

Impact of non-medical factors on patterns of treatment in patients with cancer: a systematic literature review

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Sociodemographic factors such as age, marital status, region of residence, insurance type, income, education level and socioeconomic status were often significantly associated with treatment patterns and survival among patients with cancer. Continued efforts should be made to diminish the influence of these non-clinical factors on the type of care patients receive and consequently on their survival outcomes.

Background

Access and receipt of the appropriate treatment algorithm play a crucial role in achieving optimal outcomes in patients with cancer. Numerous studies have highlighted various factors associated with treatment patterns and decisions in oncology indications.^{1,2,3} While clinical criteria provide an objective treatment decision pathway and can be standardized by guidelines and institutional policies, non-clinical factors are often less understood and addressed. Social, economic, and demographic patient characteristics were shown to impact the type of treatment received.

Objective

A systematic literature review was conducted to understand the socio-demographic factors influencing treatment patterns and decisions among patients with cancer and their healthcare providers and to highlight the disparities contributing to access to appropriate oncological therapy.

Methods

Database searches

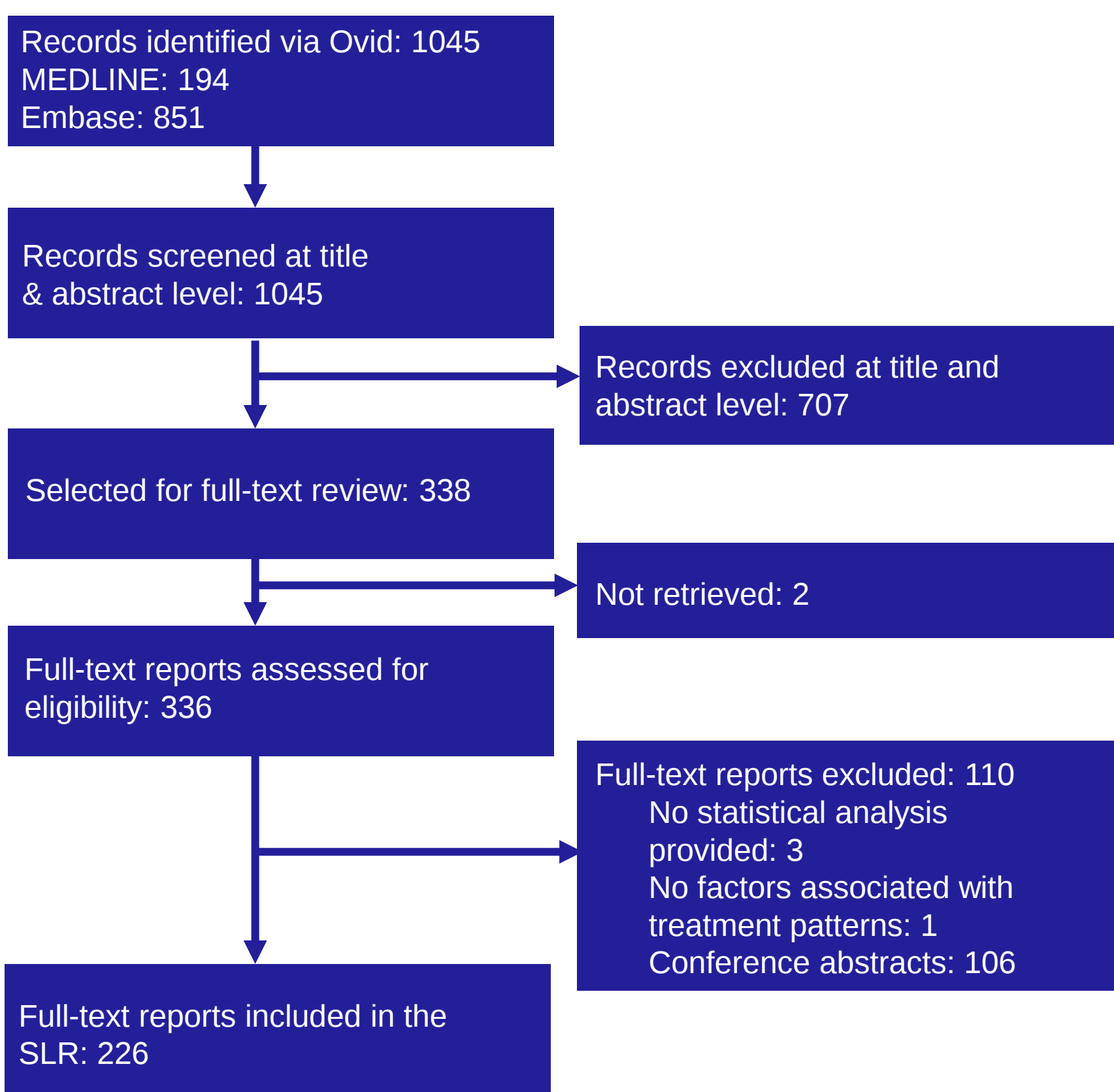
Electronic database searches were conducted in Embase and MEDLINE to identify records published in English between 01 January 2012 and 05 June 2023.

