



The Representation of Orthopaedic Oncology in the Media in Turkey

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Abstract

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The effect of the media on decisions taken in healthcare is very strong. To the best of our knowledge, there has been no previous report in literature of how orthopaedic oncology is reflected in the media. In this context, the aim of this study was to present the representation of orthopaedic oncology in the media according to 2019 data. According to the statements of patients presenting at the orthopaedic oncology polyclinic, key words were defined as, bone cyst, bone cancer, bone metastasis, orthopaedic oncology soft tissue sarcoma, bone cancer treatment, bone cancer symptoms, benign bone tumour, soft tissue cancer. News items presented in the media according to these key words were reviewed with the optical character recognition (OCR) methodology (Ajans Press Group®, Istanbul, Turkey). Screening was applied to almost 4000 newspapers and journals as printed press and more than 10,000 internet sites as the online environment. From the key words screened in the context of this study, there were seen to be a total of 473 news items in newspapers and journals in Turkey in 2019. The news items covered an area of 56310 column centimetres (colcm), and these news items were determined to have reached 44,377,922 people. The advertising equivalent value of the news items was calculated as 2,606,721 TL. The most frequently seen key words in the news items were bone cancer, soft tissue cancer, bone metastasis. These data are shown in detail in the tables. The results of this study, which examined the representation of orthopaedic oncology in the media over a one-year period, showed that half of the news items were in local press, and national representation was low. The field of orthopaedic oncology is poorly represented in the media, and this must be increased for patients to be able to access correct and reliable information.

INTRODUCTION

In addition to visual media and the printed press, it has become necessary to add developing media tools to patient-doctor communication¹. Patients currently often use the media to research diseases, and various news items are presented in the media by doctors. The extent of internet use by orthopaedic patients has been shown in previous studies². There are publications that have reported that of all orthopaedic patients, those who seek information on the internet most are patients diagnosed with a tumour³. It is important that news published in the media, especially in the field of healthcare, is correct as patient health is directly involved. The publication of incorrect information and news can lead to incorrect interpretations and practices⁴.

It is important that patients are informed and that they can access correct information. The current use of the internet by patients has reached such a level that there are newly defined diseases such as the anxiety disorder of “cyberchondria” when an individual makes a diagnosis of their

disease from the internet⁵. The main reasons that patients research diseases in the media and on the internet first is that these can be easily and quickly accessed, and bypass administrative hurdles⁵.

The diagnosis and treatment of benign and malignant tumours in bone and soft tissue is applied in the context of orthopaedic oncology. It is important to know the presence of this group of diseases in the media to be able to inform and direct patients correctly. The effect of the media on decisions taken in current healthcare is very strong⁴. To the best of our knowledge, there has been no previous report in literature of how orthopaedic oncology is represented in the media. Therefore, the aim of this study was to evaluate the representation of orthopaedic oncology in the media according to 2019 data.

METHOD

Key words for this study were defined according to the statements of patients presenting at the orthopaedic oncology

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polyclinic as, *bone cyst, bone cancer, bone metastasis, orthopaedic oncology, soft tissue sarcoma, bone cancer treatment, bone cancer symptoms, benign bone tumour, soft tissue cancer*. News items presented in the media according to these key words were reviewed with the optical character recognition (OCR) methodology (Ajans Press Group®, Istanbul, Turkey). Screening was applied to almost 4000 newspapers and journals as printed press and more than 10,000 internet sites as the online environment.

The explanations of some terms used in the study and the method are as follows: *number of news items* refers to the number of news items in the media searched with the key words. *Access* refers to the number of people the news reached, taking into consideration the readership from the press run of the publication. In national and international studies it has been revealed that one newspaper is read by 3 people and one journal by 4. On this basis, access to a news item in a newspaper was calculated as “the press run of the newspaper x 3” and a news item in a journal as “the press run of the journal x 4”. *Column centimetre value* refers to the area covered by the whole news item, mentions of it, sections formed of the text or visual parts or quotations from it. “Width” value is given as “column”, and although there are slight differences according to the publication, a column is generally equivalent to 3.6cm. The “height” value is given directly as centimetres (cm). Thus the “area” measurement is expressed as column x cm from the multiplication of the width and height values.

