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Translation and application of G-MHLC-C scales in academic and non-academic nursing staff

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Abstract

To date, studies on the health locus of control have focused on chronically ill and pregnant patients and have not included staff working in health services. Following the translation of the MHLC-C into German and its pre-testing by Wallston *et al*. [1], the G-MHLC-C was completed by 212 academic and non-academic nurses and the results of the respective groups were compared. With a Cronbachs of α=0.70, the internal consistency of the G-MHLC-C was within acceptable limits. Two of the sub-scales showed poor consistency. When comparing the scores of both groups, only the G-MHLC-C 'chance' subscale showed a significant difference (p=0.01). Before recommending the general use of G-MHLC-C, further studies on the translation and validation should be conducted. In addition, it should be explored to what extent the G-MHLC-C for nursing staff represents a suitable tool in view of their professional experiences and nursing education.

Keywords

Academic nurses, burnout, health locus of control, MHLC-C, MHLC-C German, nurses, patient-centered care, person-centered medicine, stress

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Introduction

The term 'Locus of Control' outlines relatively stable beliefs and convictions that cover the efficacy of individual behaviour. The concept is based on Rotter´s [2] "Social Learning Theory". According to Rotter [3], the construct relates to the extent of a subject's belief that the occurrence of an event depends on one's own conduct, that is, whether the locus of control is located inside or outside the individual (internal *versus* external locus of control). As a result, the locus of control is considered to be one of the determinants of expected results. It is, therefore, a matter of believing that reaching the goal can be influenced by personal action, independent of the specific nature of the goal or the enhancer [4].

Being confronted with and experiencing human suffering can be very painful for the individual and lead to exasperation and considerable difficulties [5,6]. Benyamini *et al*. [7] refer to a negative association of experiencing health-related suffering of loved ones and the perception of one's own health. Participants of their study who had encountered in their social environment people suffering from cancer, displayed greater awareness of their own health and lifestyle. The 108 interviewed participants were of an average age of 78 years and all suffered from arthritis. This, however, does not provide general validity for other groups. In addition, the qualitative collection of data of the past does not exclude the possibility of errors. Suar *et al*. [8] interviewed persons 3 months after they had been affected by a cyclone. These interviewees showed significantly higher scale values of external locus of control than the control group of non-affected people. Due to the use of qualitative methodology and individual coping strategies, a recall bias cannot be completely excluded. Furthermore, the group surveyed was not necessarily representative for other random samples.

The perception of one's own health is affected by a variety of factors, such as personal characteristics, social environment, emotions, geographical variants [9] and, consequently, by the extent of exposure to human suffering. International studies have shown a high professional exposure of psychological stress situations with negative consequences on the psychological health of nursing staff [10-12]. In the course of this, the professional exposure to severe illness and dying patients presents particularly stressful situations.

Through daily contact with severely ill patients and their fears, nurses realize their own potential of falling ill. This, in turn, can lead to stress and burnout [13]. Due to

the emotionally stressful process of nursing it can be assumed that the daily confrontation with sickness and death affects the subjective health-related control behaviour. On this issue, however, only a few insights exist relating to nursing staff. Karasek & Theorell [14] investigated 21,000 nurses using quantitative data collection over a period of 4 years. After factors such as age, weight, chronic illness, sporting activity, school education and nicotine abuse were adjusted, nursing staff achieved poorer results in terms of their physical and mental health than participants of professions with medium or low stress. This study, however, focussed on the registered frequency of specific situations and did not investigate, if and to what extent, stress was perceived.

In summary, the correlation of occupation-specific illness and stress factors, such as shift duty, overtime and physically and mentally increasing demands at work, together with scarce human resources, are well recognized [11-13]. However, little is known of the effects of occupational exposure on the individual health-related control beliefs of nursing staff. The literature reviewed for this present study contained only a few works that had been recently published. Does professional knowledge or daily confrontation with sickness and death change one's subjective attitude? Does a specific type of nursing education influence the health locus of control? Greater knowledge and more awareness of these issues could help in understanding the specific situation of nursing staff and also support the development of suitable and preventive coping strategies for trainees.

Method

MHLC-C

The publication of the MHLC scales (Form A and B) by Wallston *et al*. in 1978 [15] was the advanced development of the initial one-dimensional concept of the 'Health Locus of Control' scale by Wallston *et al*. [16]. The specified MHLC-Form C [1,17] was created for general use in medical or health-related settings.

