BODY-RELATED ATTITUDES, BEHAVIOR, AND LOCUS OF CONTROL IN DERMATOLOGICAL PATIENTS

ATTEGGIAMENTI RELATIVI AL CORPO, COMPORTAMENTI E LOCUS OF CONTROL IN PAZIENTI DERMATOLOGICI

Massimo Martini*[1], Günter Krampen** and Emiliano Panconesi***

* Department of Psychology, University of Florence, Italy
** Department of Psychology, University of Trier, Germany
*** Department of Dermatology, University of Florence, Italy

Introduction

In psychosomatic dermatology one assumes that psychological factors influence etiology, symptomatology, and maintenance as well as results of treatment in certain skin diseases. This seems especially likely in dermatological disorders such as alopecia areata, atopic dermatitis, and vitiligo, which can be compared to certain primary organic skin disorders, such as androgenetic alopecia, contact dermatitis, and pityriasis versicolor, which present similar symptoms (alopecia areata and androgenetic alopecia, atopic dermatitis and contact dermatitis, vitiligo and pityriasis versicolor), but differ in etiology (Panconesi, 1984; Egle & Tauschke, 1987). Nonetheless, in all skin disorders it can be assumed that patients experience emotional and social stress, which could influence their body consciousness, behavior, and self related cognition.

To date empirical studies with large case series of dermatological patients have failed to confirm the hypothesis of a specific personality disorder or of particular personality correlates of skin disorders (Ikeda, 1965; Muller & Winkelmann, 1963). Only the results of single case

[1] Indirizzare le richieste di estratti a M. Martini, presso il Dipartimento di Psicologia, Università di Firenze, Via San Niccolò, 93 - 50125 Firenze

studies tend to confirm the psychoanalytical and psychosomatic hypothesis of depressive and anxiety neuroses underlying certain dermatological diseases. Descriptions of the emotional experiences of patients with skin disorders by Wittkower and Russel (1955), Martini and Giorgini (1984), and Bosse et al. (1985) include, moreover, the tendency of these individuals to (1) be passive in social interactions, (2) depend on more important or more authoritive persons, (3) exercise limited personal autonomy, (4) have a negative concept of self (e.g., regarding physical appearance), (5) lack self-assertion, and (6) be pessimistic about their own future. Grouped together, these descriptions agree generally with the definition and correlates of the personality variable of internal versus external locus of control of reinforcement, first introduced by Rotter (1954, 1966) in his social cognitive learning theory of personality.

The personality variable of locus of control of reinforcement was first defined unidimensionality with the extremities of external versus internal control (Rotter, 1966). Externality is the tendency of the individual to perceive reinforcements and life events "as the result of luch, chance fate, as under the control of powerful others, or as unpredictable because of the great complexity of factors surrounding him." (Rotter, 1982, p. 171). If the individual perceives events as contingent upon his own behavoir or characteristics, internality is high. Such control orientations are the result of social learning and generalization processes; they belong to the category of (generalized) self related cognitions of the individual. The complexity of the definition of externality and the failure to confirm the unidimensionality of the variable empirically resulted soon in several approaches to distinguish between different aspects of constructs of this personality variable (Krampen, 1982, 1987).

The descriptive as well as the prognostic value of these personality variables involves in control orientations of the individual have been confirmed by various investigators (Phares, 1976; Krampen, 1982, 1987; Rotter, 1982). Results of studies in clinical and medical psychology confirm, especially, the significance of these personality variables in (1) differential psychodiagnosis of various mental disorders, (2) analysis of the etiology of such disorders, (3) indications for specials psychotherapeutic treatments, and (4) prognosis of treatment outcome and relapse. To date research has emphasized disorders such as alcoholism, drug addiction, depressive disorders, and neuroses. Meanwhile, however, there have also been results indicating the relevance of control orientations in psychosomatic patients. Items specific for locus of control have been found in myocardial infarction patients (Krampen & Ohm, 1979; Ohm,

