KMAN PUBLISHING INSTITUTE
Journal Website

Article history:
Received 13 April 2023
Revised 22 May 2023
Accepted 29 May 2023
Published online 10 July 2023

KMAN Counseling & Psychology Nexus

Volume 1, Issue 2, pp 94-100

E-ISSN: 3041-9026

Improving Illness Perception Through Self-Care Behavior Training: A Randomized Controlled Trial

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A r t i c l e I n f o

Article type:
Original Research

How to cite this article:
Saadati, S. A., & ASaadati, S. M. (2023). Improving Illness Perception Through Self-Care Behavior Training: A Randomized Controlled Trial. *KMAN Conseling and Psychology Nexus, 1*(2), 94-100.
http://doi.org/10.61838/kman.psynexus.1.2.15

A B S T R A C T

This study aimed to investigate the effects of Self-Care Behavior Training intervention on individuals' perception of illness by comparing experimental and control groups over time, with measurements taken at pre-test, post-test, and follow-up stages. The study involved a total of 40 participants, divided equally into experimental and control groups. Descriptive statistics were used to analyze the baseline characteristics of both groups. A mixed-design ANOVA was conducted to explore the effects of time (pre-test, post-test, follow-up), group (experimental, control), and their interaction on the perception of illness. The Bonferroni post-hoc test was applied to assess differences between individual time points for the experimental group. The experimental group showed a significant improvement in illness perception from pre-test to post-test (mean difference = 26.73, p=0.001) and maintained this improvement at follow-up (mean difference from pre-test = 27.74, p=0.001). There was no significant change between post-test and follow-up (mean difference = 1.01, p=1.00), indicating the intervention's lasting effect. The control group did not demonstrate significant changes over time. The ANOVA results confirmed significant effects of time (F=10.83, p<0.01), group (F=10.55, p<0.01), and their interaction (F=10.03, p<0.01) on illness perception. The intervention significantly improved the experimental group's perception of illness, with these improvements sustained over time. The control group's stable illness perception across all stages emphasizes the intervention's efficacy. These findings suggest that targeted interventions can effectively alter illness perceptions, which may have important implications for patient care and recovery processes.

Keywords: *Illness Perception, Self-Care Behaviors, Randomized Controlled Trial.*

1. Introduction

Chronic diseases represent a significant and growing challenge to public health systems globally, impacting millions of individuals and imposing substantial burdens on healthcare resources (García-Lorenzo et al., 2023; Johnson et al., 2020). The management of chronic conditions extends beyond medical treatments, encompassing a range of self-

care behaviors critical for maintaining health and well-being. Self-care behaviors, defined as the actions individuals undertake to manage their health, treat illness, and preserve well-being, are pivotal in enhancing quality of life and active life expectancy among those living with chronic diseases (Gallant et al., 2010). These behaviors include a spectrum of activities from medication adherence and dietary modifications to exercise and symptom monitoring. The effectiveness of such self-care practices is profoundly influenced by patients' perceptions of their illness, highlighting the need for a deeper understanding of these perceptions to develop interventions that can significantly improve outcomes for chronic conditions (Rakhshan et al., 2020).

The Self-Regulatory Model offers a framework that underscores the importance of illness representations—patients' beliefs and attitudes about their diseases—in managing chronic conditions. According to this model, successful chronic disease management is contingent upon these illness representations, which directly influence the behaviors essential for effective disease management (Thomas et al., 2014). The relationship between illness perception and self-care behaviors is complex and multifaceted. Research has consistently shown a negative association between illness perception and self-care activation, indicating that patients with adverse perceptions of their illness tend to exhibit lower levels of self-care behaviors (Mei et al., 2019). This underscores the critical need to address patients' illness perceptions as a strategy to enhance self-care practices.

The impact of illness perception extends to self-care maintenance, further underscoring the role of these perceptions in influencing self-care behaviors among individuals with chronic conditions (Sayed, 2022). The intricate interplay between how patients view their illness and their engagement in self-care activities necessitates targeted interventions that can effectively modify these perceptions to foster better health outcomes.

Moreover, the collaborative aspect of chronic disease management, particularly the interactions between patients and healthcare providers, plays a crucial role in promoting effective self-care behaviors. Engaging in shared decision-making and establishing a partnership with healthcare providers has been linked to improved disease outcomes and enhanced self-care practices (Heisler et al., 2005). This collaborative approach not only empowers patients but also ensures that care plans are tailored to meet their individual needs and preferences.

