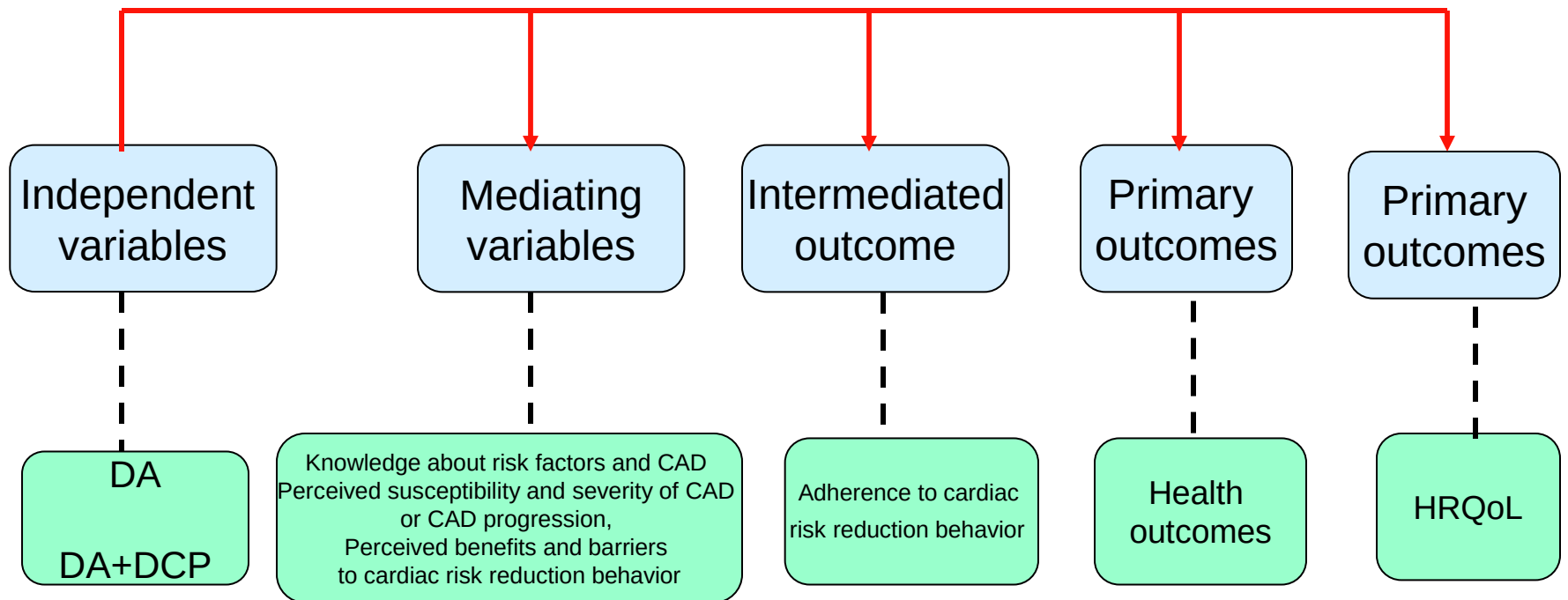
Design:

- Prospective, 3 group randomized, controlled trial with 4 repeated measures over the next 6 months
- Participants and setting:
 - 363 patients
 - > 18 years of age
 - Referred to coronary angiogram

After completion of baseline measures patients were randomly assigned to study groups:

- DA group
 - received the DA to take home
- DA+DCP group
 - received the DA to take home and an appointment was set up for a home visit by the nurse counselor
- Control group

Variables and effects studied



Demographics

- Mean age 62.2 (10.1) years
- 38.3 % women
- 67.2 % married
- 71.6 % had no further education after secondary school
- 24 % smoking
- 56 % lack of physical activity

Sample

- 24.8 % previous myocardial infarction (MI)
- 20.7 % previous PCI
- 12.9 % previous CABG surgery

Angiogram revealed:

- 45.5 % no significant vessels disease

Further treatment:

