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Original Article

Health Management and Policy Section

Estimation of Waiting Time and Consultation Duration for Patients in the Outpatient Department of Radiation Oncology at a Tertiary Care Teaching Hospital in Uttarakhand, India: A Cross-sectional Study

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ABSTRACT

Introduction: The Outpatient Department (OPD) holds significant relevance in modern medical care and serves as the "Shop Window" of the hospital. Waiting time serves as a crucial indicator of the quality of OPD services provided by the hospital, as it greatly affects patient satisfaction. Radiation oncology is a clinical specialty that focuses on administering radiation therapy to cancer patients, who seek consultation in the radiation oncology OPD.

Aim: To estimate the waiting time and consultation duration for patients in the OPD of radiation oncology at a tertiary care teaching hospital.

Materials and Methods: This cross-sectional study was conducted from August 1 to August 31, 2022, at the Cancer Research Institute of Himalayan Hospital, which is the affiliated hospital of the Himalayan Institute of Medical Sciences under the aegis of Swami Rama Himalayan University, Dehradun, Uttarakhand, India. A total sample size of 300 patients was selected using the simple random sampling technique. Data was collected through direct observation using a data collection sheet. Statistical analysis was performed using the data analysis tool in Microsoft Excel and Statistical Package for Social Sciences version 23.0. Pearson coefficient of correlation (r) and p-value were calculated.

Results: The results were analysed based on demographic details, days of the week, patients seen per consultation room, new and follow-up patients, and patient arrival time in the OPD. The majority of patients attending the OPD were in the age group of 50-69 years (60.6%). A total of 256 patients (85%) were follow-up patients. Analysis of the patient arrival pattern revealed that the highest number of patients, 200 (66.7%), arrived between 8:30 AM and 10:30 AM. The overall mean waiting time was estimated to be 50.43±0.030 minutes, and the mean consultation time was estimated to be 9.53±0.004 minutes. The Pearson coefficient of correlation between the two variables was calculated, revealing a positive correlation with 'r' value=0.14 and a statistically significant p-value=0.014 (<0.05).

Conclusion: This study provides valuable insights for waiting time and consultation duration in the radiation oncology department's OPD. On average, patients spend approximately 59.96 minutes in the OPD premises. Out of this time, 84.1% is spent waiting, while 15.9% is spent with the consultant. The primary reason for delays in the waiting area is the delayed availability of consultants due to ongoing ward rounds or other academic activities.

Keywords: Cancer, Medical care, Radiotherapy

INTRODUCTION

The OPD services in a hospital give the first impression about the hospital to the patient because the OPD is the first point of contact [1,2]. From the hospital's point of view, its success is measured based on the number of patients visiting the OPD per day, the work efficiency of the medical team, the variety of services available under one roof, and most importantly, the quality of treatment [3]. 'Waiting time' is defined as the time in which patients wait outside the consultation room or in the waiting area of the OPD before being seen by one of the clinicians [4]. Waiting time is a significant indicator of the quality of OPD services rendered by the hospital. Patients' waiting depends on many factors, including the efficiency, sincerity, and punctuality of the healthcare providers, as well as the existing facilities of the institution [5]. After the patient's wait, the next important factor in the OPD is the 'consultation time'. Consultation length varies in different countries and states, depending on the characteristics of doctors and patients. The mean consultation time in OPDs generally ranges between 10 to 15 minutes [6,7]. The Institute of Medicine (IOM) recommends that atleast 90% of patients should be seen within 30 minutes of their scheduled appointment time [8]. However, some studies have concluded that patients are spending about 2 to 4 hours in the OPD before meeting the clinician [9,10]. Patient satisfaction is greatly affected by the long waiting time and other factors, such as the time taken during consultation, comfort, and amenities in the waiting area [11,12]. The psychology of waiting and perceived waiting time has been identified. Occupied time feels shorter than unoccupied time, anxiety and unexplained delays make waits seem longer, uncertain waits are longer than known waits, and solo waits feel longer than group waits [13]. Radiation oncology is a clinical specialty that involves the delivery of radiotherapy for the treatment of cancer. This modality of treatment involves irradiation of cancer cells to achieve remission. However, patients are required to attend radiation oncology OPD, where they are explained about this treatment in detail along with its possible side-effects, precautions to be taken, and psychological counseling. Consequently, the waiting time and consultation time may vary compared to general OPD and other specialty OPDs. Hence, this study evaluates the waiting and consultation time, especially in the radiation oncology OPD. This study was undertaken with the aim of estimating waiting time and consultation time for patients in the OPD of the Radiation Oncology department of a tertiary care hospital.