Krampen & Heger, 1982), as well as patients with bulimia (Allerdissen, Florin & Rost, 1981), hypertension (Leigh, 1978), migraine (Chaisson , 1978), diabetes mellitus (Wierenga, 1980), and general psychosomatic complaints (Wilson, 1972). For patients with genital herpes Hoon (1986) confirmed a positive relationship between life stress (critical life events) and symptom-recurrence only for externally oriented individuals. In all of these studies the results indicate that control orientations of psychosomatic patients are highly disorder-specific. Thus, psychosomatic patients are, with reference to their control orientations, a very heterogeneous group. This finding leads to he hypothesis that control beliefs of certain dermatological patients may be disorder-specific, depending on the etiology, the symptomatology, and resulting social and emotional stress, as well as the treatment possibilities and the patients' expectancies.We conducted two pilot studies to evaluate the relevance of generalized locus of control expectancies in dermatological patients. The first study focused on the relationship between control beliefs and personal hygiene attitudes and behavior in a sample of patients presenting to a University dermatological outpatient clinic. In the second study we compared three aspects of control orientations in patients with certain presumably psychosomatic dermatological disorders (alopecia areata, atopic dermatitis, and vitiligo) with those found in patients with certain organic skin disorders (androgenetic alopecia, contact dermatitis, and pityriasis versicolor) presenting similar symptomatologies (i.e., alopecia areata and androgenetic alopecia, atopic dermatitis and contact dermatitis, vitiligo and pityriasis versicolor), but different etiologies.

Study 1: Control beliefs, personal hygiene attitudes and behavior

Subjects

The analyses reported below are based on replies to a questionnaire administered to a sample of 120 adult patients presenting to the outpatient clinical of the Departiment of Dermatology of the University of Florence, Italy over a three month period. The sample consisted of 89 women and 31 men, 18 to 60 years old, with a mean age (M) of 29.5 years (SD = 9.59). The majority of the patients, 73, were unmarried; 44 were married, and 3 separated. Education levels of the subjects were: 30 subjects had high school diplomas, 71 college and 19 university degrees. The skin disorders

diagnosed were perioral dermatitis in 2 cases, rosacea in 7, acne in 14, seborrheic dermatitis in 3, cellulitis in 10, striae cutis in 6, hypertrichosis in 4, effluvium telogen in 15, alopecia areata in 6, androgenetic alopecia in 31, and normal hair (i.e., no disorder) in 10.

Methods of Data Collection

Generalized locus of control orientations were measured with an Italian version of the IPC scales (Levenson, 1974; Krampen, 1981) measuring 1) *internality* (I), 2) *powerful others control* (P - social externality), and 3) *chance control* (C - fatalistic externality). Attitude towards personal hygiene was measured by a 9-item questionnaire (Eurisko) focusing on self awareness and body consciousness. Personal hygiene behaviour was measured through the responses to 12 questions (Eurisko) regarding different hygiene and physical health-related behaviors (e.g., weight control, gymnastics, frequency of bath/ shower, oral hygiene, use of cosmetics).

Results

Tests of the internal consistencies of the applied questionnaire scales confirmed their reliability for group analyses. The coefficients (*Cronbach's alpha*) are listed in Table 1, on the main diagonal. Compared with normal values for healthy adults (Krampen, 1981), the means of the IPC scales for the case series studied evidenced (1) average internality, (2) some decrease in powerful others control, and (3) some increase in chance control. Internality correlates low negative with the two externality scales; social and fatalistic are positively correlated (see Table 1). These results agree with other findings concerning the interrelations if these three aspects of generalized locus of control (Krampen, 1981, Levenson, 1981) and confirm the applicability of the IPC scales in dermatological patients.

