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Health psychology research advances theory by addressing problems: illustrations from theory-based studies of health professional behaviour

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Although problem-driven research needs good theory, such research can also advance theory. While many would agree with this assertion, it is perhaps worthwhile to reflect on how such advances might happen and to consider examples from health psychology that take theory forward. Applied research in psychology is the use of theories and methods of psychology to solve real-world problems, but theoretical problem-driven research is more than that. An important test of whether theories 'work' is whether their assumptions and hypotheses stand up to scrutiny in real-world settings. Some recent and current research investigating the behaviour of health care professionals illustrates some of these tests and advances.

The behaviour of health care professionals as a 'problem'

Health care systems and organizations provide the context in which health care is delivered, but it is individual clinicians and clinical teams who actually deliver care. The clinical behaviour of health care professionals may thus constitute either high-quality (evidence-based) or lower quality (non-evidence-based) patient care. This means that principles of individual behaviour change can inform the problem of differential uptake of evidence-based practice. Some of the specific clinical behaviours for which there is an evidence-behaviour gap are listed in Box 1.

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There are lots of reasons why it may be difficult to change clinical behaviour in the light of new evidence: clinical guidelines that summarise the research evidence may be unclear or not sufficiently specific (Michie & Johnston, 2004); patients may have strong views about their own treatment; or the necessary resources may be unavailable. So addressing the evidence-behaviour gap for a specific clinical action requires a careful exploration of the determinants of the behaviour to ensure that behaviour change interventions target the appropriate determinants.

Box 1. Some 'problem' behaviours (e.g., Walker, Grimshaw, Johnston, Pitts, Steen, Eccles, 2003)

There is evidence that, in order to achieve better clinical outcomes, health care professionals should do –

MORE:
- Applying fissure sealants to children's teeth
- Taking intra-oral x-rays for adult dental patients
- Restoring carious teeth in children
- Prescribing statins for people with diabetes
- Inspecting the feet of people with diabetes
- Prescribing thiazide diuretics in the initial management of hypertension

LESS:
- Prescribing antibiotics for people with sore throat
- Referring people with low back pain for lumbar spine x-ray
- Prescribing blood transfusions in intensive care (given certain clinical indicators)

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How might problem-driven research advance theory?

Of course there are many ways in which theory may be advanced but this paper focuses on three of these: standardizing measurement of a theory's constructs; developing methods for selecting appropriate theories to explore a problem; and interrogating a theory's axiomatic principles.

1. Advancing theory by standardizing measurement of constructs

The advantage of standardized measurement is that it permits direct comparison of data from studies of different behaviours and different samples. An example is the PRIME ('Process modelling in implementation[1] research') project (Walker et al., 2003). The aim of PRIME was to identify predictors of five clinical behaviours that are routinely recorded in health care databases. Box 2 illustrates the parallel forms of one item that were used (with other items) to operationalise attitude.

Analysis of the data from these five studies was complex but, to illustrate, within a framework of the Theory of Planned Behaviour, scores from a set of parallel items predicted intention relating to the five behaviours (Table 1).

Box 2. Standardisation of one attitude item across five studies, each investigating a different clinical behaviour.

"In general the possible harm to the patient of…

280 physicians	…taking a lumbar spine x-ray
228 physicians	…prescribing antibiotics for patients with *URTIs*
214 dentists	…taking an intra-oral radiograph
116 dentists	…restoring carious teeth in children
106 dentists	…placing fissure sealants

… is outweighed by its benefits"

Note. URTI = 'upper respiratory tract infection', or uncomplicated sore throat.

The standardisation of items used across these five studies permits confidence in interpreting whether differences between behaviours and contexts are associated with patterns of prediction. For example, these differences may consist of disparities in –

- Nature of the behaviours (e.g., differing levels of skill, time, resources required)

Table 1. Brief results of multiple linear regressions on intention[a] scores for five behaviours.

Behaviour	Predictor variables	Significant (<.05) beta weights	Adjusted R^2 (p)
1. Taking a lumbar spine x-ray to investigate low back pain	Attitude Subjective norm PBC	✗ ✗ ✓ (in)	.25 (<.001)
2. Prescribing antibiotics for patients with *URTIs*	Attitude Subjective norm PBC	✓(d) ✓(in) ✗ ✗	.31 (<.001)
3. Taking intra-oral radiographs of adult patients in general dental practice	Attitude Subjective norm PBC	✓(d) ✓(in) ✗ ✓(d) ✓(in)	.16 (<.001)
4. Restoring carious teeth in children (aged 6-16 years)	Attitude Subjective norm PBC	✓(d) ✓(in) ✗ ✗	.30 (<.001)
5. Placing fissure sealants on the teeth of children (aged 6-16 years)	Attitude Subjective norm PBC	✓(d) ✓(in) ✓(in) ✗	.42 (<.001)

Note. Sample sizes presented in Box 2. PBC = perceived behavioural control. in = indirect measure; d = direct measure (see Section 3 below for explanation).

[a] In the PRIME project, recorded behaviour was also measured but as there was a different error profile for each of the five behaviours, for the purpose of this argument direct comparison is more valid at the level of intention.

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[1] Implementation research is the field of research that involves methods to promote the uptake of research findings into healthcare practice.

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- Clinical context (general medical practice for behaviours 1-2 versus general dental practice for behaviours 3-5)
- Age of patient (child for behaviours 4-5 versus adult for behaviours 1-3)
- Direction of desired behaviour change (decrease for behaviours 1-2 versus increase in behaviours 3-5).

The patterns of prediction of intention (Table 1) did not clearly map on to these disparities. A more detailed analysis of the nature of the behaviour may be required. However, the first behaviour – taking lumbar spine x-rays – was unusual in that it was predicted by Perceived Behavioural Control (PBC) but not by attitude. So, for example, an intervention to change PBC would be more likely to change this behaviour than an intervention to change attitude. This process – identifying determinants of the target behaviour within a theoretical framework and then designing interventions to change those determinants – has the potential to advance theories not only by shifting studies from correlational to experimental research designs but also by identifying the most likely mediators of behaviour change.

Using theory in problem-driven research can be challenging to the standardisation of measurement because the behaviours to be investigated are not chosen to be readily accessed by the theory, as would happen in laboratory studies. Nevertheless, the investigation of multiple behaviours in the PRIME project illustrates the importance of standardised measurement if we wish to explore whether different behaviours are likely to be changed by similar interventions.

