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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Abstract:

Background:
Cancer patients frequently experience multiple and co-occurring problems due to their illness and therapies. 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 objective of this meta-analysis was to identify how HRQoL indicators cluster among cancer patients.

Methods:
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. A cluster analysis was performed to identify clusters among the 15 HRQoL scales, via Ward’s method. Cronbach’s alpha coefficient ($\alpha$) was used to measure internal consistency. Dendrograms of the HRQoL indicators were plotted for the overall data and for each cancer site.

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

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. Understanding these relationships may aid diagnostic criteria, and assessment, management, and prioritization of symptom care.
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