

# EXPERIENCE AND PERCEPTION OF GENERAL PRACTITIONERS IN COMMUNITY HEALTH CENTER REGARDING THE DETECTION AND MANAGEMENT OF CENTRAL POST-STROKE PAIN: A QUALITATIVE STUDY

Sekplin A. S. Sekeon<sup>1)</sup>, Asri C. Adisasmita<sup>2)</sup>

<sup>1)</sup>Clinical Epidemiology Doctoral Student, Epidemiology Study Program,  
Faculty of Public Health, University of Indonesia

<sup>2)</sup>Academic staff, Faculty of Public Health, University of Indonesia

## ABSTRACT

**Background:** Central post-stroke pain is a problem that often arises after acute phase hospitalization. Some type of post-stroke pain that bothers patients is central post-stroke pain. Understanding this type of pain has an important role in providing appropriate and adequate management for patients. This study aimed to describe the experience and perception of general practitioners in community health center regarding the detection and management of central post-stroke pain

**Subjects and Method:** This was qualitative study involving 8 general practitioners at the Community Health Center at North Sulawesi in November 2022. The data were collected by interviewed with a semi-structured questionnaire and recorded with verbal consent and transcribed.

**Results:** Participants expressed their experiences and perceptions into 5 main themes: type of chronic pain that they frequently experienced and the patterns of treatment, biopsychosocial problems of chronic pain, the relationship between stroke and central pain, experience in dealing with central post-stroke pain cases with obstacle, and expectations in chronic pain management.

**Conclusion:** Participants expressed their experiences and perceptions into 5 main themes.

**Keywords:** Pain management, primary care facilities, chronic pain, stroke

## Correspondence:

Sekplin A. S. Sekeon. Clinical Epidemiology Doctoral Student, Epidemiology Study Program, Faculty of Public Health, University of Indonesia. Pondok Cina, Beji, Depok, West Java. Email: Sekplin@yahoo.com. Mobile:081244058656.

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## BACKGROUND

Stroke was a major public health problem that contributes to death, illness, and disability around the world. In Asia, which contributes to around 60% of the world's population, the characteristic of stroke itself was rather different and the incidence was higher compared to Western countries. In the post-stroke phase, post-

stroke pain was a problem that was often found in the stroke population.

The majority of stroke patients (40-72%) would experience post-stroke pain. Neuropathic pain that was often found in stroke patients is central post-stroke pain (CPSP). The prevalence of CPSP was approximately 18.6 to 49%, with a total prevalence of 35.4%. The prevalence of CPSP could even reach 50% in patients with

lesions in certain areas of the brain. According to Olawale (2016), post-stroke patients with chronic pain tended to have the lower health-related quality of life scores than those without chronic pain. Besides that, chronic post-stroke pain could induce depression and cognition problems in stroke patients (Olawale et al., 2016).

Although this problem was usually found in our daily practice, around 25% of patients who experienced post-stroke pain did not get the proper therapy that they need (Westerlind et al., 2020). This phenomenon occurs because post-stroke pain often did not have an adequate assessment (Delpont et al., 2018). This inadequate recognition especially occurs in patients who experience neuropathic pain, where the condition of CPSP is one of the complications that was underrecognized, even though this condition could significantly reduce the quality of life.

CPSP was a chronic pain that was not well diagnosed, and because of that, CPSP was getting inadequate therapy and tended to get inappropriate management. Most health practitioners do not even recognize the symptoms of CPSP and seldomly use appropriate screening methods to recognize this disease. This leads to the usage of inappropriate drugs in management. The Mhangara study (2020) found that none of the patients with CPSP received anti-convulsant or anti-depressant therapy, which should be given as the first-line therapy in CPSP.

There have not been many reports about the magnitude of the problem of chronic pain related to stroke and how these cases are

handled until now. In particular, information has not been obtained regarding the detection and management of CPSP in Indonesia, especially from the general practitioners who work in primary care level. This study aims to explore the experiences and perceptions of general practitioners on chronic pain, especially central post-stroke pain treated at the public health centre.

