

Psychology, Health & Medicine

Lecture 2: Research & interventions in Health Psychology

Dr Ceri Phelps

Session overview

- Assessment Guidance
- Interventions in health psychology
 - What are they and how do measure them?
- Research methods in health psychology
- Ethical considerations in health psychology research

Interventions: changing health behaviour:

- Many of the risk factors for disease and illness are behavioural e.g.
 - eating behaviour
 - smoking
 - lack of exercise
- Ability to change behaviour key to tackling many of the health issues in society today

Predicting and changing health behaviour

- Behaviours that affect our health can be categorised into:
 - Health protective behaviours (exercise, good diet)
 - Health risk behaviours (alcohol abuse, smoking, unsafe sex)
- Need to understand *why* people *choose* to behave in ways that will harm their health

Predicting and changing health behaviour

- Biological factors
 - Genetics, gender, age
- Psychological factors
 - Cognitions, attitudes and beliefs
 - Emotions
 - Modelling, conditioning
- Social factors
 - Demographics, SES, employment
- Cultural factors
 - Healthcare systems, cultural norms

What is an intervention?

- **interventions** in health psychology are planned actions aimed at bringing about change in people's health
- A wide range of intervention strategies exist
- Often involves structured activities used to modify behaviour, emotional state, or feelings

Developing interventions to change health-related behaviour

- Health psychology theory provides a framework for:
1-understanding behaviours and beliefs and ;
2-exploring how these factors may relate to illnesses.
- These theories have drawn on:
1- social cognition models,
2-implementation intentions and ;
3-the self regulatory model to inform interventions aiming to change behaviours and beliefs.

Interventions in Health Psychology

Aim to:

- help people manage their illness more effectively
- help people to cope with the emotional distress associated with the disease.

Assessing medical interventions

- Interventions must be based on sound empirical evidence
- Clinicians must be able to justify choice of treatment and show that they are able to deliver it effectively
- Use of psychological measures to achieve this

Interventions in Health Psychology

Must follow stringent guidelines for assessing clinical effectiveness as any medical treatment

MRC framework

The randomised controlled trial

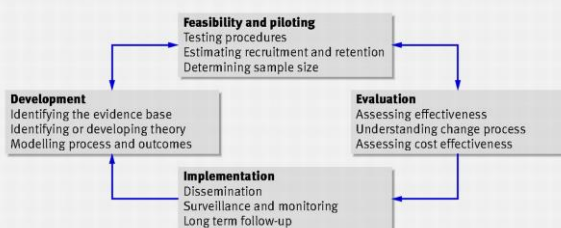
Glanz (2016)

- The choice of a suitable theory or theories should begin with identifying:
 - the problem,
 - goal
 - units of practice,

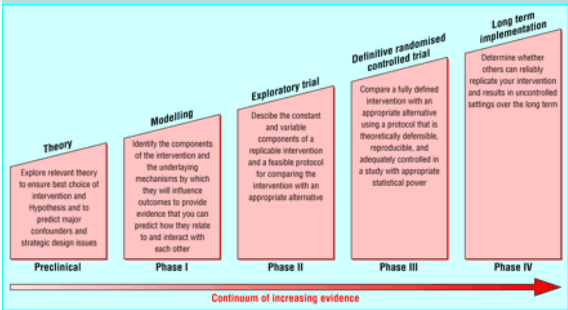
“Choice should not be based on selecting a theoretical framework because it is intriguing, familiar, or in vogue. One should start with a logic model of the problem and work backwards to identify potential solutions”

<http://www.esourceresearch.org/eSourceBook/SocialandBehavioralTheories/8ChoosingtheRightTheory/tabid/743/Default.aspx>

Intervention development



The MRC Framework for developing and evaluating interventions



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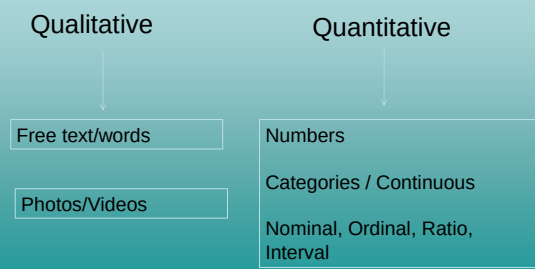
So.....

- Lots of different models explaining health-related behaviour
- How do we select the most appropriate model for an intervention?
- How do we evaluate its effectiveness?

