International Journal of Community Medicine and Public Health
Thomas B et al. Int J Community Med Public Health. 2023 Aug;10(8):2741-2747
http://www.ijcmph.com
pISSN 2394-6032 | eISSN 2394-6040

DOI: https://dx.doi.org/10.18203/2394-6040.ijcmph20232151

Original Research Article

Study of awareness, enrolment, and utilization of Ayushman Bharat Pradhan Mantri Jan Arogya Yojana in Gujarat, India

Bigi Thomas[1]*, Dharmesh P. Raykundaliya[2], Sonal Bhatt[3], Ketal Vadhel[1],

[1]Department of Social Work, [2]Department of Statistics, [3]Department of Economics, S. P. University, VVN, Gujarat, India

Received: 20 June 2023
Revised: 04 July 2023
Accepted: 05 July 2023

***Correspondence:**
Dr. Bigi Thomas,
E-mail: bigisrsh@gmail.com

ABSTRACT

Background: Ayushman Bharat-Pradhanmantri Jan Arogya Yojana (AB-PMJAY) envisages complete financial protection for around 50 crores of identified poor and vulnerable Indian beneficiaries against their catastrophic health care needs. Awareness is a pre-requisite that ensures enrolment and utilization of any health insurance program. Being a newly implemented scheme, very few studies are reported on the level of awareness, enrolment, and utilization of the AB-PMJAY scheme as well as the sources of information and support to the beneficiaries from Gujarat. So, this study aims to assess the current status of awareness, enrolment, and utilization of AB-PMJAY in Gujarat.
Methods: A multi-stage sampling method was used in this cross-sectional study in both rural and urban areas and altogether 1152 households were randomly selected from three districts of Gujarat. Ten trained field investigators collected data with the help of a structured interview schedule.
Results: AB-PMJAY is popular in Gujarat, with 24% high-level awareness and 47.8% moderate-level awareness. Out of 1152 households, 82.9% had AB-PMJAY cards, with a 43.3% utilization rate. Factors affecting awareness include area of living, religion, and caste. While 22.9% reported out-of-pocket (OOP) expenditure with AB-PMJAY benefits, 15.1% reported non-utilization of their AB-PMJAY cards, despite needed. ASHA workers and Ayushman Mitras were the major sources of information.
Conclusions: The reported utilization rate in this study was only 43.3%, despite having impressive awareness and enrolment rates. The OOP costs must be reduced, and the issues that prevented households from using the AB-PMJAY benefits despite their need must be addressed.

Keywords: AB-PMJAY, Health insurance scheme, Awareness, Enrolment, Utilization, OOP expenditure

INTRODUCTION

Ayushman Bharat-Pradhan Mantri Jan Arogya Yojana (AB-PMJAY) launched on September 23, 2018, to cater to the secondary and tertiary health care needs of the impoverished and vulnerable sections of India guarantees completely cashless hospitalization with improved effectiveness at public as well as private hospitals with a coverage up to INR.5,00,000 per family per year. Sustainable development goal (SDG) 3.8 aims to achieve the health and well-being of all by achieving universal health coverage (UHC).[1] About 107.4 million poorest and most vulnerable families identified by the 2011 socio-economic and caste census are covered by this national health insurance scheme across India which sponsors almost all the complex surgeries and thousands of procedures, covering many specialties.

India faces enormous challenges in moving towards UHC, which include suboptimal access, insufficient availability of services, poor quality, delayed health service delivery, and high OOP expenditure.[2] In India,

3.8% of the gross domestic product (GDP) is spent on healthcare expenditure, and OOP expenditure accounts for 58.78%.[3] The escalating cost of medical treatment is beyond the reach of the common man. While the well-to-do segment of the Indian population, both in rural and urban areas can afford medical care, for the poor, it remains unaffordable. Even the so-called rich people of India find it difficult to meet the exorbitant medical expenditure for certain chronic diseases like cancer, kidney and heart diseases. High OOP expenditure makes healthcare services inaccessible to a significant proportion of Indian households while catastrophic medical expenditure continues to remain a major reason for impoverishment in Indian households.[4]

