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The Basic Documentation for Psycho-Oncology (PO-Bado) – an Expert Rating Scale for the Psychosocial Experience of Cancer Patients

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Kev Words

Psycho-Oncology · Distress screening · Expert rating scale

Summary

Background: The integration of psycho-oncology into the medical care of cancer patients requires a transparent, reliable, and valid assessment of psychosocial stress. The Basic Documentation for Psycho-Oncology (PO-Bado), including a short version and a breast cancerspecific version, is such an instrument. The purpose of this article is to present the current stage of development of the 3 versions. Patients and Methods: All versions of the PO-Bado were developed and psychometrically evaluated based on the empirical analysis of multiple oncological samples. External criteria for the validation and determination of cut-off scores were the Hospital Anxiety and Depression Scale, the Questionnaire on Stress in Cancer Patients, and the EORTC Quality of Life Questionnaire. Inter-rater reliability was examined by different psycho-oncologists who independently rated PO-Bado interviews. Results: Three versions of the PO-Bado are presented: the standard version (PO-Bado, 17 items), the short form (PO-Bado SF, 7 items), and the breast cancerspecific version (PO-Bado BC, 21 items). A manual and interview guideline are provided for all versions. By now, the standard version has been implemented throughout Germany and includes data of 6,365 patients. Conclusion: A consistent nationwide implementation of the PO-Bado for the assessment of psychosocial stress in cancer patients would contribute to the improvement of medical care.

Schlüsselwörter

Psychoonkologie · Distress-Screening · Fremdrating

Zusammenfassung

Hintergrund: Mit der Integration psychoonkologischer Maßnahmen in die Krebsbehandlung wird es unverzichtbar, ein transparentes, reliables und valides Kategoriensystem bereitzustellen, das eine Einordnung des seelischen Befindens von Krebspatienten erlaubt. Die Psychoonkologische Basisdokumentation (PO-Bado) mit ihren Varianten Kurzversion und Brustkrebsversion ist eine solche Fremdeinschätzungsskala. Hier wird der aktuelle Stand der Entwicklung der 3 Versionen vorgestellt. Patienten und Methoden: Alle Versionen der PO-Bado wurden entwickelt und psychometrisch überprüft auf der Basis empirischer Untersuchungen an diversen onkologischen Stichproben. Außenkriterium für Validierung und Schwellenwertbestimmungen waren die Hospital Anxiety and Depression Scale, der Fragebogen zur Belastung von Krebskranken und der EORTC-Lebensqualitätsfragebogen. Alle Versionen wurden durch den Vergleich diverser Psychoonkologen auf Inter-Rater-Reliabilität geprüft. Ergebnisse: Es werden 3 Varianten der PO-Bado vorgestellt: die Standardversion (PO-Bado, 17 Items), die Brustkrebsversion (PO-Bado-BK, 21 Items) und die Kurzversion (PO-Bado-KF, 7 Items). Zu allen Versionen liegt ein Manual und ein Interviewleitfaden vor. Die Standardversion wird inzwischen deutschlandweit eingesetzt, so dass eine Vergleichsdatenbank von 6365 Patienten aufgebaut werden konnte. Schlussfolgerung: Die einheitliche und bundesweite Verwendung der PO-Bado zur Beschreibung des seelischen Befindens von Krebspatienten würde der Verbesserung der Behandlungsqualität dienen.

Introduction

Psycho-oncology is now an essential part of the medical treatment of cancer patients. According to national and international guidelines, clinical psycho-oncology includes psychological diagnostics and therapy of cancer patients and their relatives to support coping with illness and treatment. It is therefore essential to provide a common category system that allows specific, comprehensive, and reliable assessment of psychosocial stress in cancer patients, which is not adequately reflected by the International Classification of Diseases and Related Health Problems (10th revision; ICD-10) diagnostic system [1].