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## **SUBJECTS AND METHOD**

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### **1. Study Design**

This study used a qualitative design with an interview approach to explore the experience of general practitioners in public health centre in terms of the detection and management of chronic pain in general and central post-stroke pain specifically.

### **2. Study Informants**

The population in this study were general practitioners in North Sulawesi province, Indonesia; who could be contacted and willing to participate. Sampling was performed with a non-probability purposive sampling technique. Data collection was carried out on November 2022 by calling all participants. The interview was guided by a semi-structured questionnaire which had already been arranged before.

Participants consisted of 8 general practitioners, 3 men, and 5 women. Workplaces consisted of urban, rural, and island areas. The interview was guided by 3 main questions:

### **3. Data Analysis**

Data analysis in this study uses content analysis. The question included were 1) Describe their experience in detecting chronic pain at the Primary Health Care and the treatment given;

2) What is the point of view of general practitioners regarding the relationship between stroke and chronic pain and experience when encountering cases of chronic pain with central post-stroke pain characteristics?; 3) What are the barriers and future hopes for managing chronic pain in Primary Health Care?

The interview was held for around 20-30 minutes. During the interview, an audio recording was carried out with the consent of the participants. The transcription result of the recording was done on the same day after the interview. In this study, the result of transcription was inputted into the research matrix to obtain coding, themes, and theme categories. Coding was done in line transcripts to simplify classification, then the themes would be generated.

**Table 1. Demographic Data**

Participant	Age	Sex	Number of PHCs that Previously Stationed	Current type of area of duty
1	56	Female	4	Urban
2	43	Female	5	Urban
3	46	Male	4	Rural
4	47	Male	2	Island
5	49	Female	4	Rural
6	46	Female	2	Urban
7	52	Female	6	Rural
8	45	Male	2	Rural

**PHC: Public Health Centre**

Based on the results of data analysis derived from transcribed data, 5 main theme groups were obtained which consisted of:

1. Common types of chronic pain and treatment patterns
2. Biopsychosocial aspects of chronic pain
3. The association between stroke and chronic pain

In this interview, the participant was also asked about age, length of work, and the number of Primary Health Care that had been placed in service as general practitioners.

**RESULTS**

Current study gains perspective from the point of view of general practitioners at the Public Health Center (PHC) regarding the experience and perceptions of general practitioners in the detection and management of chronic pain, especially in cases with central post-stroke pain features. All participants are clinicians who are still actively serving patients besides administrative duties. Detailed demographic data can be seen in Table 1.

4. Experience in handling cases with central post-stroke pain features
5. Barriers and expectations in managing chronic pain.

**Common types of chronic pain and treatment patterns**

In this study, musculoskeletal pain was the most common type of chronic pain, while the type of drug that is often used is a class of non-steroidal

anti-inflammatory drugs (NSAIDs). Most participants reported that knee pain, joint pain, and muscle pain which were the types of pain that were often complained by the patient.

*“Mostly related to rheumatic pain, whether or not because of uric acid, such as back pain, joint pain” #6*

The pattern of treatment described in dealing with chronic pain cases at the PHC mostly relies on the administration of drugs that are included in the NSAID category. Besides that, in special circumstances, Paracetamol is often given for these cases.

*“If the pain is mild, give paracetamol and neurotropic. If there is gastric pain, only PCT. But if the patient had a recent painkiller drug consumption, I’ll give him/her AsMef or ND or Piroxicam” #3.*

In general, most participants reported that patient satisfaction regarding treatment is low. This is because the pain was relapsing most of the time, And the patient revisits the PHC repeatedly. This condition also became one of the motivations for participants to consider referring these cases to the relevant specialist.

*“I usually give NSAIDs, if there is an ulcer problem, I give PCT, mostly I give (chronic pain case) NSAIDs. The painful experience goes away, but it doesn't take long for it to reoccur. Usually a combination with B vitamins, vitamins for nerves” #4*

### **Chronic pain biopsychosocial problems**

Several biopsychosocial problems were reported uniformly by the participants. These problems can be in the form of the influence of chronic pain on clinical problems such as its effect on blood pressure and blood glucose control. In addition, many participants also reported the emergence of mental disorders situations among the patients.

