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STUDY ON IMPACT OF KAP ON SPINAL STENOSIS PATIENTS IN SANANRAK MUNICIPALITY THANYABURI, THAILAND

Vijaya Bhaskara Reddy [a*], Somboon Boonyakiat [b]
[a]St Theresa International College, Thailand
[b] Kasem Bundit University, Thailand
* **Corresponding author:** Vijaya@stic.ac.th

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Abstract

In contemporary society, spinal stenosis prevails across various demographic groups, exposing a gap in understanding and attitudes towards this condition and its associated pain management techniques. This study seeks to delve into the knowledge and attitudes of individuals with spinal stenosis, along with their practices in pain management. A sample of fifty-six subjects was randomly selected from the Sananrak municipality area. The questionnaire comprises three sections: Demographic Information, Attitudes and Knowledge about Pain Management and spinal stenosis, and Pain Management Behaviour. Results indicate that individuals with spinal stenosis exhibit limited knowledge and unfavourable attitudes towards pain management, yet their practical application of pain management techniques is at a moderate level. Consequently, enhancing patient awareness and attitudes concerning spinal stenosis and pain management in the study area is imperative. Remarkably, the implementation of Knowledge, Attitudes, and Practices (KAP) interventions led to significant positive shifts in respondents' attitudes towards pain management.

Keywords: Knowledge, Attitudes, Spinal Stenosis, Practice, Pain Management.

1. Introduction

It is essential to provide the elderly population with comprehensive knowledge about changing behavioral attitudes and adopting effective pain management practices for spinal stenosis. Unfortunately, there is a significant lack of awareness regarding spinal stenosis within the study area's general population. This lack of knowledge contributes to improper assessment and inadequate pain management. In many cases, both healthcare professionals and the affected individuals underestimate the severity of the pain associated with spinal stenosis. Back pain, especially low back pain, is a prevalent issue affecting both the working-age and elderly population. Numerous studies have highlighted the high prevalence of back pain within the general population. According to United Nations estimates, the population aged 65 and over is projected to increase by 16% to 25% in developing areas between 2010 and 2040, which underscores the growing significance of this issue (Population Reference Bureau, 2010).

Regrettably, the complexity of these issues is compounded by the absence of sufficient markers for assessment. However, with the advancement of phase-contrast cine MRI studies, there is now a promising avenue to gain deeper insights into cerebrospinal fluid (CSF) dynamics. This technology enables a better understanding of CSF flow patterns and holds the potential to establish connections between various disease processes. Globally, the predominant approach to treating patients involves the use of analgesics. However, in the study area, there exists a concerning deficit in attitudes and knowledge related to this matter. This deficiency may be attributed to factors such as limited educational backgrounds, prevailing attitudes, and customary practices in pain management. Consequently, there is an imperative need to disseminate advanced knowledge regarding pain management techniques. Prevalence studies indicate that as many as 50% of the population currently experiences lower back pain to varying degrees, accounting for approximately 65% of reported cases (Bresler et al., 1999). Physical therapists are highlighted as essential in addressing the specific challenges posed by an aging spine. In the elderly population, lower back pain has a more profound impact, leading to functional limitations (Weiner et al., 2003; Tong et al., 2007; Scudds and Robertson, 1998), mental health issues, including depression (Meyer et al., 2006; Weiner et al., 2003), and balance deficits, increasing the risk of falls (Yagci et al., 2007). An intriguing aspect in the realms of neurology and neuroscience revolves around the cerebrospinal fluid circulation.

Recent evidence indicates that this variation is highly diverse, influenced by numerous factors, and, in many respects, parallels the variability observed in blood pressure. Throughout the course of several millennia, Homo sapiens have tirelessly pursued solutions to a multitude of diseases that affect people. The process is undeniably challenging, hinging on a deep understanding of human physiology and the identification of markers for both typical and atypical conditions. Our species, having existed on this planet for millions of years, embodies a unique blend of both novelty and ancient heritage. Indeed, Earth has hosted a multitude of diverse life forms for far longer than our existence, yet our presence is remarkable and transformative. Notably, human progress has led to advancements in health and a rise in life expectancy worldwide.

Consequently, there has been a substantial increase in the population of individuals aged 65 and older, including octogenarians, particularly in Western nations (Cruz-Jentoft et al., 2010). It's worth noting that changes in blood pressure can contribute to numerous health conditions, and similarly, disruptions in cerebrospinal fluid flow dynamics have been linked to various disease processes.