APMJAY scheme has potential to cater to health care needs of around 10 crore very poor and vulnerable families in India while it offers affordable quality health care and ensures financial protection against catastrophic medical bills. "Since inception (2018), 19.7 crore beneficiaries have been provided Ayushman cards, and over 4.3 crore hospital admissions worth over Rs 0.49 lakh crore have been authorized through network of 28,667 empanelled healthcare providers, including 13,115 private hospitals, of 20th January 2023".[5]

It is an indisputable fact that the acceptability and utilization of any insurance scheme are greatly subjected to the level of awareness about the scheme and its subsequent acceptability by its beneficiaries. Many researchers, since long, highlighted the significant associations between awareness about health insurance scheme and its acceptability, coverage, and utilization and under-utilization.[6-8] Significant differences in the level of enrolment and utilization between those who are aware and not aware are also reported by many studies.[9,10]

AB-PMJAY scheme completes 05 years in September 2023. Being a comparatively new scheme, very few studies on the level of awareness, sources of information and support, and proximate factors affecting the level of awareness are conducted and research-based evidence is scanty in Gujarat. So, it is essential to study the overall AB-PMJAY experience and level of awareness and its proximate factors.

Objectives

Objectives of the study were to assess the current status of AB-PMJAY in terms of the level of awareness, having cards, and utilization among beneficiaries, to examine various sources of information and support to the beneficiaries regarding AB-PMJAY in the community and to identify the proximate factors associated with the level of awareness among beneficiaries.

METHODS

This cross-sectional study, guided by a multi-stage (four-stage) random sampling method, attempted to have a critical understanding of the level of awareness and knowledge about the APMJAY scheme among its beneficiaries from Anand, Aravalli as well as the Tapi districts. These districts are randomly selected from the best, average and worst performing districts of Gujarat state "to capture the possible heterogeneity, and intra-district differentials for better understanding of the scheme".[11,12] This district selection was the first stage of sampling. From each selected district, a random selection of one taluka was done in the second stage. In the third stage of sampling three villages as well as one urban ward each were selected from the talukas followed by the random selection of households from the list of beneficiaries in the fourth stage. The rural-urban proportion was considered and hence proportionate sampling method was used to calculate the samples from each district.

Altogether 1152 beneficiaries were interviewed after having their informed consent with the help of a household survey and data collection was done from January to March 2023 by 10 trained field investigators. The households in the list of PMJAY-SECC beneficiaries from the study sites were included in the study. Households that did not consent to giving details, were locked, and did not have a person above 16 years of age during data collection were excluded from the study, and in that case, the adjacent households in the list were taken. The heads of households were interviewed with a structured interview schedule, and in the absence of the head of the family, other members above 16 years of age were considered for interview. The objectives of the study were explained, and informed consent was obtained from the participants after ensuring the confidentiality of the collected data. Care was taken to maintain privacy during the interview, and the participants were informed that they could withdraw at any point in the interview.

Interview schedule had different sections to collect demographical details of households, beneficiaries' awareness, enrolment and utilization of AB-PMJAY cards.

Table 1: Sampling frame and sample size with district and rural-urban distribution.

Districts	Samples		Total
	Urban	Rural	
Anand	142	330	472
Arvalli	114	266	380
Tapi	90	210	300
Total	346	806	1152

Analysis

The collected data was analysed using SPSS. The responses to the awareness statements were coded as yes, no, or don't know. The level of awareness was computed with the total correct answers of the respondents to the

awareness-related statements. On that basis, respondents were classified into three levels of awareness namely low, moderate, and high. Cross tabulations and chi-square tests were done to understand the extent of awareness, and its associations with the demographical variables.

RESULTS

Analysis of data is documented in this section with the help of tables and explanations. AB-PMJAY awareness, enrolment, and utilization among beneficiaries in the study sites are mainly analysed.

Overall, the Table 2 makes it clear that beneficiaries are aware of many features of the PM-JAY scheme. Out of 13 different features of the scheme, seven features were well known with more than 50% awareness rate. While the maximum proportion (99.7%) of respondents knew that the PM-JAY scheme offers insurance coverage of fives lakhs per annum per family, its pre- and post-hospitalization coverage, coverage all over India, transportation allowance, availability of Ayushman Mitras (AM) at empanelled hospitals, and dental care coverage are some less-aware features of this scheme among the majority of the beneficiaries interviewed.

Table 2: Feature/benefit-wise awareness about the PM-JAY scheme.

