



**A COMPARATIVE RETROSPECTIVE STUDY TO EVALUATE THE IMPACT OF COVID-19 ON
AYUSHMAN BHARAT SCHEME (DKBSSY) REGISTRATION IN CANCER DEPARTMENT AT
CHHATTISGARH INSTITUTE OF MEDICAL SCIENCES, BILASPUR, CHHATTISGARH**

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ABSTRACT

Background: Ayushman Bharat PM-JAY is the largest health assurance scheme in the world which aims at providing health cover of Rs 5 lakhs per family / year for secondary and tertiary care hospitalization to cover 10.74 crores poor and vulnerable families (approximately 50 crore beneficiaries) that form the bottom 40% of the Indian population. Ayushman Bharat Scheme or Pradhan Mantri Jan Arogya Yojna or PM-JAY was launched on 23rd September, 2018. In our state Chhattisgarh it is run as Dr. Khoobchand Baghel Swasthya Sahayata Yojna (DKBSSY). PM-JAY is fully funded by the Government and cost of implementation is shared between the Central and the State Governments. It provides cashless access to health care services for the beneficial at the point of all necessary services. **Methods:** This retrospective comparative clinical study is conducted in the department of Radiotherapy, Chhattisgarh Institute of Medical Sciences, Bilaspur, Chhattisgarh. The one year Ayushman Bharat scheme (DKBSSY) registration data from 20 March 2019 to 20 March 2020 is compared with the data from Covid-19 year from 20 March 2020 to 20 March 2021. Frequency tables, comparative charts are used to evaluate and measure the data from the study to describe the impact of Covid-19 on Ayushman Bharat scheme (DKBSSY) registration in cancer department. **Findings:** In Pre Covid-19 yr the total Ayushman beneficiary registered in radiotherapy department, CIMS was (90.07%) IPD, patients of carcinoma ovary and cervix were registered 100%, followed by breast cancer (98.92%), head & neck cancer (98.83%), lung cancer (96.72%) and colorectal cancers (96.55%). In Covid-19 yr the total Ayushman beneficiary registered in radiotherapy department, CIMS was (96%) IPD, patients of carcinoma ovary, carcinoma cervix, carcinoma breast and carcinoma lung were registered 100%, followed by head & neck cancer (99.28%), colorectal cancer (98.91%) and haematological cancers (96%). **Interpretation:** We observed in our study that in Pre Covid-19 yr majority of the cancer IPD patients registered were old females and belonged to lower SES, in Covid-19 pandemic year there was slight increase in male and upper SES patients compared to pre Covid-19 year, a surge in IPD of 6% is seen in hematological malignancies and fall of 6% IPD of breast cancer is noted in Covid-19 pandemic year. The Ayushman registration noted in pre Covid-19 year was 90.07% with 100% registry of carcinoma ovary and cervix whereas in during the Covid-19 pandemic the Ayushman registration was 96% with 100% registration of carcinoma ovary, carcinoma cervix, carcinoma breast and carcinoma lung.

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INTRODUCTION

Ayushman Bharat is the Pradhan Mantri Jan Arogya Yojna or PM-JAY as it is popularly known. This scheme was launched on 23rd September, 2018 in Ranchi, Jharkhand by the Hon'ble Prime Minister of India. [1] Ayushman Bharat PM-JAY is the largest health assurance scheme in the world which aims at providing health cover of Rs 5 lakhs per family per year for secondary and tertiary care hospitalization to cover 10.74 crores poor and vulnerable families (approximately 50 crore

beneficiaries) that form the bottom 40% of the Indian population.[2] In our state Chhattisgarh it is run as Dr. Khoobchand Baghel Swasthya Sahayata Yojna (DKBSSY). With a view to provide the health assurance coverage to 100% of population of Chhattisgarh & to make the process of availing services simple to the general public, under Dr. Khoobchand Baghel Swasthya Sahayata Yojana (DKBSSY) treatment benefits are being provided to all the resident families of State on the basis of Ration cards issued by the State Food, Civil Supplies & Consumer Protection department.

