Patient and provider concordance on symptoms during the oncology outpatient clinic visit

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Background Cancer patients experience multiple symptoms, with specific symptoms varying by cancer type. Problems in communication between patients and health care providers (HCPs) can interfere with effective symptom assessment and management.
Objective To address gaps in previous research by prospectively examining concordance between HCPs and patients on identifying patients' symptoms by using an identical tool for patients and HCPs at the time of the oncology clinic visit.
Methods 94 patients completed measures of symptom experience and medical comorbidities before seeing their oncology medical team. HCPs were informed of a patient's participation in the study before seeing the patient in clinic. Immediately after the clinic visit, HCPs completed a symptom survey in which they noted the patient's symptoms.
Results Patients reported more symptoms than the HCPs endorsed. The highest level of concordance for any symptom fell in the moderate agreement range. Kappa values reflecting concordance between patients and HCPs were not significantly different between the various patient-HCP pairs. No demographic or clinical variables for patients were found to be statistically related to the level of agreement on patients' symptoms.
Limitations The use of a small convenience sample size drawn from 3 specialty oncology outpatient clinics may limit the generalizability of the results to other types of cancer. The distribution of cancer stage was weighted toward stages III and IV, likely contributing to the number of symptoms.
Conclusions The level of agreement between HCPs and oncology patients on patient symptoms is weak. Concordance levels were similar, regardless of the type of HCP.
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Symptom burden is a concept that encompasses the prevalence, severity, frequency, and impact of symptoms.[1] Cancer patients experience a range of physical and psychosocial symptoms.[2] A previous project by this research team demonstrated that cancer patients reported an average of 9 symptoms, with the specific symptoms varying by cancer type.[3] Symptom burden was negatively correlated with patient quality of life. In the longitudinal component of that study, it was demonstrated that symptoms persisted over 1 year of follow-up and the inverse relationship with quality of life persisted as well.[4] Although other research has highlighted the dynamic nature of the symptom experience of cancer patients through the initial diagnosis and acute treatment phase,[5,6] a large study of cancer survivors 2-5 years out of treatment found that 28% reported bothersome symptoms, but 82% of that subgroup noted inadequate symptom management.[7] Multiple symptoms persisting over time contribute to symptom burden.

Communication between health care providers (HCPs) and their patients is complicated. Research has shown that patients' communication decisions are affected by the level of trust patients have with the physician.[8-11] Previous research suggests that symptoms are often underreported by patients.[12,13] Several factors contribute to this phenomenon, such as patient stoicism, reluctance to report chronic symptoms, and tendency to report symptoms of recent onset and/or greater severity to HCPs.[9,12,14] Other research has focused on issues relevant to providers, such as time pressure in outpatient oncology clinic visits, a lack of confidence in symptom management skills, and an increasing presence of technology in the medical visit, among other factors.[15-18] Also contributing to communication difficulties are the misconceptions and attitudes among HCPs about how patients perceive symptoms, related to differences between the HCP and patient in gender, cultural background, and age.[19] Previous research has suggested that nurses and patients demonstrate

stronger agreement on symptoms than do physicians and patients, which has been attributed to nurses having more frequent and longer encounters with patients.[20,21]

The existing research on symptom concordance is characterized by methodological difficulties. Most previous research on concordance used retrospective analysis[16,17,23] and some have not used patient–physician dyads.[14] Frequently, different assessment tools are used for patients and for clinicians or the timing of the assessment is different, either of which make it difficult to determine whether discordance in symptom reporting is perhaps a methodological phenomenon.[21]

Because of the complexity of symptoms that cancer patients experience and the association of symptoms with quality of life, it is important that HCPs are able to accurately identify the symptoms of their patients. This study addresses previous methodological difficulties by prospectively examining agreement between patients and HCPs on identifying the symptoms that the patient endorses at the time of an outpatient clinic visit, using the same measurement tool. The objectives of this study are to examine the concordance between HCPs' and patients' identification of symptoms and to determine how demographic and clinical variables interact with this concordance.

