

Original Article

Cite this article: Marte C, George LS, Rutherford SC, Ouyang DJ, Martin P, Leonard JP, Trevino KM (2022). Unmet mental health needs in patients with advanced B-cell lymphomas. *Palliative and Supportive Care* 20, 328–333. <https://doi.org/10.1017/S1478951521001164>

Received: 9 November 2020

Revised: 22 June 2021



Accepted: 11 July 2021

Key words:

B-cell lymphoma; Distress; Mental health treatment utilization; Quality of life

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Abstract

Context. Existing research on psychological distress and mental health service utilization has focused on common types of solid tumor cancers, leaving significant gaps in our understanding of patients experiencing rare forms of hematologic cancers.

Objective. To examine distress, quality of life, and mental health service utilization among patients with aggressive, refractory B-cell lymphomas.

Method. Patients ($n = 26$) with B-cell lymphomas that relapsed after first- or second-line treatment completed self-report measures of distress (Hospital Anxiety and Depression Scale) and quality of life (Short-Form Health Survey, SF-12). Patients also reported whether they had utilized mental health treatment since their cancer diagnosis.

Results. Approximately 42% ($n = 11$) of patients reported elevated levels of psychological distress. Of patients with elevated distress, only one quarter (27.2%; $n = 3$) received mental health treatment, while more than half did not receive mental health treatment (54.5%; $n = 6$), and 18.1% ($n = 2$) did not want treatment. Patients with elevated distress reported lower mental quality of life than patients without elevated distress [$F(1, 25) = 15.32, p = 0.001$].

Significance of the results. A significant proportion of patients with advanced, progressive, B-cell lymphomas may experience elevated levels of distress. Yet, few of these distressed patients receive mental health treatment. Findings highlight the need to better identify and address barriers to mental health service utilization among patients with B-cell lymphoma, including among distressed patients who decline treatment.

Introduction

Up to 42% of patients with cancer experience significant psychological distress (Zabora et al., 2001; Strong et al., 2007) that is associated with more severe physical symptoms (Brown and Kroenke, 2009; Delgado-Guay et al., 2009; Reddy et al., 2009), poor quality of life (Smith et al., 2003; Horney et al., 2011), worse adherence and response to medical treatment (Fujii et al., 2001; Greer et al., 2008; Pedersen et al., 2010), chemotherapy dose delays and reductions (Greer et al., 2008); higher rates of healthcare utilization (Prieto et al., 2002; Balentine et al., 2011), increased risk of an emergency department visit, overnight hospitalization, and 30-day hospital readmission (Jayadevappa et al., 2012; Mausbach and Irwin, 2016), and shorter survival (Barrera and Spiegel, 2014). Therefore, providing distressed patients with mental health services is vital to improving patient care with the potential for impact across care outcomes.

Research on distress and mental health service utilization has largely focused on common types of solid tumor cancers (Epping-Jordan et al., 1999; Norton et al., 2004; Graves et al., 2007; Zenger et al., 2010). As a result, significant gaps exist in our understanding of distress in patients with hematologic cancers (Epping-Jordan et al., 1999; Norton et al., 2004; Graves et al., 2007; Zenger et al., 2010; Loquai et al., 2013). Addressing this gap is necessary as the experience of patients with solid tumor cancers may not be generalizable to hematologic cancers that have distinct courses of treatment and disease trajectories with unique implications for patients' mental health and quality of life (Keat et al., 2013).

Aggressive B-cell lymphomas are hematologic malignancies with unique disease trajectories that have implications for patient distress. For example, the most common type of lymphoma, Diffuse Large B-Cell Lymphoma (DLBCL) is considered a curable disease. However, among the 30–40% of patients not cured following first-line therapy (Coiffier et al., 2002, 2010; Sant et al., 2014; Howlader et al., 2016), only 20% are alive 2 years later (Crump et al., 2017) with an overall survival (OS) of 4–6 months (Mack et al., 2009; Van Den Neste et al., 2015; Crump et al., 2017). Therefore, while the initial treatment goal for patients with DLBCL is cure, prognosis suddenly and dramatically worsens following disease progression (Crump et al., 2017).

