



The Humanistic Burden Of Lung Cancer In China: A Systematic Literature Review



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Background

- Lung cancer is currently the most common cancer type in China, causing significant societal burden (1).
- Poor prognosis of lung cancer due to the advanced stage at diagnosis results in huge negative impact on health-related quality of life (HRQoL). HRQoL is usually assessed by patient reported-outcomes, such as the European Organization for Research and Treatment in Cancer Quality of Life Core 30 Questionnaire (EORTC QLQ-C30) and the EuroQol- 5 Dimension (EQ-5D) instrument (2).
- Chinese lung cancer inpatients have poorer HRQoL than the general population (3). HRQoL is even poorer in older advanced lung cancer patients (4). Depression is prevalent in inpatients in China and may worsen the HRQoL of lung cancer patients (5). Psychological support, pain management and supportive care may improve the HRQOL of lung cancer patients in China (4-6).

Objective

- The objective of the systematic literature review (SLR) was to summarize the humanistic burden of lung cancer in China and identify existing gaps for future research.

Method

- Two databases were searched using the OVID search engine for the SLR: Embase and Medline In-Process. The search utilized a combination of disease and HRQoL related indexed and free-text terms to ensure that the most relevant literature be identified and reviewed. The searches were also limited to studies:
 - Relevant to China (two terms - “China” and “Chinese” - were applied)
 - Published since 2015 (January 1, 2015–June 4, 2021)
- An additional internet-based grey literature search was conducted to identify publications that were not indexed in the databases. Annual conference proceedings from the following conferences in the past three years (2019 to 2021) were reviewed, including:
 - International Society for Pharmacoeconomics and Outcomes Research (ISPOR)
 - American Society of Clinical Oncology (ASCO)
 - Chinese Society of Clinical Oncology (CSCO)
 - European Society for Medical Oncology (ESMO)
 - World Conference on Lung Cancer (WCLC)
- Table 1** below lists the eligibility criteria.

Method

Table 1: Eligibility criteria

	Inclusion criteria	Exclusion criteria
Population	Patients with lung cancer in China, regardless of age	-
Study design	Studies reporting HRQoL values associated with lung cancer patients based on observational or interventional studies	Case studies, animal studies, letters, editorials, commentaries, or SLRs
Main outcomes	- HRQoL tools - HRQoL values - Domains of the HRQoL tools	-
Other criteria	- Languages: both English and Chinese were included; - Years: 2015 to current; - Geography: China;	-

