Frequencies and Predictors of Health Psychology Referrals after Integrative Oncology Consultation

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Abstract

Objective: Health psychology (HP) plays a critical role within a multidisciplinary, integrative oncology team. HP provides coping tools, helping patients engage in healthy lifestyle. HP in integrative oncology is not well established and criteria for referral has not been examined. This study examined characteristics of referral to HP.

Methods: A retrospective chart review of 1827 patients seen for consultation in the IMC between January 1st, 2019 and January 13th, 2020 was conducted. Patient assessments included the Edmonton Symptom Assessment Scale, Measure Yourself Concerns and Well-being, and PROMIS-10. Chi-square tests were used to compare categorical variables, Mann-Whitney test for non-normally distributed continuous variables, and *t*-tests for normally distributed continuous variables comparing those referred and not referred to HP.

Results: Referred patients were mostly female (85.4%), White (67.1%), married/partnered (67.7%), obese (42.1%), with breast cancer (52.2%). Compared to those not referred, patients referred to HP were significantly more likely to be female, younger, Black, and had a higher BMI ($p \leq .01$). Referred patients reported worse fatigue, sleep, depression, anxiety, well-being, spiritual pain, financial distress, memory, and overall mental health, physical health, and global health ($p \leq .01$). Most common concerns of referrals were diet/nutrition, overall health, and stress/anxiety. Compared to non-referred, HP referrals were more likely to prioritize depression, spirituality, and stress/anxiety as their concerns ($p \leq .01$).

Conclusions: Patient characteristics are well-suited treatment targets for HP, including addressing emotional distress, healthy lifestyle, and quality of life. Our findings can help cancer programs develop strategies to facilitate engagement with psychological counseling.

Background

Health psychology (HP) examines how biological, psychological, and social factors influence health and illness[1]. The health psychologists at The University of Texas MD Anderson Cancer Center are licensed psychologists who provide empirically-supported treatments and evidence-based interventions to facilitate improved mental and physical health in oncology patients and survivors. Psychotherapy with health psychologists is typically short-term (3-12 sessions) and goal-focused, aimed at improving patients' quality of life by focusing on several dimensions including reducing symptoms of anxiety and depression and improving nutrition, exercise habits, and sleep quality and duration, as well as addressing psychosocial stressors.

HP services are offered through the Integrative Medicine Center (IMC), which offers Integrative Oncology services. Integrative oncology focuses on physical, mind-body, and social aspects of health [2] and typically includes a multi-disciplinary team consisting of physicians, nurses, dietitians, physical therapists, acupuncturists, and more. To improve safety and utilization of appropriate treatment modalities, integrative oncology providers collaborate with patients, working alongside their medical

team, to help with symptom management and promote optimal health, regardless of where the patient is on the cancer care continuum [3]. Patients may be referred to group classes such as yoga, music, tai-chi, qigong, cooking, journaling, or meditation. They may also be referred to individual services including oncology massage, acupuncture, physical therapy, nutrition, meditation consultation, music therapy, and HP. Patients referred for HP include but are not limited to those interested in assistance with making lifestyle change (e.g., nutrition, exercise, or sleep) and patients struggling with psychological distress specifically related to their cancer diagnosis or treatment. Patients are distinguished between those that would benefit from HP and those that would be more appropriate for community providers or other mental health care providers within the larger hospital system, such as social workers, psychiatrists, or chaplains. See Supplement 1 for the flow chart representing the referral algorithm. Referrals to HP only come from within the IMC.

Health psychologists differ in important ways from other mental health providers working in a medical setting. Specifically, health psychologists focus on the overall health of the patient whereas traditional therapists focus on mental illness. Most therapists generally focus on diagnosing and treating mental disorders (e.g., anxiety and depression) whereas health psychologists focus on the bidirectional relationship between physical and mental health. They evaluate for the effects of a patient's mental health on their physical health as well as looking at how their physical health is affecting their mental health. The IMC's mission is to improve patient's physical, emotional, and social well-being. Thus, it is crucial for health psychologists within the center to not only address mental health concerns, but also help patients with their goals of lifestyle change.