The distribution of key words was examined as the distribution according to type of publication, distribution according to the field of publication, distribution according to media groups, and newspaper and journal distribution.

The data obtained from study were analyzed using SPSS vn. 22.0 statistical software.

RESULTS

From the key words screened in the context of this study, there were seen to be a total of 473 news items in newspapers and journals in Turkey in 2019. The news items covered an area of 56310 column centimetres (colcm). These news items were determined to have reached 44,377,922 people. The advertising equivalent value of the news items was calculated as 2,606,721

TL (Table 1). The most frequently seen key words in the news items were *bone cancer, soft tissue cancer, bone metastasis*. These data are shown in detail in the Table 2.

The news items were observed to generally be in local press, and the number of news items in the national press was significantly low. There was observed to be no news items related to bone cancer symptoms in newspapers or journals in the national press. These data are shown in Table 3. A total of 117 news items were determined in national press and 356 news in local press. The most news items were observed under the heading of bone cancers and the lowest number of news items were in the area of benign bone tumours.

The number of news items published by media companies according to the key words is shown in Table 1. Accordingly, the greatest number of news items, advertising value and access were under the heading of bone cancers.

There was determined to be a total of 1728 online news items. Of these, the first three were 748 (43%) news items about bone cancer, 690 (40%) about soft tissue cancer, and 135 (8%) about bone metastasis. The distribution of the number of internet new items is shown in Table 4.

DISCUSSION

The strongest aspect of this study is that it is the first study to show the representation of orthopaedic oncology in the media in Turkey. Nowadays, the media has a strong effect on decision-making in healthcare⁶. Access of individuals to the internet has greatly increased with increased penetration with mobile telephones. There are several studies in literature related to how the media affects decision-making in healthcare⁴. These present important implications to physicians as service providers. By extensive examination of printed and online media in the current study, important information is provided about the representation of orthopaedic oncology in the media.

The results of the current study showed that through orthopaedic oncology news items up to 44,377,922 individuals are reached, which is more than half of the total population of Turkey. It has been reported that internet use is seen at the rate of up to 80% in patients in Turkey⁷. This demonstrates that there is a need for greater presence and access to orthopaedic oncology.