The abrupt and drastic shift in prognosis from curable to largely terminal in patients with advanced B-cell lymphomas is a unique trajectory with implications for patient distress. Yet, little is known about rates of distress and mental health service utilization among these patients. The few existing studies conducted among patients with B-cell lymphomas examined only survivors (Smith et al., 2009; Jensen et al., 2013; Van Der Poel et al., 2014; Oberoi et al., 2017). Therefore, we have little understanding of distress and mental health treatment utilization among patients with B-cell lymphomas who are not in remission. To address this gap, this study examined psychological distress, quality of life, and mental health treatment utilization among patients with advanced, progressive B-cell lymphomas.

Methods

Participants and procedures

Participants were recruited from June 2016 to March 2018 from a single academic medical center in an urban setting. Patients were identified through oncology clinic schedules via electronic medical records. Once patients were deemed potentially eligible and after gaining approval from treating oncologists, patients were invited to participate via recruitment letters in the mail. Informed consent was conducted over the telephone by trained study staff and all participants provided oral informed consent. Participants received \$20 for completing the interview. Eligible participants were English-speaking and 21 years of age or older with a diagnosis of diffuse large B-cell lymphoma (DLBCL), follicular lymphoma transformed to DLBCL, double/triple hit lymphoma, Burkitt Lymphoma (BL), or aggressive B-cell lymphoma intermediate between BL and DLBCL. Eligible patients also experienced disease progression following first- or second-line treatment. Patients were excluded if they had a diagnosis of dementia, delirium, and/or endorsed active suicidal ideation on study screening measures. Participants were administered study measures over the telephone by trained research staff. All study procedures were approved by the institutional review board.

Measures

Quality of life

The Short-Form Health Survey (SF-12 v2) (Ware et al., 1996) is a 12-item survey that assesses mental and physical quality of life over the past month and has been validated in cancer patients (Kuenstner et al., 2002) and used in research with patients with lymphoma (Crespi et al., 2010; Kelly et al., 2012). Items are rated on a three- or five-point scale with higher scores indicating better quality of life. Sample questions include, "How much of the time during the past four weeks have you felt downhearted and blue?" (response options ranging from "None of the time" to "All of the time") and "During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of your physical health? (1) Accomplished less than you would like, (2) Were limited in the kind of work or other activities" (response options ranging from "None of the time" to "All of the time"). The Physical and Mental Quality of Life composite scores for the scale are derived using norm-based scoring (Ware, 2002).

Psychological distress

Patients were administered the Hospital Anxiety and Depression Scale (HADS) to assess levels of anxiety and depression over the past week (Zigmond and Snaith, 1983). The HADS is a

14-item self-report measure commonly used with cancer patients that consists of seven-item anxiety and depression subscales (Hopwood et al., 1991; Moorey et al., 1991; Walker et al., 2007; Vodermaier et al., 2009; Hinz et al., 2010; Mitchell, 2010). Sample items on the anxiety and depression subscales include, "Worrying thoughts go through my mind" and "I still enjoy the things I used to enjoy" (reverse scored). Each item is rated on a four-point Likert scale ranging from 0 to 3. Scores range from 0 to 21 per subscale (0 to 42 for the total scale), with higher scores indicating greater anxiety or depression. Per established cutoff criteria, a score of eight or greater on each subscale indicates elevated levels of depression or anxiety, and a total score of 11 or greater indicates elevated global distress (Zigmond and Snaith, 1983).

Mental health service utilization

To assess mental health service use since being diagnosed with cancer, patients were asked, "Have you accessed any type of mental health treatment to help yourself adjust to your cancer?" Response options included: "Yes," "No," and "I don't want mental health treatment."

Statistical analyses

Frequency and descriptive statistics were used to examine sample characteristics and levels of distress and mental health service utilization. One-way between subjects Analysis of Variance (ANOVA) was conducted to examine the relationship between distress and quality of life. Distress was dichotomized using established cutoffs. Statistical tests were two-sided and *p* values of <0.05 indicated statistical significance.

