

LOW BACK PAIN PATIENT DISTRIBUTION IN MALANG'S SECONDARY REFERRAL PRIVATE HOSPITAL: A SINGLE-CENTER STUDY

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Abstract:

The number of occurrences of Low back pain (LBP) in patients, especially the elderly, who still doubt the results of a treatment or surgery. Our study aims to review and summarize the latest literature on the distribution of LBP patients who come to specialist doctors by looking at the purposes of referral and use of BPJS (Indonesian Health Insurance). This data provides an overview of the LBP roadmap in a secondary referral hospital. We took Medical Record data from all patients who came to the Specialist polyclinic at Lavalate Hospital Malang as a Type B Referral from 2018 – 2021 (n= 644). The incoming data is grouped based on Gender, Patient Origin, Medical Expense Guarantee, Designated Medical Specialist, and Medication. The study was conducted descriptively and processed with a statistical program. The majority of the number of patients who came were dominated by the age of 51 – 70 years (25%), with more women (68.3%) than men (31.7%). The most choices for patients with LBP came to Orthopedics Specialists and Neurologists who had the same number of patients, namely 239 patients (36.1%). Most of the patients who came to the specialist clinic received therapy (81.9%) with NSAIDs as the most choice (69.3%) as the choice of medication. Antispasmodic and antiepileptic were followed as the next most popular choice, but each specialty has its uniqueness in treating LBP patients.

Keywords: BPJS; Epidemiology; Low Back Pain; NSAID

Introduction

Low back pain (LBP) is pain felt in the lower back area. It can be local, radicular, or both. Pain is felt between the lower ribs and the lower buttocks, the lumbar or lumbosacral area, often radiating pain to the legs and feet. LBP is the second-highest cause of pain after cephalgia, with an incidence of about 18% of all polyclinic patients with a chief complaint of pain.¹

LBP is the most common symptom in all ages; however, it occurs infrequently in the first ten years of life. According to Hartvigsen et al., the prevalence of LBP rises dramatically during adolescence, with about 40% of children aged 9 to 18 years in high, middle, and low-income nations were reporting low back pain. It affects roughly 37% of the adult population worldwide, peaks in middle age, and is more common in women than in males.² Low back pain was the sixth most prevalent primary diagnosis for visiting a public hospital in Australia in 2017–2018.³

Physical, occupational, and psychosocial all have a role in LBP risk factors. People with physically demanding employment, physical and mental illnesses, smokers, and obese people are more likely to experience low back discomfort. Understanding these risk factors can aid in identifying high-risk patients and the management of LBP.^{2,4}

In most people, the cause of LBP is non-specific and difficult to pinpoint. It is impossible to pinpoint a single nociceptive cause for practically everyone who suffers from low back pain. Only a tiny percentage of people have a pathological reason, such as a spinal fracture, cancer, or infection.² Degenerative spinal alterations and injury to local spinal structures, such as the spine, ligaments, surrounding muscles, and soft tissues, are possible mechanisms.⁵ Movement aggravates the pain, while rest relieves it. The pain is dull and akin to a toothache, but it does not radiate to the

leg. Patients may have symptoms when standing up from a supine or sitting position and lying prone in bed. Neurogenic pain, such as spinal stenosis, can cause discomfort radiating to the buttocks and posterior thigh.⁶ Early identification of related risk factors and good therapy of LBP patients appear to be critical in preventing the development of a chronically debilitating back pain disease.⁷

Malang is a tiny city (142,28 km²) in Indonesia's East Java region, with 915.707 persons as of mid-2018 and a population growth rate of 1,58% each year. The goal of this study was to describe the incidence, age and sex distribution, medical expense guarantor, designated medical specialist, residency, and patient treatment at a secondary referral private hospital in Malang.

Research Method

A retrospective study of collected medical records of all patients diagnosed with Low Back Pain from October 2018 to September 2021 at Lavalette Hospital's Polyclinics was conducted. Each medical specialist confirms a specific diagnosis. This study used data from all individuals who had been diagnosed with Low Back Pain.

The information includes patient and treatment information (name, gender, age, address, medical expense guarantor, designated medical specialist, and treatment). The frequency and percentages of the variables indicated above were calculated using descriptive statistics.

