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Coping strategies as predictors of health behaviour in chronic dermatoses

Abstract

This study aims to measure health behaviour change in chronic dermatoses and to assess the predictive power of coping strategies for engagement in health behaviour. The research sample was comprised of 120 participants, which included a group of 60 patients with chronic dermatoses (30 patients with psoriasis and 30 patients with vitiligo) and 60 healthy individuals as controls. Instruments used in this study were Health Behaviour Inventory and Coping Orientations

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to Problems Experiences COPE. The study revealed that there is no difference in health behaviour between vitiligo patients and controls. Psoriasis patients more frequently engage in preventive behaviour than healthy individuals. Coping strategies can be used to predict health behaviour in chronic dermatoses.

Key words: health behaviour, psoriasis, vitiligo, coping strategies

Streszczenie:

Celem niniejszego badania jest porównanie zachowań zdrowotnych osób chorych na łuszczycę i bielactwo w porównaniu z osobami zdrowymi oraz identyfikacja związków zachowań zdrowotnych ze strategiami radzenia sobie z chorobą dermatologiczną. Przebadano w sumie 120 osób: 30 osób chorych na łuszczycę, 30 osób chorych na bielactwo oraz 60 osób zdrowych, dobranych do chorych pod względem płci, wieku i wykształcenia. Badani wypełniali kwestionariusz COPE do badania strategii zaradczych oraz Inwentarz Zachowań Zdrowotnych do pomiaru zachowań zdrowotnych. Wyniki badania wskazują, że w porównaniu ze zdrowymi chorzy na łuszczycę częściej stosują zachowania prewencyjne a chorzy na bielactwo nie różnią się zachowaniami zdrowotnymi. Ponadto okazało się, że strategie radzenia sobie z chorobą mogą być dobrymi predyktorami zachowań zdrowotnych w dermatozach.

Słowa kluczowe: zachowania zdrowotne, łuszczyca, bielactwo, strategie zaradcze

Introduction

Psoriasis and vitiligo are the most common and disabling chronic skin conditions. Psoriasis affects approximately 3% of the world population with its onset in the second or third decades of life. Although the exact causes of psoriasis remain unknown, the interaction of genetic, environmental and psychological factors is being widely investigated. This inflammatory skin dysfunction consists of epidermic cellular proliferation, characterized clinically by excessive skin scaling off and the lesion appearance of hyper-keratosic and itching plaques (Ghoreschi, Mrowietz, Rocken, 2003) . It is also linked to the malfunction of the immune system and overproduction of proinflammatory cytokines. A wide range of egzo- and endogenous factors have been associated with the precipitation and exacerbation of psoriasis. These include smoking, alcohol consumption, diet, infection, drugs, and stressful life events (Nadli, 2004). Multiple etiology of psoriasis may in turn hinder the sense of control of patients and health professionals and impede treatment.

It is estimated that about 1% - 4% of the world population suffers from vitiligo, an idiopathic and autoimmune skin disease leading to depigmentation of patches of skin. Medical literature suggests a multifaceted etiology of vitiligo, that combines genetics, accumulation of toxic compounds, infection, autoimmunity, mutationism and impaired melanocyte proliferation (Njoo, Westerhof, 2001).

Mainly due to its public nature, skin disease may have a detrimental effect on quality of life, self-esteem, sense of autonomy and body image. It is often associated with poor hygiene and contagion which subsequently can lead to stigmatization and social isolation. Researchers reported that 25% of psoriasis patients have wished they were dead while a further 8% felt their life was not worth living.

It is clear that sufferers of skin disease experience a high level of stress. Coping with chronic skin conditions will therefore require efficient mobilization of psychosocial and natural resources. This study examines coping strategies applied by psoriasis and vitiligo patients. The analysis is based upon the theory of stress by Lazarus and Folkman (1983), which accentuates the procedural and dynamic nature of coping.

One could assume that dermatological patients dealing with debilitating symptoms of their skin conditions will not only develop specific coping mechanisms but also alter their behaviour. The benefits of health practices for enhancement and maintenance of health have been widely reported (Taylor, 2009; Belloc, Breslow, 1972). Research shows that inappropriate diet and smoking can exacerbate psoriasis and hinder psoriasis treatment (Bittiner et al., 1988; Gupta et al., 1989; Mayser et al., 1998; Mayser, Grimm, Grimminger, 2002; Naldi at al., 2005; Zulfakar, Edwards, Heard, 2007). The positive role of omega-6 and omega 3 fatty acids in psoriasis treatment has been recently investigated (McCusker, Grant-Kels, 2010). Recommendations are also made with regards to vitiligo patients. This group is advised to avoid direct sun exposure and alter their eating habits (Njoo, Westerhof, 2001). Emphasis is placed on a low fat diet rich in fruits and vegetables and deprived of preservatives (Namazi, Chee Leok, 2009; Bickers, Athar, 2006).