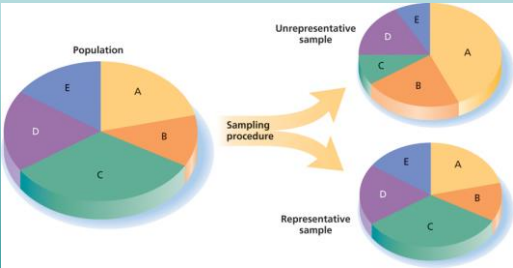
Research in Health Psychology

- Qualitative
- Quantitative
- Mixed Methods

Qualitative and Quantitative Data



Methods of Research



Choosing measures

- Use validated scales
- Appropriate for target population
- Strong psychometric properties
- Other data?
 - Physiological measures?
 - Behaviours
 - Demographics

Psychometric Standards

Key measurement concepts:

- Reliability
 - Is the measure consistent and stable over time?
- Validity
 - Is it an accurate and precise measure i.e., does it measure what it claims to measure?
- Standardization

Measures

Choosing a reliable and valid scale is always the best option:

- you know that you measuring something in a robust way (you haven't just made it up!)
- you have existing data from other studies to compare your findings with
- Sensitive to change within studies (if appropriate)
- Allows for stronger statistical analyses

Impact of Event Scale (Horowitz et al., 1979)

(Tick one box from each row)	Not at all	Rarely	Sometimes	Often
I thought about it when I didn't mean to	☐	☐	☐	☐
I avoided letting myself get upset when I thought about it or was reminded of it	☐	☐	☐	☐
I tried to remove it from my memory	☐	☐	☐	☐
I had trouble falling asleep or staying asleep, because of pictures or thoughts about it that came into my mind	☐	☐	☐	☐
I had waves of strong feelings about it	☐	☐	☐	☐
I had dreams about it	☐	☐	☐	☐
I stayed away from reminders of it	☐	☐	☐	☐
I felt as if it hadn't happened or wasn't real	☐	☐	☐	☐
I tried not to talk about it	☐	☐	☐	☐
Pictures about it popped into my mind	☐	☐	☐	☐
Other things kept making me think about it	☐	☐	☐	☐
I was aware that I still had a lot of feelings about it, but I didn't deal with them	☐	☐	☐	☐
I tried not to think about it	☐	☐	☐	☐
Any reminder brought back feelings about it	☐	☐	☐	☐
My feelings about it were kind of numb	☐	☐	☐	☐

Reliability – consistency or stability of a measure.

Test –retest reliability

consistency of measurement over time

- Assessed by administering the measure to the same group of participants on two or more separate occasions and correlating the sets of scores
- If the construct being measured is stable, scores should be consistent over time
- E.g., you would not expect the results of a test of IQ or personality traits to be different if measured more than once.

(Some of) The Big Five Inventory
Personality measure

In General I am someone who...	Neither agree nor disagree				
	Disagree Strongly	Disagree a little	Disagree a little	Agree a little	Agree strongly
	1	2	3	4	5
Is talkative					
Tends to find fault with others					
Does a thorough job					
Is depressed, blue					
Is original, comes up with new ideas					
Is reserved					
Is helpful and unselfish with others					
Can be somewhat careless					
Is relaxed, handles stress well					
Is curious about many different things					
Is full of energy					
Starts quarrels with others					
Is a reliable worker					

- **Internal Consistency:** consistency of measurement within the test itself
 - All the items on a test should measure the same thing
 - Items should correlate highly with each other
 - Internal consistency reliability – the extent to which a test has homogenous content

Cronbach's alpha – response to each item is correlated with the response to every other item

Note : Interpreting Reliability .70 or above

E.g., a scale of Extraversion

Very much so Moderately so Somewhat so Not at all so

- 1. I feel at ease with people.
- 2. I start conversations.
- 3. I take charge.
- 4. I am the life of the party.
- 5. I am skilled in handling social situations.
- 6. I make friends easily.
- 7. I talk to a lot of different people at parties.
- 8. I know how to captivate people.
- 9. I do not mind being the centre of attention.
- 10. I feel comfortable around other people.

response to each item should be correlated with the response to every other item – otherwise not tapping into the same thing!

- **Split half reliability**
 - internal consistency between two sets of scores
- **Inter-rater reliability**
 - extent to which two different raters agree in their evaluations
 - consistency of measurement when different people observe the same event or score the same test

Validity: how well a test actually measures what it is designed to measure

Face validity

– test looks plausible at face value i.e., does it look like it is measuring what it claims to be measuring?

