THE UNIVERSITY of York

The Department of Health Sciences

Common beliefs and their effect on physical functioning

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CARE AND EDUCATION
RESEARCH GROUP

Conflict of Interest

- Gill Furze has no conflict of interest regarding the studies reported in this presentation.

In the beginning …

- Alan Wynn – psychiatrist employed by the Australian Department of Work
- "Why are people not returning to work post MI?"
- Interviewed 400 men.
- 50% of patients who had not returned to work had UNWARRANTED emotional distress and invalidism, often due to misconceptions.

Wynn A. Med J Aust 1967;2:847–51

Angina and CAD

- The severity of coronary artery disease does not predict symptom report in people with CAD.[1 2]
- In order to explain symptom report you need to look at:
  - Health beliefs (cardiac misconceptions)
  - Anxiety and depression
  - Patients own attempts to cope
  - Personality
  - Social support
  - Socio-economic status. [3]

1. Ramsay, J.M.C., McDermott, M.R. & Bray, C. *J Health Psychol,* 2001; 6(6): 713-729.
2. Smith, T., Follick, M. & Korr, K. *Br J Med Psychol.* 1984; 57: 249 - 252.
3. Lewin, B. (1997). *J Psychosom Res.* 1997; 43(5): 453-462.

Effect of cardiac misconceptions

- Post MI patients with more misconceptions:
  - less likely to return to work and more likely to be admitted to hospital with chest pains that are false alarms
  - have reduced expectations of autonomy and lower perceived global health

Maeland, J.G. & Havik, O.E. *Scand J Caring Sci,* 1987; 7: 23-31.

Where do the misconceptions come from?

- Some common misconceptions held within society.[1]
- Some are induced by health professionals including cardiologists.[2] [3] [4]
- Health professionals do not always counteract misconceptions held by patients.[5]
- Nor do health professionals ask about beliefs, and patients don't offer them, and so they remain private.[6]

1. Furze, G., Roebuck, A., Bull, P., Lewin, R.J.P. & Thompson, D.R. (2002) *BMC Cardiovasc Disord,* 2002; 2(4)
2. Wynn A. *Med J Aust,* 1967;2:847–51
3. Bassan M. *Lancet*, 1986; 2: 1442 – 1443
4. Maeland, J.G. & Havik, O.E. *Scand J Caring Sci,* 1987; 7: 23-31.
5. Newens, A.J., McColl, E., Bond, S. & Priest, J.F. *Heart and Lung, 1996;*25(3): 190-9.
6. Petrie, K.J. & Weinman, J.A. (1997) In *Petrie, K. J. and Weinman, J. A. (eds.)* Harwood Academic Publishers, Amsterdam; The Netherlands, pp. 441-465

Yes but …

- These are old studies.
- Things are better now.
- Our patient education is so much improved.
- People go to cardiac rehabilitation and learn so much.

IS THAT RIGHT?

2001-2004

- 132 patients with stable angina followed for a year. Their most common misconceptions
  - Angina patients must avoid anything that might bring on angina
  - Each episode of angina does more damage to the heart
  - Angina is a kind of small heart attack
  - If you get angina you should rest as much as possible
  - The main cause of heart disease is stress

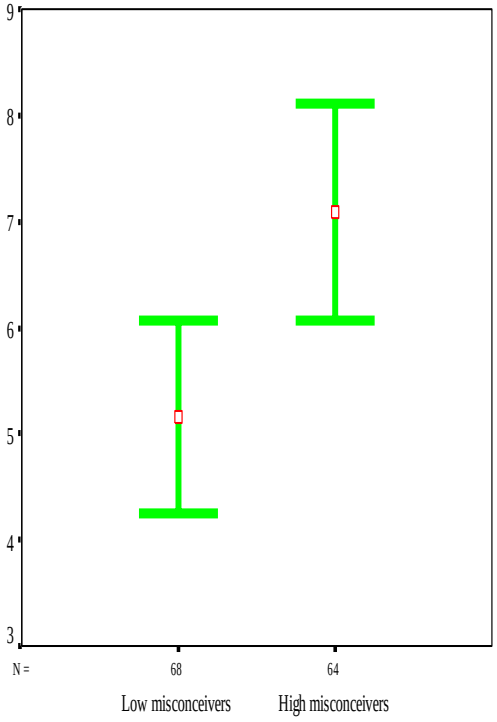
Furze, G., Bull, P., Lewin, R. & Thompson, D.R. *J Health Psychol, 2003;*8: 307-316