This paper is to contribute to the understanding of coping strategies and health behaviour change in psoriasis and vitiligo. The main focus of this study has been to measure the predictive power of certain coping strategies for engagement in health practices.

Method

Participants

In total 120 individuals participated in this study after controlling for age, gender and education level. Of these, 60 were diagnosed with chronic dermatoses by registered dermatologists: 30 patients with psoriasis (14 men and 16 women) were undergoing hospitalization at the time of this study at the Department of Dermatology, at Sexually Transmitted Diseases and Immunodermatology of the Nicolaus Copernicus University, Collegium Medicum in Bydgoszcz, Ludwik Rydygier Medical College, and at Nicolaus Copernicus University in Bydgoszcz and Torun; and 30 were vitiligo outpatients (six men and 24 women). The remaining 60 healthy individuals were controls. All participants had no history of mental illness. Informed consent procedures were utilized prior to the commencement of this study (Table 1).

Table 1. Research sample characteristics.

participants	N	average age (in years)		average length of education (in years)	
		M	SD	M	SD
psoriasis	30	45.00	14.48	11.73	1.93
control group (for psoriasis patients)	30	44.20	14.22	12.57	2.84
vitiligo	30	35.13	15.26	12.43	2.91
control group (for vitiligo patients)	30	35.57	16.06	12.97	2.94

Measurement instruments

Health behaviour was measured using the Health Behaviour Inventory (Polish: IZZ by Juczynski) (14). The IZZ evaluates a range of health behaviours forming four major categories: 1. Positive Attitude (PA): acknowledgment of symptoms,

avoidance of strong and negative emotions such as sadness, anger and fear; maintenance and participation in family and social interactions, and positive thinking); 2. Preventive Behaviour (PB): health promoting behaviour such as participation in regular screenings; medical compliance; understanding of health and illness); 3. Diet (D): healthy eating habits; diet comprised of vegetables, fruits, wholemeal bread; reduced consumption of salt, sugar and food containing preservatives); 4. Health Activities (HA): balanced lifestyle; ratio of rest and sleep to physical activities; BMI control; and non-smoking). The inventory comprises 24 items with six items assigned to each category of health behaviour. The intensity of health behaviour is measured on the 5-point Likert scale.

Coping strategies in chronic diseases were measured with the Coping Orientations to Problems Experienced Inventory (COPE; Carver, Scheier, Weintraub, 1989), in the Polish version by Wrześniewski 1996. The items of COPE are divided into eight coping mechanisms: Problem Focused Coping (PFC), Focus on and Venting of Emotions (FVE), Denial (De), Religion (Rel), Sense of Humor (SH), Use of Social Support (USS), Alcohol/Drugs Use (ADU), and Acceptance (Acc).

Additionally, psoriasis and vitiligo patients completed the Patient Inventory which provides sociodemographic characteristics of patients (gender, age, education level) and further information on the duration of their disease and age of onset.

Statistical analysis of the results was carried out using the Statistics Package for Social Sciences (PASW Statistics 18.0) for Windows. Non-parametric tests, correlations and backward stepwise regression analysis were performed. A level of $p < .05$ (two-tailed) was considered statistically significant.

Results

Health behaviour in chronic dermatoses vs. healthy individuals

Analyses indicated significant differences in two categories of health behaviour displayed by psoriasis patients and healthy individuals: Preventive Behaviour and Health Activities. The frequency of health preventive practices was higher in psoriasis than in their healthy counterparts ($Z=2.03$; $p < 0.05$). The former also tends to engage in physical activities and adopt healthy habits ($p < 0.10$). There was no difference in positive attitudes and eating habits between the two (Fig. 1). There was no difference observed in health behaviour between vitiligo and healthy individuals. This may lead to the assumption that vitiligo diagnosis itself does not lead to health behaviour change (Fig. 1).