Each item contains the term 'condition' which can either be retained or replaced by existing circumstances (i.e., by specific medical terminology). The fully standardized self-assessment includes the measurable extent to which the participants experience their state of health as a consequence of their own behaviour, external influences or as a matter of fate. The MHLC-C comprises 4 independent scales for: (a) internal health locus of control; (b) chance health locus of control; (c) doctors health locus of control and (d) other people's health locus of control. The scales 'internal' and 'chance' each comprise 6 items. The scales 'doctor' and 'other' each contain 3 items. Each of these items can be assessed on a graduated 6 point Likert scale. The higher the score, the greater is the dominance of one of the scales in relation to health.

The statistical calculation of Cronbachs alpha of the different scales showed values of >70. Thus, they achieved test quality criteria corresponding to the minimum standards established by Kline [18]. Based on the possible influence of experience on health-related perceptions, the re-test reliability is variable. As a consequence, it was established that specific interventions lead to a reduction of scale parameters [1,17].

Translation of the G-MHLC-C

In German speaking countries, the MHLC-C is rarely used. Hence, there is to date no official German version. Forkel [19] produced an unpublished translation of the MHLC-C and used it for his thesis on patients suffering from cancer. However, due to a lack of transparency, unavailable documentation on the translation process and the biased use of the term 'illness' as condition-specific definition, that particular version was not used for this study. Following the kind permission of the original author, the items were translated and the MHLC-C validated in the 9 steps shown in Table 1. The 'physical and emotional condition' were chosen as a condition-specific definition in an attempt to avoid the term 'illness' and to facilitate the use of MHLC-C for non-clinical data collection.

Pre-test

Following an appeal within the internal student networks of 3 German universities, some 30 students offered their voluntary participation. The questionnaire was sent by mail and 27 questionnaires were returned fully completed and their feedback was included in the analysis. All participants were registered in the medical faculty.

Their average age was 25.9 years (n=21, SD=3.12), 5 participants were male, 21 female and one participant did not answer the gender question. The statistical calculation of the internal consistency resulted in Cronbachs α=0.70 and the following values in the sub-scales: G-MHLC-C Internal, Cronbachs α=0.68; G-MHLC-C Chance, Cronbachs α=0.86; G-MHLC-C Doctors, Cronbachs α= -0.31; G-MHLC-C Other people, Cronbachs α=0.76.

The negative result and poor correlation of items in the G-MHLC-C Doctor sub-scale (see Table 2) could indicate that nurses differ in their behaviour regarding medical expertise from other population groups. This issue will be investigated further in the main study and with larger numbers of participants.

Main Survey

The G-MHLC-C questionnaire was part of 5 instruments studied, including the collection of demographic and educational information. Each envelope contained a cover letter outlining the aim of the study, the voluntary nature of participation and the guaranteed confidentiality and anonymity. The return of the completed questionnaire by the participants in the enclosed stamped and addressed envelopes was established as consent of the participants. The study was approved by the ethics committee of the University of the West of Scotland (UWS).

Table 1 Implementing core elements of a translation process based on ISPOR [20]

	Implementation steps	Implementation of core elements
1	Preparation of implementation process	• Contacting developer and obtaining of consent for the translation • Consolidating the socio-psychological knowledge of the concept of locus of control • Contacting experts in social psychology
2	Forward translation	• Three independent translations of the English items into German (1) by the author of the study, (2) by a bilingual individual with modest socio-psychological background, (3) by a bilingual person with distinct socio-psychological background.
3	Reconciliation	• Comparison and reconciliation of the 3 versions by the authors • Preparation of a consensus version
4	Reverse translation	• Reverse translation of the German consensus version into English by a native English speaker
5	Review of reverse translation	• The review of the reverse translation and the comparison with the original document confirmed that, apart from minor grammatical differences, no major deviations from the original content had occurred.
6	Harmonization	• Best possible adaptation of all translated versions with respect to the linguistic and cultural background of all authors ⇒ Quality check to facilitate later consolidation of global data sets
7	Implementation of pre-test	• 30 participants with a response rate of 27
8	Appraisal of pre-test	• Evaluation using SPSS 17.0 (see results)
9	Proofreading and final report	• Documentation and planning of the main sample test