It is often said that a cancer diagnosis is a "wake up call". It is a unique experience that often motivates a patient to pause and re-evaluate their life and current health behaviors. The initial shock of a cancer diagnosis is a teachable moment and may motivate patients to engage in lifestyle changes that they were hesitant to initiate or struggled to maintain prior to diagnosis. HPs are clinicians who expertly guide patients towards lifestyle changes, with the goal of improving both emotional and physical well-being. The IMC at MD Anderson views HP as a vital component of integrative oncology care, and one that is often absent from other integrative oncology programs. Addressing psychosocial distress is an increasing priority in cancer care [4] and HPs are uniquely qualified to address both cancer-related emotional distress and also facilitate lifestyle change such as losing weight, increasing exercise, and improving sleep.

After an extensive literature review, no prior articles were found that discussed characteristics of patients referred to HP in an oncology setting. The current study is a retrospective analysis examining demographic, medical characteristics, and psychosocial factors associated with referral to HP within the IMC at the MD Anderson. Understanding this information would further guide and inform oncology teams on a model of referral.

Methods

Participants

We conducted a retrospective chart review of patients who completed a medical consultation appointment with one of the physicians at the IMC between January 1st, 2019 through January 13th, 2020, which included 1827 patients. Referrals to the IMC come from centers within MD Anderson. At the initial medical consultation appointment, patients' complete questionnaires and then meet with an integrative oncology physician and/or advanced practice provider to assess biopsychosocial concerns regarding cancer diagnosis and treatment. Various services are considered for referral including individual psychotherapy with HP. Only patients over 18 years old were included in this analysis. All questionnaire data collection was part of an IRB approved protocol and this retrospective data analysis was approved in a separate IRB protocol (2021-0213). Collected data were stored in a secured, HIPAA compliant, FileMaker Pro database and a waiver of informed consent was granted for this retrospective analysis.

Measures

Demographics (e.g., sex, age, race/ethnicity, marital status, employment status) and additional clinical data (cancer diagnosis, body mass index) were extracted from the electronic medical record. Questionnaires were completed using an institutionally provided iPad. The data was later entered into an electronic database for analysis.

Measure Yourself Concerns and Well-being (MYCaW). At their integrative medicine consult, patients completed a modified version of the MYCaW questionnaire [5]. Patients were asked to identify the top two concerns for their visit. Areas of potential concern included the following: appetite, depression, diet/nutrition, dry mouth, exercise, fatigue, herbs/supplements, hot flashes, integrative approach, memory, nausea, neuropathy, overall health, pain, relaxation, sleep, spiritual, stress/anxiety, and other.

Modified Edmonton Symptom Assessment Scale (mod ESAS-FS, 16-item). Patient symptom burden was assessed using the mod-ESAS [6-8] which asks patients to rate 16 symptoms of pain, fatigue, nausea, depression, anxiety, drowsiness, loss of appetite, decreased sense of well-being, shortness of breath, sleep, financial distress, spiritual pain, hot flashes, dry mouth, numbness/tingling, and memory over the past 24 hours on a scale on a scale 0 (no problem) to 10 (most severe problem). The ESAS Global Distress Score is the sum of 9 core items including pain, fatigue, nausea, depression, anxiety, drowsiness, appetite, sense of well-being, and shortness of breath (total score 0-90). The Physical Symptom Score is the sum of pain, fatigue, nausea, drowsiness, appetite, and shortness of breath scores (total 0-60). The Psychological Distress Score is the sum of depression and anxiety scores (total 0-20). For all individual symptoms, a clinically significant difference is ≥ 1 point. For predetermined subscales, clinical significance is defined as differences ≥ 3 for Global Distress Score and ≥ 2 for Physical Symptom Score and Psychological Distress Score.