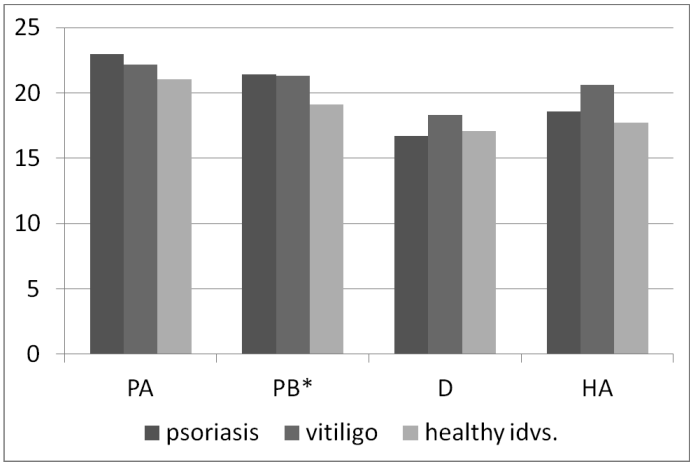

Figure 1. Health behaviour in psoriasis and vitiligo patients compared to healthy individuals Note: **PA-**Positive Attitude, **PB**-Preventive Behaviour, **D-**Diet, **HA-** Healthy Activity; * *p< 0.05*

Sociodemographic and clinical factors vs. health behaviour in dermatoses

Among the sociodemographic factors, only gender was correlated with health behaviour in dermatoses. Table II shows that positive attitude (PA) (r = 0.43), health activities (HA; r = 0.47) in vitiligo and also diet (D; r = -0.52) in psoriasis were correlated with sex. It has been shown that female psoriasis patients tended to have better eating habits compared to their male counterparts (Z= 3.05; p<0.01). However, in the vitiligo group, men were inclined to engage in health activities (Z= -2.62; p<0.01) and display a more positive mental attitude (Z= -2.16; p<0.05).

There were no correlations between clinical characteristics of dermatoses and health behaviour.

Table 2. Correlations of social-demographics and clinical factors with health behaviour in psoriasis and vitiligo patients.

factors	PSORIASIS					VITILIGO			
	PA	PB	D	HA		PA	PB	D	HA
gender	.02	-.28	-.52*	-.31		.43*	.18	.17	.47*
age	.12	.33	.33	.14		-.07	.18	.19	-.09
level of education	.12	.05	-.17	.04		-.15	-.14	-.08	-.35
duration of illness	-.02	.28	.10	.15		-.34	.04	-.06	-.28
age at onset	.11	.10	.24	.02		.29	.24	.35	.19

Note: PA-Positive Attitude, PB-Preventive Behaviour, D-Diet, HA-Health Activity
* *p<0 .05*

Coping strategies as predictors of health behaviour in dermatoses

Backward stepwise regression was applied to examine coping strategies (independent variables) as predictors of health behaviour (dependent variable) in psoriasis and vitiligo.

As shown in Table 3, psoriasis patients utilizing Problem Focus Coping (PFC) displayed a more Positive Attitude (PA) (R^2= 0.15; p<0.05). Engagement in Preventive Behaviour (PB) was observed among those who accept their skin condition (Acc) and refrain from alcohol and drugs (ADU) (R^2= 0.35; p<0.01). It means that patients with psoriasis follow medical recommendations when they accept their disease and avoid intoxicating substances and alcohol. Furthermore, psoriasis patients with strong religious affiliation (Rel), sense of humor (SH) with no tendencies to abuse alcohol or drugs (ADU) in the course of illness management are also likely to follow a healthy diet (D) (R^2= 0.35; p<0.01) (Table 3).

Table 3. Summary of multiple back regression analysis: coping strategies as predictors of health behaviour in psoriasis.

dependent variable	independent variables	B	F	R^2
PA	PFC	0.34 *	F(1,33) = -4.45	0.15*
PB	ADU	-0.34		
	Acc	0.46	F(2,32) = 8.96	0.35***
D	Rel	0.41*		
	SH	0.32*		
	ADU	-0.50**	F(3,31) = 5.65	0.35**

Note: PA - positive attitude, PB - preventive behaviour, D – diet
PFC – Problem Focused Coping; ADU – Alcohol/Drugs Abuse; Acc – Acceptance; Rel – Religion; SH – Sense of Humor
**p<0.05; **p<0.01; ***p<0.001*

As shown in Table 4, vitiligo patients who adopted a sense of humor (SH) and seek emotional support in social interactions also display a stronger Positive Attitude

(PA) (R^2= 0.29; p<0.01). Preventive Behaviour (PB) was predicted by the adoption of a task-orientated strategy (PFC) (R^2= 0.27; p<0.01). Vitiligo patients with a task-orientated strategy are more likely to comply with medical recommendations. Diet (D) was also predicted by Problem Focus Coping and Denial (De) (R^2= 0.42; p<0.01). A sense of humor, and alcohol and drug abstention were shown to predict Health Activity (HA), too (R^2= 0.23; p<0.05) (Table 4).