Observational study

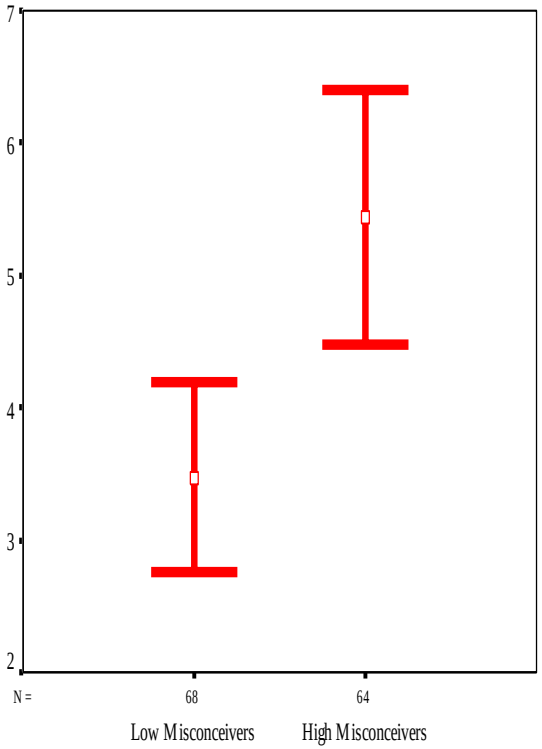
- Questionnaire study
- 132 patients drawn from primary care

  (60% male, mean age 67, mean time since diagnosis 16 months)
- 105 (80%) completed follow-up
- Measures: angina beliefs, anxiety, depression, physical functioning

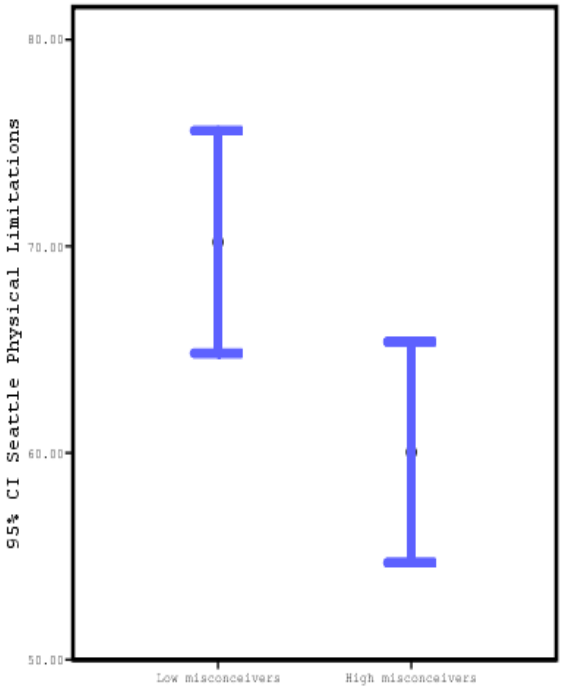
Low versus High Misconceivers



HADS Anxiety
Mean diff = 1.93
95% CI = 0.58 - 3.28
p=0.005



HADS Depression
Mean diff = 1.97
95% CI = 0.79 - 3.15
p=0.001



SAQ Physical Limitations
Mean diff = 10.17
95% CI = 2.66 – 17.68
p=0.008

Follow-up for 1 year

- Change scores calculated, subtracting baseline scores from follow-up scores for all questionnaire measures
- Hierarchical (sequential) multiple regression analysis on the 1 year value of physical functioning
  - Demographic variables, group in original study, baseline measure of dependent variable in first block, and the change in other measures in second block.

Effect on physical functioning at 1 year

Variable	B	Beta	p
Gender	-5.30	-0.11	.130
Age	-0.25	-0.10	.275
Social class	3.20	0.07	.380
Yrs education	-1.42	-0.13	.106
Diagnosis time	-0.04	-0.05	.544
Experimental Gp.	0.95	0.02	.785
Physical functioning T1	0.76	0.73	<.001
Change HADS Depression	-0.75	-.06	.475
Change HADS Anxiety	-0.44	-.05	.621
Change Angina frequency	-0.10	-.02	.840
Change Angina beliefs	-0.50	-.21	.014

- Apart from the baseline value of physical functioning, changes in misconceptions are the best predictor of physical functioning a year later

Furze, G., Lewin, R., Murberg, T.A., Bull, P. & Thompson, D. *J Psychosom Res,* 2005; 59: 323-9.

