
**Does the health belief model
provide a good theoretical basis
for effective behaviour change interventions?**

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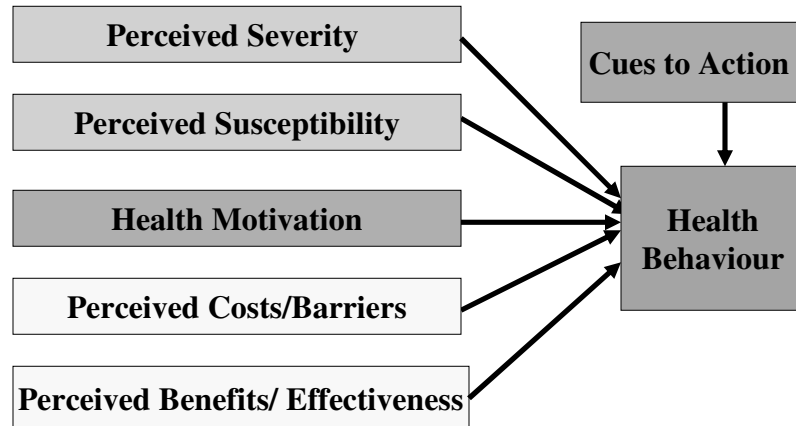
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Overview

- Systematic Review of HBM behaviour change interventions
 - Are HBM interventions effective?
 - What change techniques are used?
 - What explains the heterogeneity of effectiveness?
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The Health Belief Model



*Reviewed by: Abraham & Sheeran (2005)
(Predicting Health Behaviour, Conner & Norman)*

HBM as a Predictive Model Janz & Becker (1984) Review

Significance ratios i.e., % of times each construct was significantly associated with behaviour in 18 prospective studies

Susceptibility	82% (14/17 studies)
Severity	65% (11/17 studies)
Benefits	81% (13/16 studies)
Barriers	100% (11/11 studies)

Few studies of cues and health motivation.

Harrison et al. (1992) Meta Analytic Review

234 studies, 16 studies included 4 main constructs and reliability checks – i.e., weak operationalisations.

sample weighted average correlations (r_+)

Susceptibility 0.05

Severity 0.08

Benefits 0.13

Barriers - 0.21

(0.25% - 4.4% of variance)

Inclusion criteria harsh

- may underestimate combined effects

HBM Interventions e.g., Jones et al (1988)

N = 842 patients with 11 presenting problems

Assessed of patients' HBM-specified beliefs

Provided protocol-based, condition-specific educational messages targeting HBM beliefs.

<u>conditions</u>	<u>% scheduling</u>	<u>% Kept</u>
routine care	33%	24%
hospital group	76%	59%
telephone group	85%	59%
combined group	85%	68%

well conducted, effective HBM intervention... typical?

Systematic Review of Health Belief Model Interventions

- PsychArticles, PubMed, Web of Science
- HBM + EHBM – March 2007
- quantitative evaluation of behaviour change intervention using a control group comparison
- self identification of HBM as basis
or evaluated in terms of changes in three of perceived susceptibility, severity barriers or costs.
- 463 abstracts read out of unique 918 hits
- 192 papers read

38 HBM evaluations (k=38, N=28,838)

Abraham, C., Sibley, E & Field, A. (in preparation)

29 Theory-Linked Behavior Change Techniques I

Abraham & Michie (2008)

Health Psychology

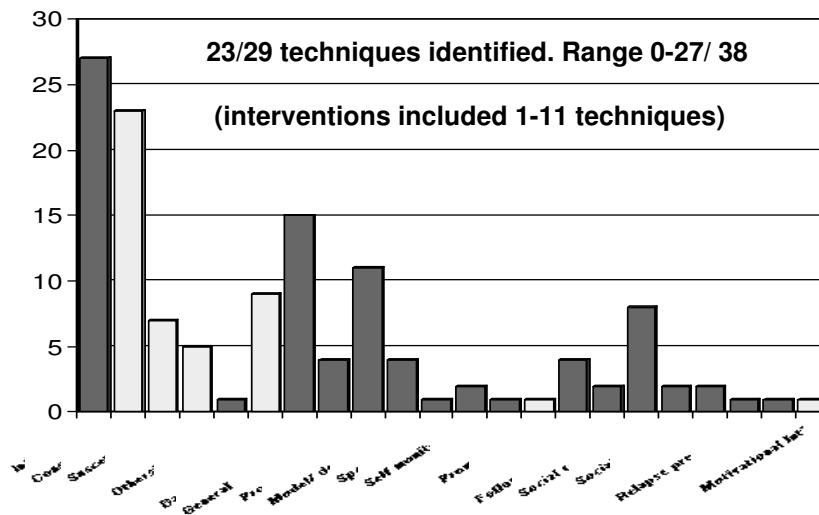
<u>Technique</u>	<u>Illustrative Theory</u>
1. Provide general health information	
2. Provide information on consequences	TRA/SCT/ HBM
3. Provide information about personal susceptibility	HBM
4. Provide information about severity of consequences	HBM
5. Provide information about others' approval	TRA
6. Provide information about others' behaviour	TRA
7. Prompt intention formation/ goal setting	TRA/ Control Theory
8. Prompt barrier identification	HBM/ SCT
9. Provide general encouragement	Social Cognitive Theory
10. Set graded tasks	Social Cognitive Theory
11. Provide instruction	Social Cognitive Theory
12. Model/ demonstrate the behavior	Social Cognitive Theory
13. Prompt specific goal setting	Control Theory
14. Prompt review of behavioral goals	Control Theory
15. Prompt self-monitoring of behavior	Control Theory
16. Provide feedback on performance	Control Theory