MATERIALS AND METHODS

This cross-sectional study was conducted from August 1 to August 31, 2022, for a period of one month at the Cancer Research Institute of Himalayan Hospital. The hospital is the affiliated hospital of Himalayan Institute of Medical Sciences under the aegis of Swami Rama Himalayan University in Dehradun, Uttarakhand, India. Ethical clearance was obtained from the Institutional Ethics Committee (IEC) with reference number SRHU/HIMS/RC/2022/275. Informed consent was obtained from all the participants.

Inclusion criteria: The study included male and female individuals in the age group of 20-80 years. The patients utilising the services of the Cancer Institute of the hospital primarily resided in the adjoining nine districts of Uttarakhand and four neighbouring states. These patients were histopathologically proven cases of malignancy requiring radiotherapy OPD consultation.

Exclusion criteria: Neonates, infants, children, and adolescents below 20 years of age were excluded from the study. Inpatients seeking unscheduled consultation during OPD hours, patients re-reporting for showing investigation reports, and patients who absented themselves after registration were also excluded from the study.

Sample size calculation: Sample size was calculated to be 300 based on standard formula for sample size using proportion percentage (p) as 0.5, margin of error (e) as 0.05, population size (N) as 1725* and Z score of 1.96 as follows:

$$\frac{Z^2 \times p(1-p)}{e^2} \div 1 + \frac{(Z^2 \times p(1-p))}{e^2 N}$$

*23 OPD working days/month (excluding holidays, Saturday and Sunday)×75 (Average number of patients coming to OPD per day).

Sampling procedure: Probability sampling was used, specifically the simple random sampling technique.

Data collection methodology and parameters studied: The data was collected from both primary and secondary sources. Primary sources involved direct observation by the researcher using a data collection sheet, which included parameters such as date, patient name, Unique Health Identification Number (UHID), age, gender, location of residence, OPD registration time, patient in time for consultation, and patient out time from the consultation room. Consultation time referred to the in and out time of patients from the consultant's chamber. Time was monitored using a stopwatch during the observation period. The study did not include patients below 20 years of age. OPD days on Saturdays, Sundays, and holidays were excluded from the study. The data collection sheet contained Parameter 'A' for the patient's registration time in the OPD, Parameter 'B' for the time when the patient went into the doctor's room for consultation, and Parameter 'C' for the time when the patient came out from the consultation room. The difference between 'B' and 'A' represented the waiting time, while the difference between 'C' and 'B' represented the consultation time (Appendix).

Secondary sources: Existing literature, articles, and publications on this subject were studied to gain first hand knowledge on OPD waiting and consultation.

Waiting time and consultation time were compiled under the following headings:

- Demographic distribution.
- According to weekdays (Monday to Friday)
- Based on consultation rooms
- Follow-up and new patients.
- Patients' arrival time pattern in the OPD.

STATISTICAL ANALYSIS

The statistical analysis was performed using the data analysis tool in Microsoft Excel and the Statistical Package for Social Sciences version 23.0. The minimum time, maximum time, mean time for waiting and consultation, and standard deviation were analysed. The Pearson coefficient of correlation (r) and p-value were also calculated. The level of statistical significance was set at 5% (p-value <0.05).

RESULTS

Demographic distribution: Based on age criteria, patients seeking radiotherapy OPD consultation were classified into three groups - 20-49 years, 50-69 years and >70 years. According to the existing guidelines of the institute, very elderly senior citizens were given priority in consultation. The total number of males and females in each age group was also calculated to determine the prevalence pattern of the disease among them. Waiting time and consultation time related to demographic distribution showed a negative correlation, with an r value of -0.51 and a statistically significant p-value of (<0.001). Waiting time and consultation time for different age groups and genders are depicted in [Table/Fig-1].