Patient-Reported Outcomes Measurement Information System (PROMIS10). The PROMIS10 [9] is an assessment of global health including 10 self-report items that can be summed and also divided into mental health and physical health subscales. Lower scores represent worse global, mental, or physical health.

Statistical Analysis

Summary statistics were used to describe the demographic characteristics of patients in the two groups referred to HP versus patients not referred to HP. Summary statistics were also used to calculate results of mod-ESAS, PROMIS10, and MYCaW questionnaires. Demographic and clinical outcomes were compared between the two groups using a chi-squared test for categorical variables (i.e., gender, race, ethnicity, cancer type, marital status, weight category, employment status), the Mann-Whitney test for non-normally distributed continuous variables (i.e., BMI-positive skew), and the independent samples *t*-test for normally distributed variables (i.e., age).

Chi-square tests were used to examine whether patients referred to HP had significantly different concerns as listed on the MYCaW compared to patients not referred to HP. Mod-ESAS symptom scores were not normally distributed, thus, group differences on mod-ESAS individual symptoms and summary subscales were analyzed using Mann-Whitney tests. PROMIS10 scores tended to be normally distributed so *t*-tests were used to evaluate whether physical health, mental health, and global total subscales differed by group membership. As this was an exploratory study including multiple analyses, the alpha level was reduced to a more conservative value (.01) to lower the Type I error rate.

Results

Of the 1827 patients who presented to the IMC for a consult between January 2019 and January 2020, 316 (17.3%) were referred to HP. Participants with missing data were excluded for the specific analysis related to the missing data. Greater than 97.5% of the data was available for demographic variables, except for employment (11.3% of patients had “unknown” employment status). Greater than 96.5% of data was available for clinical outcomes: MYCaW (96.7%), PROMIS10 (99.7%), and mod-ESAS (97.5%) questionnaires. Table 1 shows demographic characteristics. Patients referred to HP were mostly female (85.4%), White (67.1%), married or partnered (67.7%), and obese (42.1%). Most common cancer diagnosis was breast cancer (52.2%).

HP referrals, compared to those not referred, were more likely to be female (85.4% versus 70.0%), younger (mean age 53.2 years versus 56.9 years), Black (14.9% versus 8.9%), and have higher body mass index (medians 28.7 versus 26.6). HP referrals were less likely to be retired (14.6% versus 23.0%). HP referrals consisted of more breast cancer (52.2% versus 36.3%) and less thoracic neck and head cancer diagnoses (10.8% versus 16.9%) compared to the non-referred group. Based on alpha = .01, there were no significant differences in marital status or ethnicity.

Regarding the most frequent MYCaW top concerns presented during the initial IMC integrative oncology medical consultation, HP referred patients were most interested in discussing the areas of Diet/Nutrition (33.8%), Stress/Anxiety (32.1%), and Overall Health (24.0%). HP referrals, compared to those patients who were not referred, were more likely to prioritize depression (9.7% versus 3.4%), spiritual (1.0% versus 0.1%), and stress/anxiety (32.1% versus 11.9%). Patients referred to HP were also less likely to prioritize herbs/supplements (6.8% versus 14.6%), neuropathy (6.5% versus 14.8%), and pain (13.0% versus 26.0%). See Table 2 for breakdown of MYCaW results.

ESAS symptom scores during the initial integrative oncology medical consultation of patients who were referred to HP were statistically significantly worse for all symptoms ($p \leq .01$), except for pain, dry mouth, and numbness/tingling (see Table 3). Symptoms with clinically significant differences (≥ 1 point difference) included: fatigue, sleep, depression, anxiety, well-being, spiritual pain, financial distress, and memory. Patients referred to HP showed higher statistically and clinically significant symptom burden: Physical Symptom Score [$M = 18.58$ versus 15.17 , $p < .001$], Psychological Distress Score [$M = 8.00$ versus 4.28 , $p < .001$], and Global Distress Score [$M = 31.37$ versus 23.03 , $p < .001$]. Mean scores showed that fatigue, sleep, and well-being had the highest mean scores of all the symptoms for both patients referred and not referred to HP.

