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RELATIONSHIPS AMONG HEALTH-RELATED QUALITY OF LIFE INDICATORS IN CANCER PATIENTS: A POOLED STUDY OF BASELINE EORTC QLQ-C30 DATA FROM 6739 PATIENTS.

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BACKGROUND

Cancer patients often experience multiple and co-occuring symptoms due to their illness and therapies, and those symptoms can predict changes in patient function, treatment failures, and post-therapeutic outcomes. Clusters are defined as groups of two or more Health-Related Quality of Life (HRQoL) indicators that occur concurrently and may or may not have a common related cause.

The objectives of this meta-analysis were to identify how HRQoL indicators cluster among cancer patients and to identify which HRQoL indicators influence a patient's overall quality of life, in order to better understand the changes in such a generic scale.

Variable	Categories	N	%
Age	≤ 60	4428	66.51
	> 60	2257	33.49
Presence of metastases	no	3384	50.22
	yes	2069	30.70
Sex	male	4190	62.18
	female	2547	37.79
WHO performance	good	5914	87.76
	bad	462	6.86
Cancer site	brain	741	11.00
	breast	304	4.51
	colorectal	1056	15.67
	head and neck	416	6.17
	lung	976	14.48
	melanoma	2350	34.87
	overian	186	2.76
	pancreas	81	1.20
	prostate	382	5.67
	testis	247	3.67

PATIENTS

Retrospective pooling of 29 European Organisation for Research and Treatment of Cancer (EORTC) randomized clinical trials, among 10 cancer sites, yielded baseline EORTC QLQ-C30 HRQoL data for a total of 6739 patients.

Clinical data included gender (males vs. females), age (≤ 60 vs. > 60), presence of metastases (no vs. yes), World Health Organisation (WHO) performance status (WHO 0-1 vs. WHO 2-3), cancer site.

Data were available for 4190 male and 2547 female cancer patients. 66% of the patients were younger than 60 years, 50% of patients had no metastases, 87% of patients had a good WHO performace status, 34% of patients had a melanoma cancer.

METHODS

A cluster analysis, using Ward's method, was performed to determine how the 15 HRQoL indicators, and the Global Health scale (GH) in particular, cluster overall and by cancer characteristics.

Cronbach's alpha coefficient (α) was used to measure internal consistency. Dendrograms of the HRQoL indicators were plotted for the overall data and for each cancer site.

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RESULTS

Three main clusters emerged from the pooled dataset: a physical function-related cluster, consisting of physical and role functioning, fatigue and pain (α = 0.83); a psychological function-related cluster, consisting of emotional and cognitive functioning and insomnia (α = 0.64); and a gastrointestinal cluster, consisting of nausea and vomiting and appetite loss (α = 0.68).

The same clusters were found in patients with metastatic and non-metastatic disease.

The gastrointestinal cluster was reproduced in all 10 cancer sites.

We found that pain was not correlated with the other variables of the physical function cluster for patients with brain, colorectal or pancreatic cancer.

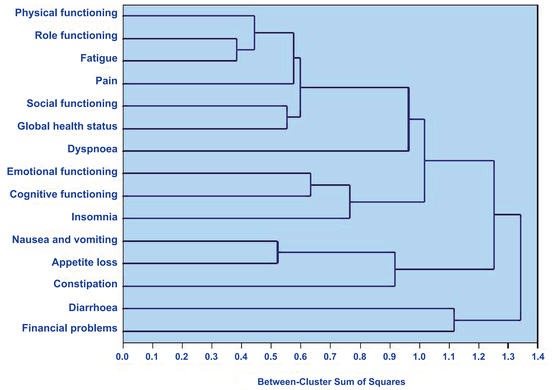
For the psychological component cluster, cognitive functioning was not correlated with the other variables of the cluster for breast or pancreatic cancer patients, while insomnia was found not to be correlated with the other variables of the cluster for prostate cancer patients.

The GH scale was found to be part of the physical function cluster in the overall dataset (α = 0.85). This result was reproduced for both metastatic and non-metastatic patients.

When looking across the 10 different cancer sites, the GH scale was mainly linked with a physical component in brain, head and neck, lung, melanoma, ovarian, pancreatic and prostate cancer.

However, in breast and testicular cancer, GH was more strongly associated with the emotional scales.

DENDROGRAM: ALL CANCER SITES



CONCLUSIONS

This study shows that relationships among HRQoL indicators exist and that three major constructs can be found: a physical, a psychological and a gastrointestinal component. The GH scale of the EORTC QLQ-C30 is most strongly linked with a patient's physical status. This result is consistent across stage of disease and most cancer sites. The different results seen in patients with breast and testicular cancer deserve additional investigation. Understanding these relationships may aid diagnostic criteria, and assessment, management, and prioritization of symptom care.