Life expectancy is influenced by a multitude of factors, including smoking cessation, effective management of blood pressure and diabetes, and notably, the widespread use of statins. Statins not only contribute to the extension of life expectancy but also have a role in decelerating the rate of cognitive decline, as demonstrated by studies like Yamada et al. (2013) and Cawthon et al. (2007). Certainly, the correlation between increased life expectancy and higher dementia rates is evident, as noted by Chang (2017). A striking illustration of this phenomenon can be found in the life of William Somerset Maugham, a renowned writer and physician who lived through the 19th and 20th centuries. Despite his robust health in earlier years, he experienced a significant decline later in life, as exemplified by Tanishima et al. (2017). This case serves as a poignant example of the consequences of physical preservation coupled with the ravages of dementia. It becomes apparent that the aging process affects individuals differently, underscoring the fact that not everyone's brain ages at the same rate.

The intellectual decline associated with aging can be partially attributed to physical changes occurring in the brain. Typically, brain weight decreases at a rate of approximately 5% per decade after the age of 40. This reduction in brain weight is accompanied by declines in the volumes of both gray and white matter, and cognitive changes become more noticeable, especially after reaching the age of 40. Studies, such as Yoshimura et al. (2017), suggest that episodic memory tends to decline from middle age onward, while semantic memory shows an initial increase from middle age to a younger age group but then deteriorates in most older individuals. This decline in brain weight may be indicative of cell death at the cerebral boundaries, as indicated by research like that of Park et al. (2016), and a decrease in the number of neurons with age. It's worth noting that the human brain undergoes rapid growth, particularly after birth, reaching an estimated 80 billion neurons and then gradually decreasing to around 60 billion by the ninth decade of life, as described by Amundsen (1995).

Contemporary medicine faces a significant challenge with the prevalence of Alzheimer's disease, and understanding why this condition occurs has proven to be complex, resulting in various proposed theories. In our discussion, we aim to explore the potential causal relationship between knowledge, attitudes, and practices (KAP) and various disease processes that may indicate an increase in cerebrospinal fluid transitory pressure, often associated with factors like cervical stenosis. Quantitative volumetric MRI analysis offers a valuable tool to assess the actual amount of neuronal tissue present in the brain. This analysis can reveal how different physiological conditions related to cerebral mass might manifest, and automated volumetric MRI analysis, as demonstrated by Sigmundsson (2013), can provide precise measurements in this regard. Additionally, it's important to note that alongside changes in the brain's weight and structure, IQ test scores tend to decrease with age, as observed in research such as Ishimoto et al. (2012). This further underscores the multifaceted nature of cognitive aging and neurological conditions like Alzheimer's disease. Hence, it is valuable to conduct a study aimed at assessing the knowledge and attitudes of the elderly population regarding their pain management practices. Such an investigation would offer essential insights that can serve as a foundation for future enhancements in pain management within the study area.

2. Methodology

In this study, one tool that is often used to assess respondents' ideas, perspectives, and attitudes is a scale that is similar to the Likert scale. It entails providing respondents with a series of statements or questions and asking them to indicate their degree of agreement or disagreement using a scale that has already been developed. In this instance, the scale was most likely a 5 - point scale, which indicates that participants were given five alternatives to choose from. These options typically ranged from "Strongly Disagree" to "Strongly Agree."The preliminary "pilot" study used to test the research methodologies, processes, and instruments (such the questionnaire), in order to discover any possible flaws before scaling up to a major study, is the main goal of a pilot study. This testing is done before moving on to a major study. This helps guarantee that the primary research well-designed and gather the desired data as efficiently as possible. The scope of investigation indicated the attitude questionnaire through a first round of testing to verify that it is clear, easily understandable, and produces reliable results from respondents (Reddy & Buncha, 2017).The main study collected data from 56 local respondents in the Sananrak area, which is part of the Thanyaburi municipality. This data collection process likely involved administering the Likert-type attitude questionnaire to the participants. We have explained the purpose of the study to the participants and provided them with the questionnaire to complete. The questionnaire would consist of statements or questions related to attitudes toward spinal stenosis and pain management, with the 5-point scale allowing participants to express their agreement or disagreement with each statement.

3. Results and Discussions

The study encompassed individuals aged between 49 and 58 years old. The mean age was 58 years, and the standard deviation was 4.06 (SD = 4.06). This indicates the average age of the participants and the degree of variability in age within the group. The majority of participants were women (91%), while a smaller percentage were men (9%). This gives an overview of the gender distribution within the sample. Most of the subjects identified as Buddhists (97%), while a smaller portion belonged to other religious groups (3%).

The majority of the participants (93.8%) had received primary level education. A smaller percentage held a bachelor's degree, with 4.2%, and 2% fell into the category of "others." This information provides insights into the educational background of the participants. Among the participants, 75% of nurses had previous experience with pain. This suggests that a substantial portion of the nurse participants had encountered pain-related situations before.