E.g., Life Orientation Test (Scheier & Carver, 1985): a measure of dispositional optimism

- In uncertain times I usually expect the best
- If something can go wrong for me, it will
- I'm always optimistic about my future
- I hardly ever expect things to go my way

Content Validity

– whether the items on a test measure all the knowledge or skills that are assumed to underlie the construct of interest

– E.g. does a measure of intelligence capture all types of intelligence or just certain types e.g. problem-solving ability; numerical reasoning;

Quality of Life??

Scales and sub-scales

- Some psychological measures may include sub-scales
- Sometimes can either add up all items for total score, or create separate sub-scales for each
- Sometimes have to keep each sub-scale separate from others.

- E.G., Impact of Event Scale, Horowitz et al. 1979
 - INTRUSION SUB-SCALE: Seven items measure intrusive thoughts “intrusion” about a stressful event (0-35)
“I thought about it when I didn’t mean to....”
 - AVOIDANCE SUB-SCALE: Eight items measure attempts to avoid those thoughts “avoidance” (0-40)
“I stayed away from reminders of it”
 - Can be combined to create a “Global distress Scale” (0-75)

Impact of Event Scale (Horowitz et al., 1979)

(Tick one box from each row)	Not at all	Rarely	Sometimes	Often
I thought about it when I didn't mean to	☐	☐	☐	☐
I avoided letting myself get upset when I thought about it or was reminded of it	☐	☐	☐	☐
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I had trouble falling asleep or staying asleep, because of pictures or thoughts about it that came into my mind	☐	☐	☐	☐
I had waves of strong feelings about it	☐	☐	☐	☐
I had dreams about it	☐	☐	☐	☐
I stayed away from reminders of it	☐	☐	☐	☐
I felt as if it hadn't happened or wasn't real	☐	☐	☐	☐
I tried not to talk about it	☐	☐	☐	☐
Pictures about it popped into my mind	☐	☐	☐	☐
Other things kept making me think about it	☐	☐	☐	☐
I was aware that I still had a lot of feelings about it, but I didn't deal with them	☐	☐	☐	☐
I tried not to think about it	☐	☐	☐	☐
Any reminder brought back feelings about it	☐	☐	☐	☐
My feelings about it were kind of numb	☐	☐	☐	☐

Reverse coding

Some scales contain items which need to be reverse-coded (to prevent demand characteristics/lazy responses)

E.g., Life Orientation Test (Scheier & Carver, 1985): a measure of dispositional optimism

- In uncertain times I usually expect the best
- If something can go wrong for me, it will
- I'm always optimistic about my future
- I hardly ever expect things to go my way

Example psychological measures

- Measure of psychological distress
 - Impact of Event Scale
 - Hospital Anxiety & Depression Scale
- Measures of mood
 - Positive and negative affect schedule
- Attitude scales
 - Theory of planned behaviour questionnaire
<http://www.midss.org/content/theory-planned-behaviour-questionnaire>
- Illness beliefs/perceptions
 - Illness perceptions questionnaire
<http://www.midss.org/content/theory-planned-behaviour-questionnaire>

When? How often?

- Interventions require pre and post measures in order to show change
- Often require a control group
- Short-term versus long-term follow-up?

Essential reading for assignment

Coolican, H (2009) *Research Methods and Statistics in Psychology*

- Chapter 8: psychological tests and measurement scales

Key ethical considerations in applied research

- Written **informed** consent – at appropriate levels
- Clarity and comprehension of research materials
 - Appropriate for target audience?
- No potential coercion
- Right to withdraw
- Debriefing
- Potential for harm/discomfort/distress
- Confidentiality/Data Protection

Informed consent

- Giving the participant a reasonable idea of what will be expected of them
 - Filling in questionnaires about attitudes and beliefs
 - Being observed for research purposes
 - Viewing images on a computer screen
- It may be necessary to withhold certain information
 - If it would inform the participant what the study is about and influence their responses
 - If there is no other way to carry out the study
- In that case, a full explanation of the nature of the study must be supplied in a debrief at the end of the study

For consent to be considered both legal and ethical it must be:

- Given by a person with capacity;
- Voluntarily given, with no undue influence;
- Given by someone who has been adequately informed;
- A fair choice.
- Consent V Assent

Ethics and the NHS

- Any research involving NHS patients has to go through NHS ethics approval process
- Extremely useful guidance on preparing materials for research with adults and children
- <http://www.hra.nhs.uk/resources/before-you-apply/consent-and-participation/consent-and-participant-information/>

Designing & evaluating theory-based interventions

- An example.....