Results

This study comprised 662 patients with low back pain that visited Lavalette Hospital's Polyclinic in Malang, Indonesia, and met the inclusion and exclusion criteria. Table 1 shows the socio-demographic information. Female (67.5%) was more common than male (32.5%).

Most of the patients were in the 51-60 years age group which accounted for 25.7% of total patients. The majority of the patients came from Malang and Greater Malang (91.1%). Indonesian National Insurance (*Badan Penyelenggara Jaminan Sosial Kesehatan* / BPJS) covers almost all patients who come to polyclinics (97%).

Patients sought for orthopaedic surgeon or neurologist (36.1% each). Patients who went to an orthopaedic surgeon with a spine sub-specialist

accounted for 83.3 percent of the total orthopaedic patients. (See Table 2) Most BPJS patients were referred to a neurologist by a physician from Primary health care or first level referral Hospital. (See Table 3)

As shown in Table 4, only 36.9% of patients were referred to a Physical Medicine and Rehabilitation expert for physiotherapy. Patients received home medication in 78.9% of cases, with 76.4 percent receiving NSAIDs. (See Table 5)

Table 1 Socio-demographic features of The Low Back Pain Patients in Polyclinics of Lavalette Hospital, Malang.

Variables	Male	Female	Total
Age Range			
0-10	2 (0.9%)	0 (0%)	2 (0.3%)
11-20	4 (1.9%)	18 (4%)	22 (3.3%)
21-30	7 (3.3%)	14 (3.1%)	21 (3.2%)
31-40	14 (6.5%)	16 (3.6%)	30 (4.5%)
41-50	20 (9.3%)	74 (16.6%)	94 (14.2%)
51-60	47 (21.9%)	123 (27.5%)	170 (25.7%)
61-70	50 (23.3%)	117 (26.2%)	167 (25.2%)
71-80	51 (23.7%)	78 (17.4%)	129 (19.5%)
81-90	19 (8.8%)	7 (1.6%)	26 (3.9%)
91-100	1 (0.5%)	0 (0%)	1 (0.2%)
Residency			
Malang	157 (73%)	323 (72.3%)	480 (72.5%)
Greater Malang	50 (23.3%)	73 (16.3%)	123 (18.6%)
East Java	5 (2.3%)	29 (6.5%)	34 (5.1%)
Java Island	1 (0.5%)	15 (3.4%)	16 (2.4%)
Outside Java Island	2 (0.9%)	7 (1.6%)	9 (1.4%)
Medical Expense Guarantor			
BPJS	199 (92.6%)	443 (99.1%)	642 (97%)
Non-BPJS	16 (7.4%)	4 (0.9%)	20 (3%)

Table 2 Intended polyclinic of The Low Back Pain Patients of Lavalette Hospital, Malang.

Variables	Male	Female	Total
Orthopaedic-Surgeon	65 (30.2%)	174 (38.9%)	239 (36.1%)
Spine Specialist	56 (26%)	143 (32%)	199 (30.1%)
Non-Spine Specialist	9 (4.2%)	31 (6.9%)	40 (6%)
Neurologist	91 (42.3%)	148 (33.1%)	239 (36.1%)
Internist	47 (21.9%)	114 (25.5%)	161 (24.3%)
Urologist	8 (3.7%)	9 (2.0%)	17 (2.6%)
Pediatrician	2 (0.9%)	0	2 (0.3%)
Cardiologist	1 (0.5%)	1 (0.2%)	2 (0.3%)
Oncology-Surgeon	0	1 (0.2%)	1 (0.2%)
Neurosurgeon	1 (0.5%)	0	1 (0.2%)

Table 3 Where Low Back Pain Patients with BPJS referred to.

Variables	Orthopaedic	Neurologist	Internist	Urologist	Pediatrician	Cardiologist	Oncology-Surgeon	Neurosurgeon	Total
BPJS	233 (36.3%)	235 (36.6%)	151 (23.5%)	17 (2.6%)	2 (0.3%)	2 (0.3%)	1 (0.2%)	1 (0.2%)	642 (100%)

Table 4 Choice of Treatment for Low Back Pain Patients in Polyclinics of Lavalette Hospital, Malang.