Inclusion / exclusion criteria

Observational studies reporting sociodemographic factors influencing treatment receipt, patterns, or choices in patients with any type of cancer were included. Examples of factors considered were age, race, sex, marital status, education level, socioeconomic status, income, insurance type, type of treatment center, distance from treatment center, geography, etc.

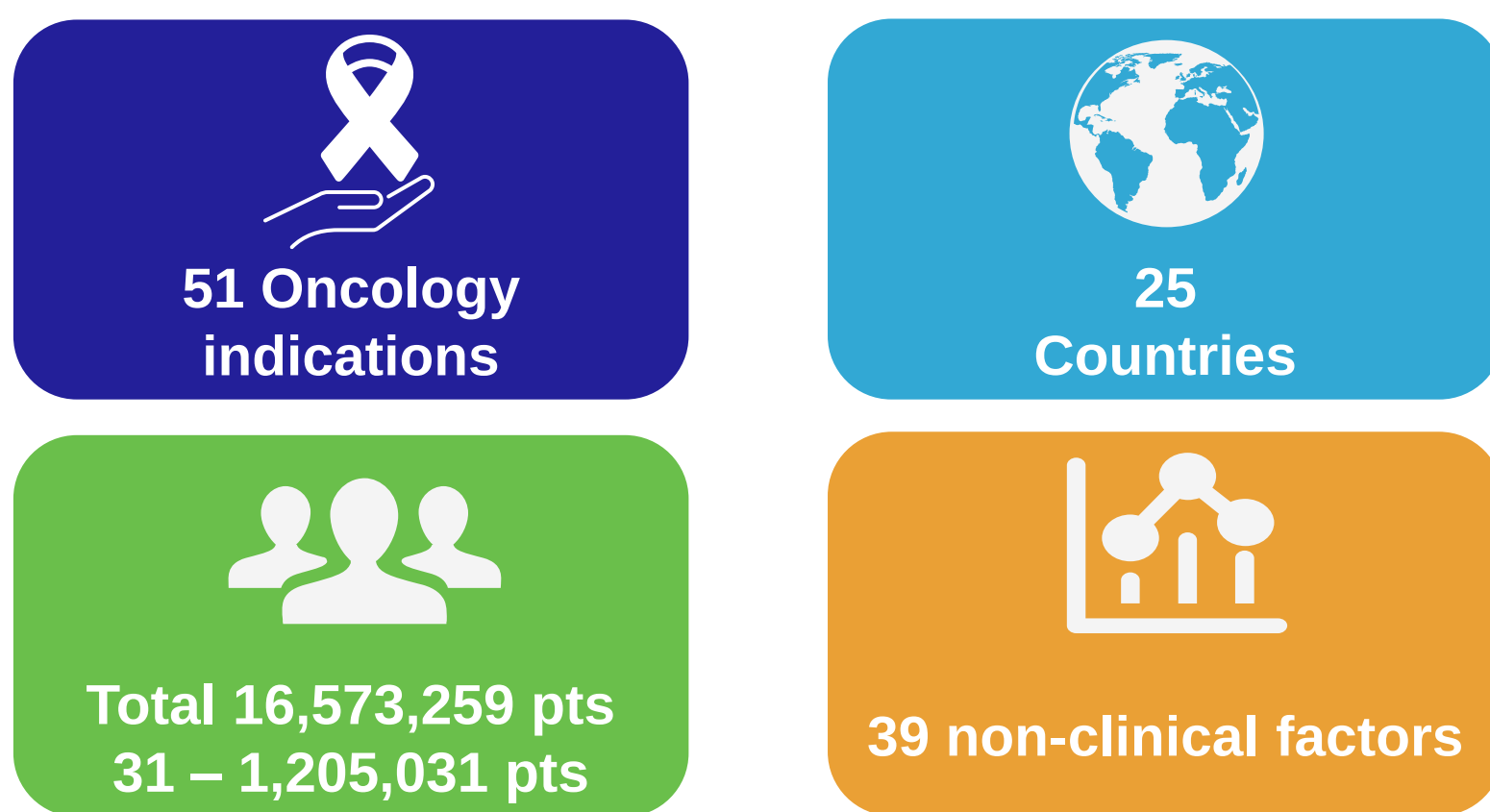
Only studies analyzing the association between sociodemographic factors and treatment patterns through a univariate or multivariate statistical analysis were included. Any variations in treatment were considered under "treatment patterns" umbrella term: type, receipt/non-receipt of cancer treatment, therapy choices, guideline adherence, curative/palliative treatment, etc. Data extraction was performed for studies published as full-text articles.