According to weekdays: The radiotherapy OPD is functional for five days a week. The data for each day of the week was compiled to determine the variation in the number of patients attending the OPD on different days or any special affiliation for a particular day of the week. Waiting time and consultation time showed a positive correlation, with an r value of 0.98 and a statistically significant p-value of (<0.001). Weekday-wise waiting and consultation time are depicted in [Table/Fig-2].

Data based on consultation rooms: The radiation oncology OPD functions with three consultation rooms manned by resident doctors and consultants. After registration, patients are allotted doctors in Room 'A' (Room 105), 'B' (Room 106), and 'C' (Room 107), respectively. Patients wait in the designated waiting area in front of their respective consultation rooms and are called in by the

Age (years)	Male	Female	No. of patient	Waiting Time (WT) and no. of patients						M±SD (mins)	Consultation Time (CT) and no. of patients					M±SD (mins)	r-value p-value
				<30 min	30 min-1 hr	1-1.5 h	1.5-2 h	2-2.5 h	2.5-3 h		<5 min	5-10 min	10-15 min	15-20 min	20-25 min		
20-49	41 (45%)	50 (55%)	91 (30.4%)	33	25	13	7	11	2	54.13± 0.03	28	24	25	7	7	9.18 mins± 0.03	
50-69	104 (57%)	78 (43%)	182 (60.6%)	81	45	23	16	11	6	49.10± 0.03	49	46	41	32	14	10.16 mins± 0.04	r=-0.51
>70	20 (4%)	7 (26%)	27 (9%)	10	6	8	2	0	1	49.29± 0.023	7	8	9	3	0	9.15 mins± 0.03	p≤0.001
Total	165 (55%)	135 (45%)	300	124 (41.3%)	76 (25.3%)	44 (14.7%)	25 (8.3%)	22 (7.3%)	9 (3.1%)		84 (28%)	78 (26%)	75 (25%)	42 (14%)	21 (7%)		

[Table/Fig-1]: Waiting time and consultation time for demographic distribution (N=300).
Pearson co-efficient of co-relation (r-value) and test of statistical significance (p-value) was calculated and is depicted in table

Week day	No. of patients	Waiting Time (WT) and no. of patients						M±SD (mins)	Consultation time (CT) and no. of patients					M±SD (mins)	r value p-value
		Upto 30 min	30 min-1 hr	1-1.5 h	1.5-2 h	2-2.5 h	2.5-3 h		Upto 5 min	5-10 min	10-15 min	15-20 min	20-25 min		
Mon	58	21	7	11	8	9	2	66.23± 0.032	16	9	16	10	7	11.03± 0.004	
Tue	60	16	21	12	5	3	3	59.29± 0.029	14	16	21	7	2	09.51± 0.003	
Wed	59	36	12	4	3	3	1	36.49± 0.026	24	21	9	3	2	07.23± 0.003	r=0.98
Thu	61	15	14	13	9	7	3	66.44± 0.031	12	17	17	11	4	10.49± 0.004	p≤0.001
Fri	62	36	22	4	0	0	0	25.05± 0.014	18	15	12	11	6	10.18± 0.004	
Total	300	124 (41.3%)	76 (25.3%)	44 (14.7%)	25 (8.3%)	22 (7.3%)	9 (3.1%)		84 (28%)	78 (26%)	75 (25%)	42 (14%)	21 (7%)		

[Table/Fig-2]: Waiting time and consultation time according to week days (N=300).
Pearson co-efficient of co-relation (r-value) and test of statistical significance (p-value) was calculated and is depicted in table

doctors for consultation sequentially. Data was collected for the number of patients seen in each of the consultation rooms, along with the waiting time and consultation time for each room. Waiting time and consultation time per consultation room showed a negative correlation, with an r value of -0.8 and a statistically significant p-value of (<0.001). The data is depicted in [Table/Fig-3].

Follow-up and new patients: Malignancy is a chronic condition that requires a prolonged course of treatment, including radiation therapy. Therefore, previously diagnosed cancer patients need to regularly consult their doctors for check-ups and advice. Additionally, patients who are newly diagnosed with cancer after receiving histopathology reports also visit the OPD to consult with doctors for initiating treatment. Data on follow-up and new patients were collected, and the waiting and consultation time for each category was recorded. It showed a positive correlation, with an r value of 1 and a statistically significant p-value of (<0.001). Waiting time and consultation time for follow-up and new patients are depicted in [Table/Fig-4].