Variables	Orthopaedic	Neurologist	Internist	Urologist	Pediatrician	Cardiologist	Oncology-Surgeon	Neurosurgeon	Total
Physiotherapy Referred	128 (53.6%)	53 (22.2%)	53 (32.9%)	10 (58.8%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	244 (36.9%)
Not referred	111 (46.4%)	186 (77.8%)	108 (67.1%)	7 (41.2%)	2 (100%)	2 (100%)	1 (100%)	1 (100%)	418 (63.1%)
Medication Prescribed	194 (81.2%)	199 (83.3%)	116 (72%)	9 (52.9%)	2 (100%)	2 (100%)	0 (0.0%)	0 (0.0%)	522 (78.9%)
Not Prescribed	45 (18.8%)	40 (16.7%)	45 (28.0%)	8 (47.1%)	0 (0.0%)	0 (0.0%)	1 (100%)	1 (100%)	140 (21.1%)

Table 5 Medicine Prescribed for Low Back Pain Patients in Polyclinics of Lavalette Hospital, Malang.

Variables	Orthopaedic	Neurologist	Internist	Urologist	Pediatrician	Cardiologist	Oncology-Surgeon	Neurosurgeon	Total
NSAID Prescribed	165 (69.0%)	151 (63.2%)	71 (44.1%)	9 (52.9%)	1 (50.0%)	2 (100%)	0 (0.0%)	0 (0.0%)	399 (60.3%)
Not prescribed	74 (31.0%)	88 (36.8%)	90 (55.9%)	8 (47.1%)	1 (50.0%)	0 (0.0%)	1 (100%)	1 (100%)	263 (39.7%)
Anticonvulsant Prescribed	6 (2.5%)	45 (18.8%)	2 (1.2%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	53 (8.0%)
Not prescribed	233 (97.5%)	194 (81.2%)	159 (98.8%)	17 (100%)	2 (100%)	2 (100%)	1 (100%)	1 (100%)	609 (92%)
Antispasmodic Prescribed	48 (20.1%)	0 (0.0%)	4 (2.5%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	52 (7.9%)
Not prescribed	191 (79.9%)	239 (100%)	157 (97.5%)	17 (100%)	2 (100%)	2 (100%)	1 (100%)	1 (100%)	610 (92.1%)
Corticosteroid Prescribed	0 (0.0%)	13 (5.4%)	1 (0.6%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	14 (2.1%)
Not prescribed	239 (100%)	226 (94.6%)	160 (99.4%)	17 (100%)	2 (100%)	2 (100%)	1 (100%)	1 (100%)	648 (97.9%)
Multivitamin & Mineral Prescribed	31 (13.0%)	37 (15.5%)	60 (37.3%)	1 (5.9%)	2 (100%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	131 (19.8%)
Not prescribed	208 (87.0%)	202 (84.5%)	101 (62.7%)	16 (94.1%)	0 (0.0%)	2 (100%)	1 (100%)	1 (100%)	531 (80.2%)

Discussion

Low back pain (LBP) is the most prevalent musculoskeletal issue worldwide, limiting and inhibiting labour activities. This study discovered that women (68,3 %) had a higher prevalence of LBP than men (31,7 %). This is consistent with Jella's results that women are more prone to LBP than men.⁹ According to research, LBP is approximately twice as common in women as in men. Tavee notes that LBP is more prevalent in women than

in men, and it also has a higher recurrence rate.⁵

According to this study's age distribution, the majority were between 51 and 60 years. Similar to the TA Sinaga study published in 2020 on the prevalence of LBP in Jakarta, most victims were between the ages of 50 and 60.¹⁰ According to a study conducted by Tavee and Levin, over 25% of adults in the United States report having experienced low back pain in the preceding three months, with a peak prevalence

among persons aged 45 to 64 years and a lifetime prevalence of up to 84%.⁵ While Aimin et al. achieved different results, they explained that the prevalence of LBP was highest in the age range over 18 years, with a peak of 80-89 years.⁸