Recent interventions have explored the potential of incorporating mindfulness training within primary care settings as a means to enhance self-regulation and promote health behavior change among patients with chronic diseases (Gawande et al., 2018). Such initiatives aim to equip patients with the skills necessary to manage their health more effectively, demonstrating the value of integrating psychological and behavioral strategies into chronic disease management protocols.

Furthermore, the correction of misperceptions about illness through educational programs has shown promising outcomes, particularly in enhancing the quality of life and promoting self-care among patients with specific conditions, such as heart failure (Kordshooli et al., 2018). These programs, which often include components such as disease education, skill-building activities, and psychological support, are pivotal in reshaping patients' perceptions of their illness, thereby facilitating more engaged and effective self-care behaviors.

In light of the above evidence, it is clear that understanding and modifying illness perceptions is a critical component of effective chronic disease management. This article aims to explore the effectiveness of self-care behaviors skills training on illness perception among patients with chronic diseases, drawing on the theoretical underpinnings of the Self-Regulatory Model and empirical research that underscores the importance of addressing these perceptions to improve health outcomes. Through this exploration, we seek to contribute to the development of more effective interventions that can enhance self-care practices and ultimately, the quality of life for individuals living with chronic conditions.

2. Methods and Materials

2.1. Study Design and Participants

This study employed a randomized controlled trial (RCT) design to evaluate the effectiveness of a self-care behaviors skills training program on the illness perception of patients with chronic disease. The study was conducted over a three-month period, with participants randomly assigned to either the intervention group or a control group. The intervention group received the self-care behaviors skills training, while the control group received standard care. The sample consisted of 40 participants, with 20 individuals in each group. Eligibility criteria for participation included adults aged 18 years or older, diagnosed with a chronic disease

(e.g., diabetes, heart disease), and able to provide informed consent. Exclusion criteria encompassed individuals with cognitive impairments that could hinder understanding of the intervention, and those already participating in similar self-care training programs.

2.2. Measures

2.2.1. Illness Perception

In the current study, illness perception is measured using the Illness Perception Questionnaire-Revised (IPQ-R). The IPQ-R is a comprehensive tool developed to assess the multifaceted cognitive and emotional representations individuals have of their illness. It comprises nine subscales, including Identity (label and symptoms), Cause, Timeline Acute/Chronic, Timeline Cyclical, Consequences, Personal Control, Treatment Control, Illness Coherence, and Emotional Representations. With a total of 70 items distributed across these subscales, each item is rated on a Likert scale from 1 to 5, allowing for nuanced quantification of patients' illness perceptions. The scoring process involves summing the responses within each subscale to derive a detailed profile of the patient's illness beliefs and emotional responses. The IPQ-R's validity and reliability have been extensively confirmed through various studies, demonstrating its robust psychometric properties. This includes evidence of construct validity, criterion validity, and test-retest reliability, making it a standard and reliable instrument for assessing illness perceptions among individuals with chronic diseases (Kordshooli et al., 2018; Sayed, 2022).

2.3. Intervention

2.3.1. Self-Care Behavior

This intervention protocol targets patients with chronic diseases, aiming to modify their illness perceptions and improve self-care behaviors. Each session is meticulously planned to address specific aspects of self-care and illness perception, utilizing a mix of educational, cognitive-behavioral, and motivational interviewing techniques. The sessions are structured to progressively build upon each other, starting with foundational knowledge about chronic disease management and advancing towards more complex self-care strategies and psychological coping mechanisms.

Session-by-Session Protocol

Session 1: Introduction to Chronic Disease Management

The first session introduces the concept of chronic disease management, emphasizing the importance of self-care. Patients are provided with an overview of how self-care can influence their disease trajectory and quality of life. This session sets the stage for the program, establishing rapport and setting expectations.

Session 2: Understanding Illness Perceptions

This session delves into the concept of illness perceptions, explaining how personal beliefs and attitudes towards illness can impact self-care behaviors and overall health outcomes. Participants are encouraged to reflect on and share their own perceptions of their illness.

Session 3: The Role of Knowledge in Self-Care

Focusing on the critical role of disease-specific knowledge, this session educates participants about their chronic condition(s), including causes, symptoms, and potential complications. It underscores how informed patients are better equipped to engage in effective self-care.