Table 1. Distribution of news items by media groups

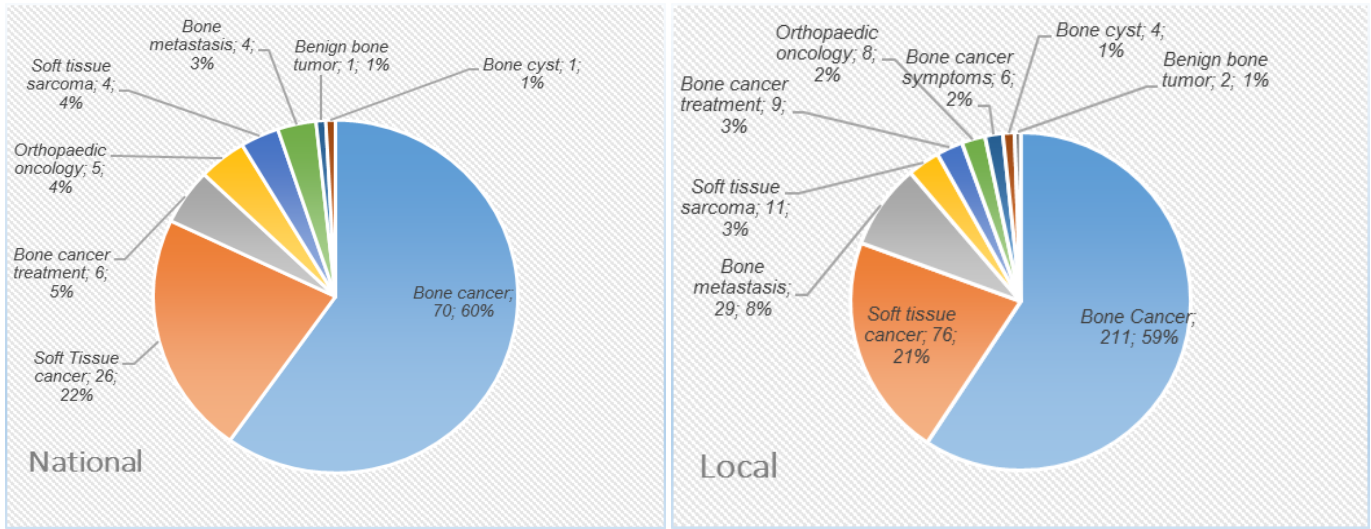
Media	Media groups	News items	ColCm	Access	Advertising equivalent (TL)
Bone cancer	Local media	146	14.356	1.884.135	55.975
	Other	68	9.679	3.744.961	195.121
	Turkuvaz	26	2.599	9.968.388	374.480
	Demirören	23	4.570	8.437.032	610.307
	İhlas	8	1.308	2.364.504	242.214
	Türk Medya	6	960	1.608.438	172.866
	Star	3	466	912.222	78.385
	Yeniçağ Grup	1	33	154.398	594
Total		281	33.971	29.074.078	1.729.942
Soft tissue cancer	Local media	51	4.481	835.197	18.177
	Other	22	2.438	1.543.903	64.743
	Turkuvaz	9	586	1.711.017	48.894
	Demirören	8	316	2.032.032	28.944
	Türk Medya	5	522	1.558.026	129.264
	İhlas	3	678	815.283	191.036
	Yeniçağ Grup	2	150	308.796	2.700
	Star	2	60	608.148	15.000
Total		102	9.231	9.412.402	498.758
Bone metastasis	Local media	25	3.084	173.484	18.656
	Other	7	2.452	199.400	24.242
	Demirören	1	216	636.291	79.488
Total		33	5.752	1.009.175	122.386
Soft tissue sarcoma	Local media	10	954	59.250	8.897
	Other	5	921	116.963	10.771
Total		15	1.875	176.213	19.668
Bone cancer treatment	Local media	7	487	39.600	1.569
	Other	3	131	423.567	1.240
	Demirören	2	49	1.685.016	16.023
	Turkuvaz	2	40	1.040.364	10.885
	Türk Medya	1	15	311.370	2.205
Total		15	722	3.499.917	31.922
Orthopaedic oncology	Local media	8	382	19.950	1.198
	Other	5	2.100	220.000	90.417
Total		13	2.482	239.950	91.615
Bone cancer symptoms	Local media	5	445	27.000	1.403
	Other	1	84	1.800	252
Total		6	529	28.800	1.655
Bone Cyst	Local media	4	370	16.050	1.048
	Other	1	1.150	28.000	79.861
Total		5	1.520	44.050	80.909
Benign bone tumor	Local media	1	84	1.800	252
	Other	1	48	1.500	144
	Turkuvaz	1	96	890.037	29.472
Total		3	228	893.337	29.868
General Total		473	56.310	44.377.922	2.606.721

The study results showed a very small number of rate of 0.8% in newspapers and journals. Prostate, breast and news items about *bone cancer symptoms*. Early diagnosis is lung cancers are the leading types of cancers most frequently extremely important for patient survival⁸. Patients generally seen in Turkey¹². The most common site of metastasis of ignore cancer signs and symptoms and may present late for urological malignancies is bone¹³. Sometimes the first sign of diagnosis⁹. Tumour diagnosis may even be missed by disease may emerge as bone metastasis or fracture¹⁴. Despite orthopedists who do not have a sub-speciality of oncology. The this importance, the results of this study showed that the media current study results showed that the greatest number of news visibility of metastasis is insufficient.