The mental disorders described can be in the form of the appearance of despair, stress, fatigue, and anxiety. While the reported social problems are related to work problems such as decreased productivity, disrupted social interaction, and disrupted daily activities. For details, the biopsychosocial problems are illustrated in Table 2 below:

**Table 2. Biopsychosocial problems in chronic pain**

<b>Problems</b>	<b>Example comments/illustrations</b>
Biological	<i>“He stressed with the pain he felt. Then over time, the blood pressure starts to rise. The pain didn’t go away and become a thought. At the very end, the blood pressure is persistent. There was one patient who finally had sugar that was not controlled because of the pain problem. Usually, the way it is.”#5</i>
Mental	<i>“Of course, there were psychological problems, usually they are already stressed, often, some have had this condition for decades, so yes there are psychological problems”#4</i>

Problems	Example comments/illustrations
Social	<i>"...Due to a lot of physical workers, when it comes to treatment, it will be hard due to time management, being left for a day, and leaving work. Especially if you have to control it often. It's very annoying, because on average they work physically, if it's swollen, it's sick, they can't work, 3 days, they can't work" #6</i>

### **The relationship between stroke and chronic pain**

In the study, participants indicated that there was a relationship between stroke and chronic pain. Most of them told a reciprocal relationship between stroke and chronic pain. Several participants explained that uncontrolled chronic pain indirectly increased the risk of having a stroke. On the other hand, post-stroke patients may also experience chronic pain related to the stroke itself. The majority of participants asked about a history of stroke in patients who came with complaints of chronic pain. Participants explored the history of stroke along with questions about another previous medical history.

*"I usually ask about the patients' previous medical history, including stroke, especially if I come with increased blood pressure. I think there is a connection between chronic pain and stroke because if the pain persists, and the blood pressure rises, you may have a stroke. It could also be that after having a stroke, in the end, he is stressed by the condition, he may not accept the condition, especially if there is still potential for work, and he can have constant headaches. Like my sister in her 40s, she had a stroke, denies her*

*conditions resulting in headaches" #5*

### **Experience detecting patients with features of central post-stroke pain**

Based on participant experiences, patients with central post-stroke pain features can be found in primary care facilities. Some reported having known and handled these cases, and two participants reported often treating patients with central post-stroke pain features. Only one participant that have no history in managing patients with the feature of CPSP. Symptoms that are often reported include pain, swelling, thick feeling, and cramps in the area affected by the stroke. The majority of participants did not think of it as a disease in itself, but as part of a stroke.

*"Yes, a lot. Mostly the problem represents stroke are just like that" #7*

*"There was a patient who has just been discharged from the hospital for 2 weeks and received a chronic prescription. his wife had been called twice, the patient has pain in the hands and feet that have had a stroke so bad until his tears fell." #2*

While the treatment could be given with analgesics which are available at the health centre, managing the risk factors of the stroke itself, administer-

ring neurotropic vitamins, consultation with medical rehabilitation consultant, and referring to a neurologist. In general, Participants knew that there were special medications for patients with characteristic central post-stroke pain, but one participant questioned their authority in using these drugs. Concerning the prognosis of these cases of post-stroke chronic pain, almost all participants found that the results of treatment were generally unsatisfactory.