Regarding the PROMIS10 scores during the initial integrative oncology consultation, patients referred to HP had significantly lower scores compared to patients not referred on the PROMIS10 Global Mental Health subscale [$M = 11.14$ versus 13.30 , $p < .001$], the PROMIS10 Physical Health Subscale [$M = 12.63$ versus 13.30 , $p < .001$], and the PROMIS10 Global Total [$M = 29.32$ versus 32.79 , $p < .001$]. Lower scores reflect worse mental, physical, and overall health.

Discussion

The present study is the first study to our knowledge to examine the characteristics of oncology patients referred to a health psychologist in an integrative medicine setting. Although the prevalence of mental health issues in oncology patients has been well studied [10], little literature exists regarding factors associated with psychology referral, especially with health psychologists. Results showed that patients referred to HP within an integrative oncology program during a calendar year did indeed present with and endorse worse mental and physical health at the time of referral than those not referred during that same time period. The findings demonstrate fidelity to the model put forth by our program, which is that HP services are to address moderate or greater emotional distress and to facilitate improvements in diet, exercise, and sleep. Patients referred to HP did in fact prioritize and report greater stress, anxiety, spiritual concerns, and depression compared to non-referrals. Furthermore, HP's focus on healthy lifestyle changes and behavioral modification is reinforced in that referrals had higher body mass index and prioritized diet/nutrition and overall health relative to those not referred. Interestingly, it is possible that emotional and physical health concerns interact to exacerbate each other. HP is a particularly helpful referral for these types of patients, in that HP focuses on the interplay between bio-psycho-social aspects of well-being.

Also consistent with our integrative oncology model is that HP referrals were less likely to prioritize concerns related to herbs/supplements and neuropathy and were less likely to report dry-mouth and numbness/tingling. This could be due to initial evaluation and screening by integrative oncology physician to appropriately choose the right patients who will benefit from an HP consult. Patients who were referred to HP were less likely to have prioritized pain as a main concern for the integrative oncology consult. It's worth noting that pain management is a relevant treatment concern within HP for which CBT and other behavioral modalities are effective [11]. It might be that these patients are more likely referred to other integrative therapies within the clinic such as massage, acupuncture, or physical therapy, all effective adjunctive treatments for pain relief. Alternatively, it is possible that patients with the primary complaint of pain were already involved in or ultimately referred to our cancer hospital's supportive care or pain clinics, which have psychologists and counselors providing psychosocial support.

Although previous studies examine which patients seek integrative medicine [2] and which patients are referred to psychological services in oncology palliative care [12], we did not find any previous literature on which oncology patients are referred to HP in an integrative oncology setting. Our study appears to have both similarities and differences to patients referred to psychology in a palliative oncology setting [12]. Like Ann-Yi's study, we also found patients referred to HP were mostly White (68% and 67.1%, respectively) and similar to the general population of 76.3% White people in the United States (US) [13]. Interestingly, the proportion of people of color referred to HP is similar to the make-up of the US general population. HP referrals included 14.9% Black patients, which is comparable to the 13.4% of Black people within the general US population; 8.5% of referrals were Asian, compared to 5.9% of the general population; Latinos represented 17.1% of the referrals and make-up 18.5% of the general population [13]. Although previous research suggests that racially and ethnically underserved populations are also underserved in mental health [14], it appears that this is not the case for HP referrals within our integrative oncology setting. Oncology providers should have vigilance in screening underserved communities for mental health issues and referring them for psychological treatments appropriately.

