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Original Article

Comprehensive Assessment of Patients in Palliative Care: A Descriptive Study Utilizing the INTERMED

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Abstract

Documentation in palliative care is often restricted to medical and sociodemographic information, and the assessment of physical and psychological symptoms or the quality of life. In order to overcome the lack of comprehensive information, we have evaluated the utility of the INTERMED—a biopsychosocial assessment method to document integrated information of patients' needs—in 82 consecutive patients for whom a palliative care consultation was requested. Results confirm the biopsychosocial heterogeneity of the sample, and the importance of integrated information to clinical, scientific, educational, and health care policy agendas. The INTERMED could become a useful method to tailor interdisciplinary interventions based on comprehensive patient needs assessment. J Pain Symptom Manage 2000;19:83–90. © U.S. Cancer Pain Relief Committee, 2000.

Key Words

Cancer, INTERMED, biopsychosocial model of disease, palliative care, case complexity, documentation system, health service research, interdisciplinary

Introduction

In 1977, Engel called for a conceptualization of medical patients in which biological, psychological, and social aspects of their illness experience, and their health care needs, are included.¹ Palliative care is one of the leading medical specialties with regard to its commitment to assess and treat different aspects of disease. However, even in palliative care, documentation of patient needs is often restricted

to the assessment of physical and psychological symptoms, or quality of life.^{2–5} Exceptions, of course, exist, such as the Support Team Assessment Schedule (STAS), which evaluates current physical and psychological symptoms, communication among health care professionals and the family, care needs, and financial aspects.^{6,7} In a recent review,⁸ 41 measures utilized in palliative care were identified, 12 of which satisfied inclusion criteria. These contained between 5 and 56 items evaluating aspects of physical, psychological, and spiritual domains. The authors concluded that each measure covers some but not all of the objectives of measurement in palliative care, and fulfills some but not all criteria for validity, reliability, responsiveness, and appropriateness.

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Similar conclusions are also drawn by other authors, who have emphasized the continuing need for measures in palliative care.⁹⁻¹¹ Consequently, health professionals, researchers, and policy planners in palliative care still face a lack of integrated information, which may hamper comprehensive care. Integrated information is most important in patients with complex care needs who are treated by different health care professionals and may lack coordination of interdisciplinary care and decisions related to type, setting, and duration of treatment.

Although attempts have been made—inside and outside palliative care—to develop instruments to assess different aspects of physical illness,^{12,13} there has not been one single reliable and valid instrument applicable to different diseases, which has been widely accepted and implemented.^{14,15} We therefore developed a method called INTERMED to assess and document integrated information concerning patients' care needs. A detailed description of the rationale,¹⁵ the development,¹⁴ and the philosophy behind the item choice¹⁶ of the INTERMED has been published; Figure 1 and Table 1 summarize this observer-rated instrument, which complements the traditional medical history. Two interrater reliability studies have been conducted,¹⁶ one of them comparing results of the INTERMED scored separately by an internist and a psychiatrist on the basis of a joint interview, and the other on the basis of a medical chart review. Averaged over both studies, there were no important differences

between two raters (more than 1 point difference) in 94.2% of all ratings. Some items performed better than others, as indicated by intraclass coefficients ranging from 0.26 to 1 (average 0.73). Those items with considerable disagreement (indicated by one of three concordance indices <0.5) were improved based on a closer analysis of the differences between the raters. A "validity" study¹⁷ revealed a close relation between results of the INTERMED and different comprehensive, validated questionnaires assessing similar aspects of disease, such as the Short Form of the SF-36, the Hospital Anxiety and Depression Scale, Visual Analogue Scales, and questionnaires assessing social stress and social support. Studies evaluating the clinical and scientific utility of the INTERMED have been or are currently being conducted.¹⁸ In patients with low back pain, the INTERMED distinguished between patients in different phases of disability, produced meaningful biopsychosocial information, and predicted response to treatment.¹⁹

This article reports on the utility of the INTERMED with regard to health care policy purposes. The specific aim of the study was to evaluate if subgroups of patients could be identified, that may require a different modality and intensity of palliative care interventions. If such subgroups could be identified, the INTERMED could be used to tailor the composition of interventions in palliative care and foster clinical decision making with regard to type, setting, and duration of treatment.