Figure 1. Literature flow diagram



Identified studies

Overall, 1045 records were screened, of which 226 full-text reports were included in the extraction.

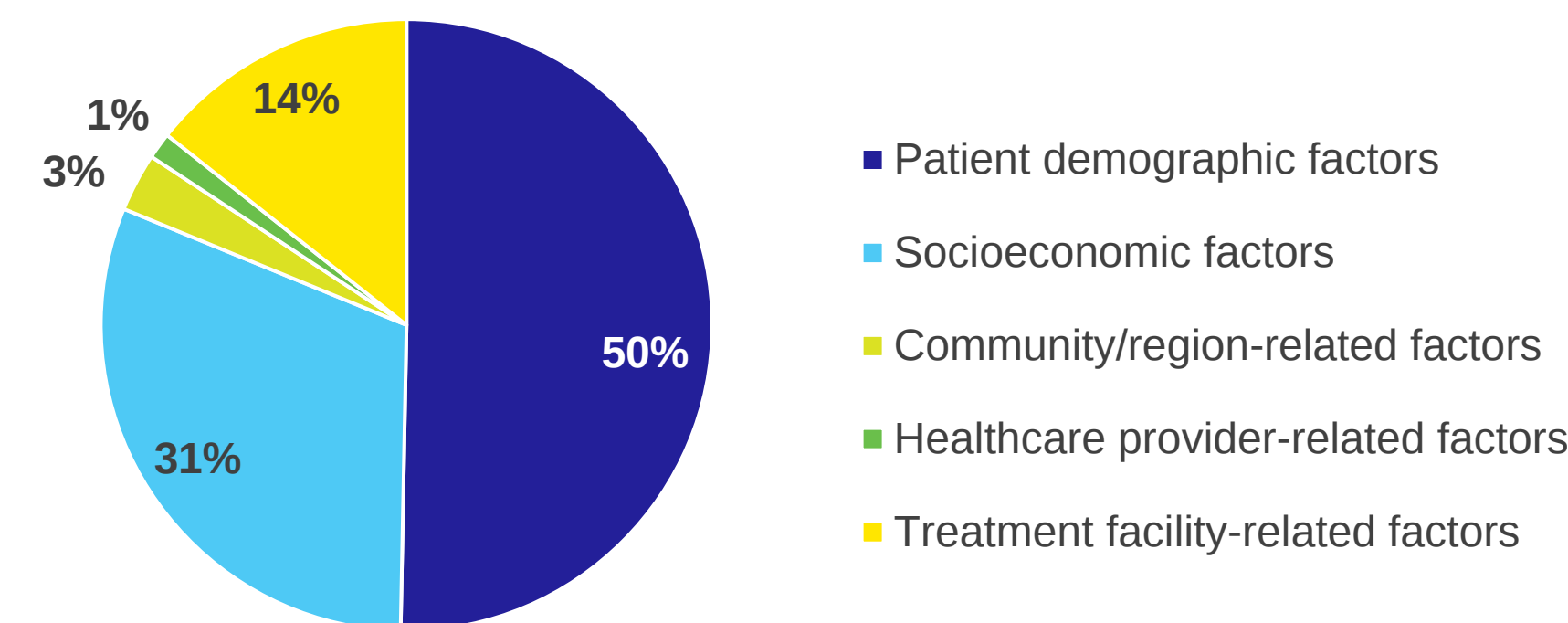


Results

Half of the investigated factors for treatment patterns or survival were demographic, such as age, marital status, region of residence, race/ethnicity, sex, or year of diagnosis (Figure 2).