Table 2 G-MHLC-C Pre-test Item analysis

MHLC items	Mean	SD	Floor[1] (%)	Ceiling[1] (%)	Item difficulty	Item discrim-ination	Missing[2]
INTERNAL (Cronbach´s α=0.68)							
(1) Own behavior	4.63	0.97	0	11.1	0.73	0.37	0
(6) Own responsibility	4.56	0.89	0	14.8	0.71	0.47	0
(8) Own fault	2.78	1.22	18.5	0	0.36	0.32	0
(12) Own doing	4.07	0.72	0	11.1	0.61	0.43	0
(13) Credit and blame	3.56	1.28	11.1	3.7	0.51	0.65	0
(17) Lack of self- careness	3.93	0.83	0	0	0.59	0.28	0
CHANCE (Cronbach´s α=0.86)							
(2) Will be	3.93	1.49	11.1	7.4	0.59	0.38	0
(4) Things by chance	3.37	1.42	7.4	3.7	0.47	0.77	0
(9) Luck	3.35	1.12	7.7	7.7	0.47	0.76	1
(11) Good fortune	2.59	1.31	22.2	11.1	0.32	0.66	0
(15) Fate	2.44	1.25	25.9	7.4	0.29	0.66	0
(16) Better by luck	3.37	1.52	11.1	11.1	0.47	0.70	0
DOCTORS (Cronbach´s α= -0.31)							
(3) Regular visit	2.55	1.34	29.6	0	0.31	-0.24	0
(5) Consult professional	2.41	1.12	22.2	0	0.28	-0.14	0
(14) Follow order	2.59	1.12	18.5	0	0.32	0.04	0
OTHER PEOPLE (Cronbach´s α= 0.76)							
(7) Big role for improvement	4.63	1,18	0	25.9	0.73	0.63	0
(10) Make things happen	2.67	1.11	11.1	0	0.33	0.50	0
(18) Type of help	3.89	1.22	0	7.4	0.58	0.66	0

Abbreviation: SD, standard deviation
NOTES: item no. in parentheses; [1]proportion of patients with worst (floor, 1) and best (ceiling, 6) MHLC-C scores; [2]number of cases with item missing, n= 27 Item difficulty: (Mean - xmin) / (xmax - xmin) MHLC: (Mean-1) / 5

Due to an anticipated low response rate, participants were recruited purposively and simultaneously by different means. Apart from the requirement of being employed within the German health system, the type of nursing education was an important criterion for being included in the study (either the nurse training of 3 years duration

without academic degree as traditional in Germany or one of the newly introduced academic nursing science study course at Bachelor, Master or PhD level). By using computer-based student networks of German universities, nurses with academic education were invited to participate in this study. Simultaneously, various platforms and associations of academically-oriented nurses were contacted and asked to assist in the conveyance of this request. After receiving an electronic confirmation from individuals willing to participate in the study, participants were sent all documents by mail. Some were kind enough to convey the request to other colleagues.

Of the 128 sent questionnaires, 110 (85%) were returned and included in the statistical calculations. The relatively high response rate is due to the applied snowball system and a direct contact with the respondents by peers. Peers were very much involved in the selection of non-academically trained nurses. Nine senior nurses in the wider geographical area around Germany received each 18 envelopes containing the questionnaire and cover letter with the request to distribute them among colleagues in hospitals, nursing homes and out-patient home care. Of the 169 envelopes distributed, 103 (61 %) were returned and a total of 102 valid data were included in the statistical calculations using SPSS 17.0.

Results

Socio-demographic characteristics

The group of academic nurses (n=110) included 28 males (25.5 %) and 82 females (74.5%). The mean average age was 39.1 (SD=8.5). The non-academic group (n=102) showed a definite gender difference with clearly more women than men and comprised 13 males (12.7 %) and 89 females (87.3 %), with a mean average age 40.6 (SD= 10.7). Civil status was more or less similar in both groups: 52 of 110 academic nurses (47.3 %) and 48 of the 101 non-academic nurses (47.1 %) were married and 26 of 101 non-academic nurses had completed a secondary school education lasting 12-13 years, whereas 3 times more participants in the academic group (83/110 = 75.5 %) had completed such 12-13 years of school education. The distribution of employment modes was 70/40 (full-time/part-time) in the academic group (n=110) and, quite similar, in the non-academic group (n=102) 61/61 (full-time/part-time). At the time of the study, academic participants had been practising their profession for a shorter period than their non-academic colleagues. Only about one-third of academic participants were involved in nursing activities with direct patient contact. Most of them reported either a managerial or administrative function.