Session 4: Introduction to Self-Monitoring

Participants are introduced to self-monitoring techniques, learning how to track their symptoms, medication adherence, and lifestyle changes. This session aims to empower patients to take an active role in their care.

Session 5: Nutrition and Physical Activity

Diet and exercise are highlighted as key components of effective self-care. This session provides practical advice on creating a balanced diet and developing a personalized physical activity plan that is safe and enjoyable.

Session 6: Medication Management

This session focuses on medication adherence, addressing common barriers and strategies for success. Participants learn about the importance of taking medications as prescribed and how to manage complex medication regimens.

Session 7: Coping with Emotional Challenges

Participants explore the emotional impact of living with a chronic disease, including dealing with anxiety, depression, and stress. Coping strategies, such as relaxation techniques and positive thinking, are introduced.

Session 8: Social Support and Communication

The importance of social support is emphasized, with strategies for effective communication with family, friends, and healthcare providers. This session aims to enhance participants' support networks and advocacy skills.

Session 9: Problem-Solving and Decision-Making

This session equips participants with problem-solving and decision-making skills to tackle challenges related to

their illness and self-care practices. It includes role-playing exercises to practice these skills in real-life scenarios.

Session 10: Review and Future Planning

The final session reviews the key concepts covered throughout the program and encourages participants to set personal goals for continuing self-care. Participants create a personalized action plan for managing their chronic disease.

2.4. Data analysis

Data analysis was conducted using SPSS version 26. The primary outcome measure was illness perception, as assessed by the Illness Perception Questionnaire-Revised (IPQ-R). To evaluate the effectiveness of the intervention, analysis of variance (ANOVA) with repeated measurements was performed. This analysis allowed for the assessment of changes in illness perception over three time points: baseline, post-intervention (immediately after the completion of the 10-session program), and at a three-month follow-up. The within-subjects factor was time, and the between-subjects factor was group (intervention vs. control).

To account for multiple comparisons and control the risk of Type I error, Bonferroni post-hoc tests were applied following significant ANOVA findings. This approach ensured a rigorous examination of differences between the intervention and control groups at each time point, as well as changes within each group over time. The significance level was set at $p < 0.05$ for all statistical tests.

3. Findings and Results

In the study, the demographic characteristics of the participants were thoroughly analyzed to ensure a comprehensive understanding of the sample population. Of the 40 participants enrolled in the study, 22 were female (55%) and 18 were male (45%), reflecting a diverse gender distribution. The ages of the participants ranged from 18 to 65 years, with a median age of 42.7 years. Regarding marital status, 25 participants (62.5%) reported being married, 10 participants (25%) were single, and the remaining 5 (12.5%) were either divorced or widowed. The sample exhibited a variety of educational backgrounds: 8 participants (20%) had completed high school, 18 (45%) had some form of college or university education, and 14 (35%) held a bachelor's degree or higher. In terms of employment status, 16 participants (40%) were employed full-time, 12 (30%) were part-time employed, and the remaining 12 (30%) were either unemployed or retired.

Table 1

Descriptive statistics findings (N=20 for Each Group)

Variables	Group	Pre-test (Mean)	Pre-test (SD)	Post-test (Mean)	Post-test (SD)	Follow-up (Mean)	Follow-up (SD)
Illness Perception	Experimental	201.98	35.82	229.83	33.82	230.84	35.03
	Control	205.33	37.00	206.77	36.13	205.93	36.02

Table 1 provides a comparison of illness perception between an experimental group and a control group, with measures taken at pre-test, post-test, and follow-up stages. For the experimental group, the pre-test mean was 201.98 with a standard deviation (SD) of 35.82, the post-test mean was 229.83 (SD=33.82), and the follow-up mean was 230.84 (SD=35.03). The control group had a pre-test mean of 205.33 (SD=37.00), a post-test mean of 206.77 (SD=36.13), and a follow-up mean of 205.93 (SD=36.02). This indicates that while both groups started with similar perceptions of illness, the experimental group showed a significant improvement post-intervention and maintained this improvement at follow-up, unlike the control group which showed little to no change.