- 49.3 % medication only
- 23.1 % PCI
- 14.3 % CABG surgery
- 13.3 % no treatment

Group differences in health results 6 months following angiogram

Health outcomes	Control group	DA group	DA+DCP group	
	<u>M</u>	<u>M</u>	<u>M</u>	<u>F</u>
Body Mass Index	27.41	27.20	26.95*	4.17
Total cholesterol	4.75	4.71	4.71	0.01
HDL	1.50	1.37	1.35	0.59
LDL	2.36	2.83	2.80	0.93
Systolic blood pressure	135	137	135	0.28
Diastolic blood pressure	78.38	79.02	81.69	1.70
Amount of tobacco in gram/week	51.72	53.83	48.16	0.09

• $p < 0.05$

• Note: The differences are adjusted for covariate = the baseline scores
Alpha = .05.



Group differences in HRQoL

6 months following angiogram

HRQoL	Control group	DA group	DA+DCP group	
	<u>M</u>	<u>M</u>	<u>M</u>	<u>F</u>
Physical Functioning	72.84	73.16	76.87	1.63
Role Functioning Physical	63.21	68.92	72.52*	3.93
Bodily Pain	61.82	63.41	64.18	0.29
General Health	57.44	59.67	63.50*	3.04
Vitality	48.56	51.70	55.89*	3.74
Social Functioning	76.65	75.16	78.95	0.95
Role Functioning Emotional	74.01	80.27	82.43*	3.49
Mental Health	72.39	75.44	76.88	2.38
Treatment Satisfaction	78.61	80.37	79.83	0.15
Disease Perception	65.85	70.27	75.91**	5.30

•p< 0.05 **p< 0.01

•Note: The differences are adjusted for covariate = the baseline scores

Alpha =.05.



Group differences in adherence to risk reduction behavior

6 months following angiogram

	Control group	DA group	DA+DCP group	
Adherence	<u>M</u>	<u>M</u>	<u>M</u>	<u>F</u>
Diet recommendations	13.24	13.46	14.01	1.06
Activity recommendations	11.54	12.01	12.71	1.42
Stress reduction	14.20	14.99	14.20	0.10
Taking medications	19.08	19.18	19.69	1.39
No smoking	19.10	19.08	19.06	0.01

Note: The differences are adjusted for covariate = the baseline scores
Alpha = .05.

Group differences in mediating variables 2 months following angiogram

	Control group	DA group	DA+DCP group	
	<u>M</u>	<u>M</u>	<u>M</u>	<u>F</u>
Knowledge about risk factors and CAD	16.13	16.19	16.88	2.28
Perceived susceptibility of CAD or CAD progression	2.99	3.02	2.88	1.91
Perceived severity of CAD or CAD progression	3.53	3.47	3.40	1.89
Perceived benefits of cardiac risk reduction	3.36	3.39	3.36	0.33
Perceived barriers to cardiac risk reduction	1.86	1.78	1.71*	3.94

•p< 0.05

•Note: The differences are adjusted for covariate = the baseline scores
Alpha =.05.

LIMITATIONS

- Variations in the sample
- One of the interventions is rather expensive
- The nurse counselor was also the PhD student

CONTRIBUTION

- So far interventions to produce lasting behavior change have shown limited effects
- The two new interventions showed that information (DA alone) was not enough to make an impact
- To help patients to integrate information to their own life may be important
- No significant differences in adherence to cardiac risk reduction behavior

RECOMMENDATIONS

- Do not know the right "dose" of intervention, included structured system of reminders, selfevaluation, feedback and support
- Interesting to study the relative commitment from all the different ingredients in this complex intervention
- Need for replication
- Effectiveness
 - Develop new approaches
 - Develop interventions that are more cost-effective, for example web-based application

CONCLUSION

- DA with the DCP showed some positive effects
- DA alone did not improve health behaviors and outcomes
- Do not know if these effects would have occurred by the DCP alone
- To tailor patients' health beliefs and perceived barriers are important ingredients in this complex intervention.

THANK YOU FOR THE ATTENTION



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