Awareness about PM-JAY scheme	Beneficiaries aware	
	N	%
Offers an insurance coverage of 5 lakhs per annum per family	1149	99.7
Puts no cap on the family size, age or gender	905	78.5
Covers all pre-existing conditions	525	45.6
Covers 3 days pre-hospitalization and 15 days post-hospitalization expenses	617	45.5
Offers cashless treatment and hospitalization anywhere in the India	508	44.1
Offers treatment facility in private sector and government empanelled hospitals	626	54.3
Offers a defined transport allowance per hospital	442	38.4
Appoints Pradhan Mantri Aarogya Mitras in empanelled hospitals	463	40.2
Offers PM-JAY card at free of cost	681	59.1
Is for the poor and below poverty line households in India	798	69.2
Covers surgery, day care- treatment, hospitalization, vaccinations and medicines	765	66.4
Covers oral health care/dental care	336	29.1
Covers hospitalization and not OPD services	836	72.6

Table 3: District-wise awareness of PM-JAY among beneficiaries.

Districts	Level of awareness, n (%)			Total
	Low	Moderate	High	
Anand	153 (32.4)	218 (46.2)	101 (21.4)	472
Arvalli	90 (23.7)	177 (46.6)	113 (29.7)	380
Tapi	81 (27.0)	156 (52.0)	63 (21.0)	300
Total	324 (28.2)	551 (47.8)	277 (24.0)	1152

X^2=15.02, df=4, p=0.005.

From the Table 3 it is clear that overall, a little less than a quarter (24%) of the respondents are highly aware and 47.8% are moderately aware. Wide variations can also be seen among districts in terms of their level of the awareness.

Chi-square results indicated a significant association between the level of awareness and districts, indicating that the level of awareness varied across different districts in terms of features of the PM-JAY scheme.

Table 4 indicated a statistically significant association between awareness and area of living, caste and religion.

Details about AB-PMJAY beneficiary enrolment and utilization experience were also studied and the data are given in Table 5.

Overall, out of the 1152 beneficiaries interviewed, a substantially high proportion (82.9%) of respondents reported having the AB-PMJAY card after their enrolment, of which 43.3% utilized it and out of those utilized (n=414), 22.9% (n=95) spent OOP. Even though the proportion of beneficiaries having AB-PMJAY cards in all the districts under the present study is almost equal, a clear distinction in its utilization and OOP expenditure across districts is clear. Among those who are having AB-PMJAY cards, Anand district (n=403) reported the highest utilization rate (59.1) followed by Arvalli and as well as the Tapi districts. One of the major issues related to the utilization, reported by 18.2% of the respondents who were having cards (n=956) was their inability to use the card despite being needed and this proportion is also widely varied across districts. The reasons reported by respondents for non-utilization of the card and the despite need, are given in Table 6.

The majority 71.8 percentages of the respondents reported non-availability of the treatment facility for the particular disease as a reason for non-utilization. However, other issues reported include lack of the guidance, not knowing the use of the PMJAY card as well as the absence of the empanelled hospital within their reach (nearby).

Table 4: Socio-demographic details and level of awareness about PM-JAY.

Socio-demographic details	Level of awareness about PM-JAY			Total	P value
	Low	Moderate	High		
Area of living					
Rural	178	431	197	806	0.000
Urban	146	120	80	346	
Religion					
Hindu	274	523	259	1056	0.000
Muslim	50	28	18	96	
Education of respondent					
Illiterate	63	80	42	185	0.192
Primary education	182	332	150	664	
Secondary education	55	106	65	226	
Graduation	24	33	20	77	
Caste					
General	42	86	59	187	0.000
OBC	206	287	148	641	
SC	32	36	20	88	
ST	44	142	50	236	
Gender of respondent					
Male	208	348	192	748	0.205
Female	116	203	85	404	

P<0.05 indicates a statistically significant association.

Table 5: Overview of beneficiaries' enrolment and utilization of AB-PM-JAY scheme.