Results

Study and population characteristics

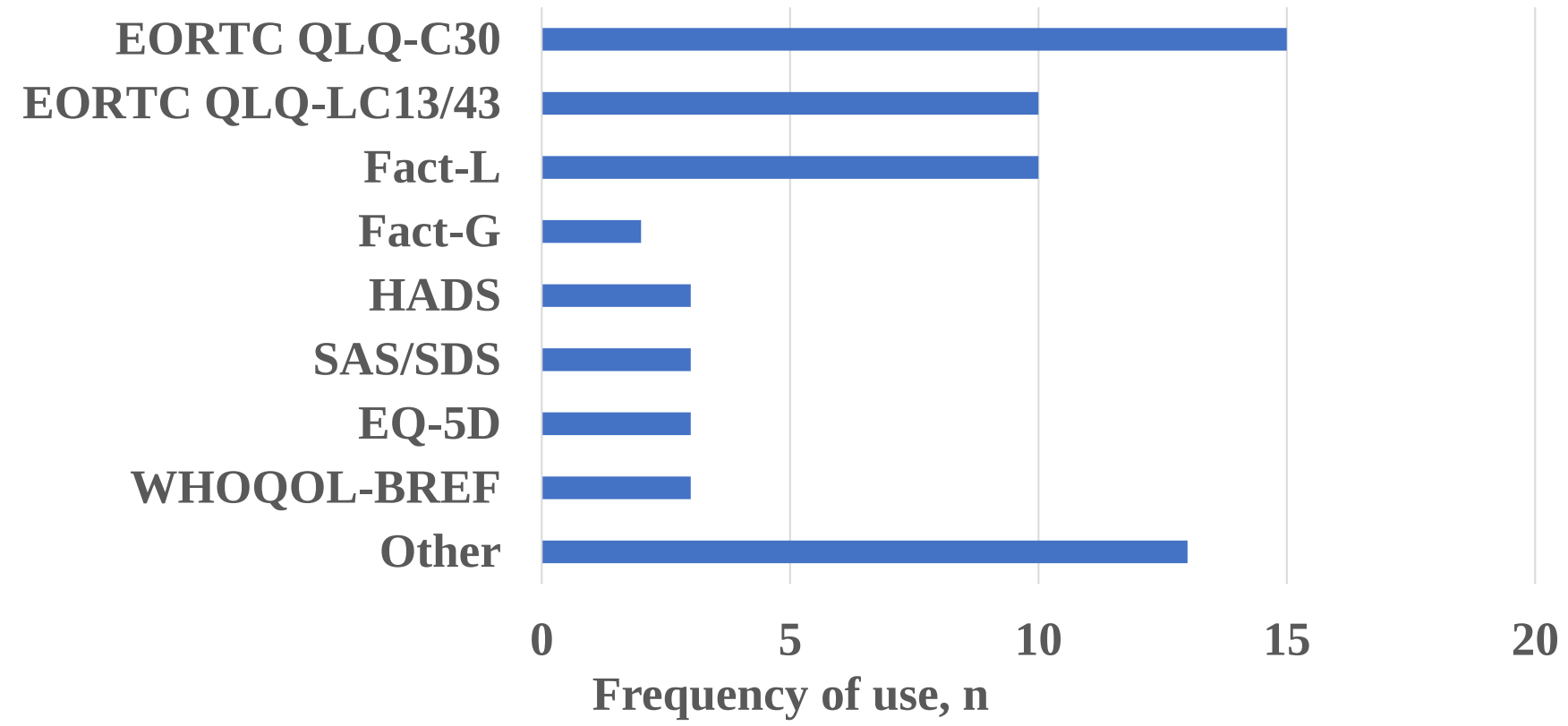
- Overall, 443 references were searched, and 45 references were included.
- Eighteen were randomized controlled trials studies, and 27 were observational studies. The most common data sources were surveys, questionnaires, and medical records. Twelve were national studies. Other commonly examined regions were Shanghai, Beijing, Tianjin, etc. Over half of the studies (n=24) were single-center.
- Twenty, 24 and one studies assessed lung cancer regardless of type, non-small cell lung cancer (NSCLC), and small cell lung cancer (SCLC) respectively.
- Seventeen studies were observational studies. In studies reporting on treatments (n=28), commonly assessed interventions were chemotherapy, Chinese medicine, and video-assisted thoracic surgery.
- Nineteen studies examined all stages or advanced stages (stages IIB to IV) of lung cancer, respectively.
- The mean age ranged from 48.4 to 72.5 years old. The proportion of males is higher than 50% in two-thirds of the studies (n=31).

HRQoL instruments

- The most frequently used HRQoL instruments were the EORTC QLQ-C30 cancer instruments, and two lung cancer specific modules - the EORTC QLQ-LC13 (or -LC43 [Chinese version]) and the Functional Assessment of Cancer Therapy- Lung (Fact-L).
- HRQoL instruments used in included publications and frequency of use are shown in Figure 1.

Result

Figure 1: HRQoL used in included publications and frequency of use



Abbreviations: HADS=Hospital Anxiety and Depression Scale; SAS/SDS=Self-Rating Anxiety/Depression Scale; WHOQOL-BREF=World Health Organization Quality of Life-BREF.