Table 4. Summary of multiple back regression analysis: coping strategies as predictors of health behaviour in vitiligo.

dependent variable	independent variables	B	F	R^2
PA	PFC	0.34 *	F(1, 33) = -4.45	0.15*
PB	ADU	-0.34		
	Acc	0.46	F(2,32) = 8.96	0.35***
D	Rel	0.41*		
	SH	0.32*		
	ADU	-0.50**	F(3,31) = 5.65	0.35**

Note: PA - positive attitude, PB - preventive behaviour, D – diet
PFC – Problem Focused Coping; ADU – Alcohol/Drugs Abuse; Acc – Acceptance; Rel – Religion; SH – Sense of Humor
**p<0.05; **p<0.01; ***p<0.001*

Discussion

There is a strong misconception that chronically ill individuals engage readily and easily in health behaviour change. It is expected that they will make every effort to learn about their condition, comply with medical recommendations and make all the required adjustments to their lifestyle. In many instances, however, chronic illness does not lead to changes in health behaviour.

This research shows there was no difference in health behaviour between vitiligo patients and healthy individuals. Vitiligo patients did not alter their diet, and maintained their sedentary lifestyle. The level of education, age and clinical characteristics of their condition (duration and age at its onset) were shown to be insignificant

in terms of health behaviour change in vitiligo and psoriasis. Interestingly, the participants' gender was correlated with health behaviour. Female psoriasis patients were found to follow a healthy diet while vitiligo men engaged in health activities and displayed a more positive mental attitude. The literature provides many examples of research showing that in general women's dietary habits are healthier than those of men (Hunter, Rosario, 2010). Polish population studies also indicate that men rather than women perform physical activities more regularly. Diet regimen appears to be more emphasized in psoriasis than in vitiligo (Wolters, 2005).

In line with the author's hypothesis, certain coping strategies predicted health behaviour in vertiligo and psoriasis. Those vitiligo patients who relied on social support and used humor in their illness management displayed a positive attitude towards life and illness. Preventive behaviour was linked with an adoption of task oriented strategies. Vitiligo patients who demonstrated problem-focus coping complied with medical recommendations appeared to be more health-conscious. This seems to be consistent with numerous studies indicating that a problem solving approach is highly effective in coping with illness (Zeidner, Saklofske, 1996).

Interestingly, those vitiligo patients who displayed both pragmatic and problem-solving approaches and illness denial were found to follow a healthy diet. Adaptation of such a combination of strategies may refer to a relatively small number of patients. Hence, further investigation of such adaptation is recommended on a larger research sample.

Physical activity, especially in vitiligo males, was predicted by alcohol abstinence and a sense of humor.

The course of psoriasis is often more severe than vitiligo. Hence, even greater engagement in health practices is expected from this patients group. This study shows that the only difference in health behaviour between psoriasis and healthy individuals was observed with respect to preventive behaviour. Psoriasis patients frequently visit health professionals, attempt to reduce the symptoms and comply with medical recommendations. There is no difference in diet and physical activities between them and their healthy counterparts. This may imply a demand to raise awareness of health intervention between behaviour and health.

Furthermore, a positive attitude was found among those psoriasis patients who applied task oriented strategies. These methods are effective when patients have a sense of control over their illness.

Preventive behaviour was linked with alcohol abstinence and illness acceptance in psoriasis. This may suggest well developed health awareness among psoriasis patients. Other research findings indicated that psoriasis patients declared that they rarely used alcohol to forget about their health conditions (Fortune et al., 2002). This might be determined by their illness acceptance. Also those who

refrained from alcohol tended to adjust their diet accordingly, seek comfort in religion and have a strong sense of humor. The literature review indicates that the least frequently used coping strategies are alcohol and nonprescription drugs, religion and denial (Fortune, et al 2000). Patients treat their illness rather seriously.
Considering health behaviour as a reflection of adaptive coping in psoriasis, among the most beneficial coping strategies are illness acceptance, alcohol abstinence, religion and a sense of humor. In the course of psoriasis treatment, these strategies should be strengthened. Positive psychology also emphasizes a sense of humor, religion and a problem-solving approach as effective in general health management (Lefcourt, 2005).

Health behaviour in vitiligo was predicted by problem-focus coping, a sense of humor, alcohol/drug abstinence and social support. It is therefore recommended to develop psychotherapeutic interventions aimed at strengthening these strategies particularly. The provision of psychoeducation should also be considered in vitiligo. This could prevent vitiligo patients from adapting undesired coping strategies, such as denial.

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