Almost a third of the factors analyzed in the included studies were socioeconomic, such as the type of insurance, income, education level, employment, and urban/rural location. The remaining factors were categorized as factors related to the community/region where the patient resides, and factors related to the healthcare provider or treatment facility (Figure 2).

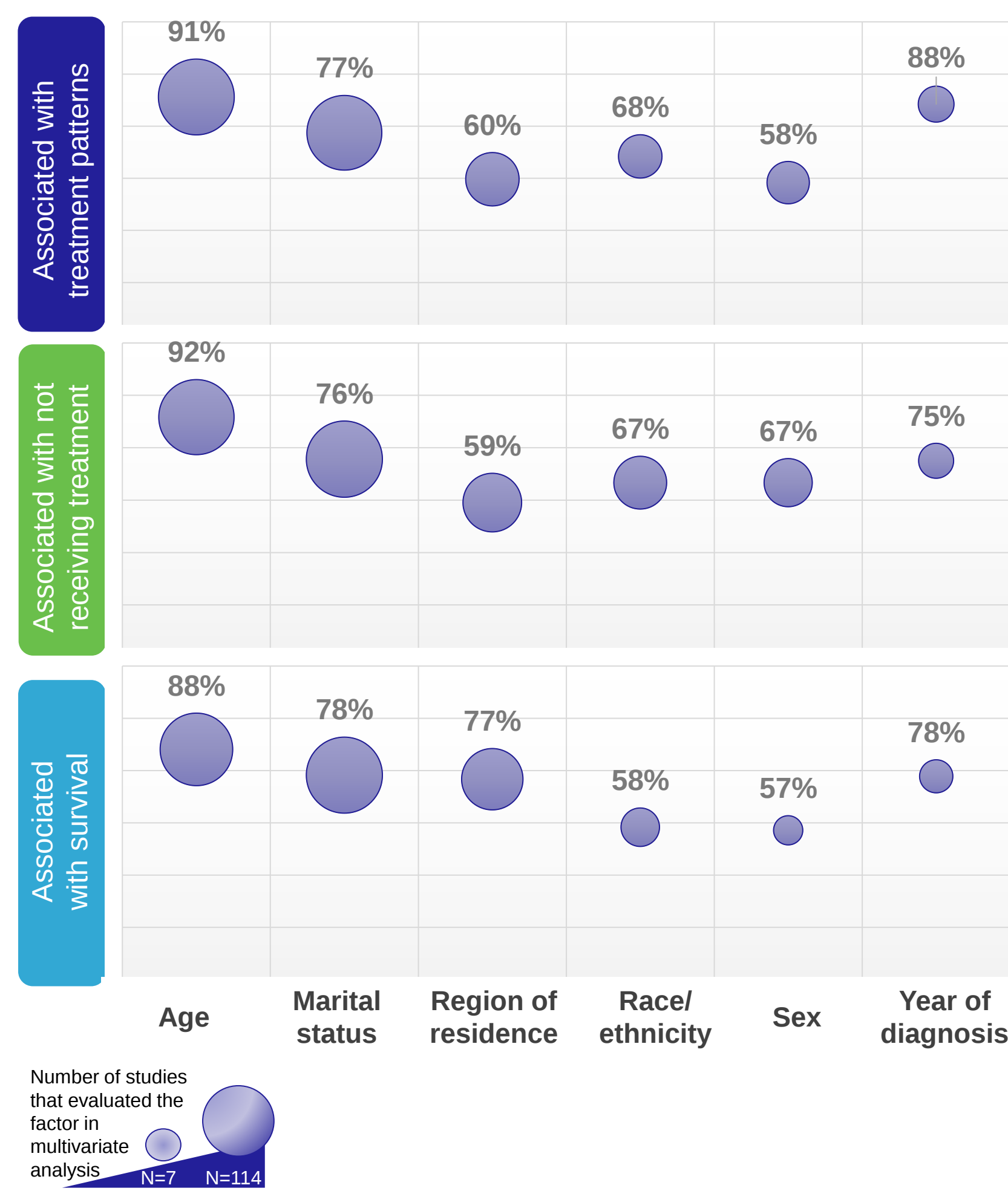
Figure 2. Categories of factors analyzed concerning treatment patterns or survival