Methods

Participants

Patients of 3 oncology outpatient clinics at a National Cancer Institute-designated comprehensive cancer center in the Midwest of the United States provided data for this observational study. The patients were recruited when they presented for an appointment with their medical oncologist or nurse practitioner. Patients were eligible to participate in the study if they were at least 18 years old; were diagnosed with cancer 3 months or more before the day of consent; had cancer of stage I, II, III, or IV; and were able to speak and read English. Patients were not eligible for the study if they were impaired by a psychiatric or cognitive disorder that limited their ability to give consent or communicate with their medical provider about symptoms. Eligible patients were identified from the clinic schedule by the oncology team in advance and approached in the clinic waiting room before their appointment.

Procedures

The study was reviewed and approved by the Protocol Review and Monitoring Committee of the cancer center and the Human Research Protection Office of the associated university. Eligible patients were approached in the waiting room by a research assistant who explained the study and sought their consent to participate. Patients were informed about the study and gave written consent if they agreed to participate. Consenting patients completed the study measures on paper while they waited for their clinic appointment. The process of filling out the pre-visit measures took about 15 minutes. The research assistant informed the HCPs of a patient's consent to participate in the study before their contact with the patient.

After the completion of the pre-visit measures, the patient's regular clinic visit proceeded. Patients were seen by all 3 HCPs or some combination of physicians (MD), nurse practitioners (NP), and nurse coordinators (NC). Immediately after the clinic visit, the HCPs who saw the patient completed a symptom survey in which they recorded the patient's symptoms. On the patients' symptom measure and the HCPs' symptom measure, the *No* choice was the default response.

Several questions about symptom communication were asked of patients. Before the clinic visit, they were asked which symptoms they planned to discuss. After the visit, they were asked about whether or not they discussed symptoms in the visit and the reasons for their behavior. The HCPs were asked which symptoms were discussed during the clinic visit. These questions about communication are not addressed in this paper.

Measures

The patients completed 3 study measures:

- Demographic Form: a self-report measure for patients' age, race, gender, level of education, insurance status, type of cancer, stage of cancer, treatment status, and current medications.
- Charlson Comorbidity Index: a measure of overall medical comorbidity.[24] The CCI score range is 0-38, with higher scores indicating greater comorbidity.
- Memorial Symptom Assessment Scale – Short Form (MSAS-SF):[25] an abbreviated version of the Memorial Symptom Assessment Survey,[23] measuring patients' experience with 32 symptoms over the previous week. This tool has been validated with oncology populations and has an alpha reliability of 0.83-0.88.[26,5] On the MSAS-SF, patients reported symptoms they experienced in the previous week. For the purpose of this comparison, only the presence of symptoms (Yes/No) was used.

In addition, the HCPs were provided a list of symptoms (taken from the MSAS-SF), and indicated which symptoms the patient had (Yes/No).

Data analysis

We used Cohen's kappa coefficient with a 95% confidence interval to evaluate concordance between different pairs (Patient [Pt]–MD, Pt–NP, Pt–NC) for each of the symptoms. The patient responses were used as the standard against which the HCP symptom responses were checked for matches. We examined whether the degree of concor-

dance on all symptoms for the different patient–HCP pairs was variable by type of cancer, age of patient, sex, comorbidity score, and stage of cancer.

An overall kappa, which combined concordance across all symptoms, was calculated for each patient–HCP pair with a 95% confidence interval. The test for homogeneity of kappas between the pairs showed no significant difference (P = .116), so we calculated a unified kappa between the combined HCP groups and the patients (Pt–HCP) for all symptoms, again with a 95% confidence interval. This is a more generous estimation of concordance because it assumes concordance if there is agreement between any of the 3 HCPs and the patient on each symptom; thus, the unified kappa does not discriminate among the HCPs and allows the combined HCP group 3 times the chance to match with the patient. For more detailed examination of concordance for the 6 most prevalent symptoms, we used the physician results as representative of the HCPs. Finally, we calculated sensitivity, specificity, and positive predictive value for Pt–MD matching for the top 6 symptoms. All statistical tests are two-sided at a significance level of .05. The statistical analysis was conducted with SAS9.2. Table 1 describes the interpretation of the kappa[27] used in this study.

Results

Overall, we approached 125 patients about participating in the study and of those, 103 consented to participate (82%). Nine of the 103 patients dropped out after consenting or were found to be ineligible. The data from these 9 patients were excluded; thus there were 94 patient participants (75% of those approached about the study) who completed the study measures. Table 2 shows the demographic and clinical data for the patient participants. The participants attended clinics that treat 1 of 3 cancer types: breast (n = 32), gastrointestinal (n = 35), and lung (n = 27). Overall,

the patient sample was primarily white and predominantly female. There were more patient participants with stages III or IV cancer than with early-stage disease. Three MDs, 3 NPs, and 4 NCs participated in the study by completing the HCP symptom report.