2. Advancing theory by developing methods for selecting appropriate theories to explore a problem

Research in psychology often focuses on one theory – or sometimes places two theories in opposition by allowing them to compete in an attempt to demonstrate the superiority of one theory over another. Health psychology research more often focuses first on the problem to be solved and uses an appropriate theory in the service of finding a solution. So it makes sense to explore the features of situations and problems that render some theories more appropriate than others. The PRIME project also advanced theory by addressing this question. Six theoretical frameworks (Theory of Planned Behaviour (TPB); Social Cognitive Theory (SCT); Common Sense Self-Regulation Model (CS-SRM); Operant Learning Theory (OLT); Implementation Intention; Precaution Adoption Process Model (PAPM)) were used. To illustrate for the behaviour 'Placing fissure sealants on children's teeth': the TPB, SCT; OLT and Implementation Intention appeared to apply to this situation but the CS-SRM and the PAPM did not (Table 2).

Table 2. Brief results of multiple linear regressions for six theories: predicting intention to place fissure sealants on children's teeth (*N* = 106 dentists).

Theory	Predictor variables	Significant (<.05) beta weights	Adjusted R^2 (*p*)
1. Theory of Planned Behaviour	Attitude Subjective norm PBC	✓(d) ✓(in) ✓(in) ✗	.42 (<.001)
2. Social Cognitive Theory	Risk perception Outcome expectancies Self-efficacy	✓ ✓ ✗	.24 (<.001)
3. Common Sense Self-Regulation model	Perceived identity Perceived cause Perceived controllability Perceived duration Perceived consequences Coherence Emotional response	✗ ✗ ✗ ✗ ✗ ✗ ✗	.00 (=.523)
4. Operant Learning Theory	Anticipated consequences Rewarding/punishing consequences Evidence of habit	✓ ✗ ✓	.57 (<.001)
5. Implementation Intention	Action planning	✓	.16 (<.001)
6. Precaution Adoption Process Model	Current stage of change	✗	.00 (=.862)

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This is not to say that the latter theories are flawed, unsupported or inferior. Rather, this was an attempt to explore the boundaries of application of the theories. For example, the project addressed such questions as, "Is it possible to operationalise OLT within a questionnaire format?" (Answer: apparently, Yes) and "Can the CS-SRM inform health care behaviour by using the illness perceptions of clinicians (rather than patients) to predict clinical behaviours (rather than patients' behaviours)?" (Answer: apparently, not for this behaviour). This pushing of theory to – and sometimes beyond[2] – its logical boundaries is a fundamentally theoretical exercise that has the potential to take theory forward.

In problem-driven research, the aim is often to optimize the prediction and explanation of the behaviour rather than to investigate the theoretical point. Thus, more theories may be used to investigate any one behaviour, with resulting opportunities to compare theories. In PRIME, multiple theories were investigated within each study to identify those that were applicable to each of these five behaviours. Specifying the boundaries of application of a theory is fundamental work. There is more conceptual development to be achieved from this project but, again, it is likely that finding systematic and generalisable ways to describe the nature of the behaviours will be key to advancing the theories in this way.

3. Advancing theory by interrogating its axiomatic principles

A further approach to exploring theory at its boundary consists of interrogating its axiomatic principles by investigating its operational detail. An axiomatic principle in the TPB concerns the manner in which the predictor variables (attitude; subjective norm; perceived behavioural control) are measured. Quite appropriately, advice by Fishbein and Ajzen (1975) has become standard practice in the field. Briefly, this advice is that the predictor variables may be measured in two ways. First, direct measurement involves selecting from a fairly small pool of standard wordings (e.g., *Doing X is good*; *People who are important to me think I should do X*). Such items are applicable to many behaviours and the researcher's task is to specify the behaviour carefully and to insert the specification into the item in place of *X*, for example, *Taking intra-oral radiographs of adult patients is good* (or , in this case … *is good clinical practice*). Second, indirect measurement is a more complex process that involves identifying relevant beliefs about the behaviour under investigation. Relevance is operationalised by asking participants to name their 'individually salient beliefs', or (more frequently) by conducting elicitation interviews to identify the 'modally salient beliefs' of people sampled from the target population.

Scores for the direct measure are derived by computing the mean of the scores for individual items. Scores for the indirect measure are derived by multiplying scores for behavioural, normative and control belief items by scores for outcome evaluation, motivation to comply and control power, respectively, and summing these product terms. (The statistical validity of this multiplicative process is somewhat controversial and researchers often simply sum the scores of the unweighted belief items (French & Hankins, 2003).) These indirect scores are proposed in the theory to measure the same constructs as their directly measured counterparts. There are two hypotheses following from this. First, correlations between direct and indirect measures of the same construct should be positive and high; second, in a hierarchical regression to predict intention, after the set of direct measures has been entered, entering the set of indirect measures should account for no further variance in intention scores (because the two sets of measures should be accounting for the same variance in intention).

We would like to add a caveat to the first of these general predictions. If the elicitation work is poor in quality, or if constraints on questionnaire length limit the number of belief items that can be included, then coverage of the construct's content domain may be inadequate. In that case, we would expect lower correlations between the direct and indirect measures. However, even an indirect measure with poor coverage should not explain additional variance in intention after the direct measures have been entered.

However, there are some in-principle reasons why the two types of measure may not follow these predicted patterns because the two measures make different assumptions about how individuals process information. To illustrate, an assumption relating to direct measurement of attitude is that individuals are capable of accessing, synthesising and accurately reporting their global positive or negative evaluation about enacting the behaviour. Given the advances in

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[2] Note that the operationalisation of OLT and the CS-CRM in the manner described is beyond the original intent of these theories and we acknowledge that this may constitute an 'unfair test' of the theories.

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cognitive psychology in the past few decades, e.g., relating to priming effects; 'hot' (emotion-laden) cognitions and attributional bias in social perception, this assumption may not be defensible.

The assumptions relating to indirect measurement are different. They relate to theories of 'cognitive algebra' that were formulated in the 1970s (e.g., Bettman, Capon & Lutz, 1975). The recommended procedure for indirect measurement corresponds to the 'weighted averaging' model within that tradition. Its validity depends on whether people actually do separately weight each individual belief in a linear way according to its perceived importance, and whether they then combine all the weighted beliefs additively to form a global attitude. Competing models may be that one belief is regarded as so important that it overwhelms all other beliefs; or that a curvilinear form of weighting more accurately represents the way each belief influences the aggregate attitude score; or that people process only a small number of individual beliefs unless cognitive resources are plentiful and the behaviour is perceived as very important. In other words, the evidence base for the assumptions relating to both direct and indirect methods of measurement is unclear. An indirect way of testing these assumptions is to proceed with the suggested analyses (i.e., correlations between direct and indirect scores and hierarchical regression to predict intention). This has been done many times, but one example from the PRIME project will illustrate the issue. For clarity, this argument will proceed using direct and indirect measures of attitude with respect to three clinical behaviours in dentistry (Table 3).