Particulars	Anand, N (%)	Arvalli, N (%)	Tapi, N (%)	Total, N (%)
HHs interviewed	472	380	300	1152
HHs having cards	403 (85.4)	305 (80.3)	248 (82.7)	956 (82.9)
HHs utilized the card	238 (59.1)	105 (34.4)	71 (28.6)	414 (43.3)
HHs required benefit, yet could not use card	88 (21.8)	48 (15.7)	38 (15.3)	174 (18.2)
HHs have cards, but were not required to use	77 (19.1)	152 (49.9)	139 (56.1)	368 (38.5)
HHs spent out of pocket expenditure	79 (33.2)	16 (15.2)	00 (00.0)	95 (22.9)

Table 6: Reasons for non-utilization of the AB-PMJAY card, despite needed (n=174).

Reasons	N (%)
Non-availability of treatment facility for a particular disease	125 (71.8)
Non-availability of nearby empanelled hospital	2 (1.14)
Do not know about the use of card	47 (27.0)
No guidance	64 (36.7)

DISCUSSION

Beneficiaries all over India have substantially benefitted from the Ayushman Bharat scheme, the world's largest health insurance program, which provides cashless quality medical access to poor families.[13,14] Several innovative, commendable, and objectively viable resolutions by many scheme-implementing states had improved the awareness, enrolment, acceptability, and utilization of this scheme among beneficiaries. However, available literature suggests varied levels of awareness and utilization from different parts of India, and this difference is mainly attributed to the settings in which these studies are carried out and to the socio-economic, educational, cultural, rural-urban, and clinical characteristics of participants, HHs, etc.[3,15] While a study from rural Jammu reported a low 28% percent awareness, a rural Tamil Nadu study found 77% awareness among the participants. An improved level of awareness about AB-PMJAY among the rural population is reported by Dash et al also.[12]

The present study found a comparatively better level of awareness (24% at a high level and 47.8% at a moderate level) among beneficiaries from Gujarat. However, the rate of awareness varies with districts under study. At the same time, the area of living (rural-urban), religion and caste are the demographical characteristics of HHs significantly associated with the awareness level of beneficiaries. Many researchers in the past also documented rural-urban differences in terms of awareness about health insurance schemes.[16]

A greater proportion of HHs (82.9) reported having AB-PM-JAY cards after successful enrolment and almost the same proportion of HHs (within a range of 80-86%) from all three districts claimed that they were enrolled and possess the cards. A better performance by Gujarat, while compared to Madhya Pradesh, in almost all components including enrolment, was reported by Trivedi et al.[17] At the same time, the possession of AB-PM-JAY cards by the majority of respondents were documented by Prasad et al also from rural Bihar. Better enrolment coverage in states with long-standing state schemes, for example, RSBY in Gujarat, is also reported by Bhatnagar et al.[3,18]

Altogether, 43.3% of beneficiaries utilized the benefit of the card for hospitalization and as expected, a clear district-based variation could be seen in the utilization pattern in the present study with Anand district having the maximum proportion (59.1%) of respondents who availed the benefits for their health care needs under the AB-PMJAY scheme. This wide variation in utilization across districts, despite having an almost equal proportion of enrolment, can be attributed to the implementation mechanisms put in place at the district level in terms of treatment facilities at empanelled hospitals. It is a matter of great concern that despite the need, many HHs could not avail the benefits of the scheme for reasons ranging from the non-availability of empanelled hospitals nearby to the non-availability of treatment facilities for a particular disease in an empanelled hospital and not knowing what to do and where to go. Similar findings are reported by other studies also in the recent past where they also raised the poor quality of treatment as an issue for non-utilization.[4,12]

The present study sheds light on the utilization of the AB-PMJAY card. Out of the total 1152 households, 83% (n=956) had the card, of which only 43.3% (n=414) utilized it and from them, 22.9% (n=95) spent OOP. This is similar to Chennai and Karnataka studies where 47.24% and 50% of families used their cards in the past year.[13,20] However, only 6% utilization was reported by a hospital study from Bangalore.[19]

The present study examined the source of information about the benefits of the AB-PMJAY card. The results showed that 45% of respondents got the information from ASHA (Accredited social health activist) workers, 25% received it from Arogya Mitra, and 11% got it from the village sarpanches. Similar results were found in a recent study by Prasad et al where 35.1% received the information from ASHA/AWW/HCW (AWW-Anganwadi worker, HCW-health care worker) and 28.7% received it from family/friends.[3] Parisi et al also found in their study that when beneficiaries learn about the program through family/friends, ASHA employees, and the PM's letter, they are generally well aware of their eligibility for PM-JAY.[16] However, the respondents' awareness of the features suggests that the information given to them is lacking or unclear. Proper training and other mechanisms should be used to ensure that information givers are fully aware of all aspects of the scheme and can disseminate it to beneficiaries according to their level of understanding.