G-MHLC-C

The internal consistency of the main scale resulted from the present randomly selected sample in a Cronbachs α of 0.70. Thus, it is within an acceptable range of instrument internal reliability [18,21]. The statistical calculations of the subscales were: G-MHLC-C Internal, Cronbachs α=0.75; G-MHLC-C Chance, Cronbachs α=0.71; G-MHLC-C Doctors, Cronbachs α=0.57; G-MHLC-C Other people, Cronbachs α=0.56. Since the 'Doctors' and 'Other People' subscales are only half as long as the 'Internality' and 'Chance' subscales their reliability values are understandably lower, but did not reach α=0.70.

Independent t-test and chi-square were applied to determine any possible differences between the groups and the respective score level of the health locus of control (Table 4). This showed a significant difference (p=0.01) in the value distribution of the G-MHLC-C 'chance' subscale between academic and non-academic nurses. The remaining scales did not show any statistically relevant differences (Table 4).

Discussion

The 'doctors' and 'other people' scales showed comparatively poorer psychometric results. This could be due either to the translation into German or the brevity of the scale (3 items only). With regard to the 'doctors' scale, the results are in line with a translation into Cantonese by Ip & Martin [22]. When applied to pregnant women, poor internal consistency, possibly due to existing cultural differences and linguistic comprehension, was reported. In the present study, 'other people' answered items numbers 3, 5 and 14 very differently. The concept of selectivity (and the related concept of reliability) states that 'other people' items that are part of the same scale are likely to generate a similar response across other scales. By way of example, if an item generates response 2 on one scale, then it is likely to generate a response 1, 2 or 3, rather than 4, 5 or 6 on another scale. After computing the correlation of the 3 items, item number 3 is strikingly different, while the correlation between numbers 5 and 14 is low. This makes the entire scale non-homogeneous. After removing item number 3, positive values occurred for reliability and selectivity. However, a scale with only 2 items is not viable. This could mean that the 'doctors' scale also fits nursing staff and, as such, cannot be evaluated as the response could be biased by professional knowledge, medical background or the close contact with doctors and be more intense than in those parts of the general population that neither have any medical background nor close contact with the medical profession. Nurses with an academic education did not generate a significantly different response than those without an academic background.

For instance, 46.8% (n=3048) of interviewed nurses in Germany stated, irrespective of their background, that they would not allow their friends, relations or family members be cared for in their own working environment [23]. On the other hand, Aronsson *et al*. [24] identified the caring professions as having a particularly high rate of presenteeism, that is, remaining at work despite their own illness. This, in turn, could mean that nurses hesitate longer before seeking medical advice than other sections of the populations.

Table 3 G-MHLC-C Item Analysis

MHLC items	Mean	SD	Floor[1] (%)	Ceiling[1] (%)	Item difficulty	Item discrim-ination	Missing[2]
INTERNAL (Cronbach´s α= 0.75)							
(1) Own behavior	4.75	1.06	0.9	22.2	0.75	0.14	2
(6) Own responsibility	4.67	1.21	0.9	25.9	0.73	0.26	2
(8) Own fault	3.16	1.41	14.8	4.3	0.43	0.33	4
(12) Own doing	4.81	1.10	0.9	26.1	0.76	0.18	3
(13) Credit and blame	4.02	1.25	4.7	8.5	0.60	0.33	3
(17) Lack of self- careness	4.01	1.33	6.1	9.9	0.60	0.19	2
CHANCE (Cronbach´s α= 0.71)							
(2) Will be	3.83	1.62	10.8	15.1	0.57	0.30	2
(4) Things by chance	3.16	1.50	14.6	5.2	0.43	0.20	2
(9) Luck	3.54	1.56	12.4	11.5	0.51	0.52	5
(11) Good fortune	2.60	1.38	25.0	2.4	0.32	0.41	2
(15) Fate	2.31	1.36	38.4	2.4	0.26	0.30	3
(16) Better by luck	3.37	1.62	18.9	8.0	0.47	0.42	2
DOCTORS (Cronbach´s α= 0.57)							
(3) Regular visit	2.11	1.44	46.7	4.3	0.22	0.27	4
(5) Consult professional	2.25	1.41	41.0	3.8	0.25	0.11	2
(14) Follow order	2.41	1.43	38.7	2.4	0.28	0.32	2
OTHER PEOPLE (Cronbach´s α= 0.56)							
(7) Big role for improvement	4.25	1.25	4.2	15.1	0.65	0.27	2
(10) Make things happen	2.38	1.31	31.3	1.4	0.28	0.31	2
(18) Type of help	3.80	1.19	3.8	5.2	0.56	0.33	2

