



A Review of Gender Differences in Quality of Life for Hematologic Malignancies



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Background

- The incidence and prevalence of hematologic malignancies differ between sexes with slight male predominance.
- Cancer experience and quality of life (QOL) vary between genders.
- Toxicity and response rates can vary due to biologic and gender differences in tissue distribution and activity, enzyme expression, and drug bioavailability.
- QOL differences can relate to gender-socially constructed roles, behaviors, role functioning, communication styles and role limitations.
- Health care providers should be cognizant of these data, as gender differences may warrant diverse clinical approaches.

Objectives

- Summarize key data comparing QOL outcomes between men and women diagnosed with any hematologic malignancy.
- Identify knowledge gaps with implications for future intervention-based research aimed at improving QOL symptoms based on the gender of the individual.

Methods

- Databases: PubMed, CINAHL, PsycINFO
Inclusion Criteria:
- Published in English between 2005-2021
 - Research studies with QOL as an outcome in adults with any hematologic malignancy
 - Validated QOL instrument
- Appraisal
- Screened and extracted with Covidence software
 - Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA).

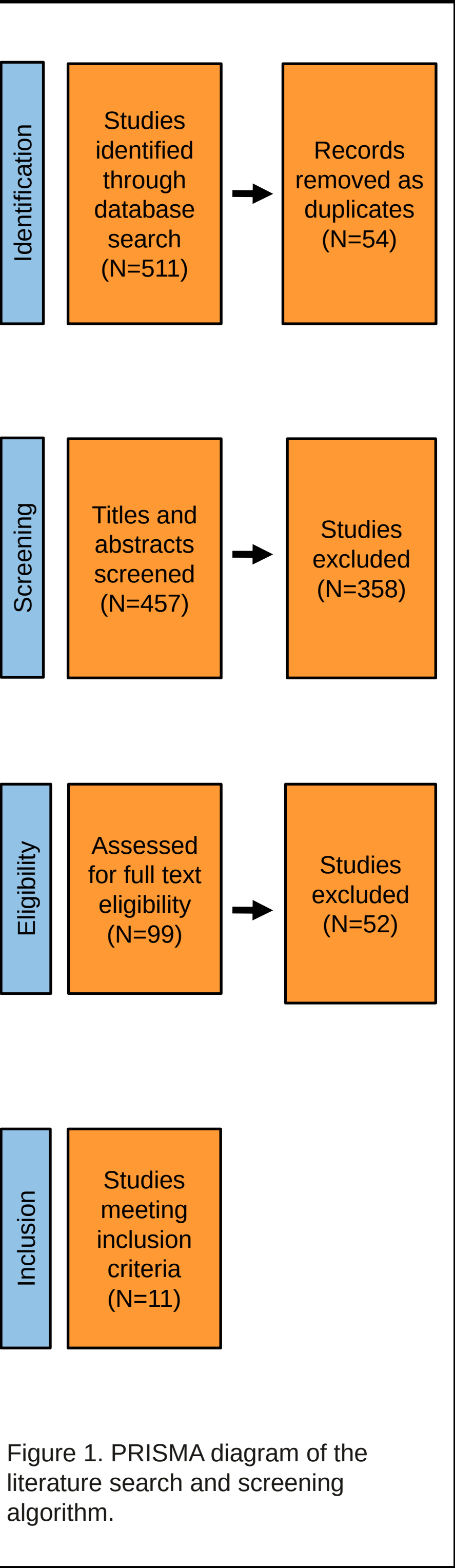


Table 1. Summary of Studies Comparing QOL Outcomes Between Genders Across Hematologic Malignancies				
Study and Setting	Sample	Design	QOL Tool	Results
Arden-Close et al., 2011 (UK)	115 (HL and NHL survivors) 57 male/58 female	Prospective, cohort, correlational	SF-12v2 QOL -CS	No gender differences in number of patient-reported late effects or perceived vulnerability. Men who reported inferior late treatment effects reported worse psychological heal-related QOL.
Geyer et al., 2016 (International)	2006 survivors with MPNs; 917 male/1089 female	International prospective	MPN SAF, BFI	Females had more severe and frequent symptoms based on overall total symptom score (p<0.001) of abdominal-related symptoms (pain/discomfort) and microvascular symptoms (headache, fatigue, insomnia, concentration problems, dizziness) (p<0.01).
Heutte et al., 2009 (Europe)	935 survivors with HL; 466 male/467 female	Longitudinal prospective design	EORTC QLQ-C30 (v2), MDI	Physical and sexual functioning scores were higher for men at all time points. Sex influenced almost all scores (p<0.0088), including emotional and sexual functioning, global QOL, and fatigue. Women had lower HRQOL and higher symptom scores.
Immanuel et al., 2019 (UK)	131 survivors B cell malignancies; 78 male/53 female. Leukemia (14), Lymphoma (102) and MM (14)	Cross-sectional design	EORTC , QLQ-C30, EQ-5D	Equal reports for men and women for mobility, self-care, anxiety, and depression. Statistically significant differences (p-value of 0.015) for proportion of women (49.1%) who reported no pain versus men (70.1%). Men reported better physical functioning (p=0.041), less loss of sleep (p=0.001) and less symptoms of pain (p=0.000) in EORTC.
Kriessl et al., 2020 (Germany)	4215 survivors HL (diagnosis to 5 years post diagnosis) 2325 male/1890 female	Prospective longitudinal study	EORTC QLQ-C30	Women reported higher symptoms scores, lower QOL, and lower functioning scores, however differences were evident at baseline. (P-value not provided).