The maximum number of symptoms reported by patients, MDs, NPs, and NCs were 27, 11, 14, and 7 symptoms, respectively. The minimum number was 0 for all 4 groups. The patients reported 9.52 symptoms on average (SD, 6.10; Table 2). The MDs reported a mean of 3.22 (SD, 2.35) symptoms; NPs 3.86 (SD, 3.16); and NCs 2.04 (SD, 2.08). We found no significant demographic or clinical factors related to concordance for symptoms.

The summary kappa values for the Pt–MD, Pt–NP, and Pt–NC pairs across all 32 symptoms were 0.27, 0.29, and 0.19, respectively. As we noted in the data analysis description, we determined that there was no significant difference among the 3 pairs (P = .116),[25] so we examined Pt–unified HCP (combining the results for all HCPs) kappa values for the most prevalent symptoms by patient report. The 6 most prevalent symptoms were: lack of energy, pain, worrying, feeling sad, feeling nervous, and cough. Table 3 presents all symptoms with both the Pt–HCP kappa value and the Pt-MD kappa value (as representative of the individual pairs) for each symptom. Using the Landis and Koch interpretation of the kappa coefficient,[28] the highest level of agreement occurred with the symptom "problems with urination," which was also the least prevalent symptom (Table 1). Other than this symptom, the highest level of concordance was in the moderate range. The lowest unified kappa value was for "problems with sexual interest/activity," which was ranked 27th by prevalence. Of the most prevalent symptoms, the unified kappa values fell in the fair to moderate range. Table 4 presents the most prevalent symptoms for the 3 cancer groups.

Table 4 also examines the sensitivity, specificity, and

TABLE 1 Symptoms distributed by unified kappa scores across distribution of level of agreement

Level of agreement, kappa score	Symptom
Very good agreement, > 0.8	None
Good agreement, 0.6-0.8	Problems with urination (1 symptom)
Moderate agreement, 0.4-0.6	Pain, changes in skin, nausea, feeling drowsy, numbness/tingling in hands or feet, shortness of breath, diarrhea, sweats, itching, dizziness, constipation, "I don't look like myself", feeling irritable, feeling nervous (14 symptoms)
Fair agreement, 0.2-0.4	Difficulty concentrating, lack of energy, cough, dry mouth, difficulty sleeping, feeling bloated, vomiting, lack of appetite, difficulty swallowing, change in the way food tastes, hair loss, swelling of arms or legs, feeling sad, worrying (14 symptoms)
Poor agreement, 0.0-0.2	Mouth sores, weight loss (2 symptoms)
Two observers agreed less than would be expected just by chance, < 0.0	Problems with sexual interest/activity (1 symptom)