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The households included are based on the deprivation and occupational criteria of Socio –Economic Caste Census 2011 (SECC 2011) for rural and urban areas respectively. [3][4] PM-JAY is fully funded by the Government and cost of implementation is shared between the Central and the State Governments. It provides cashless access to health care services for the beneficial at the point of service, that is, the hospital. Benefits of the scheme are portable across the country i.e. a beneficiary can visit any empanelled public or private hospital in India to avail cashless treatment. [5] Services include approximately 1393 procedures covering all the costs related to treatment, including but not limited to drugs, diagnostic services, physician’s fees, room charges, surgeon charges, OT and ICU charges etc.[6] The RSBY had a family cap of five members. However, based on learning from those schemes, PM-JAY has been designed in such a way that there is no cap on family size or age of members. Cashless and paperless access to quality health care services. It helps India progressively achieve Universal Health coverage [UHC] and Sustainable Development Goals (SDG) amidst Covid-19 pandemic. The first case of Covid-19 in Chhattisgarh state was found in capital Raipur on 19th March 2020.[7] In the absence of pharmaceutical interventions, many countries have resorted to population-wide lockdowns to slow the spread of the virus and to allow their health systems to cope. [8] The main concern is that health services have been partially or completely disrupted in many countries and states. Overall 42% for cancer management is disrupted by Covid-19 the key reasons behind it are the Reassignment of health staff from their primary service to support COVID-19. [9] But the most common reasons for discontinuing or reducing services were cancellations of planned treatments, a decrease in public transport available and a lack of staff because health workers had been reassigned to support COVID-19 services.

Objective: To evaluate the impact of Covid-19 on Ayushman Bharat scheme registration in cancer department at Chhattisgarh institute of medical sciences, Bilaspur, chhattisgarh.

METHODOLOGY

METHOD

This retrospective observational clinical study involved the Ayushman Bharat scheme (DKBSSY) registration data of pre Covid-19-19 year from 20 March 2019 to 20 March 2020 and data of first year of Covid-19-19 year from 20 March 2020 to 20 March 2021. This study is conducted in department of Radiation Oncology, CIMS hospital, Bilaspur Chhattisgarh. The 1 year Ayushman Bharat scheme (DKBSSY) registration data from 20 March 2019 to 20 March 2020 is compared with the data from Cov19 year from 20 March 2020 to 20 March 2021. Frequency tables, comparative charts are used to evaluate and measure the data from the study to describe the impact of Covid-19 on cancer patients’ IPD and Ayushman Bharat registrations.

Patient Inclusion Criteria

1. All Histopathological proven cases of cancer.
2. All Patients who are eligible for registration under Ayushman Bharat scheme in cancer department.

Patient Exclusion Criteria

1. Patients who were not having Ayushman Bharat card.

2. Patient who took treatment on OPD basis only.

Major Variables

1. Age
2. Gender
3. Socioeconomic status
4. Ayushman Bharat registration data pre Covid-19 year
5. Ayushman Bharat registration data Covid-19 year

Findings

This retrospective observational clinical study involved the Ayushman Bharat scheme (DKBSSY) registration data of pre Covid-19 year from 20 March 2019 to 20 March 2020 and data of first year of Covid-19 year from 20 March 2020 to 20 March 2021. This study is conducted in department of Radiation Oncology, CIMS hospital, Bilaspur Chhattisgarh. All patients’ data of both years were thoroughly evaluated and studied. The results are as follows:

Age

In Pre Covid-19 yr i.e. from 20 March 2019 to 20 March 2020, 759 out of 1532 cancer patients (49%) were belonged to >45 years age group followed by 40% in 18-45 year group and only 10% of admitted patients were below 18 yrs of age. Whereas in Covid-19-19 yr i.e. from 20 March 2020 to 20 March 2021, 49% patients were above 45 yrs of age followed by 36% in age group of 18-45 and only 15% patients were below 18 yrs. This data shows that during Covid-19 pandemic the young patients (<18yrs) were increased while IPD of other two age group patients were decreased. The mean age and s.d.(standard deviation) of pre Covid-19 year cancer patients was 42+/-2.3 Years and The mean age and s.d. (standard deviation) of patient during Covid-19 year was 43+/-3.4 Years.