The CARIAD Trial
(Cancer Genetic Risk Assessment and Distraction Trial)

An MRC phase III trial evaluating a brief intervention to reduce distress in patients undergoing cancer genetic risk assessment

Dr Ceri Phelps



Funded by Wales Office for Research & Development

E.g., The CARIAD Trial: developing an intervention to help people cope with genetic testing

- A third of women are likely to experience significant psychological distress when undergoing cancer genetic risk assessment (*Fry et al, 2003; Cull et al, 1999*).
- Lack of appropriate coping interventions (*Wellisch et al., 1999; Esplen et al, 1998; Schwartz et al, 1998*)
- Need for a brief cost-effective intervention within context of NHS service delivery

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Theory-based interventions

Distraction: controls intrusive worries about a stressful event

- Involves actively engaging in cognitive or behavioural distraction techniques

Count backwards from 200 whilst picturing the numbers in your head

Absorb yourself in something interesting or fun to do

- effective in reducing physical and psychological distress: anxiety, dental pain, phobias, back pain, insomnia
- Appropriate intervention during periods of waiting and uncertainty

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The intervention: Distraction-Based Coping Leaflet

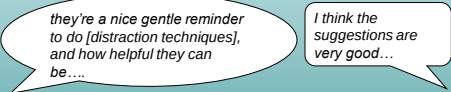
- Leaflet designed by clinical psychologist (Professor Paul Bennett),
- Describes distraction techniques and how to use them.
- Encourages participants to actively think and write down which distraction techniques may work for them.
- Also allows for emotional processing during specific times
- Pilot work suggests that the leaflet may be appropriate and effective

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Phase I & Phase II Pilot Work

➤Exploratory focus groups

➤CGSW patients thought leaflet was appropriate and effective



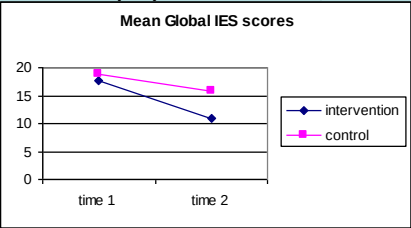
➤ **Pilot Randomised Trial:** Female referrals into Cardiff area of CGSW (Feb to Dec 2003) CONTROL v INTERVENTION

➤**Data Collection:** postal questionnaires upon referral, during waiting period and after risk notification

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Phase II Pilot RCT: Results

Whole Trial Sample (intervention n=51, control n= 48)

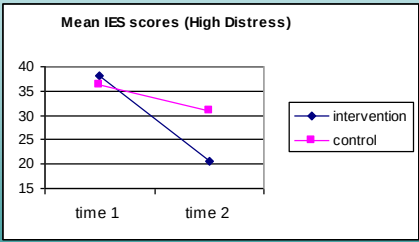


no significant difference between the two groups on follow-up global distress scores

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Phase II Pilot RCT: Results

High Distress (19+ on global IES) (intervention n=16, control n= 19)



Significant difference between the two groups on levels of global distress at follow-up (T2)
(F (1, 32) = 6.10, p=0.02)

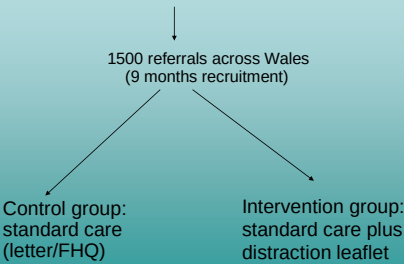
The need for a phase III fully powered RCT.....

- Needed to confirm findings in larger sample size
- Not enough at Time 3 to analyse
- Need to explore longer-term impact of the intervention – does it have the potential to increase distress in the longer-term?
- Need to identify which vulnerable sub-groups may benefit more/less from the intervention

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Phase III: The CARIAD Trial

MRC Phase III Randomised Controlled Trial



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Outcome Measures

Primary Outcome

- Level of situation-specific distress over time; Impact of Event Scale (IES; Horowitz, 1979).
 - Distress in response to a stressful event
 - intrusion and avoidance sub-scales

Secondary Outcomes

- Positive and Negative Affect (PANAS; Watson et al, 1988);
- Expectations and understanding of risk (T3 only)

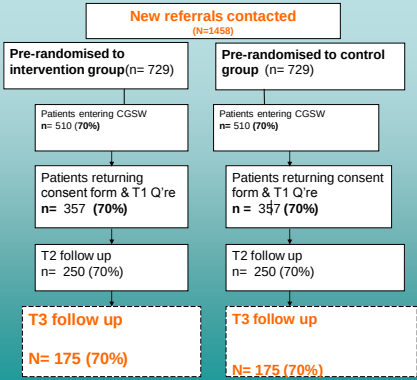
Potential Moderators

- Trait optimism (LOT; Scheier & Carver, 1985);
- Illness perceptions (IPQ-R; Moss-morris et al., 1992);
- Coping (in-house measure).