Results

Sample characteristics

Out of the 99 patients who were approached to participate, 68 were excluded due to not meeting eligibility criteria, refusing to participate in the study, or being unavailable via telephone for the study staff to contact; the 31 patients who were eligible and agreed to participate provided oral informed consent via telephone. Five patients were subsequently lost to follow-up for various reasons (e.g., transferred to hospice care, patient death, inability to reach the patient). The final sample consisted of 26 patients with complete data on study measures. The average age of the sample was 64.15 years (SD = 16.33, Table 1), with the majority of patients self-identifying as Caucasian (*n* = 23, 88.5%) and non-Latino (*n* = 26, 100%). Approximately half of the sample was female (*n* = 14, 53.8%) and the majority had a diagnosis of DLBCL (*n* = 19, 73.1%).

Rates of distress and mental health service use

Almost half of the total sample (*n* = 11, 42.3%) reported elevated levels of global distress, with approximately one-third (*n* = 8, 30.8%) endorsing elevated depression and approximately one-quarter (*n* = 6, 23.1%) endorsing elevated anxiety. Approximately half of the patients who reported elevated overall distress did not receive mental health services (*n* = 6, 54.5%). Of the patients who reported elevated depression, more than half (*n* = 5, 62.5%) did not receive mental health treatment since their cancer diagnosis, and one-quarter (*n* = 2, 25.0%) did not want mental health treatment. Half of patients with elevated anxiety (*n* = 3, 50.0%) utilized mental health treatment, while the other half (*n* = 3, 50.0%) did not (Table 2).

Table 1. Sample characteristics ($n = 26$)

	<i>n</i> (%)
Quality of Life (M, SD)	
Mental quality of life	64.5 (15.18)
Physical quality of life	56.4 (14.1)
Age, years (M, SD)	64.15 (16.33)
30–39 years	4 (15.4)
40–49 years	1 (3.8)
50–59 years	3 (11.4)
60–69 years	6 (22.8)
70–79 years	9 (34.4)
80–89 years	3 (11.4)
Gender	
Female	14 (53.8)
Male	12 (46.2)
Race	
White	23 (88.5)
Other	3 (11.5)
Ethnicity	
Hispanic	0 (0.0)
Non-Hispanic	26 (100.0)
Education	
Grade school	1 (3.7)
High school	1 (3.7)
Some college/College degree	11 (40.7)
Postgraduate	14 (51.9)
Marital status	
Married/Partnered	14 (51.9)
Divorced	6 (22.2)
Separated	6 (22.2)
Other	1 (3.7)
Annual income	
Less than \$21,000	1 (3.8)
\$21,000–39,999	3 (11.5)
\$40,000–65,999	7 (26.9)
\$66,000–105,999	2 (7.7)
\$106,000+	12 (46.2)
Don't know	1 (3.8)
Religious affiliation	
Jewish	14 (53.8)
Catholic	5 (19.2)
Atheist	1 (3.8)
Other	2 (7.7)
None	4 (15.4)

(Continued)

Table 1. (Continued.)

	<i>n</i> (%)
Primary cancer diagnosis	
DLBCL	19 (73.1)
Double/Triple hit lymphoma	2 (7.7)
Follicular lymphoma transformed to	5 (19.2)
Years since diagnosis (M, SD)	3.89 (4.7)

Note: DLBCL, Diffuse Large B-Cell Lymphoma.

Distress and physical quality of life

The bivariate relationship between global distress and physical quality of life was not statistically significant [$F(1, 24) = 3.05, p = 0.94$]. Similarly, the relationship between physical quality of life and anxiety was not statistically significant [$F(1, 24) = .10, p = 0.75$]. However, the bivariate relationship between physical quality of life and depression approached statistical significance [$F(1, 24) = 3.74, p = 0.065$], such that patients with elevated depression had worse physical quality of life ($M = 48.83, SD = 14.34$) relative to patients without elevated depression ($M = 59.83, SD = 12.97$). This association remained unchanged after controlling for sex, age, and race [$F(1, 24) = 3.74, p = 0.065$].