Females were more likely to be referred to HP, compared to those not-referred, as well as compared to palliative care patients referred to psychology (Palliative = 57% versus HP = 85%). [12] Approximately 69% of IMC patients are female [2], which makes it more likely for referrals from the clinic to be female due to this gender difference. Our results are also in line with previous literature that shows women seek psychological help more often than men and men tend to wait until they are experiencing high symptom burden [15].

HP referrals were more likely to be younger and less likely to be retired compared to non-referrals, which makes sense considering that age and employment status are likely correlated. The difference between age means was not large; however, perhaps younger patients are more interested and willing to be referred to HP, whereas there may be more hesitation to meet with psychology for older individuals. A report published by the American Psychological Association showed that younger individuals are also reporting higher mental health distress [16]. This also might account for some of the differences in the ages of those referred to HP and those not referred.

Results from the present study showed that 52% of HP referrals were diagnosed with breast cancer. Breast cancer patients make-up a significant portion (39%) of the IMC patient population [17], thus contributing to the high referral rate. Additionally, the breast cancer clinic and IMC partnered to create the Integrative Health Initiative, which helps patients engage in healthy lifestyles including reducing stress, eating healthier, and exercising more. As part of this initiative, breast cancer patients are often times referred to HP for behavior modification. This may inflate the number of breast cancer patients referred to HP.

Study Limitations

Limitations of the present study include that the selection of patients referred to HP is determined in part by the patients who are referred to the IMC. For example, some patient characteristics (e.g., breast cancer diagnosis, female) reflect the overall population referred to the IMC. Since this study was conducted at a single integrative oncology clinic, it may not be representative of the types of patients referred to HP in other cancer hospitals. Results may have been different had the referrals come from other providers within the cancer center, from outside providers, or from other institutions. It would be interesting to compare how the referral population to the health psychologists differs from the referrals to other mental health providers, in particular with physical health and lifestyle change goals. Due to the nature of the difference in practices, no other studies were found that looked at other mental health providers' referrals regarding BMI or other similar physical health variables nor lifestyle change goals. Since our study is cross-sectional, it does not help us understand the benefits of HP consultation among our patients. Future studies should look at whether and how patients benefit from HP services.

Clinical Implications

This study is clinically significant because it provides information on which patients physicians believe would benefit most from HP. By comparing those who were referred to HP to those who were not referred, the data shows physicians are more likely to refer patients who are reporting higher levels of physical and psychological distress to HP. It might be expected that referrals would endorse higher psychological distress. It is particularly noteworthy that referred patients also reported higher physical symptom burden. These referrals are appropriate given that HP focus on the integration of physical, emotional, and social well-being.

Conclusions

The present study shows that patients referred to HP, within an integrative oncology clinic at a large comprehensive cancer center, have more severe psychological and physical symptom burden and higher BMI. This is the first study to extensively describe the patient population referred to HP in an oncology setting. Strengths of the present study include a large dataset allowing detailed analysis to examine demographic, clinical, and patient self-reported outcomes as predictors of referral to HP over an extended

period. The results may guide other oncology providers who are considering referring patients to a psychologist, especially in an integrative oncology program. The development of a workflow for decision making regarding referrals to HP may help with optimizing referrals. We see HP as providing an essential and valuable resource for oncology patients, particularly within integrative oncology programs, due to HP's focus on well-being and healthy lifestyle. Our program can model how HP providers can be utilized to maximize healthcare services for cancer patients.

Declarations

Funding:

None.

Conflicts of interest/Competing interests (include appropriate disclosures):

Lorenzo Cohen is the co-author of the book *Anticancer Living: Transform Your Life and Health with the Mix of Six* for which he receives royalties

Ethics approval (include appropriate approvals or waivers):

Data was collected as part of a Center-based database as part of an IRB-approved protocol.

Consent to participate (include appropriate consent statements):

Due to the low-risk nature of the data and with IRB-oversight of the protocol, the study was conducted under a consent waiver.