Against this background, a cancer-specific screening instrument, (the Basic Documentation for Psycho-Oncology; PO-BADO) [2] was developed in collaboration with the Deutsche Arbeitsgemeinschaft für Psychoonkologie (dapo e.V.) and the Arbeitsgemeinschaft für Psychoonkologie in der Deutschen Krebsgesellschaft e.V. (PSO) supported by the Deutsche Krebshilfe e.V.. It enables clinical staff to screen cancer patients for the need of psycho-oncological support as well as to document and assess psychosocial stress. The PO-Bado has been developed since 1999 in different stages, and psychometrically evaluated [3]. By now, the instrument has been implemented in around 105 institutions (hospitals, counseling services, outpatient and rehabilitation clinics) by more than 100 clinical staff members (doctors, psychologists), and includes data of 6,365 patients [4]. The purpose of this paper is to present current data of the PO-Bado as well as 2 additional versions, the PO-Bado short form (PO-Bado SF) and the PO-Bado Breast Cancer (PO-Bado BC).

General Characteristics of the Basic Documentation for Psycho-Oncology

All PO-Bado versions include 3 parts: questions on demographic and medical characteristics and on psychosocial stress, a manual explaining the rating criteria for the items, and an interview guideline. Materials and information for all 3 versions as well as the PO-Bado software (a program for the electronic storage and analysis of the PO-Bado data) can be downloaded from www.po-bado.med.tum.de.

The instrument assesses psychosocial stress within the last 3 days. The questions refer to the subjective experience of the patient and not the intensity of the symptom. For example, a patient who experiences sleep disturbance without suffering from it would be rated not distressed for the item 'Sleep disturbances'. The items are rated on a scale ranging from 0 (not at all) to 4 (very much), or yes/no. The interview is usually conducted by the doctor or psycho-oncologist during or after the first consultation in the in- or outpatient clinic. We recommend using the interview guideline as an orientation for the structure of the interview and for the rating of the items.

The PO-Bado Standard Version

Besides the demographic and medical items (page 1), the instrument includes 2 main parts: 'Somatic stress' (4 items) and 'Psychological

stress' (8 items) (fig. 1). Furthermore, there are 3 items 'Additional stressors' referring to social aspects, rated yes/no. The interview takes about 20–25 min.

Psychometric Properties

The psychometric criterion objectivity is fulfilled provided that the scale is used appropriately (including the manual and interview guideline). Convergent validity was examined by correlations with the Questionnaire on Stress in Cancer Patients (QSC-R23) [5] and the Hospital Anxiety and Depression Scale (HADS) [6] including a sample of 596 cancer patients with different diagnoses, stages of cancer, and treatment settings. All items showed a significant minimum correlation of r = 0.30 with the external criteria (except the item cognitive impairments; however, this item was maintained for clinical reasons). The ability of the PO-Bado to discriminate between patients with distinctive features (discriminant validity) was determined by the total scores in different patient groups. Significantly higher distress was found in patients with metastases, psychopharmacological treatment, chemotherapy, and radiotherapy. Furthermore, correlations were found between distress assessed with the PO-Bado and the WHO-ECOG functional status [3]. To determine the reliability of the PO-Bado, an analysis of the factor structure and the homogeneity of the subscales was conducted. The analysis showed satisfactory results (Cronbach's Alpha $\alpha = 0.70$ for the physical and $\alpha = 0.85$ for the psychological items). Inter-rater reliability was also assessed, and yielded satisfactory results with an Intraclass Correlation Coefficient (ICC) between 0.79 and 0.85 for the somatic items, and 0.75 und 0.90 for the psychological items. The ICCs for the total scores were 0.84 and 0.88, respectively.

Cut-Off Criterion

Since the PO-Bado is often used to determine the need for psycho-oncological support, a cut-off value was defined for 'high distress' or 'need for psychological support'. This criterion is satisfied with the following scores: a minimum of 1 item scoring 4, a minimum of 2 items scoring at least 3, or at least 2 additional items ('Zusätzliche Belastungsfaktoren', fig. 1) marked 'yes', or at least 1 item scoring 3 plus 1 additional item 'yes'. The cut-off value was based on expert agreements and correlation analyses with the HADS. The specificity was 79%, and the sensitivity 71%.