Table 1 Age wise distribution of IPD patients

Age Range(yr)	< 18	18-45	>45	Total
Pre Covid-19 yr	158(10.13%)	615(40.14%)	749(48.89%)	1532
Covid-19 yr	185(15.41%)	427(35.58%)	588(49%)	1200

In pre Covid-19 patient, Mean+/-s.d.=42+/-2.3 years
 In Covid-19 patient, Mean+/-s.d.= 43+/-3.4 years

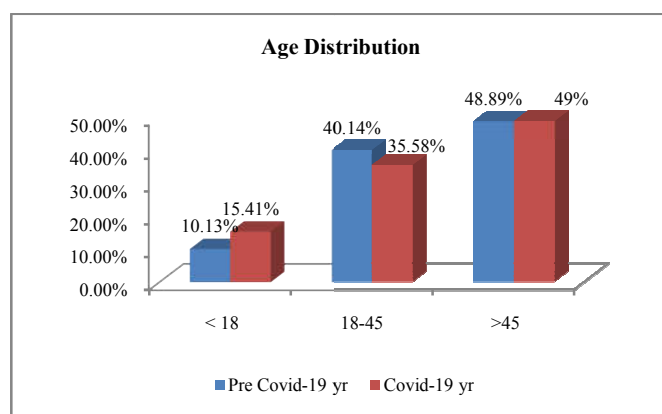


Figure 1

Gender

834 out of 1532(54%) cancer patients were females in Pre Covid-19 yr whereas male IPD patients were 45%, only 1 transgender patient was reported. During Covid-19 pandemic year males were predominant in IPD i.e. 55% whereas female IPD population was 45%, no patients of transgender community was reported. This data revealed that male cancer

patients' IPD was increased in Covid-19 pandemic than females.

Table 2 Gender wise Distribution of IPD patients

Gender	Male	Female	Transgender	Total
Pre Covid-19 yr	697(45.49%)	834(54.43%)	1(0.007)	1532
Covid-19 yr	663(55.25%)	537(44.75%)	0	1200

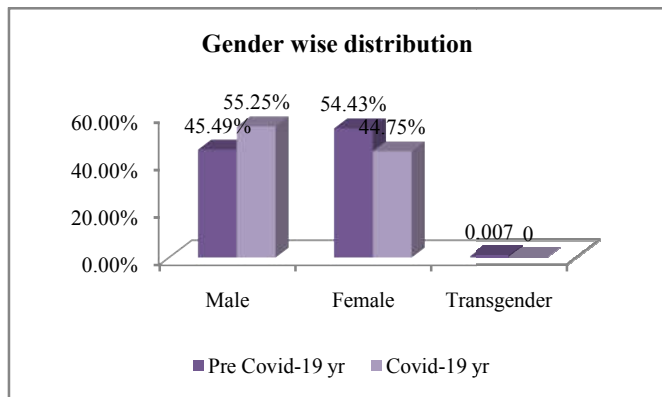


Figure 2

Socio-economic status

In Pre Covid-19 yr, 995 out of 1532 (65%) patients of lower socioeconomic strata came to cancer IPD, on the other hand 33% patients were of middle class economy status and only 2% were belonged to upper class. Whereas in Covid-19 pandemic year lower class patients reported was 56% and upper class were 5%. This data clearly stated that during the pandemic year the patients of upper socioeconomic strata were increased while lower class patient were slightly decreased.

Table 3 Socio-economic status wise distribution of patients

SES	Lower Class	Middle Class	Upper Class	Total
Pre Covid-19 yr	995(64.94%)	510(33.28%)	27(1.76%)	1532
Covid-19 yr	678(56.5%)	458(38.16%)	64(5.33%)	1200

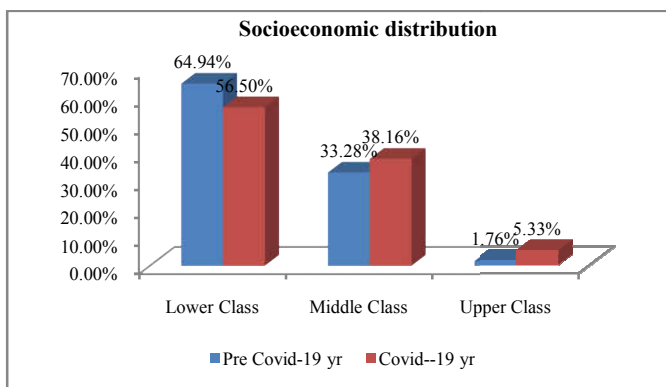


Figure 3

Table 4 Total Ayushman registration and IPD data from 20 March 2019 to 20 March 2020