Process Measures & Free text data

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CONSORT diagram of intended sample size

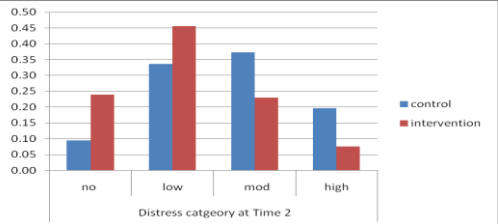


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Results: Impact of intervention during the waiting period

- No impact on trial sample as a whole
- Significant intervention effect on Time 2 intrusion for moderate distress sub-group (p=0.03)

Predicted probabilities of distress category membership at Time 2 for those in moderate distress sub-group at baseline



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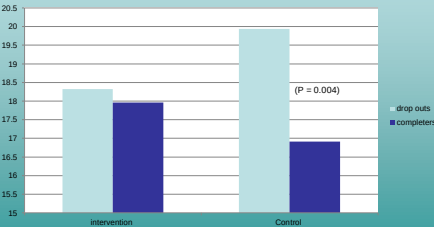
Results: Impact of intervention following risk provision

- Significant intervention effect on Time 3 intrusion for moderate distress sub-group (p=0.03)
- Significant intervention effect on Time 3 intrusion for low distress sub-group (p=0.04)
 - Those in intervention group showed lower distress following risk provision than control group
- No significant intervention effect for high distress sub-group
 - intervention did not reduce distress
 - Intervention did not increase distress

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Results: Participation Bias

PANAS Negative Affect Time 2 (10-50)



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Free text comments about leaflet

- What do participants like about the leaflet?

"Knowing that there are techniques I could use should the need arise" p.231

"It's a well informed leaflet which covers a lot of information. It also answers questions your not sure about. Its easy to read as well and well thought out" p.16

"Page 2 – First paragraph advising to think positive and stop worrying. Page 4 – Setting aside times in the day to think about things then use the distraction technique" p.277

"Giving ideas to people of various things to distract from worry" p.57

Free text comments about leaflet: when do they use it?

When I try to go to sleep or when I start thinking about my genetic risk p.540

"Late in night when not able to sleep" p.17

"When I am low, when I am stressed, when I can not stop thinking about what is going to happen. When I am thinking about my daughter" p.212

When I have had a bad day in work I've picked up the leaflet and tried using some of the distraction p.1372

Related Papers

Phelps, C., Bennett, P., Iredale, R., Anstey, S. & Gray, J. (2006). The development of a distraction-based coping intervention for women waiting for genetic risk information: a phase 1 qualitative study. *Psycho-Oncology*, 15(2), 169-173

Bennett, P., Phelps, C., Brain, K., Hood, K., & Gray, J. (2007). A randomised controlled trial of a brief self-help coping intervention designed to reduce distress when awaiting genetic risk information. *Journal of Psychosomatic Research*. *Journal of Psychosomatic Research*. 63 (1) 59-64.

Phelps, C., Bennett P & Brain, K (2008). The role of appraisals and core relational themes in predicting emotional responses to cancer genetic risk assessment: an applied test of a cognitive theory of emotion. *Psychology Health & Medicine*, 13(5):545-58.

Phelps C., Wood F, Bennett, P; Brain K & Gray J (2007). Knowledge and expectations of women undergoing cancer genetic risk assessment: A qualitative analysis of free-text questionnaire comments. *Journal of Genetic Counseling*, 16 (4), 505-514

Psycho-Oncology
Psycho-Oncology (2012)
Published online in Wiley Online Library (wileyonlinelibrary.com). DOI: 10.1002/pon.3072

A self-help coping intervention can reduce anxiety and avoidant health behaviours whilst waiting for cancer genetic risk information: results of a phase III randomised trial

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Abstract

Objective: The objective of this study is to evaluate the effectiveness of a self-help coping intervention in reducing intrusive negative thoughts while waiting for cancer genetic risk information.

Methods: Between August 2007 and November 2008, 1955 men and women for cancer genetic risk assessment were invited to participate in a randomised trial. The control group received standard information. The intervention group received this information plus a written self-help coping booklet.

The primary outcome measure was the intrusive thoughts at the Impact of Event Scale.

Results: The intervention significantly reduced intrusive thoughts during the waiting period in those reporting moderate baseline levels of intrusive thoughts. Following risk provision, those in the inter-

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