26 theory-linked behavior change techniques II

17. Provide contingent rewards	Operant Theory
18. Teach to use prompts/ cues	Operant Theory/ HBM
19. Agree behavioral contract	Operant Theory
20. Prompt practice	Operant Theory
21. Use follow up prompts	
22. Provide opportunities for social comparison	
23. Plan social support/ social change	
24. Prompt identification as role model	
25. Prompt self talk	
26. Relapse prevention	
27. Stress management	
28. Motivational interviewing	HBM
29. Time management	

26 previously found to have good inter-coder reliability

Number of Interventions (N=38) Using Specific Change Techniques

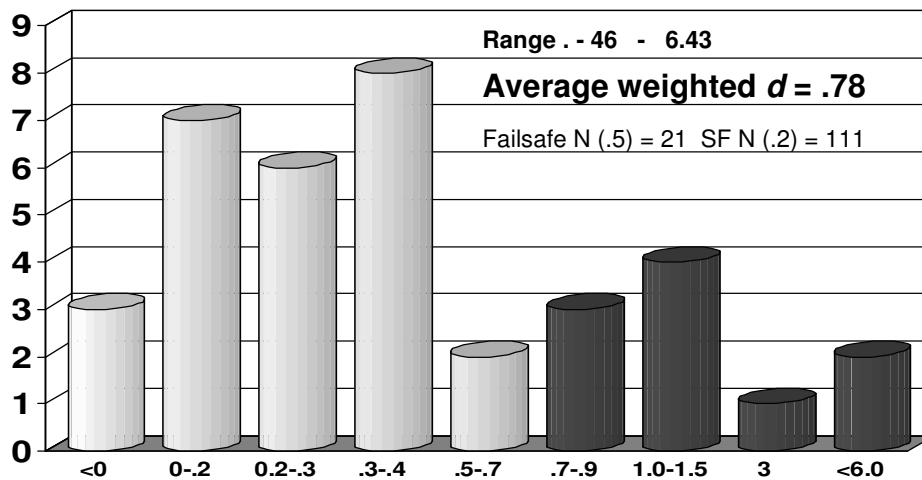


Most Frequently Used Techniques in 38 HBM Interventions

Technique	No of interventions using technique	
Provide information on health-behaviour link	27	(71.0%)
Provide information on consequences	23	(60.5%)
Provide instruction	17	(44.7%)
Prompt barrier identification	15	(39.5%)
Prompt intention formation	9	(23.7%)
Provide social comparison opportunities	8	(21.0%)
Provide information about susceptibility	7	(18.4%)

Effectiveness of 38 HBM Interventions

d = .20 is small, *d* = .50 is medium, *d* = .80 is large



What factors explain effectiveness heterogeneity?

Heterogeneity in effectiveness was NOT explained by...

- who delivered the intervention e.g., health professional/ not
 - personal vs. non personal tailoring of the intervention,
 - face to face delivery or not,
 - number of behaviour change techniques included
 - BUT interventions using individual delivery were more effective ($d = 1.19$) than those using group delivery ($d = 0.52$).
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HBM Intervention Effectiveness Moderated by..

Prompt barrier identification ($X^2 = 8.82, p < .01$)

15 included	$d = 1.14$
23 did not	$d = 0.41$

Provide instruction ($X^2 = 17.41, p < .001$)

17 included	$d = 1.23$
21 did not	$d = 0.34$

Model/ demonstrate ($X^2 = 9.87.2, p < .01$)

5 included	$d = 1.82$
33 did not	$d = 0.50$

HBM Intervention Effectiveness Moderated by.. II

Prompting self monitoring ($X^2 = 132.4, p < .001$)

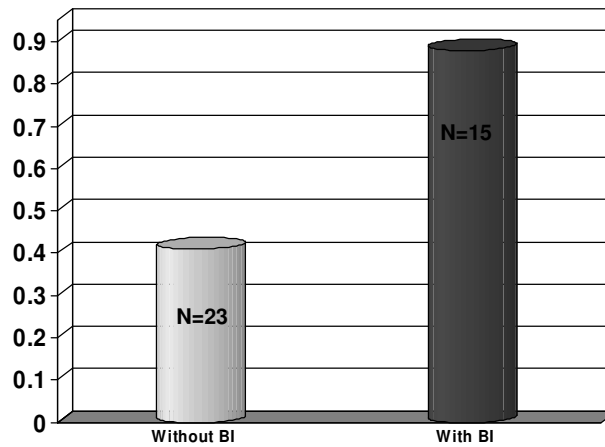
2 included	$d = 6.38$
36 did not	$d = 0.50$

Plan social support/ social change ($X^2 = 4.97, p < .05$)

2 included	$d = 3.24$
36 did not	$d = 0.58$

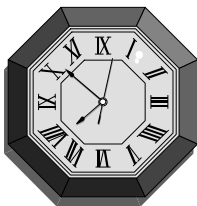
Effectiveness of HBM Interventions Using Barrier Identification

$d = .20$ is small, $d = .50$ is medium, $d = .80$ is large



Conclusions... HBM Interventions...

- vary in effectiveness but, on average, have **large effect sizes**.
 - designed to change **illness-related behaviours** (rather than preventive) and those **delivered individually** are most effective,
 - ... as are those evaluated using **active controls** and those using high **quality evaluations**.
 - prompting **barrier identification** are more effective but inclusion of other HBM-related change techniques did not affect effectiveness
 - HBM interventions including **instruction** are more effective and those including **self monitoring and social support planning** appear to be more effective.
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Thank You!

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