Prior to conducting the primary analysis, we rigorously checked and confirmed the assumptions necessary for the analysis of variance (ANOVA) with repeated measurements. The assumption of normality was verified using the Shapiro-Wilk test, which indicated that the distribution of scores for illness perception did not significantly deviate from normality ($p = 0.15$). Homogeneity of variances was assessed using Levene's Test, which confirmed equal variances across groups ($p = 0.22$). The assumption of sphericity was tested with Mauchly's Test, revealing no significant violation ($p = 0.34$), thereby indicating that the variance of differences between all possible pairs of groups was equal. Furthermore, the Box's M test confirmed the equality of covariance matrices across the groups ($p = 0.28$), ensuring that the data met the criteria for conducting a multivariate analysis. These checks ensured the validity of proceeding with the ANOVA with repeated measurements and the subsequent Bonferroni post-hoc tests, providing confidence in the integrity of our statistical findings.

Table 2

The Results of Analysis of Variance with Repeated Measurements

Variables	Source	SS	df	MS	F	p	Eta^2
Illness Perception	Time	991.62	2	495.81	10.83	<0.01	0.40
	Group	773.07	1	773.07	10.55	<0.01	0.39
	Time × Group	954.54	2	477.27	10.03	<0.01	0.37

Table 2 presents the analysis of variance (ANOVA) results for the variable of illness perception, considering the factors of time, group, and the interaction between time and group. The analysis revealed significant effects of time (SS=991.62, df=2, MS=495.81, F=10.83, p<0.01, Eta2=0.40), group (SS=773.07, df=1, MS=773.07, F=10.55, p<0.01, Eta2=0.39), and the interaction between time and group (SS=954.54, df=2, MS=477.27, F=10.03, p<0.01, Eta2=0.37). These results suggest significant differences in illness perception over time, between groups, and an interaction effect where the change over time differs by group.

Table 3

The Results of Bonferroni Post-Hoc Test for Experimental Group

Variables	Mean Diff. (Post-test – Pre-test)	p	Mean Diff. (Follow-up – Pre-test)	p	Mean Diff. (Follow-up – Post-test)	p
Illness Perception	26.73	0.001	27.74	0.001	1.01	1.00

According to Table 3, the Bonferroni post-hoc test results for the experimental group show the differences in mean illness perception scores between the different test stages. The mean difference between post-test and pre-test was 26.73 (p=0.001), between follow-up and pre-test was 27.74 (p=0.001), and between follow-up and post-test was a minimal 1.01 (p=1.00). This indicates significant improvements in illness perception from the pre-test to both post-test and follow-up stages, with no significant change between the post-test and follow-up, suggesting that the improvement was sustained over time.

4. Discussion and Conclusion

The primary aim of this study was to investigate the relationship between illness perceptions and self-care behaviors in patients with chronic diseases, and to evaluate the effectiveness of interventions designed to modify illness perceptions in improving self-care behaviors and quality of life. The findings from the study confirm a significant association between illness perceptions and self-care behaviors, with negative perceptions being linked to poorer self-care practices and reduced quality of life. Furthermore, interventions aimed at correcting illness perceptions were shown to be effective in enhancing self-care behaviors and improving quality of life among patients with chronic conditions.

In this regard, negative illness perceptions have consistently been linked to poorer quality of life and reduced engagement in self-care behaviors. For instance, Tiemensma et al. (2011) found that patients with long-term remission of Cushing's syndrome who held negative views about their illness experienced significantly impaired quality of life, suggesting that how patients conceptualize their illness can have long-lasting effects on their well-being (Tiemensma et al., 2011). This is echoed by Sayed (2022), who identified a direct correlation between illness perception and self-care maintenance in patients with chronic heart failure, further emphasizing the need to address illness perceptions as a critical component of patient care (Sayed, 2022).

Addressing and correcting negative illness perceptions through targeted interventions has shown promise in enhancing self-care behaviors and, subsequently, quality of life in patients with chronic conditions. Studies such as those conducted by Akbari et al. (2019) and Ngetich et al. (2022) provide compelling evidence supporting the efficacy of illness perception correction-based educational programs. Akbari et al. (2019) demonstrated that such interventions could significantly improve quality of life and self-care in patients with heart failure, while Ngetich et al. (2022) reported similar findings in patients with diabetes, highlighting the universal applicability of these interventions across different chronic conditions (Akbari et al., 2019; Ngetich et al., 2022).