Domain	History	Current state	Prognoses
Biological	Chronicity	Severity of illness	Complications and life threat
	Diagnostic complexity	Clarity of diagnostic profile	
Psychological	Restrictions in coping	Psychological adjustment to illness	Mental health threat
	Premorbid level of psychiatric dysfunction	Severity of psychiatric symptoms	
Social	Family disruption	Residential instability	Social vulnerability
	Impairment of social support	Vocational impairment	
Health Care	Intensity of prior treatment	Resistance to treatment	Care needs
	Prior treatment experience	Relation with and access to health care	

Fig. 1. Summary of the Variables Assessed with the INTERMED

Table 1
Example of Clinical Anchor Points of One Variable

Severity of Psychiatric Symptoms	Current State; Psychological Domain
0	This level indicates a person without psychiatric symptoms or whose psychiatric symptoms are currently in remission.
1	This level indicates a person who has mild psychiatric symptoms (e.g., problems with concentration, feeling tense), yet there is no direct need for professional assessment and treatment.
2	This level indicates a person with moderate psychiatric symptoms (e.g., depressive symptoms or somatization) that would necessitate ambulatory treatment with a mental health specialist.
3	This level indicates a person with severe psychiatric symptoms, such as agitation, suicidal threat, depression, mania, phobia, functional psychosis, delirium, or dissociative disorder with automutilation.
U	Information is unavailable.

Methods

Sample Characteristics

The sample consisted of 82 consecutive patients seen by the palliative care consultation service of the University Hospital Lausanne between January 1997 and June 1998. Palliative care consultations are requested by different departments of the hospital, mainly for patients with malignant diseases. About half of these consultations are requested for symptom control and the other half for assistance with discharge of the patient at home or to surrounding palliative care facilities.²⁰ During consultations for assistance with discharge, symptoms were frequently identified and treated by the palliative care consultation service. To be included in the study, patients had to have a diagnosis of cancer and had to be able to communicate relevant information: 26 patients were excluded (e.g., patients with nonmalignant diseases, comatose patients, or those with important communication or language difficulties). We decided to include only patients with malignant diseases for reason of homogeneity of the sample and because they represent the overwhelming majority of the consultation service. Based on a medical interview and chart review, sociodemographic and medical information was recorded. The INTERMED was filled in by the consultants (MC, LA, DS).

INTERMED

With the INTERMED (see Figure 1) information obtained during the traditional medical interview is described in four domains: the biological, the psychological, the social, and the health care domain. These domains are as-

sessed in the context of time (history, current state, and prognosis).

Two variables within each of the domains with regard to the patient's past and current state, and one variable with regard to prognosis are scored by the interviewer, resulting in 20 variables. The scoring system ranges from 0 (no vulnerability/care needs) to 3 (high vulnerability/care needs). The development of the INTERMED and the rationale for the selection of the variables are described elsewhere.¹⁴⁻¹⁷ An example of the scoring system is illustrated in Table 1.

While the interview with the INTERMED is conducted as any medical interview, special emphasis is put on the items mentioned in Figure 1. The raters were instructed and trained to utilize the INTERMED by the second author, who codeveloped the instrument¹⁶ and has gained extensive experience with its use.¹⁷⁻¹⁹ For any further information, especially with regard to the scoring system, a booklet with case examples has been developed. Readers who wish to obtain this booklet can write to F. Huyse.^a

Data Analyses

In order to form subgroups of patients based on their patterns of INTERMED scores, hierarchical cluster analysis was utilized. Hierarchical cluster analysis is a nonparametric method which identifies patients most similar to each

^aTo obtain the booklet with the scoring system of the INTERMED with case examples, please write to F. Huyse, MD, Chief, Psychiatric Consultation Service, Free University Hospital, De Boelalaan 1117, MB Amsterdam, The Netherlands.

other based on Euclidean distances on all specific variables.^{21,22} All 20 items of the INTERMED were entered and analyzed for all patients included in the study.