But …

- This is only people with angina
- And treatment is better now
- And the patients were all from one city
- So you can't generalise ….

Following beliefs 2007-2010

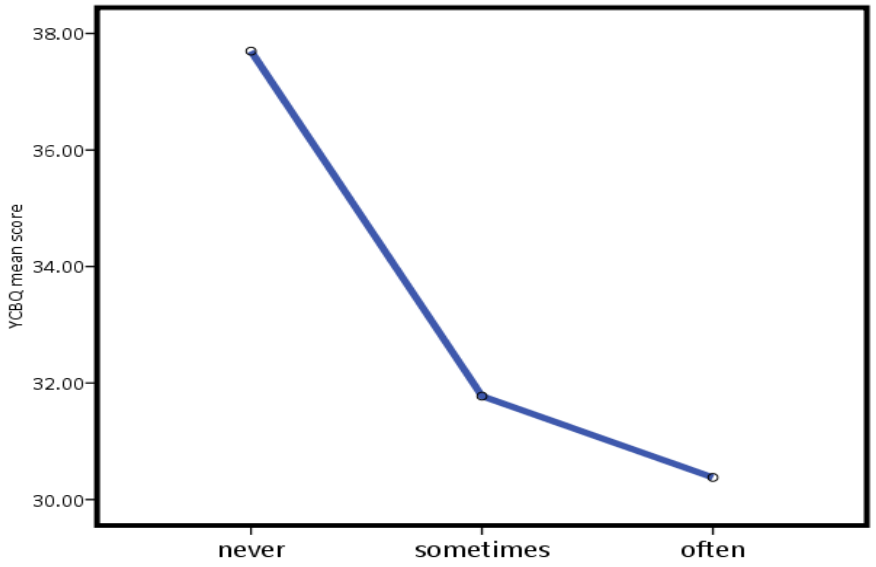
- Longitudinal study tracking responses to the York Cardiac Beliefs Questionnaire – 22 item questionnaire of common misconceptions about living with angina or MI
- 434 people with angina and / or MI recruited from 5 sites across Britain (75% male, mean age 64).
- Measures include Anxiety, Depression, Physical activity (with the Godin Shepherd Leisure time Exercise [GLE] and Vigorous Activity [GVA] questionnaires.
- Followed up at baseline and three months.

Analyses

- Baseline: Analysis of Variance comparing misconceptions among people who often, sometimes or never exercised vigorously
- Follow-up: Hierarchical multiple regression of baseline variables on Leisure Time Exercise at three months (GLE)

Beliefs and vigorous activity

GVA1	GVA2	Mean Diff	Std. Error	Sig.	95% CI	
never	sometimes	5.92	1.24	<.001	3.01	8.84
	often	7.32	1.49	<.001	3.82	10.82
sometimes	never	-5.92	1.24	<.001	-8.83	-3.01
	often	1.40	1.35	.553	-1.77	4.56



Beliefs at baseline and leisure activity at three months

Baseline variables	Beta	t	Sig.
Age	-.12	-1.97	.05
Gender (male)	.13	2.37	.02
Education	.08	1.52	.13
Months since diagnosis	-.06	-1.15	.25
Canadian Angina Class	-.07	-1.17	.24
NYHA Class	-.00	-.02	.99
Anxiety (HADS)	.04	.51	.61
Depression (HADS)	-.14	-1.90	.06
Cardiac Beliefs	-.18	-3.08	<.01

Results summarised

- Cardiac misconceptions are a stronger predictor of future physical activity levels than disease severity, anxiety or depression
- Conclusion: it is vitally important to target cardiac misconceptions

So what can we do?

- Find out about what the patient believes and check understanding
- Use these freely available questionnaires - send to patients when sending them an appointment.
- There is no need to score the questionnaires – just use them to highlight wrong beliefs.
- Patient information is then targeted – no wasting time telling patients with the right ideas what they should believe.

How do we know this works?

Cognitive behavioural treatments that target misconceptions are successful:

- The Angina Plan[1]
- Auckland study[2]
- Systematic review of interventions to change beliefs[3]

1. Lewin, R.J.P., Furze, G., Robinson, J., Griffith, K., Wiseman, S., Pye, M. & Boyle, R. *Br J Gen Pract,* 2002;52: 194-201.
2. Petrie, K.J., Cameron, L.D., Ellis, C.J., Buick, D. & Weinman, J *Psychosom Med,* 2002;64: 580-6.
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Thank You

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Questions?