On examining the reasons for non-utilization of the card, the respondents who said who didn't utilize the card (n=174), 71.8% of respondents said that there was a non-availability of a treatment facility, 37% reported that they had no guidance from anywhere about using the card, 27% said that they didn't know about the use of the card they were having. A similar kind of response was also reported by Das et al in which 95% of the respondents reported a "lack of knowledge" about "where and how to use the scheme".[16] Some respondents in the present study also reported that they could not avail of the services of the scheme due to the non-availability of the nearby empanelled hospital, a similar kind of statement is also given by Saxena et al that the lack of empanelled hospitals in rural areas is low so a lot of rural people have to go far to avail the service.[21] Moreover, some of the scheme implementation errors could be that, although the vast majority of households were aware of the PMJAY program, most of them were unaware of their eligibility status.[22]

While generalizing the findings, a few study limitations must be taken into account. Three districts in Gujarat state were chosen to participate in this study. Generalizations must be made carefully because state- and district-specific factors must have affected the stated levels of awareness, utilization, and non-utilization. The respondents' degree of awareness, which is determined by their familiarity with the many features and advantages of the AB-PMJAY program, must also have had an impact on the results.

CONCLUSION

AB-PMJAY with its attractive features have the potential to make a dramatic change in the lives of India's identified poor and vulnerable beneficiaries. The present study, overall, puts forth an impressive awareness and enrolment ratio in all the study sites. However, the awareness about specific features and benefits of the scheme among beneficiaries seemed to be less, suggesting that they may further add to under-utilization. Furthermore, the utilization rate among beneficiaries is found to be less and OOP payments are still prevalent. The OOP expenditure reported by respondents warrants

immediate attention. Since the very purpose of the AB-PMJAY scheme is to ensure universal health coverage, this OOP may keep the poorest away from availing treatment due to their absolute inability to do arrangements for the money and that will further add to the poor utilization rate. Empanelling more hospitals, especially hospitals with specialties must be given utmost priority. Efforts must be taken to motivate the main drivers of information namely ASHA workers, Ayushman Mitras, and Sarpanchs with adequate monetary and non-monetary methods. Similarly, beneficiaries must be made aware of their beneficiary status and that cashless, quality treatment with dignity is their entitlement, so that they demand the services under the PM-JAY scheme.

ACKNOWLEDGMENTS

Authors would like to thank Indian Council of Social Science Research (ICSSR), New Delhi. This study is funded by ICSSR and we acknowledge the same.