Distress and mental quality of life

The bivariate relationship between total distress and mental quality of life was statistically significant [$F(1, 24) = 15.32, p = 0.001$]. Patients with elevated distress reported worse mental quality of life ($M = 53.7, SD = 13.61$) than patients without elevated distress ($M = 72.5, SD = 10.90$). This association remained significant after controlling for age, sex, and race [$F(1, 24) = 28.29, p < 0.001$]. The relationship between mental quality of life and depression was also statistically significant [$F(1, 24) = 7.74, p = 0.010$], such that patients with elevated depression had worse mental quality of life ($M = 53.52, SD = 14.70$) relative to patients without elevated depression ($M = 69.44, SD = 12.93$). This association remained significant after controlling for age, sex, and race [$F(1, 24) = 15.16, p = 0.001$]. Finally, the relationship between mental quality of life and anxiety was statistically significant in uncontrolled analyses [$F(1, 24) = 11.76, p = 0.002$]. Patients with elevated anxiety had worse mental quality of life ($M = 48.96, SD = 11.30$) than patients without elevated anxiety ($M = 69.22, SD = 13.03$). This association remained significant controlling for sex, age, and race [$F(1, 24) = 8.48, p = 0.008$].

Discussion

The present study examined psychological distress, quality of life, and mental health treatment utilization among patients with advanced, progressive B-cell lymphomas. Over one-third of patients endorsed significant distress which was associated with worse mental quality of life. Among patients endorsing significant distress, over half did not receive mental health services. Notably, approximately one-fifth of patients with elevated distress reported not wanting mental health services.

The prevalence of distress in this study is similar to findings from prior research of patients with common and rare malignancies

Table 2. Rates of distress and mental health service use

	Mental health service use			Total
	No	Yes	I don't want mental health treatment	
Depression (n, %)				
Low	11 (61.1)	4 (22.2)	3 (16.7)	18 (69.2)
High	5 (62.5)	1 (12.5)	2 (25.0)	8 (30.8)
Anxiety (n, %)				
Low	13 (65.0)	2 (10.0)	5 (25.0)	20 (76.9)
High	3 (50.0)	3 (50.0)	0 (0.0)	6 (23.1)
Total distress (n, %)				
Low	10 (66.7)	2 (13.3)	3 (20.0)	15 (57.7)
High	6 (54.5)	3 (27.2)	2 (18.1)	11 (42.3)
Total	16 (61.5)	5 (19.2)	5 (19.2)	26 (100)

Note. Low depression: <8 on HADS depression subscale; Low anxiety: <8 on HADS anxiety subscale; Low total distress: <11 on complete HADS scale.

(Zabora et al., 2001; Bergerot et al., 2018). The rates of elevated depression and anxiety found here (approximately one quarter of patients) were also comparable, albeit slightly higher, to a previous study of patients with DLBCL and multiple myeloma (15 and 18% for anxiety and depression, respectively) (Oberoi et al., 2017). Thus, our findings suggest that among patients with progressive B-cell lymphomas, rates of distress are similar to rates in broader samples of DLBCL patients and patients with more common solid tumor cancers.

Our findings also indicate that distress is negatively associated with mental quality of life in patients with B-cell lymphomas. Additionally, the relationship between distress and physical quality of life approached significance. While causality cannot be determined from these cross-sectional data, distress may have negative implications for patients' quality of life. In fact, prior longitudinal studies in survivors of hematologic cancers found that distress was associated with worse quality of life over time (Oberoi et al., 2017). Furthermore, the relationship between elevated depression and physical quality of life approached statistical significance in this small study. While a nonsignificant finding cannot be interpreted, future research on the relationship between distress and physical well-being may expand our understanding of the relationship between physical and mental health in patients with advanced B-cell lymphomas.

