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Observational Study

What factors are important to new patients when selecting an orthopedic oncologist?

Abstract

BACKGROUND

Understanding how patients choose a provider may improve the overall experience by identifying ways to tailor a clinical practice.

AIM

To identify factors that patients consider important when choosing an orthopedic oncologist.

METHODS

New patients presenting to an orthopedic oncology clinic within a tertiary academic medical center from January 2019 to August 2020 were invited to complete an anonymous survey. The questionnaire consisted of 27 items including a Likert-type assessment of the importance of selection factors.

RESULTS

A total of 101 new patients with a median age was 66 years (range, 14 years to 91 years) responded. Most were referred by another doctor ($n = 63$, 62.4%), and of the referring providers, the most frequent specialty was orthopedic surgery ($n = 32$, 51%). Using a Likert-type scale with 1 representing 'least important' and 5 representing 'most important', the most important factor was the hospital reputation (mean, 4.65; SD, 0.85). Additional factors of importance were the number of years in practice (3.87 ± 1.3) and a

primary care provider referral (3.71 ± 1.6). Patients younger than 40 years old found social media ($P = 0.016$) and Internet ($P = 0.035$) presence of their surgeon to be more important than older patients. In contrast, older patients considered care within an academic center to be of greater importance than younger patients ($P = 0.014$).

CONCLUSION

This investigation suggests a primary care referral, as well as hospital and physician reputation, are among the most important factors when selecting an orthopedic oncologist. Furthermore, social media utilization appears to be more important for younger patients.

Key Words: Advertising; Patient choice; Selection; Patient selection; Questionnaire; Practice management; Orthopedic oncologist

INTRODUCTION

Consumer-driven health plans have increased the demand for transparency in the quality of care⁽¹⁾. As the quality of care influences patient satisfaction, understanding how patients choose a provider may improve the overall experience by identifying ways to tailor a clinical practice.

There are few data to inform how patients choose a physician, and these studies are largely focused in primary care or medicine specialties⁽²⁻⁵⁾. In medical oncology, it appears most patients utilize the Internet when researching a condition, though it is unclear whether such resources are used when subsequently selecting a provider⁽⁶⁾. In orthopedic surgery, the physician manner and ease of scheduling availability appear to impact the decision of where to establish care, though factors such as age, race, and sex of the provider are less important⁽⁷⁻¹¹⁾. While there is evidence to inform how a patient chooses an orthopedist, however, these data largely pertain to elective surgery where

the underlying condition does not carry the same magnitude as an orthopedic oncologic diagnosis.

This study sought to identify factors that new patients consider important when choosing an orthopaedic oncologist. We hypothesize younger patients would utilize social media and the Internet when choosing a surgeon, whereas older patients would identify a primary care referral and physician reputation as highly important.

MATERIALS AND METHODS

Design

Following Institutional Review Board approval, all new patients presenting to an orthopedic oncology clinic between January 2019 and August 2020 were invited to complete an anonymous survey. The clinic is located within a tertiary academic institution in major metropolitan area. Within three to five miles there are several oncologic choices each with an equivalent reputation. Inclusion criteria were new patients who initiated oncologic care with the senior author in the aforementioned time frame. There was no exclusion by age. Prior to completion of the survey, each eligible patient received a short cover letter describing the study. The subsequent questionnaire was designed using REDCap and consisted of 27 survey items^[12]. The first category included demographic questions regarding age, sex, health insurance provider, referral status, and highest level of schooling. Age was also converted to a categorical variable considered conceptually meaningful based off a consistent pattern of ages seen in our clinic. The second category assessed utilization of social media (Facebook, Instagram, and/or Twitter) and the Internet (Healthgrades.com, RateMDs.com, Vitals.com, WebMD.com). The final category was a five-point Likert-type scale evaluation of various factors considered to be of importance in choosing an orthopedic oncologist^[4]. The importance of each factor was scaled from least important (1) to unimportant (2); somewhat important (3); very important (4); and most important (5).

Statistical analyses

Continuous and categorical data were analyzed using descriptive statistics and reported as the median and range or mean and SD. Each Likert-type response was converted to a numerical variable and represented as the mean and SD. Mean responses to each factor from the Likert scale were compared between those less than 40 years of age and those older than 60 years of age using a two-sample *t*-test. *P* values were not corrected for multiple hypotheses as the analyses were primarily exploratory in nature. When possible, all available data were included for analyses. Statistical significance was set to a *P* value of less than 0.05, and all analyses were performed using SPSS version 26.0 (IBM Corp., Armonk, NY, USA).

RESULTS

Demographics

The response rate was 24% ($n = 101/426$). Demographics are listed in Table 1. The median age was 66 years (range, 14 years to 91 years) and the majority were female ($n = 61$, 60.4%). With respect to health insurance, 45.5% ($n = 46$) had governmental insurance, 38.6% ($n = 39$) had employee insurance, 13.9% ($n = 14$) had private insurance.

