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Pain descriptors and adaptation of Short Form McGill Pain Questionnaire 2 (SF-MPQ-2) for older people in Brunei Darussalam

Abstract

Background: Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage. It is common in older people and tends to be under-reported and undertreated. In addition to quantifying pain severity using the visual analogue scale (VAS), the use of the translated Short-Form McGill Pain Questionnaire (SF-MPQ-2) to identify pain descriptors may assist with pain assessment in older people. The aim is to identify pain descriptors for different pain etiology in older people using the adapted SF-MPQ-2 Brunei Malay version and compare pain severity assessments using the VAS and SF-MPQ-2.

Patients and methods: A prospective study using the translated SF-MPQ-2 in older people admitted or seen in a clinic under Orthopaedics and Geriatrics specialities between November 2018 and February 2019.

Results: There were 75 participants, with 21 pain descriptors used. The main descriptors for fractures, osteoarthritis or muscle/tendon problems were identified. Despite pain medication, more than a third still experienced moderate to severe pain. However, almost all were satisfied with the pain management. There was a statistically significant difference in pain severity between the VAS and SF-MPQ-2, with the VAS possibly underestimating pain.

Conclusions: The adapted SF-MPQ-2 appears feasible for use with older people in Brunei. Further studies are required to formally validate the SF-MPQ-2 in older patients and with specific medical conditions, such as diabetes or surgery.

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Introduction

Pain is defined as an unpleasant sensory and emotional experience associated with actual or potential tissue damage [1]. Pain is referred to as the fifth vital sign because the evaluation of pain is viewed as a basic requirement for patient care [2]. Pain is a common presenting complaint in people aged 65 years and older, with an incidence of up to 73%, increasing to 80% for those living in residential care [3]. Chronic pain or pain greater than 3 months is also common in older adults [4].

A study of nursing home residents found that although 70% of the residents had persistent pain, about 30% of these cases were not detected by the treating physician, and hence were not given appropriate symptomatic treatment [5]. In cancer patients aged below 75 years, approximately 21% received no pain medications despite having daily pain. This proportion increases with age, where 26% and 30% of those aged between 75 to 84 years and 85 years or older respectively were not treated for pain [6]. Untreated pain is associated with depression, anxiety, social isolation, immobility, sleep disturbances and poor quality of life [7].

Pain in older people may be underreported due to the impression that pain is a normal process of ageing. Older adults with or without cognitive impairment may have difficulty expressing their pain experiences verbally or sufficiently in detail, leading to unreported pain. Assessing pain requires a comprehensive approach with the involvement of a multidisciplinary team. Pain assessment tools such as the Verbal Descriptor Scale (VDS), Numeric Rating Scale (NRS) and Visual Analogue Scale (VAS) may be helpful to assist with quantifying pain severity. For older people, studies have shown that the VDS is often preferred over the NRS due to ease of use, psychometric properties and intuitive illustration of pain severity [8].

Pain assessment tools should also use descriptors that can be correlated to aetiology or diagnosis, such as the Short-Form McGill Pain Questionnaire 2 (SF-MPQ-2). This tool initially evolved from the McGill Pain Questionnaire (MPQ) to the short form version (SF-MPQ), which had 15 pain descriptors making it less time-consuming to complete. The SF-MPQ-2 has 22 pain descriptors including neuropathic pain symptoms, which were missing from the earlier version [9]. The 4-point rating scale of the MPQ was also increased to a 0–10 numerical scale to allow better responsiveness. It is expected that the combination of the NRS or VDS with SF-MPQ-2 would optimise the assessment and diagnosis of pain in older people.

Patients and methods

This study aimed to describe the types of pain descriptors in older people in hospital, using the SF-MPQ-2 Brunei Malay version, to correlate pain descriptors to the aetiology of pain and to assess if there was a difference in pain severity scores between the SF-MPQ-2 and VAS.

Patients aged 65 years and older admitted or attended clinics under Geriatric Medicine or Orthopaedics in Raja Isteri Pengiran Anak Saleha (RIPAS Hospital) between November 2018 to February 2019 were invited to participate using convenience sampling. The principle of presumption of capacity was applied where all participants are presumed to have the mental capacity or competence to answer the SF-MPQ-2 unless there was evidence to suggest otherwise. Patients with advanced dementia, unable to communicate or speak Malay were excluded from the study.