Abbreviation: SD, standard deviation
NOTES: item no. in parentheses; [1]proportion of patients with worst (floor, 1) and best (ceiling, 6) MHLC-C scores; [2]number of cases with item missing, n= 27 Item diffculty: (Mean - xmin) / (xmax - xmin) MHLC: (Mean-1) / 5

Table 4 Mean, t and p of G-MHLC-C scale and subscale scores academic *versus* non-academic nurses

	n	Possible Range	M (SD)	t	p
MHLC-C **Internal**					
academic	107	6-36	25.3 (4.6)	*t = 0.49*	*p= 0.63*
non-academic	101		25.6 (5.2)		
MHLC-C **Chance**					
academic	107	6-36	17.8 (5.7)	*t=2.70*	*p= 0.01*
non-academic	102		19.9 (5.8)		
MHLC-C **Doctors**					
academic	108	3-18	6.5 (2.9)	*t= 1.40*	*p=0.17*
non-academic	102		7.1 (3.3)		
MHLC-C **Other People**					
academic	110	3-18	10.5 (2.9)	*t=0.35*	*p=0.73*
non-academic	102		10.3 (2.6)		

The non-academic group showed significantly higher values in the area of 'chance'. Mantesso *et al*. [25] state that an expansion of knowledge can positively influence the external locus of control by strengthening professional competence. It can, therefore, be assumed that the communication of nursing subjects at an academic level provides greater security and competence for nurses in their daily work. This is likely to lower vulnerability in the psycho-social borderline areas of nursing *via* an analytical processing of the relevant topics.

The MHLC-C was initially developed for use in clinical settings. This is of vital relevance for the subscale 'doctors' as the doctor-patient contact particularly in severely or chronically ill patients is often linked with great hopes. Wallston *et al*. [1] calculate the mean value relating to chronically ill patients for the 'doctors' scale at 11-16. In contrast, the value for nursing staff is almost half

of that. One should, however, keep in mind that nurses are frequently confronted with medical failures or medical mistakes in addition to the historical potential for conflict between the two professions. A small, though statistically insignificant difference, was seen in the academic group. The reason for this might be linked to academic education and the difference could demonstrate that academically shared knowledge in connection with the character development of students has a negative impact on the locus of control in relation to healthcare. Be that as it may, an attempt to translate a G-MHLC-C requires further detailed testing and validation of psychometric data. This process should focus on the applicability in non-clinical settings and on nursing personnel

Although the limitations inherent within an adequate translation remained transparent, errors can occur in every step of the process. In addition, the MHLC-C was initially constructed for clinical random sampling, while it was used in this study for professionally pre-determined sampling. The present study does not provide information on a possible correlation with educational backgrounds of patients or nurses. Apart from possible linguistic misconceptions, some participants indicated that the similarities of some 'items' had been confusing. This could have resulted in misleading feedback. In studies and surveys of altruistically motivated professions, responses resulting from social desirability cannot be excluded. Self-reported data were the most obvious data source and participants may not have provided accurate information for a variety of reasons, for example, to present themselves in a positive light. Participant recruitment depended on voluntary participation. The call for participation was country-wide; hence, local differences in the healthcare system could have led to generally unrepresentative interpretations of the results.

Conflicts of Interest

The authors declare no conflicts of interest.

References

[1] Wallston, K.A, Stein, M.J. & Smith, C.A. (1994). Form C of the MHLC Scales: A condition- specific measure of locus of control. *Journal of Personality Assessment* 63, 534-553.

[2] Rotter, J.B. (1954). Social learning and clinical psychology. New Jersey: Englewood Cliffs, Prentice Hall.

[3] Rotter, J.B. (1966). Generalized expectancies for internal vs. external control of reinforcement. *Psychological Monograph* 80, 1-28.

[4] Weiner, B. (1994). Motivationspsychologie (3rd edn.). Weinheim: Beltz, Psychologie Verlagsunion.