Among demographic factors, age, marital status, and year of diagnosis were most often found significantly associated with treatment patterns, with not receiving treatment, and survival in adjusted, multivariate analyses (more than 75% of studies, Figure 3).

In addition to these, region of residence was also often associated with survival in adjusted multivariate analyses. (in 77% of studies, Figure 3).

Figure 3. Demographic factors significantly associated with treatment patterns or survival in adjusted multivariate analyses



Insurance, income, and socioeconomic status were often significantly associated with treatment patterns, with not receiving treatment, and survival, in adjusted, multivariate analyses (Figure 4).

Education was often significantly associated with survival (in 82% of studies, Figure 4), while patient's perception of HCP/treatment was often significantly associated with treatment patterns in multivariate analyses (in 75% of studies, Figure 4).

The type of treatment facility (i.e., academic or community clinic), the distance to the treatment facility, and its geographic location (country/region), were often associated with treatment patterns and with not receiving treatment in multivariate analyses (in more than 80% of studies, Figure 5).

Treatment facility volume, neighborhood/ regional income level, and HCP's years of education/specialty were often significantly associated with treatment patterns (Figure 5).

Although investigated in only 3 studies by multivariate analysis, the education level of the community where the patient lives was a factor significantly associated with the pattern of care in all cases.

Figure 4. Socioeconomic factors significantly associated with treatment patterns or survival in adjusted multivariate analyses