Results

Sociodemographic and Medical Characteristics

Important sociodemographic and medical information of the sample is listed in Table 2. The relatively high number of consultations requested for patients with lung cancer may be due to the fact that lung cancer is often associated with symptoms, such as dyspnea or confusion, which are less familiar to the treating physicians than other symptoms, such as pain. The low number of patients with breast cancer is due to local, organizational reasons.

Scores of INTERMED

The distribution of the INTERMED scores for each variable is presented in Table 3. The highest scores are observed in the biological domain, followed by the health care, the social, and the psychological domains.

Cluster analysis resulted in five clusters, summarized for each domain in Figure 2. All clusters showed a similar pattern of the biological domain, except cluster 3, which was characterized by a lower degree of chronicity and diagnostic complexity. With regard to the psychological domain, the total score of cluster 5 is 3–5 times higher and characterized by a pattern that involves all variables of this domain. Scores

Table 3
Scores on the INTERMED

	0	1	2	3	Median value
Biological domain history					
Chronicity	6	27	19	30	2
Diagnostic complexity	27	25	28	2	1
Biological domain current state					
Severity of illness	—	2	13	67	3
Clarity of diagnostic profile	—	—	17	63	3
Biological domain prognosis					
Complications and life threat	—	—	8	74	3
Psychological domain history					
Restrictions in coping	16	48	10	7	1
Premorbid level of psychiatric dysfunctioning	58	14	8	2	0
Psychological domain current state					
Psychological adjustment to illness	21	33	23	3	1
Severity of psychiatric symptoms	50	18	9	2	0
Psychological domain prognosis					
Mental health threat	5	49	23	4	1
Social domain history					
Family disruption	32	24	14	6	1
Impairment of social support	36	44	—	2	1
Social domain current state					
Residential instability	2	22	19	39	2
Vocational impairment	59	2	16	2	0
Social domain prognosis					
Social vulnerability	2	15	17	48	3
Health care domain history					
Intensity of prior treatment	9	4	16	53	3
Prior treatment experience	39	30	11	2	1
Health care domain current state					
Resistance to treatment	41	38	3	—	1
Relation with and access to health care	40	40	1	—	1
Health care domain prognosis					
Care needs	—	—	4	78	3

Due to missing data, the numbers of subjects for each variable do not add up to 82.

Table 2
Sample Characteristics

Sex	
male	42 (51.2%)
female	40 (48.8%)
Mean age (SD)	65.1 (14.9)
Diagnosis	
Lung cancer	17 (20.7%)
Prostate cancer	7 (8.5%)
Head and neck cancer	6 (7.3%)
Breast cancer	5 (6.1%)
Renal cancer	5 (6.1%)
Pancreatic cancer	4 (4.9%)
Pleural cancer	3 (3.7%)
Leukemia	3 (3.7%)
Melanoma	3 (3.7%)
Myeloma	3 (3.7%)
Liver cancer	3 (3.7%)
Bladder cancer	3 (3.7%)
Other	20 (24.4%)

of the social domain gradually increase from cluster 1 to 5, with cluster 5 reaching the highest total score. Again, the pattern involves all variables of this domain. With regard to the health care domain, cluster 2 and cluster 3 show low scores, at least for the past and the present. Table 4 summarizes the median scores of the five clusters for the most discriminative variables.

Taking a medium value of greater than 1 (moderate or severe vulnerability/care needs for the respective variable) as a criterion, cluster 1 describes patients with a chronic condition. Clusters 2 and 3 describe patients in a chronic or acute condition, who may have difficulties in being discharged home. Patients of cluster 4 suffer—apart from the above-men-