Table 3 demonstrates two points relevant to this argument. First, for all three behaviours, direct and indirect scores for the same construct were positively and significantly related. However, all three correlations were low-to-medium in magnitude (r < 0.3), suggesting that either coverage of indirect measures was poor or that the assumptions underlying the measures (as discussed above) are unsupported by these data. Second, for two of the behaviours, the indirect measure of attitude significantly added to the prediction of intention scores in the second step (and

Table 3. Zero-order correlations between Attitude direct and indirect scores and brief results of hierarchical linear regressions on intention scores for five behaviours, demonstrating the unique contribution of indirect measures to prediction of intention.

Behaviour (*N* analysed)	**Direct / indirect attitude scores: *r***	**Significant beta weights, Step 1**	**R^2 change, Step 1**	**Significant beta weights, Step 2**	**R^2 change, Step 2**
Taking intra-oral radiographs of adult patients in general dental practice (212)	0.25***	Attitude (dir): 0.27*** Subjective norm (indir): -0.01 PBC (dir): 0.04	0.078**	Attitude (dir): 0.22** Subjective norm (indir): 0.00 PBC (dir): 0.05 Attitude (indir): 0.21**	0.043**
Restoring carious teeth in children aged 6-16 years (129)	0.19*	Attitude (dir): 0.53*** Subjective norm (indir): -0.08 PBC (dir): 0.07	0.300***	Attitude (dir): 0.52** Subjective norm (indir): -0.08 PBC (dir): 0.07 Attitude (indir): 0.15#	0.020
Placing fissure sealants on the teeth of children aged 6-16 years (119)	0.27**	Attitude (dir): 0.36*** Subjective norm (indir): 0.25** PBC (dir): 0.20*	0.224***	Attitude (dir): 0.27** Subjective norm (indir): 0.20** PBC (dir): 0.01 Attitude (indir): 0.39***	0.145***

Note. PBC = perceived behavioural control. Subjective norm was measured using only indirect measures.
* *p* < .05 ** p < .01 *** *p* < .001 # *p* = .065

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this pattern was marginally significant for the third behaviour, restoration of carious teeth). Thus these three data sets do not provide evidence to support the principle that direct and indirect measures of attitude explain overlapping variance in intention scores. Of course, it is possible that the constructs in the theory were not operationalised well enough to capture the theory's full intent. However, this would be more consistent with poor prediction of intention from the indirect measure of attitude rather than additional prediction of unique variance in intention after accounting for the direct measures. Interrogation of the axiomatic principles of this theory therefore suggests either that direct and indirect approaches measure different constructs or that it could be fruitful to reconsider our assumptions about the way people process and aggregate attitude-relevant information.

In PRIME, we used both direct and indirect measures of the TPB constructs to answer two questions. First, which variables predict intention? (and therefore might mediate between interventions and behaviour change?); second, for the significant predictors, which specific beliefs discriminate between intenders and non-intenders (Walker, Grimshaw, Armstrong, 2001)? (and could therefore inform the content of interventions). This strategy demonstrated that there is more work to be done to understand the cognitive processes underlying these measures.

General Discussion

In summary, the PRIME project used six theories to predict five clinical behaviours. We believe that this problem-driven work has advanced theory. Briefly, we now address three questions:

1. Does the inconsistency of prediction across the different behaviours threaten the validity of the theories?

No. It is generally accepted that different patterns of prediction will arise for different behaviours. This has been argued explicitly in recent work by Michie et al. (2005) and there is much work to be done in specifying the ways in which behaviours differ.

2. Does the lack of support for the equivalence of direct and indirect measures in the TPB represent a rejection of the theory?

No. It would be inappropriate to reject the theory because it predicts *more* variance in intention than was at first thought. However, it may be appropriate to investigate further the information processing, memory and attention processes involved rather than to accept uncritically the assumption of equivalence.

3. Does it follow that we should reject the principle of parsimony that makes the TPB so usable and scientifically attractive?

No. It is possible that the *direct* measures of attitude that provide insufficient coverage of the construct (i.e., that individuals are not very efficient at aggregating their beliefs and reporting them accurately) and so it could be fruitful to re-examine the assumptions around measurement, rather than the structure of the theory.

In summary, do these theories 'work' in the context of health care provision? It appears that some do, despite the challenges of using theory to investigate clinical behaviours. In addition, using theories to address problems in this context has provided opportunities for clarifying the theories and asking new questions that may result in advances. We raise these issues with the research community in health psychology and invite comment and further investigation.

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original article

Development of a Multimedia Interactive Education System for Prostate Cancer

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Prostate cancer is the most commonly diagnosed cancer and the second leading cause of cancer-related deaths among American men (American Cancer Society [ACS], 2007). It is estimated that 218,890 men will be diagnosed with prostate cancer and 27,050 men will die from this disease in the United States in 2007 (ACS, 2007). Treatment options for localized disease (i.e., confined to the prostate, without metastases or nodal involvement) include radical prostatectomy, external beam radiation, radioactive seed implantation, and watchful waiting. Although either of these treatments is quite effective with an average 5-year survival rate of 95%, each treatment option brings risks of long term adverse physical effects (e.g., sexual, bowel, and urinary dysfunction) that have the potential to severely impact a patient’s disease-specific and general quality of life. In addition, treatment information is often presented in unfamiliar medical terms, fraught with probabilistic information that many patients have difficulties understanding. Patients are therefore in the difficult situation to make potentially far-reaching health decisions under heightened levels of distress and uncertainty (Diefenbach et al., 2002).

The Prostate Interactive Education System

We developed The Prostate Interactive Education System (PIES), an interactive multimedia expert system, to create a forum where patients receive trusted information, presented in easy-to-understand language. The overall goal was to educate patients about their treatment options and to assist them in their treatment decision by including a decision aid. PIES provides the patient with a multitude of treatment information and encourages patients to obtain the kind of information that they desire about the disease. PIES is envisioned as an important step in the treatment-decision process. The software will prepare a factual report for the patient who will meet with a physician or a psychologist if needed following his interaction with the software. PIES provides information and does not preclude a second opinion. In fact, a patient might have received a second or third opinion before using PIES.

In addition, PIES includes an expert system that will be operating in the background. The expert system will analyze prostate cancer and treatment information that the patient obtains and determine if the patient is getting enough information to make an informed decision. The expert system will not make any decision for the patient. It will only follow and evaluate the completeness of the process of obtaining information that enhance treatment decision (e.g., survival, treatment side effects). If the expert system becomes concerned that the patient is not being thorough in his examination of alternatives, it will make suggestions to view information that has not been accessed and about where the patient might find it. The patient can follow or ignore the expert system's suggestions.