The correlated findings presented in Table 1 show moreover that the three aspects of control are related to attitudes towards personal hygiene and to personal hygiene behavior, especially the former. Public self-awareness and body consciousness is correlated significantly with (1) (high) internality, (2) (high) powerful other control, and (3) (low) fatalistic or chance control. Only the (negative) correlation between chance control (fatalism) and personal hygiene survives in the interdependence analysis of

hygiene- and physical health-related behavior. Thus, it can be concluded that fatalistic externality in generalized control orientations is especially relevant in dermatological patients. The findings presented in Table 1 evidence also a weak, but significant relationship between personal hygiene attitudes and behavior as well as a positive relationship between age and powerful other control, chance control, and especially, attitudes towards personal hygiene.

Table 1 - Means, Standars Deviations, Internal Consistencies, and Intercorrelations of the Personality Variables in Study 1 (N = 120)

Variable	M	SD	I	P	C	APH	PHB	Age
Internality (IPC-I)	35.5	5.29	.57[a]	-.12	-.37**	.25**	.09	.09
Powerful Others Externality (IPC-P)	22.0	6.62		.72[a]	.63**	.33**	.06	.16*
Chance Control (IPC-C)	25.3	6.85			.71[a]	-.23**	-.31**	.17*
Attitudes towards Personal Hygiene (APH)	23.4	4.65				.54[a]	.27**	.35**
Personal Hygiene Behavior (PHB)	19.6	1.69					.69[a]	.09
Age	29.5	9.59						-

** $p < .01$; * $p < .05$

[a] Internal Consistency (*Cronbach's alpha*) of the Scale.

In sum, it can be concluded that the control orientations in this sample of dermatological patients of the University of Florence are to some extent comparable with those of healthy adults. These specific factors in locus of control are analysed with reference to different skin disorders in more detail because of the hypothesis of highly disorder-specific manifestations of control orientations in psychosomatic patients in general and in psychosomatic dermatological patients in particular. The direct significance of generalized control beliefs in the experience and behaviour of dermatological patients is confirmed by their correlations with the subjects' personal hygiene attitudes and behavior. The aspect of chance

control/fatalistic externality seems to be particularly relevant and should be considered in the treatment and counseling of dermatological patients.

Study 2: Control orientations of presumably psychosomatic and organic dermatological patients

Subjects

The analyses reported below are based on questionnaire data obtained in a selected sample of 210 adult patients presenting to the out-patient clinic of the Department of Dermatology of the University of Florence, Italy. The sample consisted of 146 women and 64 men, aged 16 to 74 years with a mean age of 29.8 years (SD = 10.34). The majority of the patients (116) were unmarried, 86 were married and 8 separated . The education levels were 78 high school diplomas and 97 college and 35 university degrees.

The subjects were selected on the basis of the dermatological diagnosis. Half of the sample (105 subjects) presented presumably psychosomatic disorders and the other half (n = 105) organic dermatological disorders matched for symptomatology. In particular the following skin disorders were considered and paired: 35 cases of alopecia areata (presumably psychosomatic etiology), and 35 androgenetic alopecia (organic etiology); 35 cases of atopic dermatitis (presumably psychosomatic) and 35 contact dermatitis (organic); 35 cases of vitiligo (presumably psychosomatic) and 35 pityriasis versicolor (organic). Thus, we compared groups of dermatological patients whose disorders present similar symptomatologies, but different etiologies.

Methods of Data Collection

Generalized locus of control orientations were measured again the Italian version of the IPC scales (Levenson, 1974; Krampen, 1981) measuring *internality* (I), *powerful other control* (P) and *chance control* (C). In addition the above described sociodemographic variables and the dermatological diagnoses were collected.

Results

First of all the incidence of desorder type (psychosomatic versus organic) and special dermatological disorders was analysed for different sociodemographic group. No difference in incidence rates were observed in relation to sex (*Chi square* (1) = 0.202, resp. *Chi square* (5) = 6.113; $p \geq .29$ or education (*Chi square* (2) = 0.319, resp. *Chi square* (10) = 15.761; $p \geq .11$). Family status was not related to disorder type (*Chi square* (2) = 3.864, $p = .14$). but it was related to the dermatological disorder (*Chi square* (10) = 26.621, $p = .003$). In particular, the incidence of atopic dermatitis was higher in unmarried patients (25% versus 6% in married patients) while contact dermatitis was more frequent in married patients (63% versus 10% in unmarried patients).