Visit details

The majority of new patients were referred by another doctor ($n = 63$, 62.4%), and of the referring providers the most frequent specialty was orthopedic surgery ($n = 32$, 51%), followed by family practice ($n = 16$, 25%), 'Other' ($n = 20$, 32%), and medical oncology ($n = 7$, 11%). The majority of new patients ($n = 72$, 71.3%) did not utilize social media or the Internet prior to their encounter (Table 2).

Selection factors

Among all responders, the most important selection factor was the hospital having a good reputation from other patients or doctors (mean, 4.65; SD, 0.85) (Figure 1A). Additional factors of importance were the number of years the orthopedic oncologist has been in practice (3.87 ± 1.3), how other patients or friends of patients rated the

surgeon (3.73 ± 1.5), ease of scheduling availability (3.83 ± 1.3) and an in-network provider (3.84 ± 1.4), and whether the patient's primary care provider referred the patient (3.71 ± 1.6).

Factors by age group

Age was then categorically grouped into those younger than 40 years of age (Figure 1B; $n = 20$), 40 years to 60 years ($n = 16$), or older than 60 years of age (Figure 1C; $n = 50$) (Table 3). Patients younger than age 40 identified social media ($P = 0.016$) and Internet ($P = 0.035$) presence of their provider as more important compared to patients older than age 60. In contrast, older patients considered working within an academic center to be of greater importance when selecting an orthopedic oncologist ($P = 0.014$).

DISCUSSION

The findings of the current study suggest a primary care provider referral is one of the most important factors that new patients consider when choosing an orthopedic oncologist. Additionally, a good hospital reputation, locating an in-network provider, and the number of years in practice were important selection factors.

This study also found the individual physician reputation to be a strong selection factor, which is consistent with how outpatients choose other orthopedic specialists^[13]. Though in contrast, the orthopedic oncologist sees new patients of a variety of different ages, often with morbid diagnoses. The presenting demographic consists of children and young adults, as well as parents of those children, in addition to the middle aged and elderly. In an era where use of the Internet and social media has become ubiquitous, the potential to reach patients *via* these platforms has increased tremendously. Chen *et al*^[6] note the media and Internet offer a profound means of medical information dissemination in cancer care, though they caution strategic efforts are needed to improve the quality of reporting and transparency of certain diseases. Additionally, social media and internet advertisement and outreach may closely be intertwined with profit-driven incentivization; therefore, further care should be taken

by patients when selecting physicians. In the current study, we sought to determine whether the Internet presence was an important selection factor when choosing an orthopedic oncologist, and it appears the majority of patients neither utilize these resources nor consider it to be highly important.

When grouped by age, however, new patients younger than 40 years old identified social media and Internet presence of their surgeon to be of greater importance than older patients. While this finding is no surprise given the trends in social media utilization by younger generations, the implications for practice expansion are worth noting. For example, children and adolescents seen by orthopedic oncologists typically undergo surgery for primary tumors of bone. One such procedure, the rotationplasty, is at first sight a cosmetically unappealing option for new patients and their families. However, some studies demonstrate favorable long-term functional outcomes and a high quality of life after this procedure⁽¹⁴⁾. In this instance, social media may allow the public (including young patients who use social media) to see the positive outcomes of rotationplasty. This tactic can certainly increase the transparency of cancer care, though also help a new patient and their family make a decision regarding where to pursue care. If appropriate, the orthopedic oncologist might utilize individual patient testimony to further promote these and other procedures with demonstrated efficacy, and social media may provide an outlet to do so given the importance of this selection factor in younger patients.

For clinics within a large metropolitan area such as the one in the current study, physician outreach is essential to a growing practice. The orthopedic oncologist and hospital alike must place an emphasis on the importance of being readily available to patients. Additionally, the hospital and surgeon must also make the practice attractive to new patients by highlighting instances of outstanding care and favorable outcomes. Bozic *et al*⁽⁷⁾ found orthopedic patients express desire to seek information regarding the quality of the provider, though note accessible and actionable information sources are often lacking. While this can be overcome with more frequent advertisement, the current study also found a majority of patients regardless of age chose an orthopedic

oncologist based on the recommendation of their primary care provider. In total, 62% were referred, most commonly from an orthopedic surgeon or family doctor. Thus, with respect to expanding the practice or maintaining a favorable reputation, these data imply it may be beneficial for an orthopedic oncologist to contact referring providers, which not only expands the practice, but contributes to the continuity of patient care. Such an interaction may certainly impact the reputation of the orthopedic oncologist as well.