*“Experience dealing with stroke patients with pain, huh? Administer analgesia, then rehab, and manage risk factors for*

*stroke. No specific treatment was given, even though it was there, right? No special management of post-stroke pain was given. Is that the authority of general practitioners? Or do we have to refer to it?” #1*

### **Barriers and expectations in the management of chronic pain**

All patients reported several characteristics of factors that were considered as obstacles or obstacles in the management of chronic pain. These factors may consist of patient, family, doctor, and health system factors (Table 3):

**Table 3. Barriers in managing chronic pain**

<b>Factors</b>	<b>Barriers</b>	<b>Examples of comments/illustrations</b>
<b>Patient</b>	<ul style="list-style-type: none"> <li>- Lacking of understanding of the usage of drugs</li> <li>- Patient’s expectations were too high</li> <li>- Getting bored</li> <li>- Not taking the medication regularly</li> <li>- Distance limitations</li> <li>- Economic limitations</li> </ul>	<p><i>“Usually most the obstacles come from the patients themselves, they want everything to be expressed, they expected that when they have been referred, they want the pain could go away immediately, especially when they have gone back and forth to the hospital, there has been no significant change as they are disappointed, they end up sad”#5</i></p> <p><i>“The problem is limited distance, transportation. When you come to the health care center, you have to waste 50 thousand, it's hard for the patient. Because they live on the islands. So far away” #6</i></p>
<b>Family</b>	<ul style="list-style-type: none"> <li>- The family was exhausted</li> <li>- The patient could not go to the the hospital because</li> </ul>	<p><i>“From the family’s side, it is often possible to get bored</i></p>

<b>Factors</b>	<b>Barriers</b>	<b>Examples of comments/illustrations</b>
	they didn't want to bring the patient any longer	<i>with taking patients, especially the elderly, maybe they are bored, for example, they are recommended to be referred, but often the family doesn't bring them, and eventually they return to the community health center"#3</i>
<b>Doctor</b>	<ul style="list-style-type: none"> <li>- Lack of education</li> <li>- Do not give prescriptions outside of existing drugs</li> </ul>	<i>"From the doctor, sometimes the patient, for example, if he gets medicine and the pain goes away, he will continue to consume it even though the complaints are gone, they think it's prevention. Maybe we also have to give more education to them. Even though they are no longer there, because they are afraid of getting sick, they continue to take medicine" #1</i>
<b>Health system</b>	<ul style="list-style-type: none"> <li>- Regulating the authority to administer drugs at the PHC</li> <li>- Drugs outside the national formulary</li> <li>- Incomplete or unavailable medication</li> <li>- There are no supporting tools such as physiotherapy.</li> </ul>	<i>"The possible obstacle is in terms of cooperation with BPJS because we are limited by the National Fornas regulations, because this is a capitation system, we provide low-cost drugs so that the expenditure is small, but the benefits are greater"#8</i>

The participants had an idealized view of the quality of treatment for chronic pain. According to the majority of participants, chronic pain management was effective or quality in terms of drugs used (i.e., drugs that relieve symptoms with minimal side effects and rapid onset, work on the cause of pain and have low or long relapse rates), comprehensive management

including involving lifestyle changes, addressing the psychological needs of patients and being able to find out the main causes underlying the appearance of chronic pain.

*"Drugs that could eliminate the pain, drugs should not take a long time to respond and of course with a small chance of*

*recurrence or in a longer period" #8*

*"Well... that touches on the main cause or basic disease. If you only treat the symptoms, in my opinion, it must be comprehensive, not just one area, what the problem must be looked for as a whole, especially if it has been going on for years" #6*

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## DISCUSSION

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This study found that based on the experience of general practitioners who served at the PHC, the most common chronic pain was musculoskeletal pain. Musculoskeletal pain was the pain that most often drives patients to seek treatment. In addition, musculoskeletal pain was also a condition that often causes disability and reduces the quality of life (Hawker, 2017; Zhang, 2020). As a result of this type of pain which is very dominant, also affects the pattern of treatment at the PHC, where the use of NSAIDs dominates the way of drug use for chronic pain at the PHC. According to the literature, this type of pain is one of the pains that causes the use of NSAIDs (Hawker, 2017). Mills reported that based on several previous studies, the provision of NSAIDs at the primary care level did have the highest proportion (55%), followed by the provision of Paracetamol (43%) and weak opioids at 13% (Mills, 2016). Thus, the results of this study are relevant to previous publications.