Patient arrival time pattern in OPD: Patient arrival time pattern in OPD: The radiation oncology OPD is functional five days a week, from 8:30 AM to 4:30 PM, Monday to Friday. As patients coming for oncology/cancer consultation arrive from far and remote places in the hills, their arrival pattern in the OPD also varies depending on road connectivity and distance. Data was collected on the arrival pattern of patients in a blocks of two hours, starting at 8:30 AM. Waiting time and consultation time based on the block timings revealed a positive correlation, with an r value of 1 and a statistically significant p-value of (<0.001). The data according to the arrival schedule of patients is depicted in [Table/Fig-5].

Average, maximum, and minimum waiting and consultation time: The average waiting time and consultation time for all 300 patients included in the study were calculated. The data also revealed a maximum waiting time of 2 hours, 56 minutes, and 30 seconds by one patient who was keen to consult a specific doctor of his choice and willingly decided to wait for him. The maximum consultation time recorded was 24 minutes and 46 seconds. The minimum waiting time recorded in this study was 8 minutes, with a minimum consultation time of 2.1 minutes. The details are summarised and depicted in [Table/Fig-6].

The data of waiting time and consultation time gathered for all 300 patients were statistically analysed using regression analysis, analysis of variance, and t-tests. The Pearson coefficient of correlation was calculated to be 0.14, which reveals a positive correlation between the two factors. The p-value was calculated to be 0.014 (<0.05), which was statistically significant. The details of the statistical analysis are summarised in [Table/Fig-7].

Consult room	No. of patients	Waiting Time (WT) and no. of patients						M±SD (mins)	Consultation Time (CT) and no. of patients					M±SD (mins)	r-value p-value
		<30 min	30 min-1 hr	1-1.5 h	1.5-2 h	2-2.5 h	2.5-3 h		<5 min	5-10 min	10-15 min	15-20 min	20-25 min		
Room A (105)	87 (29%)	35	27	22	2	1	0	40.24± 0.020	16	9	16	10	7	11.03±0.004	
Room B (106)	119 (39.6%)	53	24	11	15	12	4	53.58± 0.032	14	16	21	7	2	09.51±0.003	r=-0.8
Room C (107)	94 (31.4%)	36	25	11	8	9	5	56.10± 0.032	24	21	9	3	2	07.23±0.003	
Total	300	124 (41.3%)	76 (25.3%)	44 (14.7%)	25 (8.3%)	22 (7.3%)	9 (3.1%)		84 (28%)	78 (26%)	75 (25%)	42 (14%)	21 (7%)		p≤0.001

[Table/Fig-3]: Waiting time and consultation time for each consultation rooms (N=300).
Pearson co-efficient of co-relation (r-value) and test of statistical significance (p-value) was calculated and is depicted in table

Type of patient	Male	Female	No. of patients	Waiting Time (WT) and no. of patients						M±SD (mins)	Consultation Time (CT) and no. of patients					M±SD (mins)	r value p-value
				<30 min	30 min-1 hr	1-1.5 h	1.5-2 h	2-2.5 h	2.5-3 h		<5 min	5-10 min	10-15 min	15-20 min	20-25 min		
Follow-up	133 (52%)	123 (48%)	256 (85%)	111	61	35	20	20	9	50.33± 0.030	76	65	60	38	17	9.52± 0.004	
New	31 (70%)	13 (30%)	44 (15%)	13	15	9	5	2	0	51.44± 0.026	8	13	15	4	4	9.58± 0.003	r=1
Total	164 (54.6%)	136 (45.4%)	300	124 (41.3%)	76 (25.3%)	44 (14.7%)	25 (8.3%)	22 (7.3%)	9 (3.1%)		84 (28%)	78 (26%)	75 (25%)	42 (14%)	21 (7%)		p≤0.001

[Table/Fig-4]: Waiting time and consultation time for new and follow-up patients (N=300).
Pearson co-efficient of co-relation (r-value) and test of statistical significance (p-value) was calculated and is depicted in table