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Design of PIES and Contained Information

The identification and development of the information contained in PIES is a multi-step process. A starting point for compiling information is a review of current information on prostate cancer treatment (e.g., the PDQ), that is approved by the National Cancer Institute (NCI, 2004) and the Cancer Information Service (CIS, 2004). Regular Medline searches (Diefenbach & Butz, 2004) supplement this information and ensure that it stays current. Second,

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the research team summarizes this information and identifies and develops appropriate visual materials. Third, medical expert consultants vet all materials for accuracy. Fourth, a health educator and a cancer-information specialist adopt the information to a 6th- to 7th-grade reading level. Last, information is then adopted for high and low information seekers.

An overview of the PIES architecture is shown in Figure 1. The patient interacts with the CD-ROM based system on a personal computer. The system is CD-ROM based but could be made available over the Internet. A CD-ROM delivery system was chosen so that those patients without a high-speed connection to the Internet would not experience delays caused by downloading videos. The information is developed and presented using Macromedia's Authorware (2004). Authorware is able to communicate with other software and can transmit information in real time or near real time. Authorware will allow the patient to have access to other programs such as a notebook to record information, and various applicable medical-applications software.

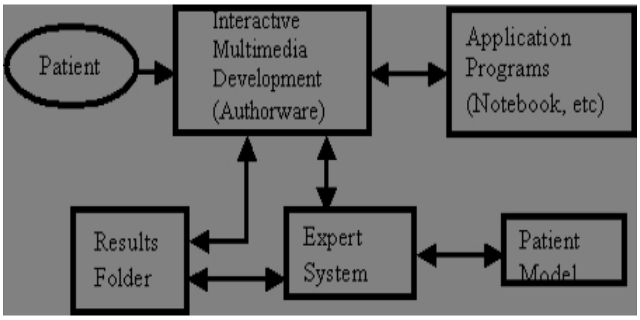

Figure 1 Overview of the PIES architecture

The metaphor used in PIES to organize information is that of a virtual health center. When the patient enters the health center, he is greeted by an information specialist (see Figure 2). The information specialist welcomes the patient and shows him around the PIES Health Center. The Health Center consists of a reception area, a library, and a group meeting room on the first floor, and physician offices on the second and third floors, connected through an elevator. Each room is interactive and the patient is shown how to use the room's facilities when he first chooses to enter the room. After showing the patient the layout of the Health Center, the information specialist asks the patient to provide some clinical data and to state initial information seeking and treatment preferences by filling a needs assessment questionnaire. This information allows the expert system to tailor the information contained in the program to the patient's information seeking needs. For example, if the patient states that he is leaning towards surgery, the expert system will suggest surgery-related information as the patient uses different rooms' facilities. After filling the questionnaire, the patient is free to visit any room of his choosing.

Figure 2 PIES Virtual Information Specialist

The Library

If the patient would like to learn about prostate cancer and all its treatment options, he is referred to the library. To get to the library, or any other room, the patient would click with the mouse on the door that leads to the desired area. The library is a highly interactive area (see Figure 3) in which the patient may obtain, and interact with, educational material and other information. The library consists of a wall of shelves with many books to choose from. The

Figure 3 PIES Virtual Library

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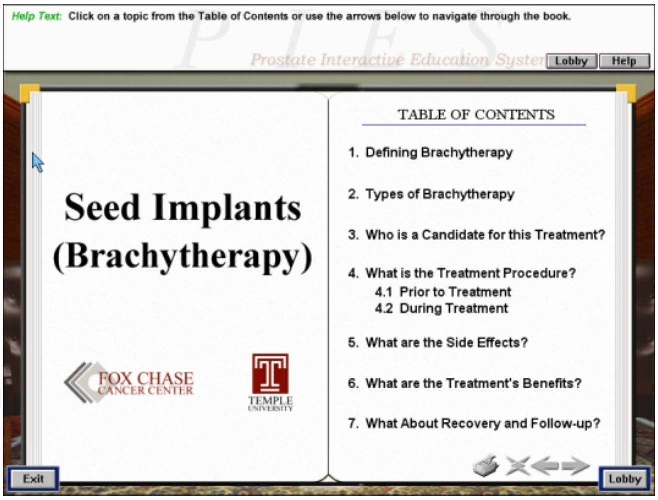
books are sorted in alphabetical order; by "rolling over" a book with a mouse, its title is revealed. For example, a book entitled Brachytherapy (see Figure 4) contains information about radioactive-seed implant treatment.



Help Text: Click on a topic from the Table of Contents or use the arrows below to navigate through the book.

Seed Implants (Brachytherapy)

TABLE OF CONTENTS

1. Defining Brachytherapy
2. Types of Brachytherapy
3. Who is a Candidate for this Treatment?
4. What is the Treatment Procedure?
   4.1 Prior to Treatment
   4.2 During Treatment
5. What are the Side Effects?
6. What are the Treatment's Benefits?
7. What About Recovery and Follow-up?

Figure 4 PIES Virtual Library – Book Example

A chapter gives an overview of brachytherapy; another chapter focuses on side effects, while another one describes the rationale behind a particular treatment regimen. Other books available contain information about psychosocial functioning, such as how to deal with impotence and incontinence, the use of alternative medicine, clinical trials, and the impact of prostate cancer on the family. In sum, the library is a place that has a comprehensive collection of disease- and treatment-related materials that not only address the momentary concerns of the patient, but also assist in the preparation for future prostate-cancer and treatment-related consequences.

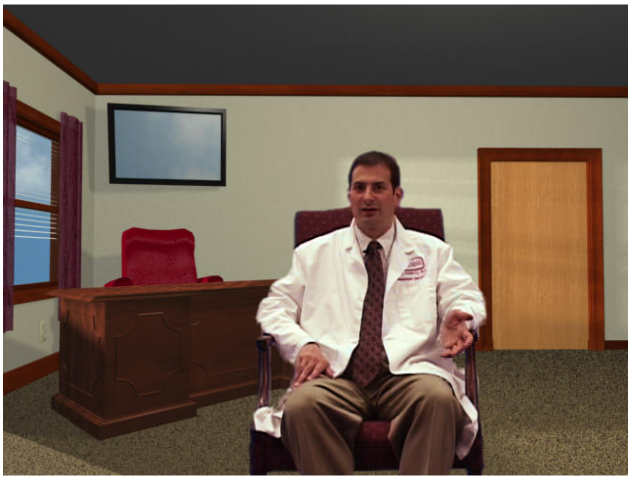


Figure 5 PIES Virtual Physician

Interacting with a physician

The physician offices are on the second and third floor of the virtual health center. The physician offices are reached through an elevator, which contains a large sign that allows the user to click on the desired office. Experts of a particular treatment specialty (i.e., surgeons, radiation oncologists, a physician specializing in brachytherapy) are available to provide information about different treatment modalities. After entering the office (see Figure 5), the patient interacts with the physician by selecting different video clips from a clipboard that contains over 30 frequently asked questions. Each video clip answers a specific question about the treatment, providing anatomical and technical information. In addition, physicians discuss issues such as who is a candidate for a particular treatment, the likelihood of side effects, success rates, recovery time, and expected quality of life.