Consent for publication (consent statement regarding publishing an individual's data or image):

Not applicable

Availability of data and material (data transparency):

The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

Code availability (software application or custom code):

Not applicable

Authors' contributions:

Conceptualization: Lorenzo Cohen, Catherine Powers-James, Gabriel Lopez; Provision of study materials or patients: Catherine Powers-James, Aimee J Christie; Collection and assembly of data: Telma Gomez, Catherine Powers-James, Aimee J Christie, Gabriel Lopez; Formal analysis and investigation: Aimee J. Christie, Catherine Powers-James; Writing-original draft preparation: Aimee J Christie, Catherine Powers-James; Writing – review and editing: all authors

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Tables

Table 1
Demographic Characteristics of Integrative Oncology Consults (N = 1827)

Demographic	Patients referred to Health Psychology (n = 316)		Patients NOT referred to Health Psychology (n = 1511)		p value
	n	%	n	%	
Gender					< .001
Female	270	85	1057	70	
Male	46	15	454	30	
Age					< .001
15-39	45	14	184	12	
40-59	173	55	623	41	
≥ 60	98	31	704	47	
Race					.01
Black	47	15	135	9	
White	212	67	1118	74	
Asian	27	9	112	7	
Other [†]	29	9	131	9	
Unknown or Declined	1	0.3	15	1	
Ethnicity					.03
Latino	54	17	179	12	
Non-Latino	257	81	1298	86	
Unknown or Declined	5	2	34	2	
Marital Status					.09
Single	48	15	182	12	
Married or Significant Other	214	68	1108	73	

[†] American Indian or Alaskan Native, Native Hawaiian or Other Pacific Islander, Other

* Student, Part-time employment, Active-Duty, Disabled

Note: Denominator in the % calculation excluded patients with missing data in each group; percentages rounded to nearest whole number

Demographic	Patients referred to Health Psychology (n = 316)		Patients NOT referred to Health Psychology (n = 1511)		p value
Divorced or Separated	40	13	134	9	
Widowed	12	4	70	5	
Other or Unknown	2	0.6	17	1	
Employment Status					< .01
Full-time	125	40	553	37	
Self-employed	19	6	114	8	
Retired	46	15	347	23	
Not employed	63	20	232	15	
Other*	29	9	92	6	
Unknown	34	11	173	11	
Body Mass Index					< .001
< 25	91	29	558	37	
29.9 < 25.0	92	29	505	33	
> 30.0	133	42	445	30	
Cancer type					< .001
Breast	165	52	549	36	
Thoracic Head and Neck	34	11	256	17	
Gastrointestinal	25	8	187	12	
Gynecologic	29	9	120	8	
Genitourinary	19	6	111	7	
Lymphoma/Myeloma	12	4	83	6	
Sarcoma	6	2	55	4	

* American Indian or Alaskan Native, Native Hawaiian or Other Pacific Islander, Other

* Student, Part-time employment, Active-Duty, Disabled

Note: Denominator in the % calculation excluded patients with missing data in each group; percentages rounded to nearest whole number

Demographic	Patients referred to Health Psychology (n = 316)		Patients NOT referred to Health Psychology (n = 1511)		p value
Central Nervous System/Neurologic	5	2	47	3	
Skin/Melanoma	14	4	38	3	
Leukemia	7	2	34	2	
Other	0	0	31	2	
† American Indian or Alaskan Native, Native Hawaiian or Other Pacific Islander, Other					
* Student, Part-time employment, Active-Duty, Disabled					
Note: Denominator in the % calculation excluded patients with missing data in each group; percentages rounded to nearest whole number					

Table 2

Comparison of Top 2 Patient Concerns (MYCaW) for Integrative Oncology Consultation Among Those Referred versus Not Referred to Health Psychology (N = 1827)