TABLE 2 Patient demographic and clinical characteristics

Characteristic	Overall (n = 94)	GI (n = 34)	Breast (n = 33)	Lung (n = 27)
Demographic, n (%)				
Sex				
Male	28 (29.8)	18 (52.9)	1 (3.0)	9 (33.3)
Female	66 (70.2)	16 (47.1)	32 (97.0)	18 (66.7)
Age group, y				
23-49	19 (20.4)	5 (14.7)	12 (36.4)	2 (7.7)
50-59	27 (29.0)	9 (26.5)	10 (30.3)	8 (30.8)
60-69	29 (31.2)	15 (44.1)	7 (21.2)	7 (26.9)
70-86	18 (19.4)	5 (14.7)	4 (12.1)	9 (34.6)
Race				
Asian	2 (2.1)	1 (2.9)	0 (0)	1 (3.7)
African American	22 (23.4)	11 (32.4)	7 (21.2)	4 (14.8)
Hispanic	0 (0)	0 (0)	0 (0)	0 (0)
White	69 (73.4)	21 (61.8)	26 (78.8)	22 (81.5)
Other	1 (1.1)	1 (2.9)	0 (0)	0 (0)
Education level				
Some high school	12 (12.8)	3 (8.8)	6 (18.2)	3 (11.1)
High school graduate/GED	22 (23.4)	10 (29.4)	7 (21.2)	5 (18.5)
Some college	24 (25.5)	11 (32.4)	6 (18.2)	7 (25.9)
Technical school	3 (3.2)	3 (8.8)	0 (0)	0 (0)
Bachelor's/associate degree	16 (17.0)	3 (8.8)	7 (21.2)	6 (22.2)
Master's/doctoral degree	15 (16.0)	4 (11.8)	6 (18.2)	5 (18.5)
Other	1 (1.1)	0 (0)	0 (0)	1 (3.7)
Insurance type				
Medicare	31 (33.0)	11 (32.4)	8 (24.4)	12 (44.4)
Medicaid	12 (12.8)	4 (11.8)	4 (12.1)	4 (14.8)
Private	36 (38.3)	12 (35.3)	15 (45.5)	9 (33.3)
Self-Pay	3 (3.2)	2 (5.9)	0 (0)	1 (3.7)
Other	12 (12.8)	5 (14.7)	6 (18.2)	1 (3.7)
Clinical				
Stage, n (%)				
I	9 (9.6)	1 (2.9)	7 (21.2)	1 (3.7)
II	22 (23.4)	6 (17.6)	13 (39.4)	3 (11.1)
III	23 (24.5)	9 (26.5)	7 (21.2)	7 (25.9)
IV	38 (40.4)	16 (47.1)	6 (18.2)	16 (59.3)
CCI,[a] mean score (SD)	6.8 (3.1)	7.6 (2.9)	4.8 (2.9)	8.2 (2.4)
No. of patient-reported symptoms, mean (%)	9.5 (6.1)	9.5 (6.2)	9.4 (5.2)	9.7 (7.1)

CCI, Charlson Comorbidity Index; GED, General Education Development Test; GI, gastrointestinal

[a]The CCI score range is 0-38, with higher scores indicating greater comorbidity.

TABLE 3 Symptoms by prevalence with kappa coefficients

Rank	Symptom	% of patients reporting	Kappa coefficient (Pt–MD)	Unified kappa coefficient
1	Lack of energy	68.10	0.3223	0.3587
2	Pain	55.30	0.4178	0.4166
3	Worrying	50.00	0.0863	0.3367
4	Feeling sad	44.70	0.0623	0.302
5	Feeling nervous	43.60	0.2198	0.5242
6	Cough	40.40	0.3079	0.3664
7	Dry mouth	39.36	0.0533	0.4437
8	Change in the way food tastes	38.30	0.0880	0.3002
9	Difficulty sleeping	38.30	0.2133	0.3526
10	Feeling drowsy	38.30	0.3166	0.4019
11	Feeling irritable	37.23	0.1734	0.5491
12	Nausea	34.04	0.4691	0.4437
13	Numbness/tingling in hands or feet	32.98	0.3242	0.5455
14	Shortness of breath	31.91	0.1356	0.4294
15	Hair loss	30.85	0.3152	0.3112
16	Loss of appetite	30.85	0.1270	0.2508
17	Constipation	25.53	0.1220	0.5153
18	Sweats	25.53	0.1567	0.5731
19	"I don't look like myself"	24.47	0.0857	0.4922
20	Weight loss	24.47	-0.0288	0.0805
21	Swelling of arms or legs	23.40	0.4785	0.3481
22	Difficulty concentrating	23.40	0.3528	0.3158
23	Dizziness	22.34	0.1585	0.4041
24	Diarrhea	21.28	0.5032	0.4282
25	Feeling bloated	20.21	0.3145	0.3968
26	Changes in skin	15.96	0.1656	0.4483
27	Problems with sexual interest/activity	14.89	0.1782	0.0078
28	Difficulty swallowing	13.83	0.3433	0.2769
29	Vomiting	12.77	0.1404	0.3401
30	Itching	11.70	0.1248	0.4588
31	Mouth sores	11.70	0.1670	0.1795
32	Problems with urination	6.83	-0.0251	0.7426

Pt-MD, patient-physician

positive predictive value (PPV) for physicians (as representative of the HCPs) in matching with their patients for the 6 most prevalent symptoms. Overall, the physicians displayed a 36.2% PPV in identifying these symptoms. The concordance for the top 6 symptoms indicates greater sensitivity than specificity; suggesting physicians were more prone to making false positive predictions than false negatives. (This is further supported by the data shown in the cross tabs in Table 5.) Of the top 6 symptoms, pain had the highest PPV, indicating that agreement was best with this symptom.