Table 2 - Intercorrelation of the Control Orientations and Age in the Subsamples of Patients with Psychosomatic Dermatological Diseases (above the Main Diagonal) and those with Organic Dermatological Diseases (below the Main Diagonal) in Study 2

Variable	I	P	C	Age
Internality (I)	.61[a]	-.31**	-.36**	.08
Powerful Others Control (P)	-.10	.67[a]	.65**	.25**
Chance Control (C)	-.04	.50**	.61[a]	.17*
Age	.06	.12	.13	-

** $p < .01$; * $p < .05$

[a] Internal Consistency (*Cronbach's alpha*) of the Scales.

Tests of the internal consistency of the IPC scales confirm, again, their reliability and applicability in group analysis (see main diagonal in Table 2). Table 2 presents also the intercorrelations of the IPC scales and age separately for the sub-samples of presumably psychosomatic (above the main diagonal) and organic dermatological patients (below the main diagonal). For the psychosomatic patients we note that (1) internality is related to low externality, (2) chance control and powerful others control are positively correlated, and (3) externality increases with age. These

findings agree with the results of Study 1. For the group of patients with organic dermatological disorders, however, the correlative pattern is different. All coefficients are markedly lower and only one reaches statistical significance. These results lead to the hypothesis that generalized control orientations of organic patients are more differentiated than those psychosomatic patients, who differentiate less in these aspects of self related cognitions.

To test the hypothesis that psychosomatic dermatological patients differ from organic dermatological patients in control orientations and age a multivariate discriminance analysis was computed. The resulting canonical correlation and the corresponding *Chi square* values (see Table 3) are significant and confirm that both groups be discriminated with the help of these variables. The structure coefficients as well as the univariate *F* values (see Table 3) show that especially powerful other control (P - externality) and chance control (C - externality) contribute much variance to the discrimination. With reference to the discriminance function including I, P, C, and age, *a posteriori* close to 70% of the 210 subjects were classified correctly in their groups of psychosomatic versus organic dermatological patients. The means of the variables and the univariate *F* values (see Table 3) show that the psychosomatic dermatological patients scored significantly higher in fatalism (i.e., chance control), and there were non significant differences between the groups in regard to internality and age.

The discriminance-analytical results regarding the differences between presumably psychosomatic and organic dermatological patients in control orientations were analysed further in differential group comparisons, including not only disorder type (i.e., psychosomatic versus organic etiology), but similarly of symptomatology as well. This was done by *t*-tests. Table 4 presents the means, standard deviations and results of these comparisons for I, P, and C for the six patient groups with different skin disorders. In each test a group of patients is compared with the matched group whose skin disorder differs in etiology (presumably psychosomatic versus organic), but not in symptoms and phenomenology.

Table 3 - Results of the Discriminance Analysis for the Patients with Psychosomatic versus Organic Dermatological Diseases in Study 2 (N = 210)

	Psychosomatic Patients		Organic Patients			
Independent Variable					Structure Coefficient	*F*(1/194)
	M	*SD*	*M*	*SD*		
Internality (I)	34.9	5.24	35.4	5.38	.09	0.294
Powerful Others Control (P)	26.2	6.71	21.8	6.10	-1.03	4.973*
Chance Control (C)	24.9	5.95	28.4	6.03	.75	4.220*
Age	28.4	9.87	30.7	10.50	.58	2.326
Canonical Correlation (R_c)					.32*	
Chi^2 (df = 5)					13.08*	
Misclassifi-cations (%)					31.70	