PO-Bado Short Form

Clinicians from acute clinical settings frequently expressed the need of a short psycho-oncological screening instrument that can be integrated into the routine admission procedure. For this purpose, a short form of the PO-Bado (PO-Bado SF) was developed consisting of 6 items only (fig. 2). The selection of these items was based on correlations with the somatic and psychological total score of the standard version. The first part (sociodemographic and medical items) of the PO-Bado SF is identical to the standard version. As for the standard version, there is a manual and interview guideline for the short form. The interview takes around 10 min.

Psychometric Properties

Convergent validity of the PO-Bado SF was calculated by correlations (Spearman's rank) between the PO-Bado SF item scores and the scale scores of the QSC-R23 [5] as well as the HADS [6] for the validation sample (n = 254). Correlations varied between 0.46 and 0.67 for the HADS scales, and between 0.43 and 0.55 for the QSC total score except the PO-Bado SF item 'other problems', e.g. social life. This item showed < 0.40 correlations with the HADS scales and the QSC-R23 total score (p > 0.001). Additional correlations were conducted for the item scores of the PO-Bado standard version with a sample of n = 42. The SF total score correlated r = 0.78 with the somatic score and r = 0.70 with the psychosocial score of the standard version (Spearman's rank correlations, p < 0.001) indicating a minor loss of information in the SF compared to

Ihre Angaben sollen sich auf das subjektive Erleben des Patienten der letzten drei Tage beziehen.

Der Patient / die Patientin leidet unter	nicht	wenig	mittel- mäßig	ziemlich	sehr
Erschöpfung / Mattigkeit.				Пз	
Schmerzen.					
Einschränkungen bei Aktivitäten des täglichen Lebens.					
weiteren somatischen Belastungen (z.B. Übelkeit, Verlust von Körperteilen, sexuellen Funktionsstörungen).					

2. Psychische Belastungen					
Der Patient / die Patientin leidet unter	nicht	wenig	mittel- mäßig	ziemlich	sehr
Schlafstörungen.					
Stimmungsschwankungen / Verunsicherung.					
kognitiven Einschränkungen (z.B. Konzentrations-/ Gedächtnisstörung).					
Hilflosigkeit / Ausgeliefertsein.					
Angst / Sorgen / Anspannung.					
Scham / Selbstunsicherheit.					
Trauer / Niedergeschlagenheit / Depressivität.					
weiteren psychischen Belastungen (z.B. Wut, Ärger, Schuldgefühle).					

3. Zusätzliche Belastungsfaktoren		
	Ja	Nein
Belastende Probleme im Familien- oder Freundeskreis.		
Belastende wirtschaftliche / berufliche Probleme.		
Weitere zusätzliche Belastungsfaktoren (z.B. Probleme mit Ärzten/Pflegenden, Probleme aufgrund drohender bzw. aktueller Pflege- / Hilfsbedürftigkeit).		
Das aktuelle emotionale Befinden ist durch krankheitsunabhängige Belastungen beeinflusst.		

Fig. 1. Page 2 of the PO-Bado.

the more time-consuming standard version. Concerning discriminant validity, higher levels of PO-Bado SF total score were found in patients with previous psychological/psychiatric therapy (t = 2.83, p = 0.005) and for patients with current psychopharmacological treatment (t = 5.14, p < 0.001). Patients with comorbidity showed higher levels of PO-Bado SF total score (t = 2.48, p = 0.014) compared to those without. PO-Bado SF scores were highest in the age group < = 50 years and lowest in patients between 61 and 70 years (F = 3.11; p = 0.027). Internal consistency (reliability) of the 6 PO-Bado SF items was sufficiently high (Cronbach's Alpha α = 0.82). Inter-rater reliability for SF items was examined by 3 different raters who independently rated 20 tape recordings of PO-Bado SF interviews. ICCs were between 0.74 and 0.93, a satisfactory result.

Unterstützung.