The occurrence of LBP occurs in physical situations that are generally still productive, and it is noted that referrals for LBP patients occur at working ages and originate in urban regions, where work activity is generally predominant. Additionally, the human resource population in metropolitan regions has a relatively high level of comprehension and awareness of the importance of health. As a result, the inclination to visit a doctor to check on the body's state when disrupted activities and work are also improved. This finding was also confirmed in a study by Wong et al., who discovered that the increase in LBP prevalence from adolescence to age 60 was connected with several factors, one of which was occupational exposure or changes in pain perception associated with pain with increasing age.⁴

Patients with Low Back Pain contact specialists with varying degrees of specialization. Two specialists accounted for the most significant proportion of Low Back Pain patients arrivals with the same number, namely coming to an Orthopedic and Neurologist for additional treatment, with 36.1% (239 persons). Most individuals with LBP are also beneficiaries of national insurance, specifically BPJS. This is conceivable since the LBP condition is seen as quite burdensome for the patient, with a high cost and negative influence on the patient's quality of life, necessitating the usage of BPJS as insurance. As Cruz et al. stated, LBP is the most widespread rheumatic and musculoskeletal condition in Portugal, affecting a considerable proportion of the population (26.4%) at a great cost to society and a significant

impact on disability, perceived health, and quality of life for the individual.⁷

Although most patients who visit the polyclinic at Lavalette Hospital Malang receive treatment with medications, other polyclinics, such as urologists and internists, provide medical therapy to less than half of all patients. This is possible because the patient presented with additional more bothersome issues and did not receive specific low-back pain therapy.

NSAIDs are one of the most often prescribed medications for LBP patients at the Lavalet Hospital Malang Polyclinic; around 60% of patients with LBP receive NSAIDs. NSAIDs are believed to alleviate acute pain in patients with LBP. Pharmacologic treatments are critical for acute and chronic lower back pain; as Urits et al. stated, Acetaminophen and nonsteroidal anti-inflammatory medications (NSAIDs) are beneficial for relieving pain in the short term.¹¹

In addition to NSAIDs, antiepileptic, anticonvulsant, and antispasmodic medications are available. Neurologists' preferred treatment is antiepileptic; approximately 45 of the 239 patients treated (18.8 %) received gabapentin. Antiepileptics are believed to have a pain-relieving impact in the treatment of spinal cord injury. Apart from NSAIDs, oral antiepileptics such as gabapentin, topiramate, duloxetine, and muscle relaxants have been demonstrated to be effective analgesics.⁵ Treatment in comparison to the group of patients who came to Orthopedics, the group of patients who came to Orthopedics received more antispasmodic medication, in this case, Eperisone hydrochloride, which was administered to 48 patients out of a total of 233 patients (20.2 %). Antispasmodics are believed to decrease the frequency of muscle spasms in people suffering from Low Back Pain. In Addition, according to a systematic review, eperisone may

effectively lower pain in acute LBP patients by boosting paraspinal blood flow while generating fewer adverse events.¹²

We collected patient referrals from the main polyclinic to physical rehabilitation specialists. Two hundred forty-four patients (36.9 %) were referred to a physical rehabilitation specialist based on the data obtained, while another 418 (63.1 %) were not recommended. The Orthopedic Polyclinic referred the majority of patients to Rehabilitation Specialists (up to 128 patients (53.6 %) of total LBP patients (19.8 %), while the Neurology Polyclinic referred the fewest patients (58 patients (22.1 %) of total LBP patients who came to the Neurology Polyclinic (239 patients). The percentage of total referrals is relatively minimal compared to the total number of LBP patients seen at the polyclinic. According to Cruz et al., just 8.3 % of patients were referred for physiotherapy, and 32.6 % of employed participants had recently gotten a sickness certificate without receiving physical treatment.⁷

Physiotherapy and Physical Rehabilitation can be assessed to reduce pain and improve the quality of life of Low Back Pain patients. Physical rehabilitation techniques such as lumbar stabilization and walking exercise can be advised for individuals with chronic LBP since they treat back pain and help prevent chronic back pain by strengthening muscle endurance; this is based on Suh et al.'s Randomized Control Trial.¹²

Conclusions

The majority of low back pain patients are older women, which mostly came to Orthopedics and Neurologists rather than other specialists. NSAIDs is the most commonly prescribed drugs by specialist, but each speciality has its uniqueness in treating LBP patients.

Further research is recommended to follow up this study in a more significant population, primarily because most Indonesians use BPJS for treatment.

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