* $p < .05$

In sum, the results presented in Table 4 indicate very disorder-specific manifestations of control orientations in certain dermatological patients. The results of the (rougher) discriminance analysis are partly confirmed, partly differentiated: (1) psychosomatic dermatological patients with alopecia areata scored significantly higher in powerful other control and significantly lower in fatalism than organic patients with the phenomenologically similar disorder of androgenetic alopecia; (2) the psychosomatic patients with atopic dermatitis were more internal and less fatalistic than organic patients with contact dermatitis; (3) the psychosomatic patients with vitiligo were less internal and, in both powerful others and chance control, more external than the organic dermatological patients with pityriasis versicolor. Thus, these disorder-specific comparisons confirm the hypothesis, that certain dermatological patients evidence non only specific manifestations of generalized locus of

control beliefs, but that these manifestations are markedly dependent on etiology as well as symptomatology.

Table 4 - Means, Standard Deviations, and Results of t-Tests[a] for the Specific Dermatological Diseases in Study 2 (N = 210)

		Internality (I)		Soc. Externality (P)		Chance Control (C)	
Dermatol. Disease	Type[b]						
		M	*SD*	*M*	*SD*	*M*	*SD*
Alopecia areata	P	35.6	6.68	26.3	7.72	25.5	6.91
Alopecia androgen.	O	35.4	4.69	22.8	6.82	29.1	5.88
t (*df* = 68)		0.11		2.10*		2.15*	
Atopic dermatitis	P	37.4	4.03	22.5	5.45	22.4	4.83
Contact dermatitis	O	32.5	6.15	21.7	6.47	30.6	6.67
t (*df* = 68)		2.49*		0.76		4.13**	
Vitiligo	P	33.4	4.73	28.1	6.51	27.9	5.33
Pityriasis versicolor	O	37.4	5.29	21.0	4.72	24.4	5.60
t (*df* = 68)		2.42*		2.95**		2.07*	

** $p < .01$; * $p < .05$

[a] In Case of Heterogenity of Variance the *t*-Test with Separate Variance Estimation was Computed.

[b] P = Psychosomatic, O = Organic Dermatological Disease.

Discussion

In sum, the results of the two studies presented here confirm the relevance of locus of control orientations in psychosomatic dermatology. Control orientations belong to the class of experience-dependent personality variables of (more or less) generalized self-related cognitions,

for which the psychodiagnostic, etiologic, and indicative as well as prognostic value has been confirmed in many other areas of research (Phares, 1976; Rotter, 1982; Krampen, 1982, 1987). Our findings are only the first steps on the way to confirming this for patients with skin disorders as well.

Roughly viewed, the results of both studies evidence in particular (1) the increased fatalism and chance control beliefs of certain dermatological patients and (2) the relationship of such control expectancies to attitudes as well as behavior related to personal hygiene, public self-awareness, and physical health. The comparison of dermatological patients with "more psychosomatic" versus "more organic" skin disorders shows in addition, that the first group is more external in powerful other (social) control, while the second is more external in chance control (fatalism). It can be assumed that these differences result from differences in (1) cognitive processing of information concerning the disease and (2) coping with experiences in social interactions.

The comparisons of patients with skin disorders differing in etiology (psychosomatic versus organic) and in symptomatology shows, however, that control orientations of dermatological patients are rather disorder-specific. This is in accordance with (1) the observation of a high specificity of control beliefs in other psychosomatic patients and (2) the assumption, that generalized control beliefs result from individual experiences in specific person-situation transactions (Krampen, 1987). Our results suggest that experiences in social interactions are more similar for individuals with similar etiology (and resulting treatment expectancies) and physical appearance than for those with similar symptoms as it appears to the patient himself.

With reference to our findings the following particularities should be taken into account for dermatological patients: (1) patients with alopecia areata tend to be socially dependent and high in subjective control by powerful others; (2) patients with androgenetic alopecia tend to be fatalistic; (3) patients with atopic dermatitis seem to be very internal (perhaps overestimating their possibilities); (4) patients with contact dermatitis are less internal and somewhat fatalistic; (5) patients with vitiligo are more external, especially in powerful other control; (6) patients with pityriasis versicolor tend to present increased internality. However, it must be considered that these descriptions are founded on mean comparisons and that cross-validations are necessary.