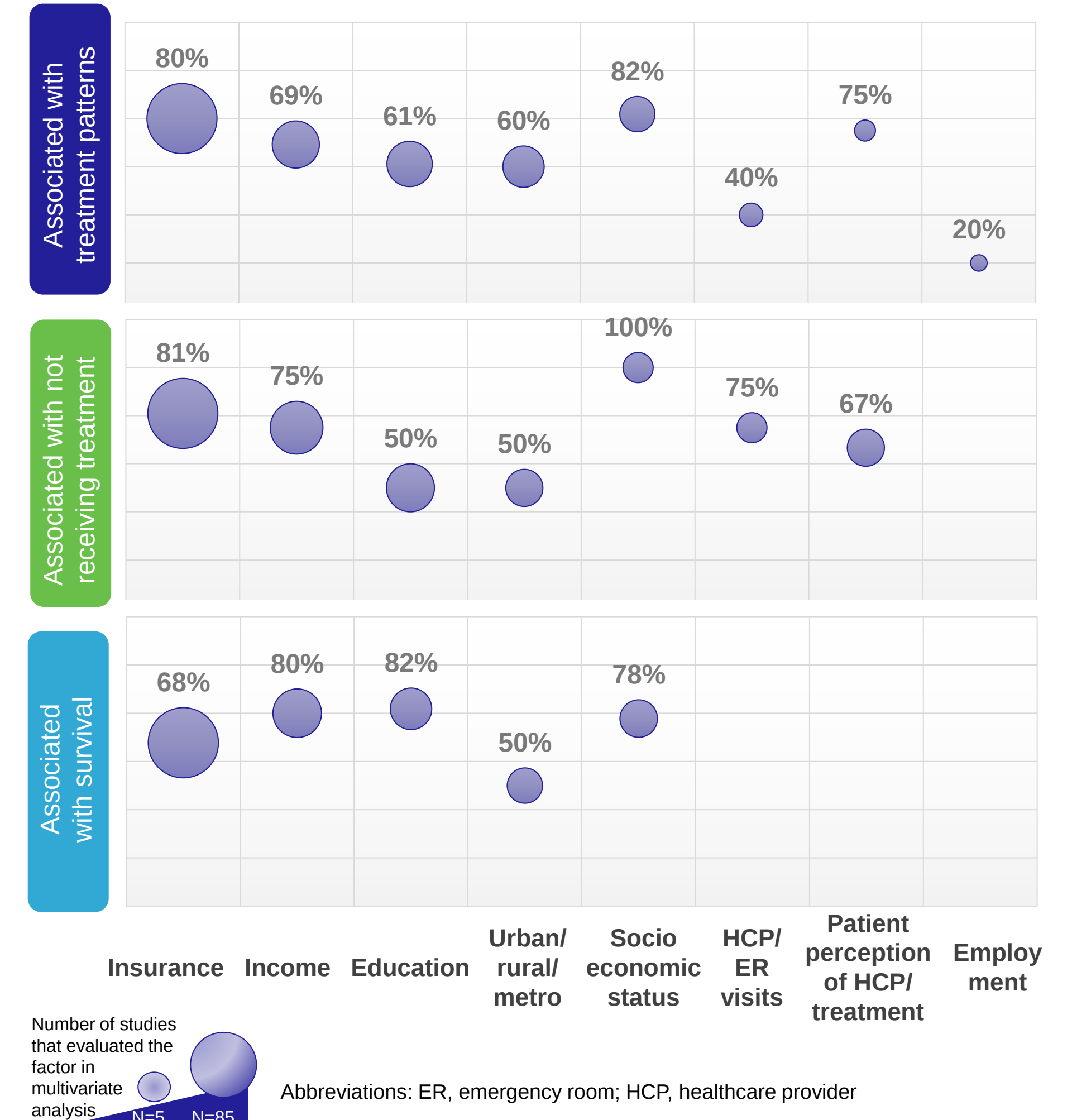
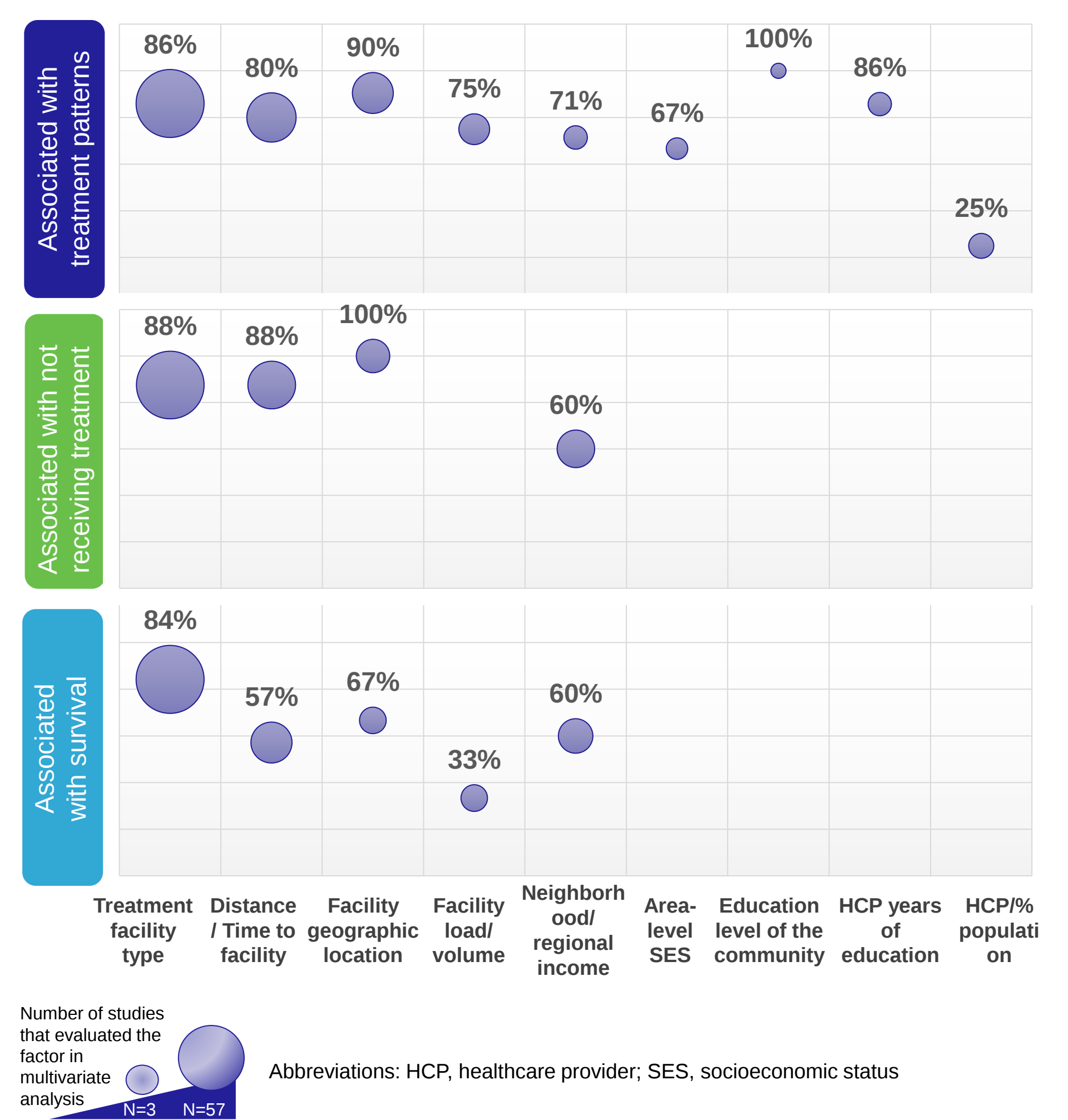


Figure 5. Factors related to community, treatment facility, or HCP significantly associated with treatment patterns or survival in adjusted multivariate analyses



Conclusions

- Demographic and socioeconomic factors were significantly associated with patterns of treatment and survival outcomes for patients with cancer. Moreover, such factors were associated with not receiving cancer treatment
- Given the complexity of non-clinical variables influencing treatment decisions, it is important to recognize and understand them and identify ways to mitigate their effects.

References

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Disclosures

The authors declare no conflicts of interest.