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Psoriasis-Zentrum Kiel

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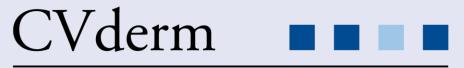# Measuring wellbeing in psoriasis: Psychometric properties of the WHO-5 questionnaire

INTRODUCTION & OBJECTIVES

According to the definition of the World Health Organization (WHO), **health is not only understood as the absence of disease, but as the restoration of full physical, mental and social wellbeing**[1]. Therefore, also for the therapy of psoriasis, **wellbeing should be included as an important endpoint**. To date, wellbeing in psoriasis has been measured predominantly by surrogates, including skin condition, absence of physical symptoms such as itching, and improvement in quality of life. Although these endpoints have been shown to be valid and responsive, they still may not fully represent the holistic construct of wellbeing. Instruments assessing wellbeing have been rarely been used in dermatology[2]. Only two studies assessed health-related wellbeing in psoriasis, using the WHO-5 questionnaire[3,4]. The WHO-5 is an internationally recommended questionnaire on health-related wellbeing, which has been validated and used in other indications.

OBJECTIVES OF THE STUDY

The aim of this study was **to test the psychometric properties of the generic WHO-5 questionnaire for the assessment of wellbeing in people with psoriasis.** The specific aims are to test:
a) Internal consistency
b) Convergent validity and,
c) Responsiveness of the WHO-5 questionnaire

METHODS

Study design and patient cohort

This was a longitudinal study (with two measurement times; baseline and 12 weeks follow-up) under routine conditions. Approval was obtained from the ethics committee at the University Medical Center Hamburg – Eppendorf.

Inclusion criteria

| Age ≥ 18 years | Diagnosis of psoriasis vulgaris | Informed consent |

Applicable patients who were treated in the course of routine care at the University Medical Center Hamburg-Eppendorf or at the University Medical Center Kiel were included.

408 patients with psoriasis were included

Measures

Clinical severity | **Psoriasis Area and Severity Index (PASI)**: 0 (not present) to 72 (very strong)

Quality of life | **Dermatology Life Quality Index (DLQI)**: 0 (no impairment) to 30 (max. impairment)

Wellbeing | **The World Health Organisation- Five Well-Being Index (WHO-5):** 0 (none of the time) to 25 (all of the time)

The WHO-5 Questionnaire

Please indicate for each of the 5 statements which is closest to how you have been feeling over the past 2 weeks.

| Over the past two weeks... | All of the time | Most of the time | More than half the time | Less than half the time | Some of the time | At no time |

1.- I have felt cheerful and in good spirits
2.- I have felt calm and relaxed
3.- I have felt active and vigorous
4.- I woke up feeling fresh and rested
5.- My daily life has been filled with things that interest me

Scoring principle: The raw score ranging from 0 to 25 is multiplied by 4 to give the final score from 0 representing the worst imaginable well-being to 100 representing the best imaginable well-being.

RESULTS

Patient characteristics

In total, data of 408 patients with psoriasis were analyzed. Of those, 257 (62.8%) were male. Mean age was 46.0 years (SD 14.2). Mean WHO-5 at baseline was 15.5 (SD 5.6), mean PASI at baseline 2.4 (SD 4.1).
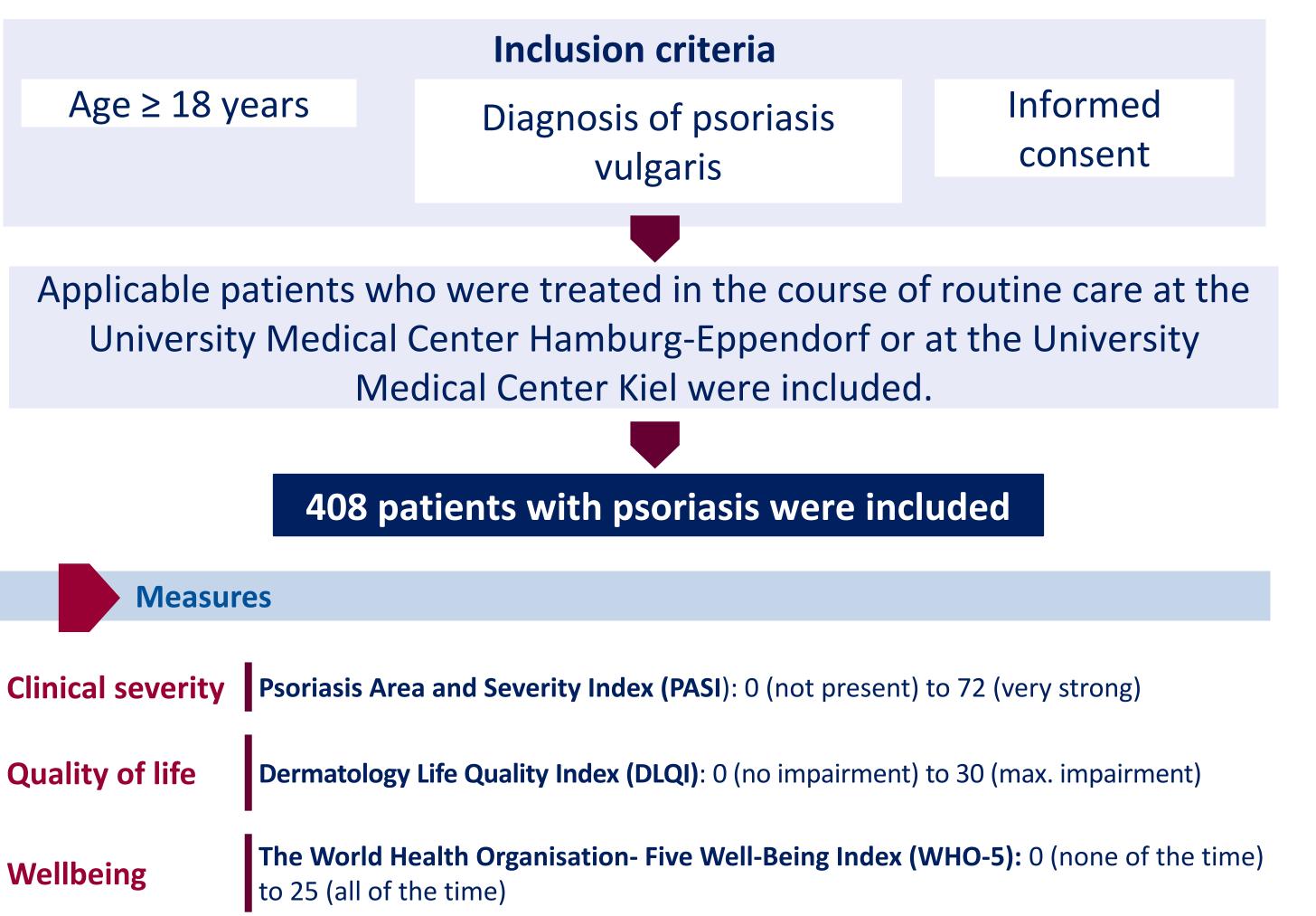
Descriptive statistics WHO-5 at baseline (t0) and t1