One unique finding of the current study is that older patients placed a higher emphasis on the importance of seeking care within an academic medical center compared to younger patients. It is difficult to draw conclusions regarding this discrepancy by age, though one explanation is that older patients may have been treated in the same academic center and are simply new to the orthopedic oncology section itself. Another explanation is the perceived association of a higher quality of care with larger, higher volume centers. This may be in contrast to decisions made when choosing a hospital for other orthopedic procedures such as primary arthroplasty. Moser *et al*^[15] found that selecting a hospital for arthroplasty is extremely complex, and often an individualized process with no real discernable preference towards higher volume centers in their cohort. For orthopedic cancer diagnoses, the magnitude of the underlying condition is often greater, and a higher volume center may indicate a more experienced multidisciplinary team which may motivate a new patient to seek care at one of these facilities. Furthermore, the current responders chose years in practice as a strong selection factor, and such providers may be located within these high volume centers. However, it is also likely that new patients are generally unaware of the multidisciplinary effort, and simply choose a hospital on familiarity of the name or proximity to the facility.

As this study was a survey design, the findings may not be applicable to orthopedic oncologists in a different practice setting. Second, the overall response rate was 24%, which is low, though appears to be consistent with response rates from other survey studies used to identify selection factors^[4,8,16]. Third, the question items of this survey

were not validated, and in certain instances, patients omitted answers. As a large amount of the surveyed patients were of an advanced age, we believe that administering a survey *via* REDCap (electronic mailed survey) resulted in a lower yield than would be expected if they were approached in a clinical setting. Last, the patients seen in this practice are of a heterogeneous group of diagnoses, ranging from incidental findings to aggressive malignancies, and the factors that influence choosing an orthopedic oncologist may vary by diagnosis. However, given the potential for recall bias, we did not inquire about any underlying diagnoses.

CONCLUSION

The findings of this investigation suggest a primary care referral, a good hospital reputation, and a good physician reputation are among the most important factors when selecting an orthopedic oncologist. Furthermore, younger patients found social media and Internet presence of their surgeon to be more important than older patients, which may highlight an area for practice expansion when advertising to this group.

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Figure Legends

Figure 1 Importance of selection factors among new patients. A: Importance of selection factors among all new patients; B: Importance of selection factors among new patients younger than 40 years of age; C: Importance of selection factors among new patients older than 60 years of age.

Table 1 Demographics of all responders

	<i>n</i> (%)
Age (yr), median (range)	66 (14-91)
Female	61 (60.4)
Male	39 (39.0)
Health insurance	
Governmental	46 (45.5)
Employee	39 (38.6)
Private	14 (13.9)
Other	2 (2.0)
Highest schooling	
Graduate or professional degree	39 (38.6)
College degree	36 (35.6)
Some college, no degree	15 (14.9)
Highschool or GED	7 (6.9)
No degree	3 (3.0)
Referral	
Yes	63 (62.4)
No	38 (37.6)
Sum may not represent total cumulative count (<i>n</i> = 101).	

Table 2 Utilization of social media and the Internet among all responders, *n* (%)

	Yes	No
Social media		
Facebook	6 (5.9)	88 (87.1)
Twitter	4 (4.0)	90 (89.1)
Instagram	4 (4.0)	90 (89.1)
Internet		

HealthGrades.com	13 (12.9)	80 (79.2)
RateMDs.com	9 (8.9)	84 (83.2)
Vitals.com	4 (4.0)	86 (85.1)
WebMD.com	13 (12.9)	80 (79.2)

Sum may not represent total cumulative count ($n = 101$).

Table 3 Comparison of selection factors between ³patients younger than 40 years of age and those older than 60 years of age

Selection factor	< 40 yr, mean (SD)	> 60 yr, mean (SD)	P value
Recommended by primary care provider	4.0 (1.5)	3.5 (1.7)	0.25
How other patients or friends rated the physician	4.26 (0.8)	3.48 (1.7)	0.056
Number of years of practice	3.95 (1.3)	3.8 (1.4)	0.745
The medical school attended	2.95 (1.2)	3.1 (1.4)	0.669
Works in an academic medical center	3.0 (1.5)	3.96 (1.4)	0.014 ¹
The hospital has a good reputation	4.78 (0.5)	4.56 (1.0)	0.396
It was easy to make an appointment	4.11 (1.1)	3.81 (1.4)	0.402
They were in my insurance network	4.44 (1.1)	3.48 (1.6)	0.019 ¹
The amount of dollars I have to pay out of pocket	3.67 (1.3)	2.24 (1.4)	< 0.001 ¹
I could easily find the doctor on the Internet	3.33 (1.5)	2.44 (1.5)	0.035 ¹
They had good online reviews	3.5 (1.4)	2.84 (1.7)	0.143
They had accessible social media pages	2.22 (1.4)	1.48 (0.9)	0.016 ¹
They were locally advertised	1.94 (1.2)	1.57 (0.9)	0.167

¹Significant.

A mean value close to '5' is considered most important.

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