Another noticeable point of the study results was the items was about *bone cancers* and almost half of these were in local press, which reduces the exposure of news. There is media visibility of *soft tissue sarcomas*. The number of news frequent internet and media use among cancer patients, and this items was the second most frequent, although half of the news places a burden of responsibility on doctors to create a reliable items in the media were in local press. There is currently source¹⁰. increasing understanding and knowledge of the treatment of

In addition to primary bone tumours, metastases are soft tissue sarcomas¹⁵. Awareness of soft tissue sarcomas frequently seen¹¹. In the current study, *bone metastasis* media should be increased with greater representation in the media. visibility was observed to be reflected in national media at the

Table 2. Distribution of news items in local and national media



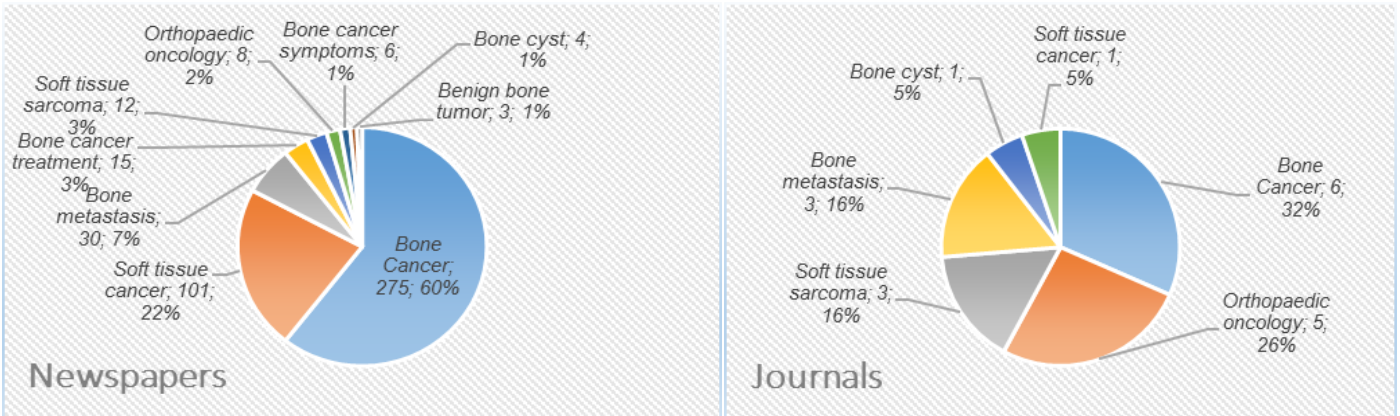
Key words	Publications Area	News items	%	ColCm	%	Access	%	Advertising equivalent (TL)	%
Bone cancer	National	70	14,8	10.008	17,8	24.080.031	54,3	1.510.590	57,9
	Local	211	44,6	23.963	42,6	4.994.047	11,3	219.351	8,4
Total		281	59,4	33.971	60,3	29.074.078	65,5	1.729.942	66,4
Soft tissue cancer	National	26	5,5	2.320	4,1	7.171.218	16,2	440.632	16,9
	Local	76	16,1	6.911	12,3	2.241.184	5,1	58.126	2,2
Total		102	21,6	9.231	16,4	9.412.402	21,2	498.758	19,1
Bone metastasis	National	4	0,8	2.012	3,6	758.891	1,7	100.344	3,8
	Local	29	6,1	3.740	6,6	250.284	0,6	22.042	0,8
Total		33	7,0	5.752	10,2	1.009.175	2,3	122.386	4,7
Soft tissue sarcoma	National	4	0,8	741	1,3	112.463	0,3	10.051	0,4
	Local	11	2,3	1.134	2,0	63.750	0,1	9.617	0,4
Total		15	3,2	1.875	3,3	176.213	0,4	19.668	0,8
Bone cancer treatment	National	6	1,3	150	0,3	3.297.990	7,4	29.573	1,1
	Local	9	1,9	572	1,0	201.927	0,5	2.349	0,1
Total		15	3,2	722	1,3	3.499.917	7,9	31.922	1,2
Orthopaedic oncology	National	5	1,1	2.100	3,7	220.000	0,5	90.417	3,5
	Local	8	1,7	382	0,7	19.950	0,0	1.198	0,0
Total		13	2,7	2.482	4,4	239.950	0,5	91.615	3,5
Bone cancer symptoms	Local	6	1,3	529	0,9	28.800	0,1	1.655	0,1
Total		6	1,3	529	0,9	28.800	0,1	1.655	0,1
Bone cyst	National	1	0,2	1.150	2,0	28.000	0,1	79.861	3,1
	Local	4	0,8	370	0,7	16.050	0,0	1.048	0,0
Total		5	1,1	1.520	2,7	44.050	0,1	80.909	3,1
Benign bone tumor	National	1	0,2	96	0,2	890.037	2,0	29.472	1,1
	Local	2	0,4	132	0,2	3.300	0,0	396	0,0
Total		3	0,6	228	0,4	893.337	2,0	29.868	1,1
General total		473	100,0	56.310	100,0	44.377.922	100,0	2.606.721	100,0