	WHO-5 Total Score t0 (0-25)	WHO-5 Item 1	WHO-5 Item 2	WHO-5 Item 3	WHO-5 Item 4	WHO-5 Item 5	WHO-5 Total Score t1 (0-25)	WHO-5 Item 1	WHO-5 Item 2	WHO-5 Item 3	WHO-5 Item 4	WHO-5 Item 5
Mean	15.5	3.4	3.2	3.0	2.8	3.2	16.3	3.5	3.3	3.2	2.3	3.4
Std	5.6	1.1	1.2	1.3	1.4	1.3	5.4	1.1	1.2	1.2	1.3	1.2
Skewness	-0.6	-1.1	-0.6	-0.5	-0.4	-0.6	-0.8	-1.1	-0.8	-0.7	-0.6	-0.7
Kurtosis	-0.2	0.6	-0.5	-0.6	-0.9	-0.5	0.1	0.7	-0.2	-0.2	-0.7	-0.4
Min	0	0	0	0	0	0	0	0	0	0	0	0
Max	25	5	5	5	5	5	25	5	5	5	5	5

WHO-5 (0 = "absence of wellbeing" to 25 = "maximal wellbeing"); t1 (12 weeks after baseline); std = standard deviation

The WHO-5 showed excellent reliability with Cronbachs alpha > 0.9 (95% CI: 0.8; 0.9) at baseline and Cronbachs alpha > 0.9 at t1 (95% CI: 0.91; 0.93). Convergent validity with other instruments was moderate but significant and responsiveness was acceptable.

Convergent validity: correlation of WHO-5 with DLQI and PASI

	WHO-5 t0	WHO-5 t1	DLQI t0	DLQI t1	PASI t0	PASI t1
WHO-5 t0	1	0.656**	-0.364**	-0.309**	-0.158**	-0.103*
WHO-5 t1	-	1	-0.273**	-0.403**	-0.095	-0.170**
DLQI t0	-	-	1	0.680**	0.558**	0.340**
DLQI t1	-	-	-	1	0.348**	0.460**
PASI t0	-	-	-	-	1	0.593**
PASI t1	-	-	-	-	-	1

• * is significant at $p < 0.05$; ** is significant at $p < 0.01$

Responsiveness: correlation of change in WHO-5 with change in DLQI and PASI

	WHO-5		
	Pearson R	P-value	n
DLQI change (t1 – t0)	-0.277	<.01	408
PASI change (t1 –t0)	-0.163	<.01	408

DISCUSSION

The results indicate that the WHO-5 can contribute to the understanding of patient wellbeing in psoriasis routine care since the questionnaire showed high reliability and acceptable validity, both related to health-related QoL and to clinical severity. Furthermore, the responsiveness to treatment effects was satisfactory, suggesting a potential role in outcomes measurement and verification of achieving treatment goals. As such, the WHO-5 questionnaire may support the concept of people-centered health care (PCHC) as proposed by the WHO in the global report on psoriasis[5].

References

1 World Health Organisation. Founding Charter 1948

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