Type of Cancer	Head & Neck ca.	Breast can.	Cervix can.	Lung can.	Colorectal can.	Ovary can.	Lymphoma/leukemia	others	Total
IPD	342	278	200	122	145	60	180	205	1532
Ayushman	338	275	200	118	140	60	176	73	1380
Conversion	98.83%	98.92%	100%	96.72%	96.55%	100%	97.77%	35.60%	90.07%

Table 5 Total Ayushman registration and IPD data from 20 March 2020 to 20 March 2021

Type of Cancer	Head & Neck ca.	Breast can.	Cervix can.	Lung can.	Colorectal can.	Ovary can.	Lymphoma/leukemia	others	Total
IPD	278	148	209	40	92	47	210	176	1200
Ayushman	276	148	209	40	91	47	206	135	1152
Conversion	99.28%	100%	100%	100%	98.91%	100%	98%	76.70%	96%

Total Ayushman Bharat scheme (DKBSSY) registration data from 20 march 2019 to 20 march 2020

In Pre Covid-19 yr i.e. from 20 March 2019 to 20 March 2020 the total Ayushman beneficiary registered in radiotherapy department, CIMS was 1380 out of 1532 IPD, these patients received chemotherapy (intravenous, oral, hormonal, metronomic, targeted, molecular, intraperitoneal), symptomatic IV treatment, pain management (oral, IV), emergency critical care and other conservative management in different forms after admission in cancer ward. Patients of carcinoma ovary and cervix were registered 100%, followed by breast cancer (98.92), head & neck cancer (98.83%), lung cancer (96.72%) and colorectal cancers (96.55%).

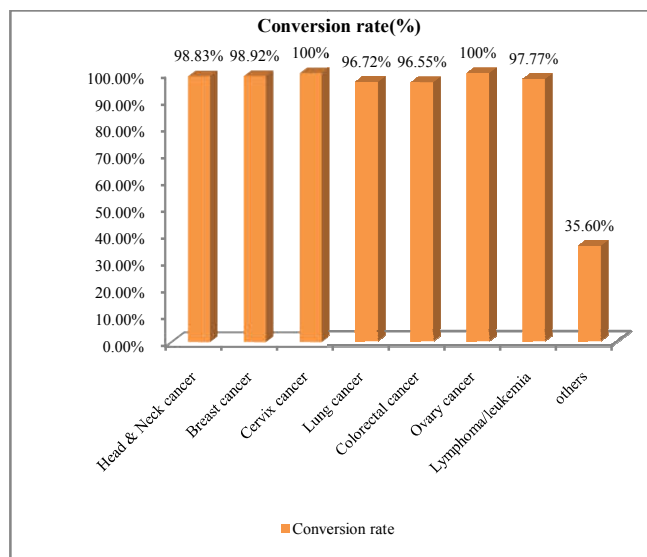


Figure 4

*Conversion rate is calculated from IPD registration and AYUSHMAN registration

Total Ayushman Bharat scheme (DKBSSY) registration data 20 march 2020 to 20 march 2021

In Covid-19 yr i.e. from 20 March 2020 to 20 March 2021 the total Ayushman beneficiary registered in radiotherapy department, CIMS was 1152 out of 1200 IPD, these patients received chemotherapy (intravenous, oral, hormonal, metronomic, targeted, molecular, intraperitoneal), symptomatic IV treatment, pain management (oral, IV), emergency critical care and other conservative management in different forms after admission in cancer ward. Patients of carcinoma ovary, carcinoma cervix, carcinoma breast and carcinoma lung were registered 100%, followed by head & neck cancer (99.28%), colorectal cancer (98.91%) and haematological cancers (96%).