Among the elderly population within the sample, pain levels were measured. The distribution was as follows: 68.91% had experienced low back pain previously, 12.09% of participants reported moderate pain and 19.0% of participants reported severe pain. This indicates the prevalence and varying degrees of pain experienced within the elderly population. A portion of the subjects (38.98%) attended a pain management program, while the remaining subjects (61.02%) had not attended such a program. This information highlights the engagement of participants in pain management programs. This information is essential for contextualizing the study findings and understanding the participants characteristics might relate to their attitude, knowledge and practices regarding spinal stenosis and pain management.

3.1 Categorization of Survey Participants According to Their Pain Management Knowledge and Attitudes

Table-1 displays the breakdown of respondents' knowledge and attitudes regarding pain management, divided into three distinct categories: "Moderate," "High," and "Very Low". A significant proportion of respondents (69.64%) fell into the "Very Low" category, reflecting their perceptions and behavioral attitudes towards pain management. This suggests that a significant portion of the participants had minimal knowledge and relatively negative attitudes toward pain management practices. About 17.86% of respondents indicated a "Moderate" level of attitudes and knowledge towards pain management. This suggests that a smaller proportion of participants had a moderate understanding and attitudes in this aspect. A smaller percentage of respondents, 12.5% to be precise, demonstrated a "High" level of attitudes and knowledge towards pain management. This indicates that a minority of participants possessed a more positive outlook and a better grasp of pain management concepts. This distribution provides insights into how the surveyed elderly population perceives and approaches pain management, showcasing varying degrees of understanding and attitudes.

Table 1
The demographic distribution of the elderly population in Thayaburi in relation to their perspectives and awareness of pain management

Level of knowledge	**Frequency**	**Percent (%)**
Very low (score 1-3)	39	69.64
Moderate (score 4-6)	10	17.86
High (score 7-10)	7	12.5
	56	100

3.2 The categorization of survey participants according to their behaviors and practices related to pain management

Table-2 provides an in-depth analysis of how survey participants are distributed according to the frequency of their actions and practices in the realm of pain management, with specific parameters for categorization. Around 25.00% of respondents reported practicing pain management on a daily basis, once per day. About 14.27% of respondents indicated practicing pain management twice daily, suggesting a more frequent practice routine. Approximately 16.10% of respondents reported practicing pain management once a week. The majority of respondents (33.92%) practiced pain management systematically

once a month. This frequency appears to be the most prevalent among the surveyed population. A smaller percentage of respondents (10.71%) reported practicing pain management only when they have free time.

The distribution highlights the various practice frequencies among the surveyed respondents. Notably, the most common practice frequency reported was "Monthly Once." This finding indicates a deficit in the systematic practice of pain management techniques for spinal stenosis, as a significant portion of respondents practiced only on a less frequent basis, with a relatively smaller percentage practicing more regularly. This information underscores the need for improved education and interventions to encourage more consistent and effective pain management practices among the studied population.

Table 2
The allocation of individuals into groups based on their actions and behaviours related to pain management.

Practice frequencies	Frequency	Percent (%)
Daily once	14	25
Daily twice	8	14.27
Weekly	9	16.10
Monthly	19	33.92
If I have free time	6	10.97
	56	100

3.3 The categorization of survey participants based on their Knowledge, Attitude, and Practice (KAP) application regarding pain management practices

Table 3 illustrates how respondents are distributed according to their application of Knowledge, Attitude, and Practice (KAP) in relation to pain management practices. A significant majority of respondents (55.36%) reported practicing pain management systematically on a daily basis, once per day. Around 33.93% of respondents indicated practicing pain management twice daily, reflecting a substantial portion of participants who are practicing more frequently. Approximately 10.71% of respondents practiced pain management once a week. Notably, no respondents reported practicing pain management on a monthly basis or whenever they have free time.

This distribution illustrates a remarkable transformation in practice frequency after the utilizing the KAP approach in the context of the spinal stenosis pain relief program. The respondents' practice habits have shown significant improvement, with the majority adopting more systematic and frequent pain management practices. This positive change underscores the effectiveness of the KAP intervention, which seems to have motivated respondents to engage in more consistent and beneficial pain management practices. This shift in practice patterns suggests the successful impact of the KAP approach on the respondents' attitudes and behaviors towards pain management for spinal stenosis.

Table 3
The categorization of subjects based on the posttest results of the Knowledge, Attitude, and Practice (KAP) application regarding pain management practices in Thanyaburi.