The participants' experience in this study has demonstrated their ability to recognize biopsychosocial factors that are important in detecting and managing chronic pain. Chronic

pain is associated with emotional, cognitive, and behavioural functioning and psychosocial consequences. The long-lasting nature of chronic pain will influence the patient's experience and reporting of pain. These psychosocial factors are not just a secondary reaction to chronic pain but form a complex interactive biopsychosocial process. Thus, these factors need to be considered because they are risk factors and protective factors in the dynamic system that shapes chronic pain conditions (Meints 2018). Even in particular chronic pain conditions, biopsychosocial interventions have been shown to provide more significant benefits than advice/education and have shown similar effectiveness to physical activity interventions (vanErp, 2019).

This study also revealed that most participants had attempted to identify a history of stroke in chronic pain cases. They did this as part of a systematic approach to diagnosing chronic pain. Such awareness is important because post-stroke pain is essential to be recognized earlier to maintain quality of life post-stroke. To be admitted, clinicians must know the likelihood of this chronic pain occurring in post-stroke patients. It is also essential to understand the factors that influence the occurrence of post-stroke pain and the difficulties patients face when trying to communicate it (Payton, 2020).

Chronic pain syndrome is a condition that is often found post-stroke, even reaching half of stroke patients. More than 70% of patients with post-stroke experience chronic pain every day. Treatment of chronic



post-stroke pain is still considered suboptimal, despite the high prevalence of post-stroke pain. It has been reported that one-third of post-stroke patients with central pain receive inadequate or no therapy (Harrison, 2015). In other side, a study by Wang (2020) found that the chronic low back pain was a risk factors for stroke. The association was strongest among young patients. In addition, the severity of chronic low back pain was also associated with the higher risk for stroke. In the present study, the participants also recognized the association between chronic pain and stroke.

Recognition of central post-stroke pain features is important for providing appropriate treatment in cases of CPSP. In this study, the presence of cases with the features of CPSP was reported by almost all participants, with only one participant who had never encountered such cases. This is consistent with the literature which states that the prevalence of central post-stroke pain is relatively high.

This prevalence can even reach 50% if the stroke occurs in certain anatomical localizations, namely the brain stem (Liampas, 2020). Symptoms and signs of CPSP can be continuous or intermittent, with a commonly reported feeling of heat, pressure, tightness, or stiffness. Symptoms may also include burning or electrocution. Physical examination may reveal hyperesthesia, hypoalgesia, hypoesthesia, paresthesia, dysesthesia, allodynia, and hyperpathia. The above features usually occur in areas of the body affected by stroke, depending on

the location of the lesion in the brain (Betancur, 2021).

The participants in this study revealed that in managing chronic pain, there are many barriers. These barriers can come from the patient himself, his family, doctors, and the health care system. This is in line with the National Guideline Center report (2021) which divides barriers to chronic pain management into biological, psychological, and social factors. Physical activity and the presence of comorbidities are factors that fall into biological barriers. Pain intensity, the presence of psychiatric comorbidities, and coping mechanisms are classified into psychological barriers.

This study showed the perception of participants regarding the important role of comprehensive chronic pain management. Most of the perception of participants is in line with the literatures which states that chronic pain management at the primary care level should prioritize a combination of pharmacological and non-pharmacological approaches.

For this reason, guidelines are needed that can be used as guidelines by general practitioners in chronic pain management. Likewise, non-pharmacological interventions can include psychological approaches, also self-management, physiotherapy services, peripheral nerve stimulation, and complementary therapies as well as other comprehensive pain management programs (Mills, 2016).

This study showed that the majority of participants had correct perceptions regarding the important role of comprehensive chronic pain management. The experience and

perceptions of general practitioners at the public health centre can contribute to the comprehensive detection and management of chronic pain, especially central post-stroke pain.

#### **AUTHOR CONTRIBUTION**

All authors contribute to finding research topics, searching for data, analyzing that data, and writing the manuscript.

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#### **CONFLICT OF INTEREST**

There is no conflict of interest in this study.

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