Given this relationship between distress and poor mental quality of life, the low rates mental health treatment of distressed patients in this study are concerning. Over half of distressed patients did not receive services to treat their distress with the potential to improve their quality of life. The current study was conducted at a single institution, thereby reflecting a specific treatment setting. However, similar rates of mental health treatment for distressed patients have been found in other studies (Carlson et al., 2004; Mosher and DuHamel, 2012), suggesting that under-treatment of distress may be a widespread problem. The American College of Surgeons Commission on Cancer mandates distress screening and referral to psychosocial services in accredited cancer centers (Wagner et al., 2013; American College of Surgeons Commission on Cancer, 2016). Research identifying barriers to provision of mental health services and

examining implementation strategies that address these barriers is vital to the provision of cancer care focused on the whole person (Institute of Medicine (US) Committee on Psychosocial Services to Cancer Patients/Families in a Community Setting, 2008; Trevino et al., 2018, 2020). Innovations in mental health assessment and delivery, such as co-located oncologic and mental health services (Druss and Newcomer, 2007) and remote delivery options (e.g., telephone, web-based) may improve patient access to mental health services (Shepherd et al., 2008; Head et al., 2009; Krigel et al., 2014).

These innovations in mental health delivery may also benefit patients who endorsed distress but indicated not wanting mental health services. Easier access to services may incline patients to accept treatment for their distress. However, future work should also consider other reasons for refusal of mental health services including cost, the stigma associated with seeking care, patient perceptions regarding seeking help, and a lack of awareness regarding effective and available mental health services (Weinberger et al., 2011; Mosher et al., 2014). Strategies to address these barriers may further increase patients' willingness and ability to utilize mental health services.

Limitations of the present study include the use of self-report measures and a small sample size. Mental health treatment utilization was assessed via self-report. Patient self-report has the benefit of capturing services received outside of the institution that would not be recorded in the medical record. However, this assessment strategy may result in inclusion of services not traditionally viewed as mental health treatment and heterogeneity across patients in the definition of mental health services. Collection of objective data on mental health treatment use, such as from the medical record, in combination with self-report may provide a more comprehensive assessment of mental health service use.

The present study is also limited by the small sample size, attributable to the rarity of progressive B-cell lymphomas and recruitment challenges related to patients being too sick, or busy with medical appointments to participate (Surveillance Research Program, 2000–2011; Joy et al., 2013; Parikh et al., 2013). However, despite the small sample, the relationships between distress and quality of life were significant or approached significance, highlighting the magnitude of these relationships. Future research should explore these associations further, including examining factors that may account for these relationships. Additional research on the relationship between distress and constructs such as treatment decision-making and adherence, sleep quality, and relationship function will provide a more comprehensive understanding of the impact of distress on patients' lives. Longitudinal research on the relationship between distress and these variables is particularly important in B-cell lymphomas due to the potential for a drastic change in prognosis. Longitudinal research would capture patients' experience of this change and elucidate causal relationships that cannot be determined from these cross-sectional data.

Finally, this study is limited by sample selection as the sample consisted of patients from a single institution in an urban setting. As a result, the majority of the sample was white and highly educated, precluding generalization to other demographic groups such as racial and ethnic minority patients. Research on more diverse samples is vital to understanding cultural influences on patients' experiences and informing interventions tailored to the needs of particular populations.

The present study is a preliminary step toward understanding distress, quality of life, and mental health treatment use in

patients with advanced hematologic malignancies. Despite the limitations of this study, our results highlight potential gaps in the research and clinical care of these patients. The unique disease trajectory of advanced B-cell lymphomas likely has significant implications for patients' psychological well-being that justifies additional research and clinical services that account for the unique needs of this population.

Funding/support. This work is funded by the Weill Cornell Medicine Lymphoma Program (J.P.L.), the National Institute on Aging and American Federation for Aging Research (K23 AG048632, K.M.T.), and the National Cancer Institute (P30 CA008748, T32 CA009461). This work is supported by a grant from Ben and Ayalet Blaustein in memory of Henry Blaustein.

Conflict of interest. P.M. serves as a consultant to AstraZeneca, Gilead, Janssen, Bayer, Seattle Genetics, and Kite; S.C.R. serves as a consultant for AstraZeneca, Celgene, Heron, Juno Therapeutics, Karyopharm, and Seattle Genetics; J.P.L. serves as a consultant to Sutro, Bayer, MEI Pharma, Gilead, AstraZeneca, Novartis, Celgene, Biotest, Merck, Morphosys, Beigene, Nordic Nanovector, Roche/Genentech, ADC Therapeutics. No other authors (K.M.T., C.M., L.S.G., D.J.O.) have conflicts to disclose.

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