[5] Miller, R.B. (2005). Suffering in psychology: The demoralization of psychotherapeutic practice. *Journal of Psychotherapy Integration* 15, 299-336.

[6] Honkasalo, M.L. (2006). Fragilities in life and death: Engaging in uncertainty in modern society. *Health, Risk and Society* 8, 27-41.

[7] Benyamini, Y., McClain, C.S., Leventhal, E.A. & Leventhal, H. (2003). Living with the worry of cancer: Health perceptions and behaviors of elderly people with self, vicarious, or no history of cancer. *Psycho-Oncology* 12, 161-172.

[8] Suar, D., Mandal, M.K. & Khuntia, R. (2002). Supercyclone in Orissa: An Assessment of Psychological Status of Survivors. *Journal of Traumatic Stress* 15, 313-319.

[9] Smith, T.W. & Ruiz, J.M. (2004). Personality theory and research in the study of health and behavior. In: Handbook of clinical health psychology, pp. 143-199. (Boll, T.J., Frank, R.G., Baum, A. & Wallander, J.L., eds.). Washington DC: American Psychological Association.

[10] Molassiotis, A. & Haberman, M. (1996). Evaluation of burnout and job satisfaction in marrow transplant nurses. *Cancer Nursing* 19 (5) 360-367.

[11] Jamal, M. & Baba, V.V. (2000). Job stress and burn-out among Canadian managers and nurses: an empirical examination. *Canadian Journal of Public Health* 91, 454-458.

[12] Decter, M.B. & Villeneuve, M. (2001). Repairing and renewing nursing workplaces. *Hospital Quarterly* 5, 46-49.

[13] Gallagher, R. & Gormley, D.K. (2009). Perceptions of stress, burnout, and support systems in pediatric bone marrow transplantation nursing. *Clinical Journal of Oncology Nursing* 13 (6) 681-685.

[14] Karasek, R.A. & Theorell, T. (1990). Healthy Work: Stress Productivity and the Reconstruction of Working Life. New York: Basic Books.

[15] Wallston, K.A., Wallston, B.S. & DeVellis, R. (1978). Development of the multidimensional health locus of control (MHLC) scales. *Health Education Monographs* 6, 160-170.

[16] Wallston, B.S., Wallston, K.A., Kaplan, G.D. & Maides, S.A. (1976). The development and validation of the health related locus of control (HLC) scale. *Journal of Consulting and Clinical Psychology* 44, 580-585.

[17] Wallston, K.A. (1989). Assessment of control in health care settings. In: Stress, personal control and health, pp. 85-105. (Steptoe, A. & Appels, A., eds.) Chicester: Wiley.

[18] Kline, P. (1993). The handbook of psychological testing. London: Routledge.

[19] Forkel, S. (2007). Kontrollüberzeugungen als Moderator der gesundheitsbezogenen Lebensqualität von Krebspatienten - Ergebnisse mit dem MHLC - C. Bremen: Unpublished Doctoral Thesis of the University of Bremen.

[20] Wild, D., Grove, A., Martin, M., Eremenco, S., McElroy, S., Verjee-Lorenz, A. & Erikson, P. (2005). Principles of Good Practice for the Translation and Cultural Adaption Process for Patient-Reported Outcomes (PRO) Measures: report of the ISPOR Task Force for Translation and Cultural Adoption. *Value Health* 8 (2) 94-104.

[21] Kline, P. (2000). A psychometrics primer. London: Free Association Books.

[22] Ip, W.Y. & Martin, C.R. (2006). The Chinese version of the multidimensional health locus of control scale form C in pregnancy. *Journal of Psychosomatic Research* 61, 821-827.
[23] DBfK (Deutscher Berufsverband für Pflegeberufe) (2009). Wie sieht es im Pflegealltag wirklich aus? - Fakten zum Pflegekollaps. Berlin: DBfK Berufsverband.
[24] Aronsson, G., Gustafsson, K. & Dallner, M. (2000). Sick but yet at work. An empirical study of sickness presenteeism. *Journal of Epidemiology and Community Health* 54, 502-509.
[25] Mantesso, J., Petrucka, P. & Bassendowski, S. (2008) Continuing Professional Competence: Peer Feedback Success from Determination of Nurse Locus of Control. *Journal of Continuing Education in Nursing* 39, 200-205.