Funding: Indian Council of Social Science Research (ICSSR), New Delhi, India.
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Nations United. Goal 3: Good health and well-being. In: Sustainable Development Goals Fund. Available at: https://www.sdgfund.org/goal-3-good-health-and-wellbeing. Accessed on 13 April 2023.
2. Joseph J, Sankar D, H, Nambiar D. Empanelment of health care facilities under Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB PM-JAY) in India. Plos One. 2021;16(5):1-16.
3. Prasad SSV, Singh C, Naik BN, Pandey S, Rao R. Awareness of the Ayushman Bharat-Pradhan Mantri Jan Arogya Yojana in the Rural Community: A Cross-Sectional Study in Eastern India. Cureus. 2023;15(3):1-11.
4. Thakur H. Study of Awareness, Enrollment, and Utilization of Rashtriya Swasthya Bima Yojana (National Health Insurance Scheme) in Maharasta, India. Fronitiers Public Health. 2015;3(282):1-13.
5. Kulkarni S. How many claims have been paid under Ayushman Bharat Yojana, PMVVY govt insurance schemes? 2023. Available at: https://economictimes.indiatimes.com/wealth/personal-finance-news/how-many-claims-havebeen-paid-under-ayushman-bharat-yojana-pmvvy-govt-insurance-schemes/articleshow/97487386.cms. Accessed on 9 April 2023.
6. Chemin M. Informal groups and health insurance take-up evidence from a field experiment. World Development. 2018;101(C):54-72.
7. Hoerl M, Wuppermann A, Barcellos SH, Bauhoff S, Winter JK, Carman KG. Knowledge as a Predictor of Insurance Coverage Under the Affordable Care Act. Med Care. 2017;55(4):428-35.
8. Bonan J, Dagnelie O, Lemay-Boucher P, Tenikue M. The Impact of Insurance Literacy and Marketing Treatments on the Demand for Health Micro insurance in Senegal: A Randomized Evaluation. J Afri Economies. 2016;26(2):169-91.
9. Jathanna PR. Awareness and Utilization of Health Insurance Among Selected Population of State of Sikkim, India. Online J Health Allied Sci. 2018;17(2):8.
10. Thomas B, Mishra S, Nimbalkar S, Phatak A, Shinde M, Talati K. Study on Level of Awareness and Factors Contributiong to Non-Utilization. Social Work Chronicle. 2019;8(1):80-93.
11. National Health Authority: About Pradhan Mantri Jan Arogya Yojana (PM-JAY). 2022. Available at: https://dashboard.pmjay.gov.in/pmj/#/. Accessed on 22 February 2023.
12. Dash U, Muraleedharan VR, Rajesh M. Accessing Ayushman Bharat- Pradhan Mantri Jan Arogya Yojana (PM-JAY): A case study of three states (Bihar, Haryana and Tamil Nadu). Working paper 2019. Available at: https://pmjay.gov.in/sites/default/files/2020-06/WP_IITM_study_1.pdf. Accessed on 22 February, 2023.
13. Panda PK. Ayushman Bharat: Challenges and Way Forward. Jaipuria Int J Management Res. 2021;5:53-65.
14. Sriee GVVP, Maiya GR. Coverage, utilization, and impact of Ayushman Bharat scheme among the rural field practice area of Saveetha Medical College and Hospital, Chennai. J Family Med Prim Care 2021;10:1171-6.
15. Pugazhenthi V. A study on awareness on AB-PMJAY for treatment of diseases with special reference to cancer care in Thanjavur district of Tamil Nadu. EPRA Int J Multidisciplinary Res. 2021;7(2):202-6.
16. Parisi D, Srivastava S, Parmar D, Strupat C, Brenner S, Walsh, C. Awareness of India's National Health Insurance Scheme (PM-jay): A cross-sectional study across six states. Health Policy and Planning. 2022;38(3):289-300.
17. Trivedi M, Saxena A, Shroff Z, Sharma M. Experiences and challenges in accessing hospitalization in a government-funded health insurance scheme: Evidence from early implementation of Pradhan Mantri Jan Aarogya Yojana (PM-JAY) in India. PLoS One. 2022;17:1-20.
18. Bhatnagar A, Chhabra S, Manchanda N, Smith O. PM-JAY: Awareness, Enrollment and Targeting: Evidence from a national health survey. PM-JAY policy Brief 11, National Health Authority 2022. Available at: https://pmjay.gov.in/sites/default/files/2022-01/Policy-Brief-11-Awareness-PMJAY.pdf. Accessed on 28 June 2023.
19. Netra G, Rao BAV, Kengnal P. Utilization, satisfaction, out of pocket expenditure and health seeking behaviour among the insured residents of

rural field area: A cross sectional study. Int J Community Med Public Health. 2020;7:1047-50.
20. Akshay VK, Umashankar G, Pramila M, Maiti R, Aswini M, Manjusha PC. Oral health utilization and awareness of Ayushman Bharat (PMJAY) health insurance scheme in Bangalore. Int J Community Med Public Health. 2020; 8(8):4012-8.
21. Saxena NK, Chattopadhyay S, Singh R. An empirical study on citizen perception, and satisfaction towards Ayushman Bharat Yojna (PM-jay). J University Shanghai Sci Technol. 2021;23:35-48.
22. World Health Organization (Ed.). Analyzing the effectiveness of targeting under AB-PM-JAY in India 2022. Available at: https://www.who.int/publications/i/item/9789290210016. Accessed on 22 February 2023.

Cite this article as: Thomas B, Raykundaliya DP, Bhatt S, Vadhel K. Study of awareness, enrolment, and utilization of Ayushman Bharat Pradhan Mantri Jan Arogya Yojana in Gujarat, India. Int J Community Med Public Health 2023;10:2741-7.