Thus, we will avoid further interpretations of the results with reference to the etiology of the different skin disorders. However, our

findings do indicate the descriptive and psychodiagnostic value of control orientations for evident skin disorders, as well as the possible relevance of control orientations to (psychosomatic and psychotherapeutic) treatment of dermatological disorders in general. The characterizations of the control beliefs of patients with specific disorders evidence topics which should be taken into account during therapy. This is also true for the relationships between control orientations and patient attitudes as well as behavior related to personal hygiene and health. One treatment objective is to improve the patient's motivation to take batter care of his/her skin. Chance and powerful other control beliefs hinder attainment (maintenance) of this objective, and include dangers of treatment failure or relapse and symptom recurrence (Hoon, 1986).

Abstract

This paper presents the results of two pilot studies on the relevance of three aspects of generalized control orientations (internality, powerful others control, and chance control) in dermatological outpatients.

Locus of control beliefs (IPC scales) and attitudes as well as behavior related to personal hygiene and health were measured in first study in a sample of 120 adult patients presenting to a dermatological outpatient clinic.

In a second study locus of control scores (IPC scales) were compared for selected samples of 105 dermatological adult patients with presumably psychosomatic disorders (alopecia areata, atopic dermatitis, and vitiligo) and 105 dermatological adult patients with organic disorders (androgenetic alopecia, contact dermatitis, and pityriasis versicolor, which were paired for their different etiologies, but similar symptoms.

The results confirm the relationship between generalized control beliefs and hygiene/health-related attitudes and behavior, which are especially marked for fatalistic externality. "Psychosomatic" dermatological patients scored higher in powerful others control and the "organic" dermatological patients scored higher in chance control/fatalism. Disorder-specific manifestations of the three aspects of control orientations are described for the six different dermatological disorders.

The discussion treats the relevance of the specific manifestations of control orientations in dermatological patients in relation to treatment and symptom recurrence.

Riassunto

Vengono presentati i risultati di due studi pilota relativi alle tre dimensioni del locus of control (internalità, esternalità socialmente condizionata, esternalità fatalistica) in pazienti dermatologici.

Nel primo studio sono rilevati gli atteggiamenti e i comportamenti relativi all'igiene personale e alla malattia, e il locus of control in un campione di 120 pazienti ambulatoriali.

Nel secondo studio vengono comparati i risultati del locus of control di due campioni selezionati costituiti da un gruppo di 105 pazienti ambulatoriali con affezioni presumibilmente psicosomatiche (alopecia areata, dermatite atopica e vitiligine) e da un gruppo di 105 pazienti ambulatoriali con affezioni organiche (alopecia androgenetica, eczema da contatto e pitiriasis versicolor), accoppiate per differenti eziologie, ma con sintomi simili.

I risultati confermano il rapporto tra il locus of control e gli atteggiamenti e i comportamenti relativi all'igiene/malattia, particolarmente marcato per la dimensione dell'esternalità fatalistica. I pazienti "psicosomatici" mostrano valori più alti nell'esternalità socialmente condizionata, mentre i pazienti "organici" presentano punteggi più elevati nella esternalità fatalistica. Per le sei differenti affezioni sono descritte le tre dimensioni del locus of control.

Infine, viene discusso il rapporto delle specifiche manifestazioni del locus of control in relazione al trattamento e alla ricorrenza del sintomo.

References

Allerdissen, R., Florin, I. & Rost, W., 1981. Psychological characteristics of women with bulimia nervosa (bulimarexia). *Behavioural Analysis and Modification, 4*, 314-317.