Figure 6 PIES Virtual Group Meeting Room

The Group Meeting Room

The patient may choose to participate in a group meeting of prostate cancer survivors. There are four groups representing the different treatment options (i.e., external beam radiation, surgery, brachytherapy, and a combination of the previous options). The patient may listen to the group members discuss with one another aspects of their treatment decision-making such as how they found out that they had prostate cancer, how they felt when they found they had the disease, and how they chose a treatment. Figure 6 shows members of the group discussing a wide-ranging array of topics that include sexual and

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incontinence problems, issues with intimacy, the effect of the disease on the partner, the influence of the spouse on treatment decision-making, experience with different treatments, and the use of alternative therapies.

The Notebook

If the participant wants to take notes or jot down a comment during his exploration of the Health Center, he can call up an electronic notebook, which is available from any room. The notebook will also be helpful to jot down notes when visiting the doctor's office. These notes might be helpful to the patient when he consults with physicians about prostate cancer. All notes will be incorporated in the final printed report that will be generated upon exiting the program.

The Expert System

Research has identified two main profiles of information processing: high monitoring (i.e., information seeking) and low monitoring (i.e., information distracting) (Miller, 1995). When confronted with medical information, high monitoring patients typically process information very attentively and amplify its threatening aspects. In contrast, low monitoring patients are more likely to minimize threatening cancer-related information that diverges from their belief that they will be fine (Miller, 1995, Diefenbach & Butz, 2004). Based on the patient's scores on the needs assessment questionnaire, the expert system determines if the patient is a low information seeker (i.e., a low monitor), one who wants only the important facts about a treatment, or a high monitor (i.e., a high information seeker), one who wants considerable detail about a treatment therapy. The expert system directs the interactive multimedia program to provide the amount of information that the patient desires. The expert system realizes that a patient might want to be a high monitor in some areas and a low monitor in others. For example, a patient may be very interested in knowing all about the side effects of external beam radiation while wanting only the essentials about the procedure itself. To our knowledge, PIES is unique in that it allows such dynamic tailoring. Consequently, as patients proceed through PIES, its expert system determines how much information patients desire about a topic and provides it.

Exiting the Software

When participants decide to exit, the software calculates which information had been accessed and offers information that has not been viewed to patients. For example, if a patient only inquired about surgical treatment for prostate cancer, the program offers information on external beam radiation and brachytherapy for reviewing. Thus, the software will ensure that all patients are offered a balanced amount of information. If the patient desires, he can complete a decision aid, designed to elicit his values and goals with regard to prostate cancer treatment (O'Conner et al., 1999) and thus assist him in making a treatment decision that is right for him. After completing the decision aid, the software will also ask the patient if he wants to return to PIES. If the answer is yes, the expert system will update the patient's results folder before the program is closed. When a participant re-enters the software he is placed in the reception area to decide which part of the health center he wishes to visit. If the participant does not intend to revisit the software, it updates the results folder, and then generates a report for the patient. This report contains a synopsis of accessed information, notes that were taken, areas the participant has not visited, and types of available information that he has not yet accessed. Information about the evaluation of PIES is available at <http://www.jmir.org/2004/1/e3/>.

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original article

Populations living in poverty and with low education: How health education programs can make a difference

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Abstract

This contribution describes the approach taken by IMIFAP, a Mexican NGO, to the development and administration of programs that target health behaviour changes in communities and schools. In twenty years time our programs and books have reached over 17 million people in 14 Latin American countries, often living in rural areas with inadequate schools and virtually always in poverty. The IMIFAP approach seeks to combine the needs expressed by program clients, a theoretical basis from the development and psychology literatures, and empirical research. Programs focus on bringing about behaviour change by enabling skills, increasing knowledge and reducing psychological barriers. Such programs have been demonstrated to lead to an increase of behavioural choices in concrete situations that have been program targets and from there to broader changes such as more personal agency and agentic empowerment. This in turn impacts on the social and structural context in which individuals live. One of the programs is presented as an illustration. Lastly, the means through which Psychology can make an economic perspective such as that of Amartya Sen is briefly described.

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> *“ ... we are very, very poor, most of us only read a little and do not write, many do not speak Spanish, only Mixteco, and so it easier for the politicians to take advantage”.*
>
> *".... People come here all the time to bring programs…they talk and talk and we just sit there; they think we understand and go away after a few hours very pleased”.*
>
> *"... They say that if we have a test we can prevent cancer, but cancer comes from the air that we breathe when it is not good, so how can a test where they see our [private] parts help?”*
>
> *"... They tell us to go for vaccines and check ups of women’s things, that they will make sure a doctor will be at the clinic a certain day, but we don’t even know if the bus will come by that day”.*
>
> *“.... I feel ashamed of going to a doctor. What will he think! He knows much more than I do”.*
>
> *"... It is not so easy just to tell our husbands that we want to go to the doctor, they would not let us, they would be suspicious: why a doctor if you are not sick, he will see your parts and maybe touch you. We cannot do that; we may even get a beating”.*
>
> *“We are not supposed to go to work. People will talk. Women are supposed to stay home.”*

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These comments are from rural Mexican women. They have been placed here to focus the reader's attention on the powerlessness of people in poverty and illiteracy. They also can be used to exemplify the principles that underlie the IMIFAP approach to developing and implementing health behaviour promotion programs. Let us briefly look at some of these.

"They think we understand and go away after a few hours, very pleased"

Good Samaritans or health specialists developing and implementing a health education program without first determining people's needs and interests greatly reduce the probability of acceptance and, as a consequence, the adoption of the suggested behaviour changes. The first principle is that programs have to be driven by the needs of the intended program clients and by their own understanding of these needs (Givaudan, Pick, Poortinga, Fuertes & Gold, 2005; Pick and Poortinga, 2005).

"We are very, very poor...we may even get a beating"

A second principle is that changes in health behaviour have to take into account the structural context, i.e. the educational, political, economic and ecological conditions in which people live, as well as their social norms and expectations The context we live in imposes constraints on the resources available for addressing local issues and problems, both economically and psychologically (Berry, Poortinga, Segall, & Dasen, 2002). Still, virtually any context also comes with opportunities or affordances, and programs have to enable or facilitate these. In communities with low education and low affluence, obedience is much more socially accepted than informed decision making (Weiner-Levi, 2006). Among other things this has led to gender roles in which women are expected to follow what the men say rather closely (Amuchástegui, 2001).

A corollary of this second principle is a program has to be promoted. With each major program there has to be a range of activities aimed at advocacy and dissemination, not only among program clients to make them participate, but also among administrative authorities and other stakeholders, including teachers, staff of rural clinics and, in the case of programs for women, the men.