The SF-MPQ-2 Brunei Malay version was adapted from the original tool through a translation and back translation process by staff from the Geriatrics and Palliative Unit, RIPAS Hospital until there was overall consensus and agreement. The SF-MPQ-2 Brunei Malay version was piloted with 10 participants, during which no further adjustments or changes were required. Permission was obtained from Mapi Research Trust (ePROVIDE request 145076) for translating the SF-MPQ-2 to Brunei Malay and using it in this study.

Data collection from participants was performed as one-to-one interviews and included sociodemographic data, numeric rating scale or visual analogue scale and the SF-MPQ-2 Brunei Malay version. Participants were given a choice of the numeric rating scale or visual analogue scale to determine pain severity. The use of these pain severity assessment tools was preferred rather than the verbal descriptor scale, as the SF-MPQ-2 Brunei Malay version also required participants to rate the intensity of each of the pain and related symptoms on a 0 to 10 scale. This will enable a comparison of responses between the numeric rating scale or visual analogue scale and the SF-MPQ-2 Brunei Malay version. Statistical analysis was performed using Microsoft Excel and RStudio for Windows. For patients with multiple descriptors of pain on the SF-MPQ-2, the overall severity score was the calculated average (median) of positive pain scores. Wilcoxon Signed Rank Test was used to compare median pain scores between the VAS and the SF-MPQ-2.

Approval for the study was obtained from the joint Institute of Health Science Research and Ethics Committee (IHSREC) and the Medical and Health Research and Ethics Committee (MHREC), Ministry of Health, Brunei

Darussalam (IHSREC/UBD/IHS/B3/8). The study was conducted in accordance with the Declaration of Helsinki.

Results

There were 75 participants, 26 (34.7%) males and 49 (65.3%) females. The median age was 75 years with a range of 65 to 91 years. There were more Orthopaedic patients (72.0%) than Geriatrics patients (28.0%). Among the 54 orthopaedic patients, there were 21 (38.9%) with fractures, 13 (24.1%) with osteoarthritis, 7 (13.0%) with tendon or muscle injuries, and 13 (24.1%) had other injuries. A large proportion of patients had hypertension (84.2%) and diabetes mellitus (54.4%). Table 1 summarises findings from the pain history of older adult patients, including the location of pain, duration, impact on mobility, whether analgesia was taken and patient satisfaction with pain management.

A total of 21 pain descriptors were identified. The top five most commonly used pain descriptors by older adult patients were aching pain (*sangal/ngilu*) 50 (11.7%), numbness (*kebas/panat*) 36 (8.4%), tenderness (*rasa sensitif*) 35 (8.2%), throbbing pain (*sakit berdenyut*) 34 (7.9%) and pain caused by light touch (*sakit dengan sentuhan ringan*) 26 (6.1%). A list of pain descriptors and their relative percentages are shown in Table 2.

Pain descriptors were classified based on aetiology for orthopaedics patients. It was not possible to do this for geriatric inpatients, as the diagnoses for the causes of pain were non-specific or multifactorial. Pain experienced by orthopaedic patients can be classified into four main groups: fractures (38.9%), osteoarthritis (24.1%), muscle or tendon-associated pain, such as muscle tears or tendinitis (13%) and other unclassified pain (24.1%). The other unclassified pain included gout, chondrosarcoma, abscess and spondylosis.

For fractures, the main pain descriptors used were aching pain (*sangal atau ngilu*), (12.3%), throbbing pain (*sakit berdenyut*) (10%), numbness (*kebas atau panat*), tenderness (*rasa sensitif*) at 9.2% and pain caused by light touch (*sakit dengan sentuhan ringan*) (8.5%). The main pain descriptors for osteoarthritis were aching pain (*sangal atau ngilu*) (13.3%), cramping pain (*kekejangan atau kram*) (9.3%), numbness (*kebas atau panat*) (8%), throbbing pain (*sakit berdenyut*) (8%) and tingling or pins and needles (*sakit kesemutan*) (6.7%). For muscle and tendon-associated pathology, the main pain descriptors used were tenderness (*rasa sensitif*) (10.9%), throbbing pain (*sakit berdenyut*) (10.9%), sharp pain (*tajam-tajam*) (9.1%), punishing or cruel (*rasa terseksa*) (7.3%) and stabbing pain (*sakit ditikam*) (7.3%).