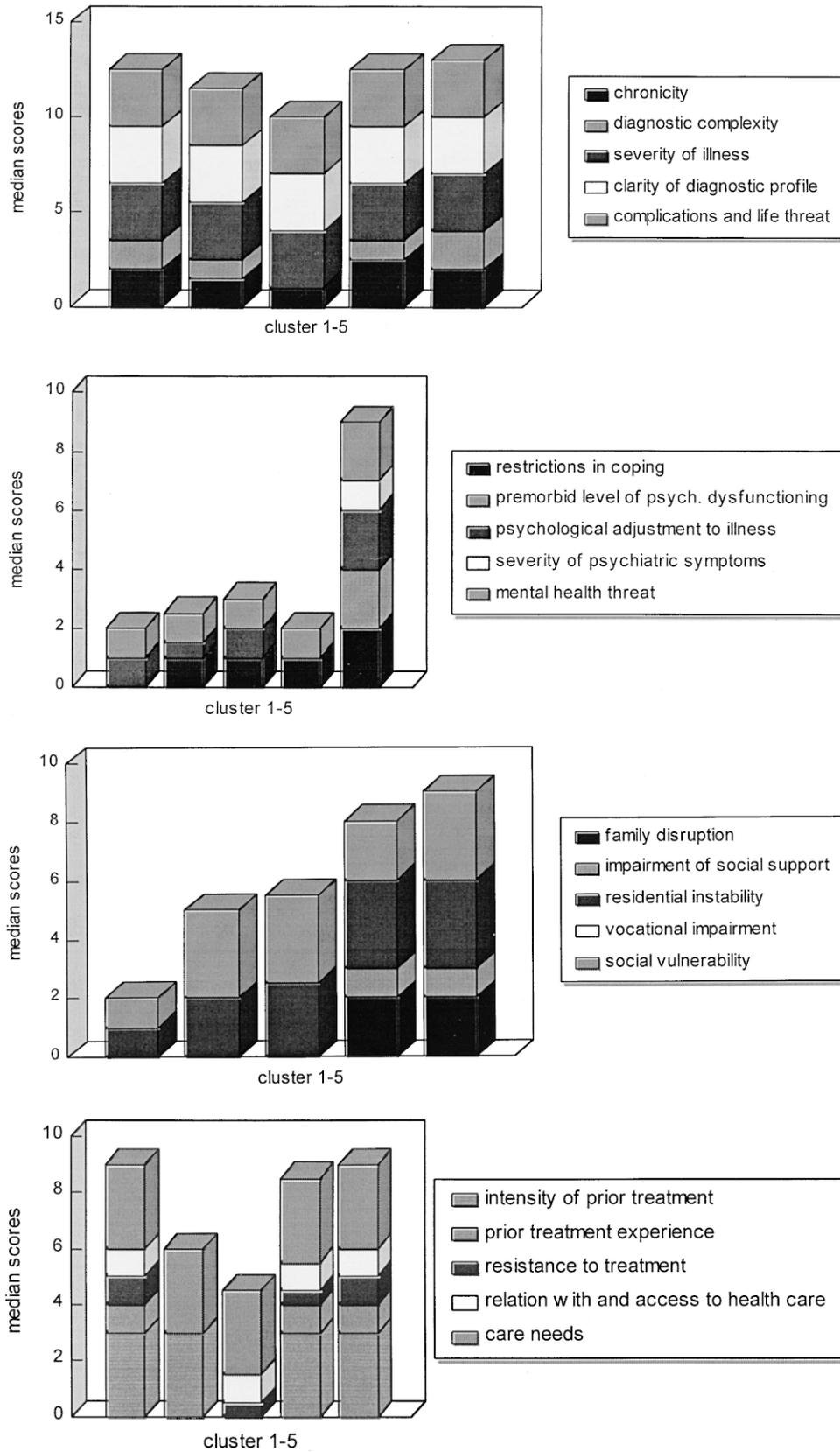


Fig 2. Comparison of the five clusters on the: a) biological, b) psychological, c) social, and d) health care domain.

Table 4
Description of the Five Clusters

	Chronicity	Residential instability	History of social vulnerability	Psychiatric comorbidity
Cluster 1 (<i>n</i> = 14; 20.3%)	2	1	0	1
Cluster 2 (<i>n</i> = 18; 26.1%)	1.5	2	0.5	0
Cluster 3 (<i>n</i> = 10; 14.5%)	1	2.5	0	1
Cluster 4 (<i>n</i> = 12; 17.4%)	2.5	3	2	0
Cluster 5 (<i>n</i> = 15; 21.7%)	2	3	2	2

Due to missing data, the number of subjects do not add up to 82.

tioned characteristics—from a history of social vulnerability. Patients of cluster 5, being the most complex cases, show all of the previously mentioned characteristics and a current psychiatric comorbidity.