"... cancer comes from the air"
"... I feel ashamed"

The third principle that IMIFAP follows may be less self-evident. Our programs are meant to bring about changes in characteristic situations. Many programs address psychological characteristics of the person, using instruction and explanation and promoting participation and self reflection. Our approach is to focus on concrete situations and to provide tools enabling individuals to deal effectively with situations that are difficult for them. Such tools include knowledge, skills and the reduction in psychological barriers that limit individuals the possibility of addressing these situations.

Knowledge refers to fact-based information and has to be distinguished from (non-factual) beliefs. For example, in rural Mexico the belief can be found that the use of contraceptives will lead to the piling up of babies in the abdomen, or that water should not be boiled because that reduces its vitamin content. Although providing factual information is an essential component of any program, it is important to note that offering information on its own often fails to create positive change (Fishbein & Guinan, 1996). Programs with one-sided emphasis on knowledge do little to change attitudes, beliefs, let alone concrete actions (Smith, Zhang, & Colwell, 1996; Uchoa et al., 2000).

Skills including decision-making and communication provide program participants with the tools to translate information into action. The mode of program implementation should be interactive rather than instructional. The group setting of workshops facilitates receiving social support, or as one young woman put it: "getting permission to make choices and do things that are not accepted by the community but that are necessary for us to have better lives".

Psychological barriers such as shame, guilt and fear act in ways that paralyze action. They are a result of social pressures and the internalization of educational means (threats, fear) and messages of key socializing agents that lead to mainly an external source of control rather than inner regulation of one's decisions and choices of action. Through sharing, discussions and role playing more agentic forms of behaviour can be acted out in the protected setting of a workshop.

Moreover, "The Life Skills" approach has become a prominent international strategy, (Pick, Givaudan, & Poortinga, 2003; World Health Organization [WHO], 1999). The WHO emphasizes that key elements of a life skills program include: skills development; informational content addressing relevant social and developmental tasks, and interactive methods of teaching and learning (Mangrulkar, Whitman, & Posner, 2001). Developing the use of appropriate skills

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and integrating them with knowledge and clarification of beliefs allows the individual to develop competencies which enable them to react optimally according to his or her own standards and desired outcomes. These lead to behaviours, which amount to the application of being able to expand one's choices.

"I want to, I can…care for my health and exercise my rights (originally called "If I am OK, so is my family")

Social norms in rural Mexico prescribe that women put care for others before themselves. In one of the programs developed by IMIFAP the saying "If I am OK, so is my family" was used as the program's name to convey the idea that women need to be healthy if they are to look after their families. "If I am OK, so is my family" was developed for and implemented in the Mixteca, which is one of the poorest regions in Latin America and certainly in Mexico.

Based on extensive assessment of needs including interviews and focus groups with women as well as other stakeholders, six modules were developed: four for the women themselves, namely, *Health, Hygiene, Nutrition and Sexuality* and two for them to replicate with their children: *Development* and *Health*. Throughout the program a gender perspective was emphasized, together with the women's need for personal agency.

Thirty nine thousand young women (mostly 12-25 years of age), participated in 120 hours of training workshops designed to provide knowledge and promote the development of skills. The implementation of the program was realized through a closely supervised "cascade" with three levels of "replicators" who all received a special training of several days prior to each module. Twenty community action promoters employed by the federal public health sector were trained by *IMIFAP* staff. They trained 500 rural health assistants working in the local Oaxaca health system, who in turn replicated the training workshops with approximately 3,100 local volunteer community health promoters. The latter group offered weekly two-hour workshops to 39,000 women of their communities in groups of approximately ten to fifteen persons. The methodology was highly participatory, using role playing and other interactive exercises.

Extensive efforts were made towards advocacy among local politicians and health officials and towards dissemination of the program and its messages and goals among the general public (e.g., a local radio station broadcasted a health message every hour for the duration of the program implementation) to provide support for changes in socio cultural norms.

The program was monitored with both process and outcome evaluation methods. A controlled study showed significant changes in target behaviours (Pick, Venguer & Fishbein, in press). Such effects were also found again when the program was administered in Guatemala (Leenen et al., in press). The effectiveness of the program was supported by process evaluation data; perhaps the most impressive finding was that the rate of attendance was over 85% staying high throughout the program . Moreover, there were numerous testimonies that we heard from the women three years after completion of the program. When we returned to the region; many women expressed deep gratitude. They saw the program as having led them to start a business such as a bakery or taco stand, to become political active, organize women's groups, participate in the organization of community festivities previously not permitted for women, negotiate with their husbands, and a score of other activities:

A medical doctor from the region expressed the changes he had seen as follows:

"The women used to be quiet, looking down at the floor and whatever I would say they would just nod their heads to agree…whatever I would say they agreed. I have seen a great change, they look at my eyes, ask questions and even negotiate regarding when the surgery will take place or ask how long the recuperation process will take…they say "we are now empowered".

Changes towards agency and empowerment

In the course of participating in a program like "I want to, I can…care for my health and exercise my rights"people start to gain confidence in their ability to make decisions in some situations, they acquire a sense of responsibility and they start taking charge of their life. Having a sense of control over one's choices is essential for being able to form the intentions which precede behaviours. If the (lack of) perceived control over one's behaviour is seen as external (normative), the probability for choosing a course of action that one desires is strongly diminished (Pick, 2007).

Although the generalization or expansion from new reactions in a few situations to new characteristic forms of behaviour is not well understood, it is now widely accepted that such generalization does occur (Flay, 2002; Lave & Wenger, 1991). There are various concepts referring to a person's general capability to deal with difficult situations in a socially competent and confident manner, including agency (Kagitcibasi, 2005), self efficacy (Bandura, 1997), self esteem (Baumeister, 1993), self determination (Deci & Ryan,

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2000), internal locus of control (Rotter, 1966), empowerment (Stein, 1997) and autonomy (Assor, Kaplan & Roth, 2002). Agency is used as an umbrella concept to encompass these notions. Agency develops as competencies are experienced that go beyond what is directly being addressed in a program. It develops in concrete situations (e.g., going for a vaccine, having a Pap smear, talking to the school director). In its broadest sense agency leads to having control over more and more situations. In short, human agency is the recognition that people *can* be, and I would go a step beyond, *must* be agents of their own well-being. Only in this way can they be held responsible for the decisions they make regarding what behaviours they engage in.

As people realize that they can be agents of their own actions and perceive that they can have more control over their own lives, this sense of agency also allows them to become actively and constructively engaged in their social environment. We have called this agentic empowerment, i.e., an empowerment that evolves from within the person rather than from extrinsic (e.g. material or economic) or systemic (e.g. rules, norms and laws) incentives (Pick & Sirkin, in preparation). For example, a woman may start talking with her immediate and extended family and other community members about the importance of having a Pap smear (Givaudan et al., 2005) or not tolerating domestic violence (Fawcett, Heise, Isita-Espejel, & Pick, 1999).