Table 1. Pain history of older adult patients

Variables	n [%]
Location of pain (n = 75)	
Head and neck	3 (4.0)
Upper limbs	24 (32.0)
Lower limbs	40 (53.3)
Others	8 (10.7)
Duration of pain (n = 75)	
Less than one month	26 (34.7)
1–5 months	16 (21.3)
6–11 months	2 (2.7)
1–5 years	12 (16.0)
More than 5 years	19 (25.3)
Mobility affected (n = 75)	
Yes	55 (73.3)
No	20 (26.7)
On pain medication (n = 75)	
Yes	68 (90.7)
No	7 (9.3)
Visual Analogue Scale (n = 75)	
None	20 (26.7)
Mild	23 (30.7)
Moderate	22 (29.3)
Severe	10 (13.3)
Visual Analogue Scale for participants with pain medication (n = 68)	
None	16 (23.5)
Mild	22 (32.4)
Moderate	21 (30.9)
Severe	9 (13.2)
Patient satisfaction towards pain treatment/management (n = 75)	
Satisfied	74 (98.7)
Not satisfied	1 (1.3)

The median and interquartile range (IQR) was 2.0 for the VAS. For SF-MPQ-2, the median was 3.0 and the IQR was 1.0. Wilcoxon Signed Rank Test confirmed a statistically significant difference in pain severity between the VAS and SF-MPQ-2 Brunei Malay versions ($p < 0.05$).

Discussion

The main objective of this study was to identify pain descriptors in the Brunei Malay language used by older adults and to correlate pain descriptors to aetiology.

Table 2. Bruneian-Malay pain descriptors used by older adult patients

Pain descriptors identified (n = 428)		n [%]
Aching pain	<i>Sangal atau ngilu</i>	50 (11.7)
Numbness	<i>Kebas atau panat</i>	36 (8.4)
Tender	<i>Rasa sensitif</i>	35 (8.2)
Throbbing pain	<i>Sakit berdenyut</i>	34 (7.9)
Pain caused by light touch	<i>Sakit dengan sentuhan ringan</i>	26 (6.1)
Hot-burning pain	<i>Panas-panas</i>	24 (5.6)
Cramping pain	<i>Kekejangan atau kram</i>	23 (5.4)
Shooting pain	<i>Sakit merenjat</i>	23 (5.4)
Stabbing pain	<i>Sakit ditikam</i>	22 (5.1)
Cold-freezing pain	<i>Rasa sejuk membeku</i>	21 (4.9)
Sharp pain	<i>Tajam-tajam</i>	19 (4.4)
Punishing-cruel	<i>Rasa terseksa</i>	18 (4.2)
Tingling or 'pins and needles'	<i>Sakit kesemutan</i>	17 (4.0)
Tiring-exhausting	<i>Ngalih atau lesu</i>	16 (3.7)
Heavy pain	<i>Rasa berat</i>	16 (3.7)
Itching	<i>Gatal-gatal atau cakar-cakar</i>	13 (3.0)
Gnawing pain	<i>Sakit mencengkam berlarutan</i>	11 (2.6)
Electric-shock pain	<i>Kejutan elektrik</i>	8 (1.7)
Splitting pain	<i>Sakit kena belah</i>	6 (1.4)
Sickening	<i>Rasa loya atau mual</i>	5 (1.2)
Piercing pain	<i>Sakit menindik</i>	5 (1.2)

In older people, pain may be underdiagnosed due to limited skills in pain assessment and language barriers. It is also important to develop localised tools containing pain descriptors to assist with the diagnosis of pain [5, 6, 10]. For example, the description of pain differs between neuropathic and non-neuropathic pain, which helps identify aetiology and has implications for treatment. The SF-MPQ-2 shows promise in other studies, showing validity in both inpatient and outpatient settings. This tool has also been adapted and translated to a culturally-appropriate version in China, Japan, Iran and Brazil [11–14].