When the key word of *orthopaedic oncology* was examined, there was observed to be a media presence at a very low rate. Knowledge of this sub-specialist branch of orthopaedics and traumatology is important for the correct referral of patients. While modern medical practices have adapted to the internet, it is important that orthopaedists contribute to creating easily understandable, reliable sources for patients to prevent incorrect information¹⁶.

The study results showed that *benign bone tumours* had the lowest media presence. When prevalence is examined,

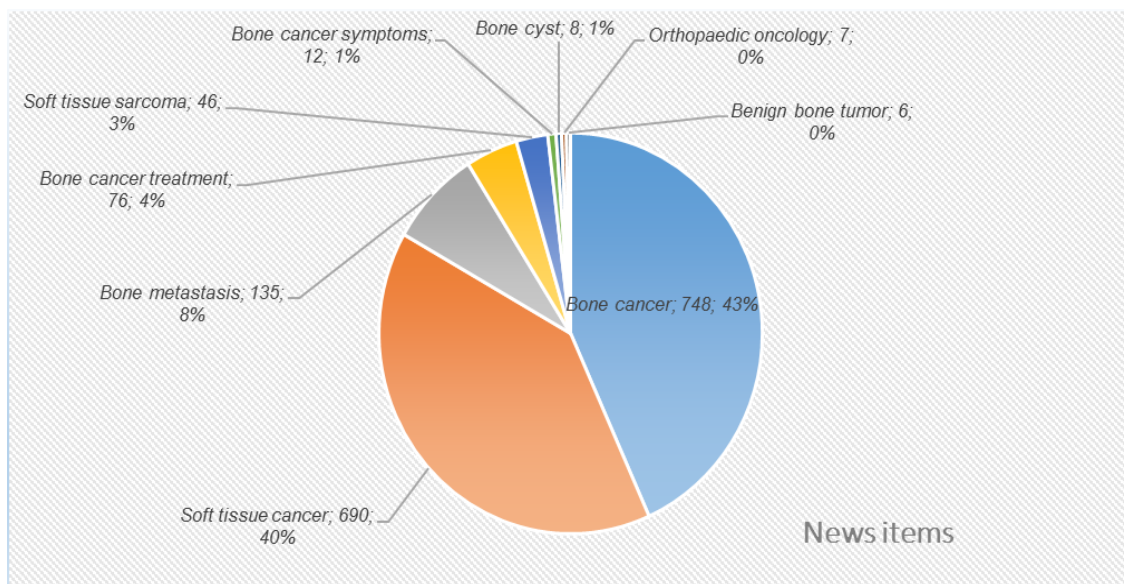
these lesions are more frequently encountered. For lesions such as a simple bone cyst that constitute a fracture risk, surgical treatment can be applied¹⁷. However, it is known that not every benign bone lesion requires treatment. Lesions such as non-ossified fibroma, and compacted bone islets are labelled as “don’t touch” by orthopaedic oncologists¹⁸. The level of concern associated with the disease may increase, including in patients diagnosed with this type of benign bone lesion. An increase in written and visual press visibility would make a positive contribution to increasing awareness in this area.