We used the crosstabs method for more detailed examination of the concordance between the patients and HCPs. Table 5 depicts the 4 different types of "matches" between the patient and physician (as representative of the HCPs), extending the data in Table 4. When both the patient and physician indicate the same status for the symptom (ie, Yes/Yes or No/No), then there is concordance in the match, whereas mismatches (Yes/No and No/Yes) indicate discordance. In Table 5, the distribution for these 4 kinds of matches is shown for the Pt–MD pairs for the 6 most prevalent symptoms. Most of the concordant matches were those in which both the patient and the physician indicated a *No* for the symptom. Between the 2 kinds of discordance, the one in which the physician indicated a *Yes* and the patient indicated a *No* for the symptom was more common than the other (in which the patient indicated *Yes* and the physician indicated *No*). In fact the MD:No–Pt:Yes mismatches – false negatives – were the least prevalent of the 4 types of matches for these 6 symptoms. Furthermore, the MD:Yes–Pt:No mismatches were more common than the MD:No–Pt:Yes mismatches. These results also support that physicians' identification of patients' symptoms was more sensitive than specific, with more false positive errors.

Discussion

High symptom burden for cancer patients has implications for clinical practice and patients' well-being. This study is consistent with others in showing that the most prevalent symptoms patients experience vary by cancer type.[3,29] The patients in this study, on average, reported experiencing 9.52 symptoms, which is also consistent with previous data.[3]

We found no demographic or clinical factors related to patient–provider symptom concordance. This may suggest that symptom awareness is not a function of sex, race, or age; although there have

TABLE 4 Top 6 symptoms – sensitivity, specificity, and positive predictive value for patient-provider concordance

	Type of cancer									
	Breast		**GI**		**Lung**		**Overall**			
Rank	**Symptom**	**% reporting**	**Symptom**	**% reporting**	**Symptom**	**% reporting**	**Symptom**	**Sensitivity, %**	**Specificity, %**	**Positive predictive value, %**
1	Pain	62.5	Lack of energy	77.1	Cough	70.4	Lack of Energy	86.7	43.4	56.5
2	Lack of energy	62.5	Pain	51.4	Lack of energy	63	Pain	81.3	61.1	65.0
3	Worrying	59.4	Dry mouth	51.4	Pain	51.9	Worrying	70.0	48.3	18.9
4	Feeling sad	53.1	Nausea	45.7	Shortness of breath	51.9	Feeling Sad	100	97.2	61.0
5	Feeling nervous	53.1	Change in the way food tastes	45.7	Worrying	48.1	Feeling Nervous	100	37.8	9.10
6	Feeling irritable	50	Numbness, tingling in hands or feet	42.9	Feeling drowsy	44.4	Cough	90.0	64.9	31.0

been other findings suggesting that symptom awareness is related to socioeconomic and demographic factors such as age and race.[27,31] Our sample may not have been large enough to detect the impact of demographic or clinical variables on symptom agreement. Alternatively, the lack of association may relate to an unmeasured intrinsic variable in the patient–provider interaction in this clinical setting. Nevertheless, this result suggests concordance on symptoms is not related to a particular subset of patients.

In general, we found fair to moderate symptom agreement between HCPs and oncology patients by unified Kappa scores; however, the level of agreement did not differ by provider type. Although some research has suggested that nurses' ratings of patients' symptoms match patients' ratings more closely than physicians' ratings do,[21, 32] our results do not support a difference by provider type. The results suggest that there are communication challenges for this patient population, which is a problem because previous studies have documented benefits of good physician–patient communication, such as increasing a patient's ability to cope with disease and satisfaction with care, enhancing informed consent and cooperation between patient and HCP, and decreasing HCPs' risk for burnout and the probability of facing malpractice litigation.[18,33,34] Owing to the high symptom burden in oncology, good communication seems critical to patient outcomes.