Leak et al., 2007 (US)	741 Non -Hodgkin Lymphoma survivors, 86% Caucasian 377 male/364 female	Retrospective Correlational	FACT-G	QOL scores were higher for females but did not differ as much for older women.
Morishita et al., 2013 (Japan)	100 patients, 66 male/34 female AML (55), NHL (29), MDS (12), severe AA (2), CML (1), CLL (1)	Prospective observational	Medical Outcome Study 36 item survey: Exercise (6-min walk test/ hand grip strength/knee extensor strength), PFS, HADS	Female patients scored lower on physical function and general health. Fatigue and psychological status did not differ between genders.
Pashos et al., 2013 (US)	1140 CLL; 710 men/430 women	Prospective, longitudinal, observational study	BFI, EQ50D, FACT-Leu	Women reported worse global fatigue (p< 0.0001), severity of fatigue (p<0.0001), pain/discomfort (p=0.0077), and anxiety and depression (p=0.0117). Females reported better social/family score (p=0.0238). FACT-G total score similar between genders.
Sarker et al., 2017 (UK & US)	993 NHL survivors, 326 UK (176 male 150 female) 667 US (331 male 336 female)	Prospective observational	Impact of Cancer v2, HADS, The Chalder Fatigue Questionnaire, SF 36	Higher impact of cancer associated symptoms with female gender (p<0.001).
Shanafelt et al., 2007 (US, International)	1482 CLL survivors; 846 male/636 female	Prospective Observational	BFI, FACT-G	In multivariate analysis, female gender was associated with lower emotional QOL and more fatigue.
Stauder et al., 2018 (Europe and Israel)	1690 consecutive MDS patients from ELN Registry	Prospective longitudinal study	EQ-5D	Anxiety and depression higher in female patients (p<0.001) and restrictions in all parameters of EQ-5D (p<0.05). Mobility restrictions most pronounced in male survivors (p< 0.01).

Results

- There is a paucity of QOL data using sex as a biological variable across hematologic malignancies with a predominance of data from B cell malignancy patients followed by MDS and MPNs.
- Women report greater anxiety, depression, physical limitations and pain across B cell malignancies, MDS, MM and MPNs.
- Mixed results for men regarding anxiety and depression following treatment.
- Women show a greater symptom burden of increased fatigue and interference with activities compared to men regardless of hematologic malignancy.

Discussion

- The impact of QOL symptoms based on sex as a biological variable in various hematologic malignancies is an important consideration.
 - Gender-competent care
 - Enhances options for tailored treatment modalities in effort to optimize patient outcomes for respective disease states
 - Enriches our understanding of QOL symptoms experienced by both sexes
- Limitations of this reviewed research
 - Variability of validated QOL tools utilized across studies
 - May be culturally biased with studies limited to English language
 - Cross section of only hematologic malignancies can bias data
- Recommendations for future research should separate studies based on hematologic malignancy and treatment time point.
- QOL varies between genders; therefore, should be factored into clinical-decision making to optimize patient outcomes.

References

Available upon request