Table 3. Distribution of news items by type of publication



Key Words	Type of publication	News items	%	ColCm	%	Access	%	Advertising equivalent (TL)	%
Bone cancer	Newspaper	275	58,1	31.146	55,3	28.896.078	65,1	1.641.825	63,0
	Journal	6	1,3	2.825	5,0	178.000	0,4	88.117	3,4
Total		281	59,4	33.971	60,3	29.074.078	65,5	1.729.942	66,4
Soft tissue cancer	Newspaper	101	21,4	9.205	16,3	9.408.402	21,2	498.642	19,1
	Journal	1	0,2	26	0,0	4.000	0,0	116	0,0
Total		102	21,6	9.231	16,4	9.412.402	21,2	498.758	19,1
Bone metastasis	Newspaper	30	6,3	3.956	7,0	886.575	2,0	101.530	3,9
	Journal	3	0,6	1.796	3,2	122.600	0,3	20.856	0,8
Total		33	7,0	5.752	10,2	1.009.175	2,3	122.386	4,7
Soft tissue sarcoma	Newspaper	12	2,5	1.240	2,2	93.813	0,2	11.737	0,5
	Journal	3	0,6	635	1,1	82.400	0,2	7.931	0,3
Totaş		15	3,2	1.875	3,3	176.213	0,4	19.668	0,8
Bone cancer treatment	Newspaper	15	3,2	722	1,3	3.499.917	7,9	31.922	1,2
	Total	15	3,2	722	1,3	3.499.917	7,9	31.922	1,2
Orthopaedic oncology	Newspaper	8	1,7	382	0,7	19.950	0,0	1.198	0,0
	Journal	5	1,1	2.100	3,7	220.000	0,5	90.417	3,5
Total		13	2,7	2.482	4,4	239.950	0,5	91.615	3,5
Bone cancer symptoms	Newspaper	6	1,3	529	0,9	28.800	0,1	1.655	0,1
	Total	6	1,3	529	0,9	28.800	0,1	1.655	0,1
Bone cyst	Newspaper	4	0,8	370	0,7	16.050	0,0	1.048	0,0
	Journal	1	0,2	1.150	2,0	28.000	0,1	79.861	3,1
Total		5	1,1	1.520	2,7	44.050	0,1	80.909	3,1
Benign bone tumor	Newspaper	3	0,6	228	0,4	893.337	2,0	29.868	1,1
	Total	3	0,6	228	0,4	893.337	2,0	29.868	1,1
General Total		473	100,0	56.310	100,0	44.377.922	100,0	2.606.721	100,0

Table 4. Classification of the news items according to the number of Internet news



The media and internet currently provide rapid and easy access to information, and they are strong tools influencing individuals. However, they can lead to rumour and the spread of false information¹⁹, and can damage public health policies²⁰. In an area such as orthopaedic oncology, access to correct information from sources is important. Knowledge of media representation according to medical branches will be of use to decision-makers in the forming of public healthcare policies.

The results of this study, which examined the representation of orthopaedic oncology in the media over a one-year period, showed that half of the news items were in local press, and national representation was low. The news items can reach only approximately half of the population. Media visibility in the field of orthopaedic oncology must be increased for patients to be able to access correct and reliable information.

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Conflict of interests

The authors have no conflict of interests to declare.

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Ethics committee approval

Ethics committee approval was received for this study from the Local Ethics Committee of Cumhuriyet University (18.03.2020, decision no: 2020-03/33).

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