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Investigating Public Pharmacists' Awareness, Perspectives, and Functions in Pediatric Palliative Management: Facilitators and Obstacles

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ABSTRACT

Pain is a frequent issue, and the use of painkillers is widespread. Public Pharmacists (PP) serve as the main interfaces for patients and may significantly influence the direction of reasonable medication or unconventional pain treatment approaches. Nonetheless, there are no definitive academic programs or standardized norms to facilitate this position, and the awareness of this prospective job remains limited. This research investigated PP's awareness, perspectives, and functions in Pediatric Palliative Management (PPM) at Community-based Pharmacies (CbP) and Pharmaceutical Storefronts (PSs). An exploratory study was performed using SPSS version 25 to collect, analyze, and evaluate the information. The study further examined possible facilitators and obstacles and the application of current regulations. Of the 125 PPs solicited for the research, 100 consented to participate and submitted the survey responses. When evaluating alternative options, 37.2% concur that the exclusive use of analgesics and adjuvant medicines may successfully manage chronic pain, whereas a notable minority (28.1%) either dissent or maintain a neutral stance. