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Validity of the Perceived Health Competence Scale in a UK primary care setting.

Dempster, M., & Donnelly, M. (2008). Validity of the Perceived Health Competence Scale in a UK primary care setting. *Psychology, Health and Medicine*, 13(1), 123-127. <https://doi.org/10.1080/13548500701351984>

Published in:

Psychology, Health and Medicine

Document Version:

Early version, also known as pre-print

Queen's University Belfast - Research Portal:

[Link to publication record in Queen's University Belfast Research Portal](#)

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SCALE

Validity of the Perceived Health Competence Scale in a UK Primary Care Setting

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Abstract

The Perceived Health Competence Scale (PHCS) is a measure of self-efficacy regarding general health-related behaviour. This brief paper examines the psychometric properties of the PHCS in a UK context. Questionnaires containing the PHCS, the SF-36 and questions about perceived health needs were posted to 486 patients randomly selected from a GP practice list. Complete questionnaires were returned by 320 patients. Analyses of these responses provides strong evidence for the validity of the PHCS in this setting. Consequently, we conclude that the PHCS is a useful addition to measures of global self-efficacy and measures of self-efficacy regarding specific behaviours in the toolkit of health psychologists. This range of self-efficacy assessment tools will ensure that psychologists can match the level of specificity of the measure of expectancy beliefs to the level of specificity of the outcome of interest.

Validity of the Perceived Health Competence Scale in a UK Primary Care Setting

Self-efficacy has been shown to be strongly, positively and consistently related to health status (Holden, 1991; McGowan, 1997; Tedesco, Keffer, Davis & Christersson, 1993) and to be an independent predictor of health-related behaviours such as smoking cessation (Dornelas, Sampson, Gray, Waters & Goethe, 1997), exercise behaviour change (Meland, Maeland & Laerum, 1999) and the consumption of a healthy diet (Brug, Lechner & DeVries, 1995).

However, many investigators are interested in outcomes at the level of general health-related behaviour, such as that measured by the single secondary factor underlying the Health Promoting Lifestyle Profile (Walker, Sechrist & Pender, 1987). Given that the level of specificity of an instrument designed to assess expectancy beliefs should match the level of specificity of the outcomes or behaviours that one wishes to predict (Smith, Wallston & Smith, 1995), measures of expectancy beliefs at this intermediate level have been developed, for example, the Multidimensional Health Locus of Control Scale (Wallston, Wallston & DeVellis, 1978) and, in the case of self-efficacy, the Perceived Health Competence Scale (Smith et al., 1995).

The Perceived Health Competence Scale (PHCS) has been used, for example, to predict various health behaviours in older adults (Marks & Lutgendorf, 1999), to compare health-related self-efficacy between people with chronic obstructive pulmonary disease and chronic heart failure (Arnold et al., 2005), to predict psychosocial health outcomes in women with breast cancer (Arora et al., 2002), and to predict adherence in renal dialysis (Christensen, Wiebe, Benotsch & Lawton, 1996). Smith et al. (1995) provide evidence for the reliability and validity of the PHCS across a range of groups in the USA. The purpose of this paper is to investigate the psychometric properties of the PHCS with a UK sample.

Method

A questionnaire containing the PHCS, the Short Form 36 (SF-36: Ware, Snow, Kosinski & Gandek, 1993), and other single-item questions about health needs was administered to 486 patients randomly selected from the practice list of patients registered with a group of GPs. Questionnaires were completed by 66% of these patients (133 males, 187 females; median age range = 35-44 years).

The PHCS has eight items, to which responses are chosen from a 5-point Likert scale ranging from “strongly agree” to “strongly disagree”. Scores from each item are averaged to produce an overall score, with higher values indicating a stronger perception of health competence. The SF-36 is a 36 item measure of general health status, which assesses eight domains: physical functioning, social functioning, general health, bodily pain, vitality, mental health, role limitations due to physical problems and role limitations due to emotional problems. The single-item questions asked participants whether or not they have a long term illness, who takes the main decisions affecting their health, whether they had failed to obtain help with health-related problems within the past six months and to what extent they perceive greater access to primary care services designed to address health-related behaviours would be helpful.

Results

Construct validity

A factor analysis confirmed the single factor structure underlying the PHCS scale, explaining a total of 56% of the variance (factor loadings are provided in Table 1). Cronbach’s alpha was high (0.91).

Normative and descriptive data

Mean (SD) PHCS score for males was 3.78 (0.91) and 3.56 (0.84) for females. The mean (SD) score for the entire sample ($n = 320$) was 3.65 (0.88). This mean differs significantly ($t = 2.513$, $p = .012$) but not importantly (Cohen's $d = 0.16$) from an adult sample ($n = 100$, $M = 3.77$, $SD = 0.64$) used in the original validation of the PHCS in the USA (Smith et al., 1995).

Table 2 shows that PHCS scores decrease with age. The post hoc differences were statistically significant when comparing 15 to 34 year olds with 45 to 65 year olds.

Discriminant validity

To examine the discriminant validity of the PHCS, comparisons were made between the PHCS scores and the single-item questions (see Tables 3 and 4). Table 3 shows a large difference in PHCS scores between those with and those without a long term illness and medium to large associations between PHCS scores and health-related activities. Table 4 suggests that higher perceived health competence is associated with less perceived need for lifestyle advice or increased health checks.

Concurrent validity

As self-efficacy has been shown to be strongly, positively and consistently related to health status, evidence for the concurrent validity of the PHCS was found in the form of moderate to high correlations between the PHCS and each of the scales from the SF-36. The PHCS had the strongest relationship with the SF-36 General Health scale ($r = .71$) and the weakest relationship with the Role Limitations due to Physical Problems ($r = .55$) and Role Limitations due to Emotional Problems ($r = .54$) scales. All correlations were significant at the .001 level; other coefficients were:

PHCS x Physical Functioning = .62, PHCS x Bodily Pain = .58, PHCS x Vitality = .65, PHCS x Social Functioning = .65, PHCS x Mental Health = .62.

Discussion

This brief report examined the psychometric properties of the PHCS in a UK sample. The scores on the PHCS and the nature of the relationships between the PHCS and other variables found in the present study are similar to results found in previous research in non-UK samples (Arora et al., 2002; Rueda & Perez-Garcia, 2006; Smith et al., 1995).

The PHCS appears to be explained adequately by a single factor and scores on the PHCS are associated with other variables in the expected manner. Findings indicate that people who report seeking help for health-related problems (as opposed to failing to do so) or taking decisions about their own health (as opposed to leaving these decisions to others) have significantly and substantially higher scores on the PHCS. The PHCS, therefore, seems to be moderately to strongly associated with health-related behaviours, at the general health level. The present study also found that those with higher PHCS scores are less likely to desire advice or help with their health or health-related behaviours.

In summary, this brief report provides evidence for the validity of the PHCS when used among a UK sample. It appears to be a very useful, brief assessment of self-efficacy in relation to general health and consequently it is recommended for use.

Given the sound psychometric properties of the PHCS and the evidence to suggest its importance as a predictor of health-related behaviour and outcomes, it is surprising that this instrument is not more widely used and there continues to be a reliance on global measures such as the Generalised Self-Efficacy Scale (Schwarzer & Jerusalem, 1995), regardless of the level of specificity of the outcome under

examination (against the recommendations of the authors: Schwarzer & Fuchs, 1996). Perhaps the reluctance to use the PHCS in the UK stems from the lack of norms. The present study has addressed this. However, a head-to-head comparison of the predictive power of the PHCS and a measure of global self-efficacy would be a useful next step in determining whether or not the PHCS has any added value in situations where the outcome of interest is general health-related behaviour.

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Table 1

Factor Loadings for Items in the PHCS on a Single Factor

	Factor loading
1. I handle myself well with respect to my health.	0.627
2. No matter how hard I try, my health just doesn't turn out the way I would like.	0.814
3. It is difficult for me to find effective solutions to the health problems that come my way.	0.760
4. I succeed in the projects I undertake to improve my health.	0.739
5. I'm generally able to accomplish my goals with respect to my health.	0.754
6. I find my efforts to change things I don't like about my health are ineffective.	0.782
7. Typically, my plans for my health don't work out well.	0.830
8. I am able to do things for my health as well as most other people.	0.674

Table 2

PHCS Scores Within Each Age Category

Age Category	<i>M</i>	<i>SD</i>	n
15 to 24 years	3.93	0.81	81
25 to 34 years	3.92	0.75	56
35 to 44 years	3.64	0.79	81
45 to 54 years	3.34	0.97	61
55 to 64 years	3.14	0.99	23
F(4,297) = 7.863, p < .001, $\eta^2 = 0.096$			

Table 3

PHCS Scores and Health-Related Single-Item Variables

	<i>M</i>	<i>SD</i>	n	
Long term illness	2.74	0.74	73	$t = 12.14,$
No long term illness	3.92	0.72	244	$p < .001$
Failed to obtain health-related help	3.10	0.81	29	$t = 3.80,$
Obtained health-related help	3.74	0.86	272	$p < .001$
Main decisions about health taken by self	3.72	0.87	273	$t = 3.68,$
Main decisions about health taken by others	3.22	0.82	47	$p < .001$

Table 4

PHCS Scores and Perceived Helpfulness of Primary Health Care Services

How helpful would the following be:	No help <i>M (SD)</i> n	Some help <i>M (SD)</i> n	Great help <i>M (SD)</i> n	
Regular visits to the practice for health checks	3.96 (0.84) 137	3.50 (0.81) 125	3.23 (0.88) 47	$F(2,306) = 17.76$, $p < .001$, $\eta^2 = 0.10$
More discussion about possible side effects of medication	3.84 (0.86) 189	3.44 (0.81) 93	3.04 (0.81) 25	$F(2,304) = 14.37$, $p < .001$, $\eta^2 = 0.09$
More home visits to check on how you are coping with your health	3.86 (0.83) 230	3.05 (0.71) 58	2.97 (0.83) 21	$F(2,306) = 31.03$, $p < .001$, $\eta^2 = 0.17$
Help or advice about giving up smoking	3.80 (0.89) 171	3.61 (0.83) 79	3.30 (0.77) 59	$F(2,306) = 7.75$, $p = .001$, $\eta^2 = 0.05$
Help or advice about drinking alcohol	3.63 (0.93) 206	3.84 (0.71) 81	3.19 (0.66) 20	$F(2,304) = 4.87$, $p = .008$, $\eta^2 = 0.03$
Help or advice about healthy eating	3.80 (0.92) 108	3.67 (0.84) 143	3.31 (0.84) 60	$F(2,308) = 6.44$, $p = .002$, $\eta^2 = 0.04$

Help or advice about	3.78 (0.93)	3.67 (0.82)	3.25 (0.85)	F(2,307) = 6.95, p = .001, $\eta^2 = 0.04$
taking exercise	123	136	51	
Help or advice about	3.76 (0.92)	3.69 (0.80)	3.14 (0.73)	F(2,306) = 9.67, p < .001, $\eta^2 = 0.06$
losing weight	183	79	47	