Discussion

The INTERMED reveals a picture of palliative care patients, which is consistent with clinical experience and the literature. With regard to the biological domain, the high INTERMED scores reflect chronicity of disease, severity of symptoms, diagnostic complexity, shortened life expectancy, and anticipated physical complications. A significant minority of patients (cluster 3) was not in a chronic stage and had low diagnostic complexity (e.g., recently diagnosed pancreatic cancer). With regard to the psychological domain, the overwhelming majority of patients did not have prior restrictions in coping or a past psychiatric history, a finding observed in many epidemiological studies.²³ However, about one-fifth were perceived to have adjustment difficulties and mild psychiatric symptomatology, also a finding known from clinical and scientific experience.²⁴ There is a shift toward an increase of scores in the psychological domain from history to prognosis, illustrating that a majority of these patients were previously mentally healthy individuals but became psychologically vulnerable during the stress of the cancer and its treatment.²⁵ The same holds true with regard to the social domain. Most of the patients had no or only mild signs of family disruption and impairment of social support in the past, but scores of the current state indicate that most of them need assistance at home and a small minority depend on disability allocations or are jobless. Again, a shift toward an increase of the IN-

TERMED scores from history to prognosis illustrates that these patients, socially integrated in the past, became socially vulnerable now and were perceived to be at risk for social isolation in the future. With regard to the health care domain, most of the patients underwent intensive diagnostic and therapeutic procedures in the past, which were not always well tolerated. Ambivalence toward treatments and mild difficulties in relating to or accessing the health care system were observed in the current hospitalization, whereas care needs and dependence on medical services were anticipated to increase in the future. Compared with other complex patient populations, such as patients with chronic, disabling low back pain,¹⁹ mean INTERMED scores were higher in the biological domain and lower in all other domains; the mean total score was about one-fourth lower in the palliative care population.

In the cluster analysis of the INTERMED scores, five distinct clusters of patient profiles emerged, illustrating the biopsychosocial heterogeneity of this population. We will focus on patients of cluster 5 to illustrate the potential utility of the INTERMED for palliative care. Patients of cluster 5 are characterized by a considerable psychological and social comorbidity and could probably benefit from early interventions of health care professionals with psychosocial skills, comprehensive assessment, coordination of care, and a careful evaluation with regard to discharge in order to avoid unnecessary rehospitalizations and ineffective management. We are well aware that such a hypothesis has to be confirmed by controlled clinical studies. Such studies are currently underway and will be most crucial to support the claim that a structured and comprehensive assessment with the INTERMED will be beneficial for complex patients with psychosocial comorbidities.

With regard to existing measures utilized in palliative care, the INTERMED has some similarities with the Support Team Assessment Schedule (STAS). However, the STAS does not include a time perspective like the INTERMED and is conceptualized to be rated repeatedly over the course of disease. The INTERMED is more stable over time, complements decision making in periods of transition of care, and can be utilized for a variety of clinical, scientific, educational, and health care policy-related purposes.^{15-17,19} In addition, it covers aspects that are not taken into account by the STAS, such as diagnostic complexity, residential instability, compliance, and access to health care structures, which are crucial to determine an appropriate treatment strategy.

As with other clinical studies,¹⁷⁻¹⁹ results of this first application of the INTERMED in palliative care point to its possible clinical utility as a method to detect and describe vulnerable patients with a high degree of case complexity and an increased need for comprehensive and coordinated care. In addition, the INTERMED could possibly be used for epidemiological research, comprehensive stratification of patient populations, and the controlling for confounding variables, for example, in interventions aiming to increase quality of life. From an educational/communication point of view, the INTERMED may increase the awareness of psychosocial aspects of disease and facilitate interdisciplinary assessment and communication. Finally, from a health care policy point of view, the use of the INTERMED in palliative care could have major implications with regard to health care delivery, coordination of care, and allocation of financial and human resources.

We are aware that results of the first studies with the INTERMED have to be considered as preliminary, that its application has to be extended to different and larger populations, and that its utility in and influence on daily clinical practice still must be demonstrated. However, we hope that our work will be a small step forward in the operationalization of the biopsychosocial model of disease.

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