MYCaW	Patients referred to Health Psychology (n = 316)		Patients NOT referred to Health Psychology (n = 1511)		p value
	n	%*	n	%*	
Appetite	5	2	44	3	= .18
Depression	30	10	49	3	< .001
Diet/Nutrition	104	34	406	28	= .04
Dry Mouth	7	2	61	4	= .11
Exercise	31	10	115	8	= .21
Fatigue	47	15	217	15	= .86
Herbs/Supplements	21	7	213	15	< .001
Hot Flashes	13	4	66	5	= .82
Integrative Approach	51	17	264	18	= .52
Memory	7	2	38	3	= .74
Nausea	8	3	51	4	= .43
Neuropathy	20	7	216	15	< .001
Overall Health	74	24	266	18	= .02
Pain	40	13	380	26	< .001
Relaxation	13	4	74	5	= .53
Sleep	31	10	138	10	= .75
Spiritual	3	1	1	0.1	< .01
Stress/Anxiety	99	32	173	12	< .001
Other	5	2	53	4	= .07
Note: Denominator in the % calculation excluded patients with missing data in each group; percentages rounded to nearest whole number MYCaW = Measure Yourself Concerns and Wellbeing					

Table 3

Comparison of Symptom Burden (ESAS) at Integrative Oncology Consultation Among Those Referred versus Not Referred to Health Psychology (N = 1827)

ESAS Symptom	Patients referred to Health Psychology (n = 316)	Patients not referred to Health Psychology (n = 1511)	<i>p</i> value
	Mean (SD)	Mean (SD)	
Pain	3.31 (2.86)	3.41 (2.9)	.62
Fatigue	5.27 (2.65)	4.19 (2.71)	< .001
Nausea	1.37 (2.25)	1.08 (2.09)	.01
Sleep	5.57 (2.55)	4.42 (2.72)	< .001
Shortness of breath	1.83 (2.53)	1.27 (2.05)	< .001
Appetite	3.59 (2.71)	2.86 (2.73)	< .001
Drowsiness	3.18 (2.87)	2.34 (2.55)	< .001
Depression	3.26 (2.90)	1.58 (2.29)	< .001
Anxiety	4.74 (2.89)	2.70 (2.67)	< .001
Well-being	4.82 (2.35)	3.56 (2.50)	< .001
Spiritual pain	1.87 (2.50)	0.83 (1.66)	< .001
Dry mouth	2.41 (2.87)	2.17 (2.86)	.08
Hot flashes	2.72 (3.29)	1.78 (2.78)	< .001

Note: ESAS = Edmonton Symptom Assessment Scale

Physical Symptom Score = sum of pain, fatigue, nausea, drowsiness, appetite, and shortness of breath (range 0-60)

Psychological Distress Score = sum of depression and anxiety (range 0-20)

Global Distress Score = sum of pain, fatigue, nausea, depression, anxiety, drowsiness, appetite, well-being, and shortness of breath (range 0-90)

ESAS Symptom	Patients referred to Health Psychology	Patients not referred to Health Psychology	<i>p</i> value
	(n = 316)	(n = 1511)	
	Mean (SD)	Mean (SD)	
Financial distress	3.88 (3.29)	2.24 (2.75)	< .001
Memory	4.40 (2.62)	3.38 (2.50)	< .001
Numbness/Tingling	2.69 (3.07)	2.71 (3.11)	.87
Physical Symptom Score	18.58 (10.64)	15.17 (10.47)	< .001
Psychological Distress Score	8.00 (5.21)	4.28 (4.57)	< .001
Global Distress Score	31.37 (15.47)	23.02 (15.02)	< .001
<p>Note: ESAS = Edmonton Symptom Assessment Scale</p> <p>Physical Symptom Score = sum of pain, fatigue, nausea, drowsiness, appetite, and shortness of breath (range 0-60)</p> <p>Psychological Distress Score = sum of depression and anxiety (range 0-20)</p> <p>Global Distress Score = sum of pain, fatigue, nausea, depression, anxiety, drowsiness, appetite, well-being, and shortness of breath (range 0-90)</p>			