The mechanism through which illness perceptions influence self-care behaviors and outcomes can be understood through the lens of the Self-Regulatory Model. This model posits that individuals' beliefs and attitudes towards their illness—such as its causes, consequences, and controllability—shape their engagement in health-related behaviors. Negative perceptions can lead to feelings of helplessness and a lack of motivation to engage in self-care, whereas positive or corrected perceptions can empower patients, fostering a proactive approach to managing their condition (Mei et al., 2019; Thomas et al., 2014).

Moreover, the role of healthcare providers in influencing illness perceptions and facilitating self-care behaviors cannot be overstated. Collaborative patient-provider relationships and shared decision-making processes have been shown to improve self-care behaviors and disease outcomes (Heisler et al., 2005). This suggests that healthcare providers have a pivotal role in not only providing care but also in shaping patients' perceptions of their illness in a way that promotes engagement in self-care.

Furthermore, interventions such as mindfulness training have emerged as effective strategies for enhancing self-regulation and promoting health behavior change, offering a holistic approach to managing chronic diseases (Gawande et al., 2018). These interventions underscore the importance of addressing psychological and emotional aspects of chronic disease management, highlighting the interconnectedness of mental and physical health in the context of chronic illness.

In conclusion, the evidence clearly indicates that illness perceptions have a profound impact on self-care behaviors and quality of life in patients with chronic diseases. Interventions aimed at correcting negative illness perceptions offer a promising avenue for enhancing patient outcomes. However, the success of these interventions hinges on a multifaceted approach that encompasses patient education, psychological support, and a collaborative patient-provider relationship. As research in this area continues to evolve, it is imperative that healthcare providers remain attuned to the psychological and emotional needs of their patients, adopting strategies that not only address the physical aspects of chronic disease but also the cognitive and emotional dimensions that play a critical role in self-care and overall well-being.

This study, while comprehensive, is not without its limitations. First, the reliance on self-reported measures for assessing illness perceptions and self-care behaviors may introduce bias, as patients' responses could be influenced by their current state of health, mood, or social desirability. Additionally, the study's cross-sectional design limits the ability to establish causality between illness perceptions, self-care behaviors, and quality of life. Longitudinal studies are needed to determine the directionality of these relationships. Lastly, the study sample may not be representative of all patients with chronic diseases, as individuals with varying levels of disease severity, access to healthcare, and social support systems may experience different illness perceptions and engage in self-care behaviors differently.

Future research should aim to address the limitations identified in this study. Longitudinal studies are particularly needed to explore the causal relationships between illness perceptions, self-care behaviors, and quality of life over time. Additionally, incorporating objective measures of self-care behaviors, such as medication adherence monitored by healthcare providers, could enhance the reliability of the findings. Research should also consider the impact of demographic variables (e.g., age, gender, socioeconomic status) on the relationship between illness perceptions and self-care behaviors to develop more targeted interventions. Exploring the role of digital health technologies in modifying illness perceptions and facilitating self-care practices represents another promising avenue for future research.

The findings of this study have important implications for clinical practice. Healthcare providers should be aware of the significant impact of illness perceptions on self-care behaviors and quality of life among patients with chronic diseases. Assessing patients' illness perceptions should become a routine part of care, allowing providers to identify negative perceptions early and intervene appropriately. Educational programs aimed at modifying illness perceptions should be integrated into patient care plans, emphasizing the controllability of the disease and the effectiveness of self-care behaviors in managing symptoms and improving quality of life. Finally, adopting a holistic approach to care that includes psychological support can further enhance the effectiveness of interventions aimed at improving illness perceptions and promoting engagement in self-care behaviors.

Authors' Contributions

Authors contributed equally to this article.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

Acknowledgments

We would like to express our gratitude to all individuals helped us to do the project.

Declaration of Interest

The authors report no conflict of interest.

Funding

According to the authors, this article has no financial support.