Some have questioned whether clinician reporting of patients' symptoms can ever be reliable.[35] Indeed, there are a number of possible explanations for the suboptimal patient–provider symptom agreement found in this study, some of which have been noted in the Introduction for this paper. In this study, HCPs were aware which patients were participating in the study and learned of patient participation prior to seeing the patient in clinic; therefore, they may have attended more to patients' symptoms, suggesting that our low concordance rates may be inflated compared to usual practice. The present results could also be indicative of patients' reluctance to share some complaints or symptoms with their HCPs, as has been suggested in other studies[14,21,36] Alternatively, it may be that some patients fail to disclose symptoms in order to seem as if they are getting better, as a way to convey that the HCPs' efforts have been successful.[37] Because symptom reporting is a social interaction, patient reporting could be affected by social desirability effects or impression management. Previous research has suggested that patients tend to highlight physical symptoms and underreport psychological symptoms[38,39] or minimize symptoms to avoid being perceived as a complainer.[40,41]

The agreement mismatch that was most common among the 6 most prevalent symptoms was that the physician wrongly ascribed the symptom to the patient. The other type of mismatch – not recognizing symptoms the patient is experiencing – may be less surprising given previous findings about patients underreporting symptoms.[11,12] Laugsand and colleagues[42] found that HCPs underesti-

TABLE 5 Cross-tab of concordant and discordant matches between physician and patient

	Pt = Yes		Pt = No	
	Yes–Yes: concordant		**Yes–No: discordant (false positive)**	
	Top 6 symptoms	Pt–MD match %	Top 6 symptoms	Pt–MD match %
MD = Yes	1	38.2	1	29.4
	2	38.2	2	20.6
	3	10.3	3	44.1
	4	2.9	4	45.6
	5	13.2	5	35.3
	6	13.4	6	29.9
	No–Yes: discordant (false negative)		**No–No: concordant**	
	Top 6 symptoms	Pt–MD match %	Top 6 symptoms	Pt–MD match %
MD = No	1	5.9	1	26.5
	2	8.8	2	32.4
	3	4.4	3	41.2
	4	0	4	51.5
	5	2.9	5	48.5
	6	1.5	6	55.2

MD, physician; Pt, patient

mated symptoms in 10% of patients and overestimated symptoms in 1% of patients. The greater false positive result found in the present study may reflect a difference in language or interpretation of a symptom between the patient and provider. HCPs have recognized the value of serial interviews in eliciting information from patients, and the HCPs' responses here may have reflected knowledge gained during multiple encounters with the patient.[43] The results in the present study may indicate that HCPs need to use terminology that is understood by their patients and encourage patient reporting of symptoms.

The results of this study demonstrate variability in agreement across symptoms. Some symptoms typical of cancer or of cancer treatment (mouth sores, weight loss) were characterized by worse agreement, whereas others were not (nausea, diarrhea, constipation). Xiao and colleagues[44] suggested that concordance is better with "observable" symptoms, but that does not seem consistent with the present results. Basch and colleagues[45] indicated that physicians focus on more serious symptoms or those associated with clinical outcomes. In the present study, pain was the second most prevalent symptom and had relatively better agreement. This finding may reflect improved efforts at assessment of pain (pain as the "fifth vital sign").[46] Alternatively, pain is a symptom that providers may feel more confident about treating, whereas other symptoms may be more recalcitrant (ie, weight loss, oral ulcers). Perhaps providers more consistently question patients about symptoms for which effective treatment exists.

The study has limitations, including the use of a small convenience sample size drawn from 3 specialty oncology outpatient clinics, which limits the generalizability of the results to other types of cancer. Only 75% of eligible patients agreed to participate in the study, and no symptom information was available on those patients who declined to participate. Therefore, these results may under- or overestimate symptom concordance. There were more female than male participants, largely because of the inclusion of a breast cancer clinic. The distribution of cancer stage was weighted toward stages III and IV, which likely contributed to a higher number of symptoms. Finally, agreement on symptoms might have been better if patients had reported symptoms after the clinic visit, when the HCPs reported symptoms; however, data was collected on the same day in the same relative time frame.

In our next paper, we plan to examine the data about communication collected for this study. It seems that the patient–provider relationship, particularly in regard to effective communication about symptoms, is an area in need of clinical innovation.[47] Areas for future research include exploration of methods for measuring concordance between HCPs and patients, the impact of power differential on the quality of communication, the effect of time constraints on the patient–provider interaction, and the role of serial prompting in assessment of symptoms. High symptom burden for cancer patients is an important concern with implications for clinical practice and the clinician–patient relationship. The degree of symptom burden for patients and the generally weak agreement between patients and HCPs demonstrate the need for improved communication about symptoms in the oncology clinic.

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