As mentioned in the description of "I want to, I can…care for my heath and exercise my rights" we found in follow-up studies a few years after the completion of this program that as a result of participation in it, women tended to report various changes in their lives, scattered across a range of domains, but attributed by them to what they learned through the program. For example, they reported discussing more matters with their husbands, being more tolerant and even supportive of informed autonomous decision making rather than only blind obedience in their children, operating a small scale business, and negotiating with officials instead of leaving important decisions up to third parties.

Gradually such changes also will lead to changes in socio-cultural norms. Empowerment takes place when people influence or modify economic, cultural or social barriers. Agentic empowerment is both a process and a state of inner power that allows for autonomy and a sense of control over one's environment, not as an object but as a direct agent of change. Elsewhere these broader prospects have been elaborated in a framework that seeks to account for the theoretical explanation of agentic change and empowerment. Pick et al., 2003; Pick & Sirkin, in preparation).

There it is also shown how ideas about agency as found in psychology converge with recent ideas in developmental economics, especially those formulated by the Nobel Prize winning economist Amartya Sen (e.g., 1999) that are revolutionizing development policies worldwide. Programs like those of IMIFAP amount to making Sen`s theory about development operational. Psychologists have a store of theoretical and empirical knowledge that can contribute to sustainable development. Maybe we have to be less modest about what we can contribute. Like the women in the Mixteca we may have to learn: "I want to, I can".

In his well known book "Development as Freedoms" Sen (1999) defines development in terms of expanding individual freedoms. He argues that economic factors are a means to development and cannot continue to be seen as the end goal. These freedoms depend on a number of factors and can be divided into five categories: political freedoms, economic facilities, social opportunities, transparency guarantees, and protective security; Sen states, "Each of these distinct types of rights and opportunities helps to advance the general capability of a person." (1999, p. 10). In his theory capabilities refer to the freedom to achieve doing and being functionings. In FENAE terms we have translated 'doing functionings' to what a person succeeds in doing (behaviours) with the commodities and abilities given his knowledge, skills and context, while Sen's 'being functionings' we have interpreted as the personal characteristics which the individual achieves as a consequence of having tried out and succeeded in several behaviours (e.g. personal agency).

Both Sen and the IMIFAP rationale emphasize that one is able to enhance choice as one enhances one's capabilities. The context in FENAE encompasses the freedoms and entitlements (defined as the social, political and economic opportunities that are available to us and that can act to facilitate or to constrain human development (socially as well as and economically) depending on the mindset (i.e., degree of agency) of the individuals that make up its institutions and their degree of empowerment.

Conclusions

Today "If I am OK, so is my family" has reached over 300,000 Mexican women and their families. It has become part of an integral community development effort with the United Nations Foundation that, in addition to this community health program, also

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includes school based and micro enterprise development programs which follow the same approach and has changed its name to "I want to, I can…care for my health and exercise my rights". Each of several modules addresses a specific topic, for example "I want to, I can…prevent cancer", "I want to, I can…create my business, "I want to, I can… prevent alcohol abuse" and "I want to, I can… prevent violence"; see www.imifap.org.mx).

IMIFAP programs all have a common basis: they aim to enable individuals to promote their own wellbeing through the expansion of choice. This is realized through addressing concrete situations in which individuals would like to change their common, and socially approved, pattern of behaviour. A single act of a single individual is seen as the source and origin of change. Repetitions of such acts across situations lead to the development of individual agency; its impact on the context is defined as agentic empowerment. In this way health behaviour choices expand and become part of broader changes and opportunities (in Sen's terms "freedoms") in individuals and their communities.

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original article

Ethnicity & Health

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Europe and in particular, the United Kingdom (UK), are becoming increasingly multicultural and ethnically-diverse regions. For this reason, the role of ethnicity in health has become salient as ethnic inequalities in health have become apparent. The use of ethnicity in health research has its origins in theories of 'race', which focus on physical and anthropological characteristics (Fenton, 2004), with the idea that racial and biological variations underpin the "natural" differences in health between ethnic groups (Karlsen, 2004). Ethnicity, however, emphasises the differentiation between groups in terms of their religious, ancestral, cultural and social backgrounds, and with the belief that ethnic groups are bound together by shared attitudes, behaviours and experiences. For this article, this definition will be used; however there are numerous ways to define ethnicity depending on one's focus of interest and opinion.

Ethnicity and disease

There is much evidence indicating that ethnicity is associated with health (Nazroo, 2003). Rates of particular diseases are higher in certain ethnic groups than others. For example, it has been repeatedly shown that South Asian people in the UK (people originating from the Indian sub-continent) suffer from elevated rates of diabetes and coronary heart disease (CHD). In contrast, despite a high prevalence of diabetes and hypertension, Afro-Caribbeans in the UK show low rates of CHD, however, they suffer an elevated vulnerability to stroke. Cancer prevalence in ethnic minorities has not been widely examined but it has been suggested that high prevalence of CHD in South Asians may be the result of low rates of competing illnesses (Bhopal, 2002), such as cancers. In terms of self-reported health, ethnic minorities in the UK (except Chinese groups) are consistently more likely to report their own health as poor compared with the majority (Natarajan, 2006).

Possible explanations

There are a number of possible explanations for these ethnic differences in health.

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a) Genetic and biological variations

There are many genetic variations between ethnic groups, for example, the polymorphism of factor VII, an independent risk factor for CHD, is more prevalent in Indian compared with other ethnic groups (Quek et al, 2006; Saha et al, 1995). Biological precursors seem to account for the high vulnerability to diabetes and insulin resistance seen in South Asians and Afro-Caribbeans (Chaturvedi, 2001). However, the evidence focusing on biological and genetic variations by ethnic group does not account fully for differences in disease rates between groups. Other factors must be considered and adequate adjustments made before it is simply assumed that ethnic differences have a biological basis.

b) The importance of socioeconomic differences

To understand ethnic inequalities in health, the structural qualities of ethnicity, such as socioeconomic status (SES) and discrimination, need to be investigated (Karlsen & Nazroo, 2002). These are integral to the lives of ethnic minorities and have a large impact on health.