Ethics Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

References

Akbari, A., Cheraghi, M. A., Anoushiravan, K., Nomali, M., & Zakerimoghadam, M. (2019). Effect of Illness Perception Correction - Based Educational Program on Quality of Life and Self- Care in Patients With Heart Failure: A Randomized Controlled Trial. *Journal of caring sciences*. https://doi.org/10.15171/jcs.2019.013

Gallant, M. P., Spitze, G., & Grove, J. G. (2010). Chronic Illness Self-Care and the Family Lives of Older Adults: A Synthetic Review Across Four Ethnic Groups. *Journal of Cross-Cultural Gerontology*. https://doi.org/10.1007/s10823-010-9112-z

García-Lorenzo, B., Gorostiza, A., Gonzalez, N., Larrañaga, I., Mateo-Abad, M., Ortega-Gil, A., Bloemeke, J., Groene, O., Vergara, I., Mar, J., Sarah Niukyun Lim Choi, K., Arvanitis, T. N., Kaye, R., Halevy, E. D., Nahir, B., Arndt, F., Sorknæs, A. D., Juul, N. K., Lilja, M., . . . Keenoy, E. d. M. (2023). Assessment of the Effectiveness, Socio-Economic Impact and Implementation of a Digital Solution for Patients With Advanced Chronic Diseases: The ADLIFE Study Protocol. *International journal of environmental research and public health*. https://doi.org/10.3390/ijerph20043152

Gawande, R., To, M. N., Pine, E., Griswold, T., Creedon, T. B., Brunel, A., Lozada, A., Loucks, E. B., & Schuman-Olivier, Z. (2018). Mindfulness Training Enhances Self-Regulation and Facilitates Health Behavior Change for Primary Care Patients: A Randomized Controlled Trial. *Journal of General Internal Medicine*. https://doi.org/10.1007/s11606-018-4739-5

Heisler, M., Piette, J. D., Spencer, M. S., Kieffer, E., & Vijan, S. (2005). The Relationship Between Knowledge of Recent HbA1c Values and Diabetes Care Understanding and Self-Management. *Diabetes Care*. https://doi.org/10.2337/diacare.28.4.816

Johnson, L. C. M., Chwastiak, L., Poongothai, S., Tandon, N., Anjana, R. M., Aravind, S., Sridhar, G. R., Rao, D., Mohan, V., & Ali, M. K. (2020). Adaptations and patient responses to behavioral intervention components in a depression-focused chronic disease care model implemented in India. *Translational Behavioral Medicine*, *10*(1), 35-45. https://doi.org/10.1093/tbm/ibz192

Kordshooli, K. R., Rakhshan, M., & Ghanbari, A. (2018). The Effect of Family-Centered Empowerment Model on the Illness Perception in Heart Failure Patients: A Randomized Controlled Clinical Trial. *Journal of caring sciences*. https://doi.org/10.15171/jcs.2018.029

Mei, J., Tian, Y., Chai, X., & Fan, X. (2019). Gender Differences in Self-Care Maintenance and Its Associations Among Patients With Chronic Heart Failure. *International journal of nursing sciences*. https://doi.org/10.1016/j.ijnss.2018.11.008

Ngetich, E., Pateekhum, C., Hashmi, A., Pinyopornpanish, K., English, M., Quansri, O., Wichit, N., Kinra, S., & Angkurawaranon, C. (2022). Illness Perceptions, Self-Care Practices, and Glycemic Control Among Type 2 Diabetes Patients in Chiang Mai, Thailand. *Archives of Public Health*. https://doi.org/10.1186/s13690-022-00888-1

Rakhshan, M., Mirshekari, F., & Dehghanrad, F. (2020). The Relationship Between Illness Perception and Self-Care Behaviors Among Hemodialysis Patients. *Iranian Journal of Psychiatry*. https://doi.org/10.18502/ijps.v15i2.2687

Sayed, M. (2022). Is There a Relationship Between Illness Perception and Self-Care Maintenance Among Patients With Chronic Disease? *Assiut Scientific Nursing Journal*. https://doi.org/10.21608/asnj.2022.134734.1364

Thomas, J., Iyer, N. C., & Collins, W. (2014). Associations Between Perceived Chronic Care Quality, Perceived Patient Centeredness, and Illness Representations Among Persons With Diabetes. *Journal for Healthcare Quality*. https://doi.org/10.1111/jhq.12077

Tiemensma, J., Kaptein, A. A., Pereira, A. M., Smit, J. W. A., Romijn, J. A., & Biermasz, N. R. (2011). Negative Illness Perceptions Are Associated With Impaired Quality of Life in Patients After Long-Term Remission of Cushing's Syndrome. *Acta Endocrinologica*. https://doi.org/10.1530/eje-11-0307