Cut-Off Criterion

As with the PO-Bado standard version, we defined a critical cut-off value to identify cancer patients in need for psycho-oncological support. We

suggest 2 alternative versions: either a minimum of 2 items scoring 3 or 1 item scoring 4 (based on correlations with the HADS, sensitivity was 71% and specificity 79%), or a total score > 8 (sensitivity 80%, specificity 78%)

PO-Bado Breast Cancer

Bei dem Patienten besteht aktuell eine Indikation für professionelle psychosoziale

The breast cancer version (PO-Bado BC; fig. 3) is also based on requests from clinical staff, in particular since the establishment of breast cancer centers in Germany. Apart from the items of the standard version, the PO-Bado BC includes 4 additional questions specific to breast cancer (fig. 2) as well as additional breast cancer-specific medical items. The additional items were developed in multiple phases. The explorative phase included interviews with 27 breast cancer patients to identify specific psy-

Ihre Angaben sollen sich auf das **subjektive Erleben** des Patienten in den **letzten drei Tagen** beziehen.

Psychosoziale Belastur	ngen				
Der Patient / die Patientin leidet unter	nicht	wenig	mittel- mäßig	ziemlich	sehr
Erschöpfung / Mattigkeit.		Π,		Пз	\square_4
Stimmungsschwankungen / Verunsicherung / Hilflosigkeit.					
Angst / Sorgen / Anspannung.					
Trauer / Niedergeschlagenheit / Depressivität.					
Einschränkungen bei Aktivitäten des täglichen Lebens.					
weiteren Problemen, z.B. im sozialen / familiären Bereich.					
Indikation					
				Ja	Nein
Bei dem Patienten besteht aktuell eine Indikation für propsychosoziale Unterstützung.	ofession	elle			

Fig. 2. Page 2 of the PO-Bado Short Form.

chosocial stress factors that were not considered in the standard version. 8 items were generated out of the most frequently mentioned distress factors. These items were added to the standard version and tested in a sample of 74 breast cancer patients with different disease stages in different treatment settings. Following this investigation, 4 items were incorporated into the current version of the PO-Bado BC: 'Motion restrictions in arm or shoulder', 'Hot flashes', 'Body change/body image' and 'Disturbed sexual sentience'.

Psychometric Properties

Convergent validity of the PO-Bado BC was examined for the validation sample by correlations with 3 self-rating scales: the QSC-R23 [5], the HADS [6], and the EORTC Quality of Life Questionnaire QLQ-C30 including the breast cancer-specific tool BR23 [7]. Spearman's rank correlations were conducted for the PO-Bado BC total scores (physical and psychological) and the scale scores of the OSC-R23, HADS, and EORTC. Highest correlations of the physical score were found for the QSC-R23 scales 'Psychosomatic complaints' (0.59), 'Restrictions in daily activities' (0.50), the QSC-R23 total score (0.52), and, furthermore, for the EORTC QLQ-C30 scales 'Role function' (-0.63), 'Physical function' (0.58), and 'Fatigue' (0.61). Highest correlations between the psychological score and the self-rating scales were found for the EORTC QLQ-BR23 scale 'Functional LQ' (0.66), the EORTC QLQ-C30 scale 'Emotional function' (0.60), the QSC-R23 scale 'Psychosomatic complaints' (0.66), the QSC-R23 total score (0.57), and the HADS scales 'Anxiety' (0.63) and 'Depression' (0.54).

Discriminant validity of the PO-Bado BC was demonstrated by testing mean differences of the physical and psychological total scores in various patient groups. Higher levels of PO-Bado BC physical distress scores became apparent in patients with affected lymph nodes (t = 2.14; p = 0.036) and lymphedema (t = 3.30; p = 0.002). Patients with normal performance status (WHO-ECOG scale) showed lower somatic distress scores compared to those with performance status grade 1 and 2 (F = 3.24; p = 0.045). Higher levels of psychological distress score were found in women with mastectomy compared to those with breast preserving surgery (t = -3.22; p = 0.002). Status of breast reconstruction was also associated with different levels of psychological distress: Patients without reconstruction showed higher distress compared to the group with breast reconstruction (F = 2.87; p = 0.043). Internal consistency (reliability) was α = 0.71 for the physical distress items and α = 0.83 for the psychological distress items.

Inter-rater reliability for the BC version was examined by 3 raters who independently rated tape recordings of PO-Bado BC interviews with 14 patients from radio-oncological or psycho-oncological outpatient clinics. ICCs (two-way mixed effects models; absolute agreement definition) for the additional BC items were between 0.70 and 0.96.