Patient arrival schedule	No. of patients	Waiting Time (WT) and no. of patients						M±SD (mins)	Consultation Time (CT) and no. of patients					M±SD (mins)	r-value p-value
		<30 min	30 min-1 hr	1-1.5 h	1.5-2 h	2-2.5 h	2.5-3 h		<5 min	5-10 min	10-15 min	15-20 min	20-25 min		
8:30 AM 10:30 AM	200 (66.7%)	89	56	25	13	10	7	46.30± 0.028	61	57	43	23	16	09.34±0.004	r=1 p≤0.001
10:30 AM 12:30 PM	81 (27%)	25	18	15	10	12	1	61.39± 0.031	16	19	24	17	5	11.01±0.004	
12:30 PM 2:30 PM	13 (4.3%)	7	1	2	2	0	1	53.56± 0.032	6	1	4	2	0	07.51±0.003	
2:30 PM 4:30 PM	6 (2%)	3	1	2	0	0	0	36.47± 0.023	1	1	4	0	0	09.56±0.002	
Total	300	124 (41.3%)	76 (25.3%)	44 (14.7%)	25 (8.3%)	22 (7.3%)	9 (3.1%)		84 (28%)	78 (26%)	75 (25%)	42 (14%)	21 (7%)		

[Table/Fig-5]: Waiting time and consultation time as per arrival time in OPD (N=300).
Pearson co-efficient of co-relation (r-value) and test of statistical significance (p-value) was calculated and is depicted in table

	Waiting time	Consultation time
Mean and SD (mins)	50.43±0.030	9.53 mins±0.004
Maximum time taken	2 hrs 56 mins 30 secs	24 mins 46 secs
Minimum time taken	8 min	2 mins 1 secs

[Table/Fig-6]: Overall mean waiting and consultation time (N=300).

Summary output						
Regression statistics						
Multiple R	0.14	(r-value=0.14)				
R square	0.02					
Adjusted R square	0.02					
Standard error	0.004					
Observations	300					
ANOVA						
	Degree of freedom	Sum of squares	Mean square	F statistic	Significance F	
Regression	1	0.0001	0.0001	6.0409	0.0145	
Residual	298	0.0050	1.68481E-05			
Total	299	0.0051				
	Coefficients	**Standard error**	**t Stat**	**p-value**	**Lower 95%**	**Upper 95%**
Intercept	0.0062	0.0004	16.8336	3.75E-45	0.0055	0.0069
Waiting time	0.0196	0.0080	2.4578	0.0145	0.0039	0.0352

[Table/Fig-7]: Regression and analysis of variance.

DISCUSSION

Waiting time refers to the time a patient waits in the clinic to be seen by one of the clinical medical staff, and consultation time is the time spent by one patient with the clinical medical staff [14,15]. Patient clinic waiting time is an important indicator of the quality of services offered by hospitals [16]. Patients often spend a substantial amount of time in the waiting area before meeting with the consultants. The quality of the waiting experience strongly influences patient satisfaction with the care received. Long waiting times are perceived by patients as a barrier to accessing services [17]. Failure to incorporate consumer-driven features into the design of the waiting experience can lead to dissatisfaction among both patients and providers [18].

Age, defined by completed units of time, is used in virtually all studies of cancer epidemiology and is one of the most studied risk factors for cancer [19]. Cancer can be considered an age-related disease because the incidence of most cancers increases with age, with a more rapid increase beginning in midlife [20]. The cumulative risk for all cancers combined increases with age, up to age 70, and then slightly decreases [21]. In a study by Javed D in 1985, it was observed that 36% of patients coming to the OPD were in the age group of 50-60 years [1]. However, present study revealed a much higher figure of 60.6% of patients visiting the radiation oncology OPD in a similar age group. As the number of adults reaching older ages is increasing rapidly, the number of new cancer cases will also increase if current incidence rates remain unchanged [22]. According to Siegel RL et al., the incidence of cancer was about 20% higher in men than in women, and the mortality rate was 40% higher in men in the United States [23]. This study also revealed that out of the total sample of 300 patients, 165 (55%) were males and 135 (45%) were females.