It is essential that socioeconomic factors are taken into account in ethnic group comparisons of disease rates because of the socioeconomic patterns between groups in the UK, with ethnic minorities generally clustered in the lower social groups

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(Modood et al, 1997). Therefore, these SES factors must be considered, to prevent excessive disease rates being attributed to 'ethnic' or biological differences, without full assessment of the socioeconomic contribution. It has been suggested that the CHD differentials between white and South Asian groups may not reflect true 'ethnic group' differences. Work from the Fourth National Survey of Ethnic Minorities in Britain has shown that once adjustments were made for SES factors, the ethnic group difference was eradicated (Nazroo, 2001). This implicated SES as a key mediating factor in CHD risk variations, as demonstrated in the heterogeneity of CHD risk between the South Asian subgroups, with Bangladeshis, who are the most socially disadvantaged, suffering the highest CHD rates, and Indians showing similar SES and CHD risks to UK whites. Socioeconomic factors also affect health behaviours, with people in lower social groups being more likely to participate in health-compromising behaviours, such as smoking, high fat diets and lower rates of physical activity. Therefore, it is possible that some of the SES influence is mediated through health behaviours.

c) Behavioural differences

The impact of behavioural and lifestyle choices play a major role in the development of disease. For example, it is well established that South Asian people in the UK have particularly low rates of physical activity, in particular in Muslim groups and women (Fischbacher et al, 2004). This is likely to promote CHD risk through dyslipidaemia, hyperglycaemia, and other atherogenic processes. Smoking rates vary widely between South Asian subgroups; Bangladeshi men have particularly high rates and Indian men have very low rates of smoking compared with the general population (Wardle, 2006). These differences have a largely religious and cultural basis, and therefore SES factors are likely to play a less prominent role in such variations compared with smoking differentials observed within the white population. There are fewe behavioural differences between Afro-Caribbeans and whites in the UK, with similar levels of physical activity (Stamatakis, 2006) and smoking (Wardle, 2006). Alcohol consumption, fruit and vegetable intake, and dietary fat consumption were more favourable in ethnic minorities compared with the general population according to the recent Health Survey for England, The Health of Minority Ethnic Groups 2004 report (Becker et al, 2006; Craig et al, 2006).

d) Other psychological and social variations

Another possibility for ethnic differences in health is likely to be variations in exposure to non-behavioural psychological and social factors, which relate to ill health, and in particular to heart disease. Psychosocial factors, such as depression, work stress and social support, have been shown to be associated with CHD risk in UK white groups (Rozanski et al, 1999) but such psychosocial CHD risk factors have not been adequately examined in other ethnic groups. The psychosocial experience of ethnic minorities in the UK differs from the ethnic majority, for example, with greater exposure to racial discrimination (Karlsen & Nazroo, 2002). This discrimination affects many aspects of life and culminates in the socioeconomic positioning of most ethnic minorities in the more socially deprived groups. The few studies that have investigated psychosocial profiles in UK South Asians have had mixed findings, with some suggestion of elevated psychosocial risk profiles (Hemingway et al, 2001; Williams et al, in press). Such psychosocial disadvantage has been associated with increased risk of ill health, in the form of poor self-reported health (Nazroo, 1997) and increased CHD risk (Karlsen & Nazroo, 2002; Rosengren et al, 2004). It is important that comprehensive psychosocial profiles are taken into account in ethnic minority groups beyond the standard psychosocial risk factors explored in white populations.

Each of these explanations is likely to provide some contribution to the ethnic equalities in health that have been observed.

Importance of cross-cultural validity

Ethnicity-related studies must demonstrate cross-cultural validity of their measures (Bhopal et al, 2004). It is important that the established questionnaires are validated in ethnic minorities, as it cannot be assumed that different cultural groups interpret items in the same way. It has also been suggested that description of symptoms and symptom presentation may differ between cultural groups which may affect diagnosis and treatment. For example, studies have shown that there are some differences in the description of depressive symptoms between whites and South Asians (Nazroo & O'Connor, 2002), and that the Rose questionnaire may be less reliable as a marker for definite angina in South Asian groups than whites (Fischbacher et al, 2001). Therefore, reliable and valid measurement remains one of the key challenges in this area of research.

(Continued on page 37)

Williams (cont'd)

(Continued from page 36)

Future research

Given this great complexity and the various competing explanations of the observed association between ethnicity and health, there is considerable scope for future research in this area for health psychologists. Future research focusing on ethnicity and health must fully evaluate the influence of the various SES indicators on health differentials across ethnic groups, to more accurately identify behavioural and other psychological mediators/moderators. Work should also measure life course elements of psychosocial exposure to try to understand the role of migration and the cumulative impact of psychosocial disadvantage across the lifespan (Nazroo, 2003). There are many issues relating to acculturation that need further attention. Acculturation is the modification of one's culture and behaviours as a result of contact with a different culture. Researchers must be flexible and sensitive to acculturation differences between individuals and generations, and aware of the way this is likely to affect behaviour patterns and therefore influence health. This and other work will allow us to improve our understanding of this complex issue and help inform policy that aims to reduce health inequalities related to ethnicity. In particular, health psychology will have an important role in identifying and changing the modifiable behavioural and other psychosocial determinants of health that operate between ethnicity and health.

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EHPS 2007 conference announcement

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European Health Psychology Society

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Facilitator
Jonathan Smith, Birkbeck College, London

Level
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Prerequisites
Participants in the workshop must have conducted some work with Interpretative Phenomenological Analysis (IPA).

For more information:
http://www.ehps2007.com/pre-postconf.html

"Economic Evaluation of Health Promotion Interventions"

Facilitators
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Maastricht University, The Netherlands

"Mixed Models / Multilevel Models"

Facilitator
Geert Molenbergs, Hasselt University Belgium

http://www.ehps2007.com/pre-postconf.html

Post-Conference Workshop

"Four Fundamental Qualities of Qualitative Research: Epistemology, Ethics, Reflexivity, and Interpretation"

August 18th 2007
14.00-18.30

Facilitator
Kerry Chamberlain
Massey University, New Zealand

Level
Introductory, Intermediate

Content
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conference announcements

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The DHP is a Division of the British Psychological Society (BPS). More information can be found at www.health-psychology.org.uk

XXIXth International Congress of Psychology

Berlin, Germany
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Conference website: http://www.icp2008.org/

Deadline for abstract submission
31 October 2007

First deadline for reduced congress registration fee
1 February 2008

Deadline for submission of rapid communication posters
1 March 2008

Second deadline for reduced congress registration fee
20 June 2008

Division of Health Psychology Annual Conference 2007

University of Nottingham Park Campus
September 12th – 14th 2007

Conference website
http://www.dhp2007.org.uk

The DHP is a Division of the British Psychological Society (BPS). More information can be found at www.health-psychology.org.uk

UK Society for Behavioural Medicine Annual Scientific Meeting 2007

University of Warwick
December 10th 2007

Conference website
http://uksbm.org.uk/

1st Conference of them Central and Eastern European Society of Behavioural Medicine

Pécs, Hungary
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Conference website
http://www.ceebm-net.hu/

Deadline for early registration
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conference announcements (cont'd)

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Conference website:
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