Discussion

According to national and international guidelines and recommendations, all cancer patients should be screened for psychosocial stress, observed, documented, and treated according to evidence or at least consensus-based recommendations for clinical care [8-11]. Screening for psychosocial stress is an essential part of the entire treatment process [12]. However, it is very difficult, error-prone, and rarely objective. Therefore, we developed a reliable and valid category system that describes the subjective experience of cancer patients. The PO-Bado is the first cancer-specific expert rating scale for psychosocial distress. The only existing expert rating scales are the Karnofsky index [13] and the Spitzer index [14] that focus on physical functioning rather than psychological distress. Today, there are 3 versions of the PO-Bado: the standard version (PO-Bado), the short form developed especially for the screening of patients (PO-Bado SF), and a breast cancer-specific version (PO-Bado BC).

It may be debatable whether there is any need for a new expert rating scale considering the already existing self-rating questionnaires such as the Brief Symptom Inventory [15], HADS [6, 16], QSC [5], the quality of life questionnaires including the QLQ C30 [7], or the Functional Assessment of Cancer Therapy (FACT) [17]. However, the use of expert rating scales has some advantages compared to self-rating questionnaires. First, they allow to examine non-verbal behavior

1. Somatische Belastung	gen				
Die Patientin leidet unter	nicht	wenig	mittel- mäßig	ziemlich	sehr
Erschöpfung / Mattigkeit.	□,	□,		\square_3	
Schmerzen.					
Bewegungseinschränkung im Schulter-/ Armbereich.					
Einschränkungen bei Aktivitäten des täglichen Lebens.					
Hitzewallungen.					
weiteren somatischen Belastungen (z.B. Übelkeit, sexuellen Funktionsstörungen, Empfindungsstörungen der betroffenen Brust).					
2. Psychische Belastunç	gen				
Die Patientin leidet unter	nicht	wenig	mittel- mäßig	ziemlich	sehr
Schlafstörungen.					
Stimmungsschwankungen / Verunsicherung.					
kognitiven Einschränkungen (z.B. Konzentrations-/ Gedächtnisstörung).					
Hilflosigkeit / Ausgeliefertsein.					
Angst / Sorgen / Anspannung.					
Scham / Selbstunsicherheit.					
Veränderungen ihres Körpers / Körperbildes.					
gestörtem Lustempfinden (Sexualität).					
Trauer / Niedergeschlagenheit / Depressivität.					
weiteren psychischen Belastungen (z.B. Wut, Ärger, Schuldgefühle).					
3. Zusätzliche Belastungsfa	ktoren			Ja	Nein
Belastende Probleme im Familien- oder Freundeskreis.					
Belastende wirtschaftliche / berufliche Probleme.					
Weitere zusätzliche Belastungsfaktoren (z.B. Probleme mit Ärzten/Pflege drohender bzw. aktueller Pflege- / Hilfsbedürftigkeit).	enden, Pro	bleme aufg	grund		
					Ш
Das aktuelle emotionale Befinden ist durch krankheitsunabhängig	e Belastu	ungen be	einflusst	. 🔃	
Bei der Patientin besteht aktuell eine Indikation für profession Unterstützung.	nelle psy	/chosozi	iale		

Fig. 3. Page 2 of the PO-Bado Breast Cancer.

and to consider aspects of illness experience sessed by self-rating questionnaires such as denial. Denial defined as an 'adaptive strategy to protect against overwhelming events and feelings' [18] - is such a phenomenon and a very important and frequent coping strategy of cancer patients. Second, expert rating scales can be used for patients who are unable to answer questionnaires due to mental or physical problems. The PO-Bado is increasingly used in clinical practice with current data of 6,365 patients from 105 insti-

were able to integrate the PO-Bado interview into the anamnestic consultation. Current work focuses on the preparation of foreign language versions, the integration of the PO-Bado into electronic clinical documentation systems/medical reports, and on the question whether the instrument is suitable for the use by other professional groups (i.e. health care workers, nurses).

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