The number of females attending the OPD was highest in the age group of 20-49 years (55%), whereas the number of males was highest in age group of 50-69 years (57%). However, the study conducted by Bamgboye EA and Jarallah J, did not observe any association between gender and duration of waiting time [24].

The mean waiting time was observed to be highest in the age group of 20-49 years (54.13±0.03 minutes) and lowest in the age group of 50-69 years (49.10±0.03 minutes). On the other hand, the mean consultation time was highest in the age group of 50-69 years (10.6±0.04 minutes) and lowest in the age group of 70-80 years (9.15±0.03 minutes). The findings of this study reveal that 182 (60.6%) patients were in age group 50-69 years and received the longest consultation time with the doctors.

Analysis of OPD statistics for weekdays reveals that waiting time was highest on Thursday (66.44±0.031 minutes), which also recorded the second longest consultation time (10.49±0.004 minutes) as it was the OPD day of a senior consultant. The consultation time was highest on Monday (11.03±0.004 minutes) as the patients were seen by senior residents and junior resident doctors. Feddock CA et al., in their study concluded that the level of patient dissatisfaction relating to long waiting times in OPDs can be reduced if consultants spend more time with their patients during consultation [9].

Regarding the consultation rooms, the waiting time was highest for consultation room 'C' (Room 107), which was manned by a senior consultant, with a mean waiting time of 56.10±0.32 minutes and a

mean consultation time of 7.23±0.003 minutes. Patients received the most time for consultation in consultation room 'A' (Room 105), which was manned by senior residents and junior resident doctors, with a mean consultation time of 11.03±0.004 minutes. However, the maximum number of patients (119, 39.6%) were attended to in Consultation room 'B' (Room 106), which was manned by other consultants, with a mean waiting time of 53.58±0.032 minutes and a mean consultation time of 9.51±0.003 minutes, respectively. Deveugele M et al., and Ogden J et al., have mentioned that there are no guidelines on the ideal consultation length, but studies have found that patients prefer to have more time with the doctor [25,26].

The majority of the patients (256, 85%) were follow-up patients with cancer, with a male dominance of 52%. The number of new patients attending the OPD was only 44 (15%), out of which 70% were males. In present study, the consultation time for new patients was 9.58±0.003 minutes, which was slightly higher than the consultation time for follow-up patients (9.52±0.004 minutes). However, the study by Aeinparast A et al., revealed no statistical difference in waiting time between new and follow-up patients [27].

The analysis of the arrival pattern of patients revealed that a maximum of 200 (66.7%) patients arrived in the time slot of 8:30 AM-10:30 AM, whereas the number of patients was minimal with 6 (2%) in the time slot of 2:30 PM-4:30 PM. Tiwari Y et al., in their study, observed that 26.3% of patients came during the period 9:00 AM-12:00 PM, with the peak hour of arrival between 10:00 AM-11:00 AM, which was different from the findings of present study [28]. It was observed in this study that some academic activities in the department were also scheduled in the afternoon after 2:30 PM, and the patients were mostly seen by Senior Residents during this time slot. However, the time slot of 10:30 AM to 12:30 PM recorded a higher waiting time (61.39±0.031 minutes) and higher consultation time (11.01±0.004 minutes) as the majority of the consultants were available in the OPD during this time slot after completing their morning ward rounds.

According to the data collected in this study, the waiting time for 124 (41.3%) patients was less than 30 minutes, and 200 (66.6%) patients were attended to by the consultant within one hour of waiting. A total of 84 (28%) patients spent less than five minutes for consultation with their doctor, whereas 162 (54%) patients spent approximately 10 minutes with their doctor for consultation. The overall mean waiting time and mean consultation time were estimated to be 50.43±0.030 minutes and 9.53 min±0.004, respectively. The Pearson coefficient of correlation value (r) was calculated to be 0.14, indicating a positive correlation. The p-value was calculated to be 0.014 (p-value <0.05) and was found to be statistically significant. Based on the overall mean waiting time and mean consultation time, it can be concluded that on average, a patient spends about 59.96 minutes in the OPD premises. Out of this, 84.1% of the time is spent waiting and 15.9% of the time is spent with the consultant. The estimated mean waiting time and consultation time in this study are much shorter than the average waiting time of 173 minutes observed by Dansky KH and Miles J, [29]. In a similar study conducted by Bamgboye EO et al., a mean waiting time of 1 hour 13 minutes was observed [30]. Dos Santos LM et al., observed an average waiting time of about 60 minutes in Atlanta and 188 minutes in Michigan [31].