Practice frequencies	Frequency	Percent (%)
Daily once	31	55.36
Daily twice	19	33.93
Weekly	6	10.71
Monthly	0	0
If I have free time	0	0
	56	100

The present study investigated the impact of the Knowledge, Attitude, and Practice (KAP) approach on spinal stenosis patients' pain management strategies. Through the application of a structured intervention, the study aimed to assess the extent to which this approach could influence patients' knowledge, attitudes, and actual practices concerning spinal stenosis pain management. The KAP theory is a methodical framework for encouraging positive behavioural shifts in individuals. It consists of three interconnected phases: information acquisition, belief formation, and action. Because of its effectiveness in promoting positive lifestyle changes, this model is increasingly being used in the fields of illness prevention, management, and rehabilitation. By encouraging patients to take an active role in their treatment, the KAP model may improve several aspects of medical practise (Wang et al. 2020). The preceding research validated the Thai translation of the Swiss Spinal

Stenosis (Thai-SSS) questionnaire, designed to assess discomfort, mobility, and satisfaction levels among individuals with spinal stenosis. Expert translators and medical professional ensured that the translation met all applicable international requirements. The Thai-SSS, the Thai version was used for pre-and post-treatment assessments of Thai patients with lumbar spinal stenosis. Treatment outcomes in Thai patients with spinal stenosis may be assessed in terms of patient satisfaction, symptom severity and physical function with the use of the Thai-SSS (Wilartratsami et al. 2021). Our current study highlights the profound impact of the KAP model on pain management practices among respondents. The data signifies a positive shift towards increased regularity and intensity in practicing pain management techniques. This shift underscores the KAP intervention's effectiveness in promoting more consistent and beneficial pain management practices for individuals dealing with spinal stenosis, highlighting its potential significance in enhancing overall patient outcomes and well-being.

The distribution of pain levels within the elderly population sample is notable, with a majority (68.91%) having experienced previous low back pain. The presence of moderate (12.09%) and severe (19.0%) pain levels highlights the varied experiences within this group. These findings suggest a need for tailored pain management strategies that address the differing pain intensities. According to the findings of the research, there is a discernible gender gap in the incidence of chronic pain, with women demonstrating an increased risk in comparison to males. This result is consistent with the information that already exists, which reveals unequivocally that women of all ages have a greater incidence of chronic pain than males do (Macfarlane et al. 2015). This study's findings on patients of pain treatment were also greater than those from studies conducted in Mekelle, Ethiopia (58.6%); Harare, Zimbabwe (35.5%); Tehran (46.6%); Ankara (38.2% and Ankara (39.5%); Sydney (24%) and Kuala Lumpur (25%) (Liyew et al. 2020). Possible explanations for why the finding is greater than the previously mentioned research include variations in study design, sample size, tools utilized, and outcome rating. Remarkably, the adoption of treatments targeting respondents' Knowledge, Attitudes, and Practises (KAP) led to substantial positive modifications in the attitudes that they held about pain management.

Conducted as a questionnaire-based survey, the study's findings offer insights into spinal stenosis pain management. Yet, this method's potential to oversimplify matters and sway respondent attitudes is recognized, prompting caution in interpretation. Moreover, the predominantly female respondents from the Thanyaburi area suggest limited generalizability across demographics and locales.To mitigate these concerns, the study incorporated oral interviews to provide a more nuanced understanding and counteract potential biases. However, the study acknowledges the need for prudence in extrapolating results. Moving forward, the study recommends a more focused exploration into the challenges of applying KAP principles to spinal stenosis pain management. This would enable a deeper understanding of barriers and inform more effective interventions.

4. Conclusion and Recommendation

The study's investigation provided evidence that the elderly individuals residing in the designated research region possessed limited knowledge and a less favorable attitude towards effectively managing spinal stenosis pain. Their methods for mitigating or handling this pain were assessed to be at a moderate level. Importantly, the educational sessions conducted after the study, focused on Knowledge, Attitudes, and Practices (KAP) concerning spinal stenosis pain management, garnered a noteworthy and encouragingly positive reception from the participants. This indicates that the post-session content had a substantial impact on enhancing their understanding and attitudes towards managing spinal stenosis pain.

The absence of effective pain management programs can significantly contribute to the limited knowledge and attitudes observed among the elderly population in the study area. Consequently, it is recommended that public health authorities take the initiative to establish targeted training programs addressing spinal stenosis pain and back pain management. Despite this, the study findings indicate that information about pain management methods remains at a moderate or minimal level, warranting increased awareness and emphasis on behavioral interventions.Given these insights, public health administrators should consider advocating for policy changes based on the study's outcomes. This study focused on enhancing the quality of life for the population by allocating resources to educate the elderly about spinal stenosis pain management. Future research could expand on these efforts by targeting a larger and more diverse male population, encompassing both urban and rural areas, to ensure a broader representation of perspectives and experiences. This iterative approach could yield more comprehensive and actionable findings to inform effective pain management strategies.

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