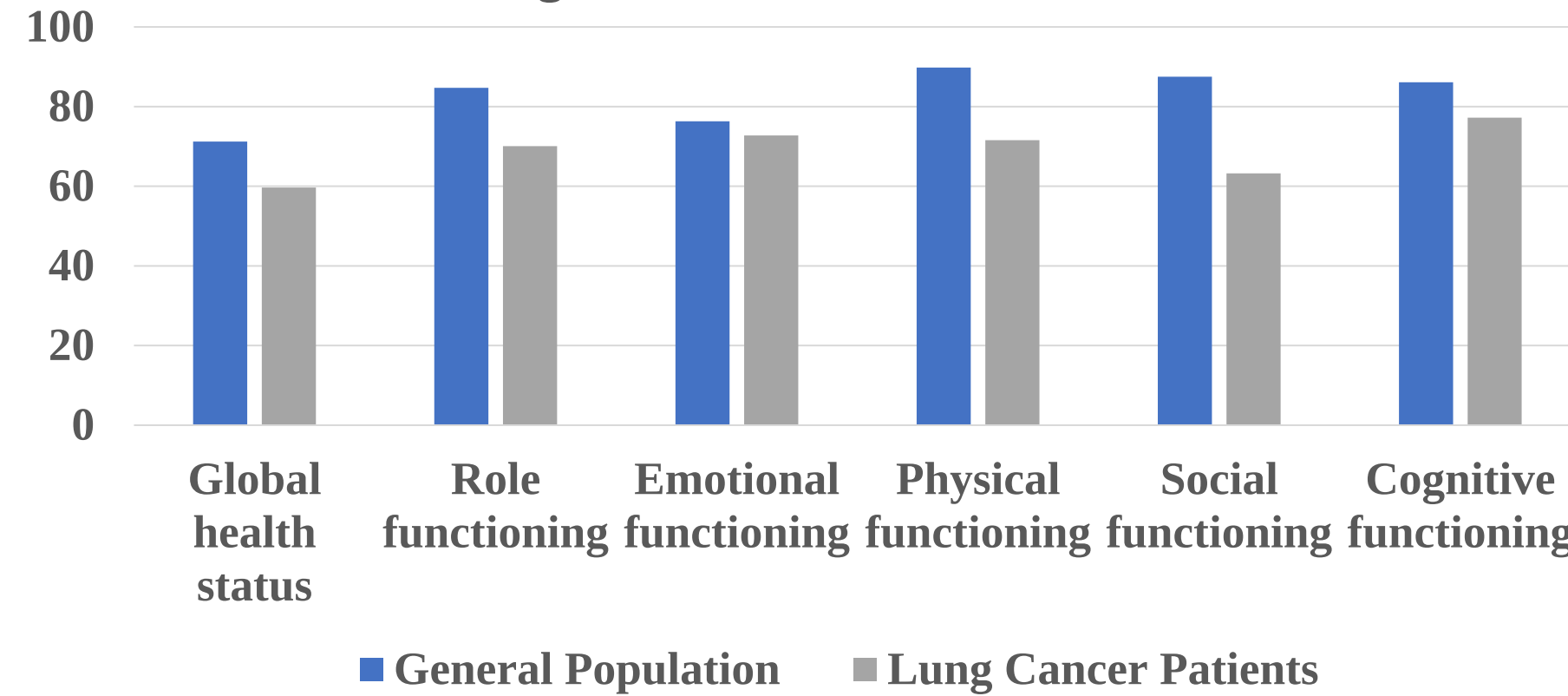
HRQoL values

- All studies except for one reported the mean HRQoL scores.
- Over half of the studies (n=28) reported HRQoL values at baseline. Other commonly reported timepoints were week 6, week 8 and week 12. HRQoL generally improved over time.
- Global or overall HRQoL score was most often reported (n = 37), with fewer studies reporting individual domains of the HRQoL instruments.
- Results indicated that HRQoL using the EORTC QLQ-C30 was negatively impacted in lung cancer patients comparing to the general population in both the global score and most domains (Figure 2a and Figure 2b) (7).