In the study by Oche MO et al., it was observed that patients spent about seven minutes in the consultation room, compared to 9.53 minutes in our study [11]. However, the waiting time observed in their study was 90-180 minutes, which was significantly higher than the waiting time of 50.43 minutes observed in present study.

The study conducted by Ahmad BA et al., revealed that 91.93% of patients waited for <90 minutes to see the doctor, with an average consultation time of 18 minutes [32]. This was higher than present study findings, where 81.3% of patients waited for <90 minutes with an average consultation time of 9.53 minutes. However, the study conducted by Paul BC et al., in the OPD revealed a mean consultation time of 10 minutes, which was consistent with present study findings [33].

Based on the observations of the study, the following factors were found to be responsible for long waiting times:

- Delay in starting the OPD, possibly due to morning rounds in the wards.
- Non availability of automated patient records leading to disorganised upkeep of medical documents by patients, resulting in more time spent searching for physical documents.
- Patients interrupting the OPD for minor issues like affixing a doctor's stamp on a document, Ayushman Bharat related queries, financial issues, etc.
- The maximum number of patients were first seen by junior resident doctors followed by senior consultants, resulting in increased patient waiting times.
- Frequent interruption of the OPD by relatives of in-patients, who wanted to clarify queries with the consultants regarding their patients admitted in the ward.
- Many patients had post-consultation queries with the registration staff, leading to a delay in the registration of other patients and increasing waiting times.
- VIP patients and hospital staff moving directly to consultation rooms, bypassing the queue.
- Overcrowding by patients outside the doors of consultation rooms, leading to chaos.

The hospital administration authorities were informed of the observations brought out in the study, and the following interventions have been recommended to reduce waiting times in the OPD, thereby ensuring better quality of care and patient satisfaction:

- Public relation officers or executives should be made available in each OPD to guide patients about the consultation process and address post-registration queries.
- Consultant rounds and academic activities should be scheduled before or after OPD timings.

A token display system should be available for each of the consultation rooms in the OPD to prevent overcrowding in front of the consultation rooms.

A separate consultation room manned by a senior resident doctor should be earmarked for providing priority consultation to stretcher-bound and differently-abled patients. This will also help declutter the waiting area and ease the movement of patients.

The complaint/suggestion box available in the OPD should be opened every week for compiling valuable feedback from patients. The access key for this box should be with the Head of Department (HOD) only, so that negative feedback is not weeded out by the staff. This will help enhance the quality of care in the OPD.

In order to reduce "waiting fatigue," the waiting areas should have adequate amenities and facilities for entertainment, such as TVs, newspapers, magazines, and health education brochures.

Regular training of staff on better communication skills and time management should be conducted to ensure better patient satisfaction. The quality of service can be further improved in the OPD by effectively managing resources and fostering a team spirit among healthcare workers.

Limitation(s)

The limitation of the study was the short duration of observation. Additionally, during brief absences of the researcher from the OPD for refreshments or nature calls, the researcher had to rely on the statements of the patients/attendants regarding the time taken for consultation. Hence, there might be a possibility of subjective bias.

CONCLUSION(S)

This study has attempted to gain a better insight into the OPD waiting time and consultation time of the radiation oncology department. The prime reason for the delay in the waiting area was the delayed availability of consultants due to ongoing rounds or other academic activities. The mean waiting time and consultation time were estimated to be 50.43±0.030 minutes and 9.53±0.004 minutes, respectively. The hospital authorities have been requested to implement the recommendations brought out in the study and perform a detailed analysis of feedback forms received in suggestion boxes to further improve the quality of patient care.

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APPENDIX

Data collection sheet:

Date	Week day	Patients name	Age/sex	Address	New/Follow-up	Conslt room No.	Regd time (A)	Conslt in time (B)	Conslt out time (C)	Waiting time (B-A)	Conslt time (C-B)