Bosse, K., Diepold, B., Heigl, F., Heigl-Evers, A. & Streeck, U., 1985. Familiäre Sozialisation, Ich-Entwicklung und psychosomatische Krankheit am Beispiel von Patienten mit endogenem Ekzem. In A. Heigl-Evers, D. Eicke & H. Friedrich (Eds.), *Die Bedeutung der Gruppe für die Sozialisation*. Göttingen, Vandenhoeck und Ruprecht, 52-135.

Chaisson, E., 1978. A psychological study of tension headaches as a psychophysiological disorder and their relationship to locus of control. *Dissertation Abstracts International, 38 (8-A)*, 4576-4577.

Egle, U.T. & Tauschke, E., 1987. Die Alopezie - ein psychosomatisches Krankheitsbild? *Psychotherapie und medizinische Psychologie, 37*, 31-35.

Eurisko, *Psychographia: Analisi statistica delle tendenze rievate nel periodo 1978-1984*, Milano (unpublished).

Hoon, E.F., 1986. Life stress: Impact on genital herpes recurrences. *Dissertation Abstracts International, 47 (5-B)*, 2167-2168.

Ikeda, T., 1965. A new classification of alopecia areata.*Dermatologica, 131*, 421-445.

Krampen, G., 1981. *IPC-Fragebogen zu Kontrollüberzeugungen*. Göttingen, Hogrefe.

Krampen, G., 1982. *Differentialpsychologie der Kontrollüberzeugungen*. Göttingen, Hgrefe.

Krampen, G., 1987. *Handlungstheoretische Persönlichkeitspsychologie*. Göttingen, Hogrefe.

Krampen, G. & Ohm, D., 1979. Generalisierte Kontrollüberzeugungen von Kurpatienten mit Herz-Kreislauferkrankungen. *Medizinische Psychologie, 5*, 171-180.

Leigh, H., 1978. Self-control, biofeedback, and change in psychosomatic approach. *Psychotherapy and Psychosomatics, 30*, 198-204.

Levenson, H., 1974. Activism and powerful others. *Journal of Personality Assessment, 38*, 377-383.

Levenson, H., 1981. Differentiating among internality, powerful others, and chance. In H.M. Lefcourt (Ed.), *Research within the locus of control construct* (Vol I). New York: Academic Press, 15-63.

Martini, M. & Giorgini, S., 1984. Effect of skin diseases of attitudes and interpersonal behavior. In E. Panconesi (Ed.), *Stress and skin diseases: Psychosomatic dermatology*. Philadelphia, Lippincott, 37-42

Müller, S.A. & Winkelmann, R.K., 1963. Alopecia areata: An evaluation of 736 patients. *Archives of Dermatology, 22*, 290.

Ohm, D., Krampen, G. & Heger, R., 1982. Kontrollüberzeugungen und Wertorientierungen von Herzinfarktpatienten in der Rehabilitation. *Medizinische Psychologie, 8*, 131-140.

Panconesi, E. (Ed.), 1984. *Stress and skin diseases: Psychosomatic dermatology.* Philadelphia, Lippincott.

Phares, E.J., 1976. *Locus of control in personality.* Morristown, General Learning Press.

Rotter, J.B., 1954. *Social learning and clinical psychology.*New York, Prentice-Hall.

Rotter, J.B., 1966. Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs, 80 (1, No. 609).*

Rotter, J.B., 1982. *The development and application of social learning theory. Selected papers.* New York; Praeger.

Wierenga, M.E., 1980. The interrelationship between multidimensional health locus of control, knowledge of diabetes, perceived social support, self-reported compliance, and therapeutic outcome six weeks after the adult patient has been diagnosed with diabetes mellitus. *Dissertation Abstracts International, 40 (12-B)*, 5610.

Wilson, S.R., 1972. Psychosomatic symptoms and reactions against the university. *Journal of College Student Personnel, 13*, 551-555.

Wittkower, E. & Russel, B., 1955. *Emotional factors in skin desease.* New York, Hoeber.