Domains of HRQoL

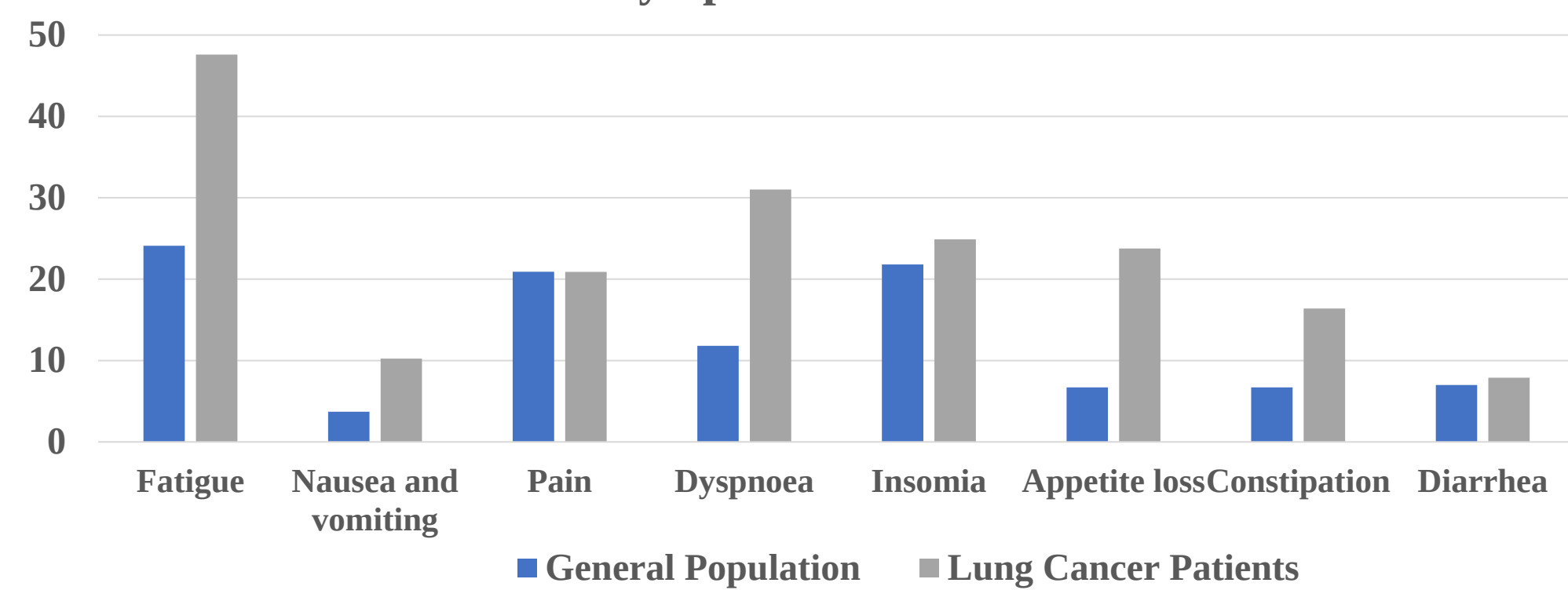
- Overall, the domains measuring social functioning, physical functioning, and role functioning were mostly impacted. Results on emotional and cognitive functioning were inconclusive (Figure 2a) (7).
- Almost all the symptoms were adversely impacted, especially appetite loss, nausea and vomiting, and dyspnoea (Figure 2b) (7).

Figure 2a: HRQoL using the EORTC QLQ-C30 for the global and functional scale scores



Note: A high score for the global health status or a functional scale represents a high QoL or a high level of functioning.

Figure 2b: HRQoL using the EORTC QLQ-C30 for the symptom scale scores



Note: A high score for a symptom scale represents a high level of symptomatology or problems.

Treatments, stages and types of lung cancer

- The impact on HRQoL may be higher in lung cancer patients who had received treatments or in advanced stages, than those who were treatment naïve or in early stages respectively.
- The effect on HRQoL by the type of lung cancer was inconclusive.

Discussion

- The SLR summarized the humanistic burden of lung cancer in China. Meanwhile, we also identified some limitations:
 - Various HRQoL instruments and relevant versions were used. We suggest applying more standardized methods for better comparison across studies.
 - Limited number of studies reported scores for individual domains of the HRQoL tools, making it challenging to understand HRQoL of patients with lung cancer at a granular level.
 - We need more studies to understand the impact on HRQoL for different types of lung cancer.

Conclusion

- The humanistic burden of lung cancer is substantial in China.
- More reporting using standardized methods and at a granular level is suggested to achieve more robust conclusions.
- Future studies should investigate humanistic burden by the type of lung cancer.

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