In this study, the SF-MPQ-2 was translated into Brunei Malay language and the main descriptors for specific pain aetiologies were described. Geriatrics and orthopaedics patients were selected for convenience, as it was expected these two specialities would have sufficient older people for recruitment. However, there were more orthopaedic patients identified for this study, with fractures making up almost 40% of the participants. Fractures in older people may indicate skeletal fragility from osteoporosis. Older women have up to five times higher risk of hip fractures and are three times more likely to incur other

fractures during their lifetime [15, 16]. A study from the United Kingdom showed that very old patients (≥ 90 years) represented less than a per cent of the total population but were responsible for almost 5% of all fractures and 9.3% of all orthopaedic trauma admissions [17]. Further work may be required to screen and treat osteoporosis to reduce fracture risk and subsequent pain.

Osteoarthritis was the second most common cause of pain, affecting a quarter of older orthopaedic patients. Osteoarthritis is a common cause of chronic disability in older adults, which results in pain and poor quality of life [18–20]. While non-steroidal anti-inflammatory drugs (NSAIDs) may be effective for osteoarthritis, the potential adverse events including hepatic, cardiovascular and gastrointestinal toxicities limit their use in older adults [21].

The World Health Organization (WHO) Study on global AGEing and adult health (SAGE) found a high prevalence of back pain and disability among adults aged 50 years and older, ranging from 22% in China to 56% in the Russian Federation [22]. Back pain was not so prevalent in the present study, possibly due to the selection bias of the older people, of whom 40%

were recruited from the Orthopaedics clinic after sustaining limb fractures.

Symptomatic management should be offered for patients with pain. Early and adequate pain management during the pre-operative and post-operative period, through to rehabilitation may reduce complications such as cardiopulmonary consequences and mental status change [16, 17]. Quantifying severity is crucial as opioids are often required to treat moderate or severe pain. Opioids should be used only when appropriate due to the risk of adverse side effects such as nausea and vomiting, constipation, respiratory depression and most importantly alterations in mental status [16].

Although most of the participants in this study were on pain medications, almost 40% still had moderate to severe pain. This suggests that a substantial proportion of older patients may be undertreated for pain. Despite this, there was a high satisfaction rate with the pain management given, implying that older people may be accepting of suboptimal pain management. Further studies may be required to review the type of analgesia used and compliance with medications.

The Wilcoxon Signed Rank Test showed a statistically significant difference between the severity scores using the VAS and SF-MPQ-2, with higher severity indicated in the SF-MPQ-2. Although studies found the VAS showed good psychomotor properties and was easy to use, other studies found that some older people were unable to complete this tool [23–26]. This may be due to the VAS requiring thinking, sensory, motor and perceptual abilities, which limits its utility in people with lower levels of education or impaired cognition. In this study, the subjects gave a lower pain severity score using the VAS compared to the SF-MPQ-2, which suggests the VAS may underestimate pain severity. However, it is also uncertain whether the one-point difference between the two tools in terms of pain severity is clinically significant.

This study had several limitations. Given the small sample size, multivariate analysis to correlate pain descriptors to pain aetiology was not possible. While the adapted SF-MPQ-2 appears practically useful and feasible for local use, formal validation studies to assess its reliability are still required. Further studies are also required to evaluate the cultural interaction of the pain experience, which may explain the satisfaction rate despite poorly controlled pain symptoms.

Conclusions

From the 21 pain descriptors used, the main pain complaints by older people were described as

aching, numbness, tenderness, throbbing or pain caused by light touch. Despite pain medication, more than a third still experienced moderate to severe pain but almost all stated they were satisfied with the pain management. There was a statistically significant difference in pain severity between the VAS and SF-MPQ-2, with the VAS possibly underestimating pain. While the SF-MPQ-2 appears feasible for use locally, further studies are required to formally validate the SF-MPQ-2 in older patients and with specific medical conditions, such as diabetes or surgery, including ensuring internal consistency, test-retest reliability, inter-rater reliability and construct validity.

Article information and declarations

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Conflict of interest

The authors declare no conflict of interest.

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