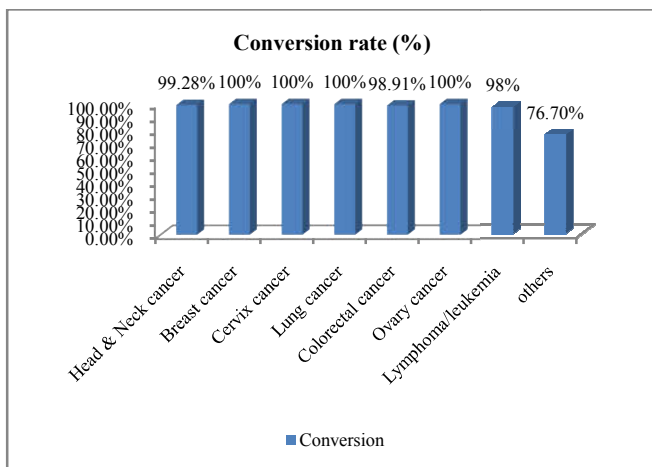


Figure 5

*Conversion rate is calculated from IPD registration and AYUSHMAN registration

Total Ayushman Bharat scheme (DKBSSY) registration data comparison

Table 5 Total Ayushman Bharat scheme (DKBSSY) registration data comparison

	Pre Covid-19-19 yr	Covid-19-19 yr	Total
Total IPD	1532	1200	2732
Total Registration	1380	1152	2532
Conversion rate	90.07%	96%	92.67%

*Conversion rate is calculated from IPD registration and AYUSHMAN registration

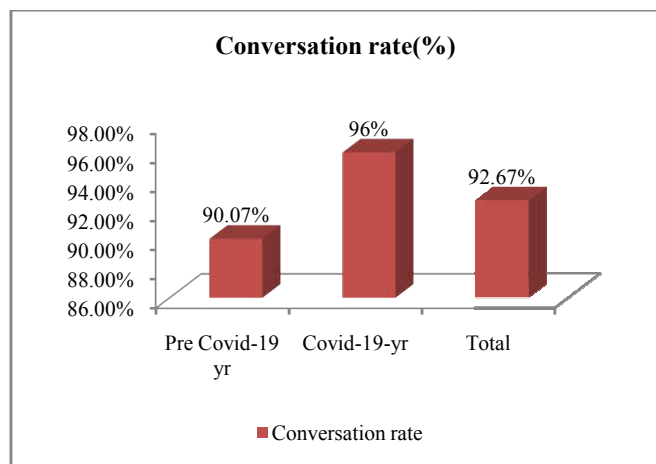


Figure 6

DISCUSSION

Covid19 pandemic, AB PM-JAY service utilization across most of the implementing states has reduced significantly. This change can be attributed to deeper underlying factors relating to supply, demand, and infrastructural set-up. Surveys and discussions conducted across the country have indicated that providers are facing financial and service delivery challenges from factors such as low utilization, delayed payments, inadequate and expensive supply of PPE along with disruptions to the commodity supply chain while, beneficiaries continue to face physical barriers to access facilities even post-lockdown, information asymmetry and fear of contracting the virus at hospitals. [10] The lockdown continued in different phases till 31 May 2020. During this time the movement of entire population was limited which resulted in postponement and delaying of many health care services including oncological care which includes

chemotherapy, radiotherapy, targeted therapy, IV symptomatic managements and many more. Consequently the deterioration of health status of cancer patients. Many patients reached the hospital for oncological care during the period and benefited, Overall 42% for cancer management is disrupted by Covid-19 the key reasons behind it is the reassignment of health staff from their primary service to support COVID-19. [9] Evidence is emerging that the poor are at heightened risk of acquiring NCDs, and a persistent need remains for government to fully cover the financial burden of NCDs especially for this stratum. Among NCDs, the odds of incurring catastrophic hospitalization expenditures are highest for cancer. India has around 2.25 million cases with over 1 lakh new cases being registered every year, between 30-50% of all cancer cases are preventable, but the percentage of patients undergoing cancer treatment in India are much lower than international standards for multifactorial reasons – lack of awareness, late stage of presentation, geographical remoteness, financial hardship and fear of the disease treatment and consequences. [11] In our cancer centre during Covid-19 pandemic the Ayushman Bharat (DKBSSY) registration was recorded 96% which is 6% higher than the previous pre Covid-19 year.

CONCLUSION

We observed in our study that In Pre Covid-19-19 yr majority of the cancer IPD patients registered were old females and belonged to lower SES, in Covid-19 pandemic year there was slight increase in male and upper SES patients compared to pre Covid-19 year, a surge in IPD of 6% is seen in hematological malignancies and fall of 6% IPD of breast cancer is noted in Covid-19 pandemic year. The Ayushman registration noted in pre Covid-19 year was 90.07% with 100% registry of carcinoma ovary and cervix whereas in during the Covid-19 pandemic the Ayushman registration was 96% with 100% registration of carcinoma ovary, carcinoma cervix, carcinoma breast and carcinoma lung.

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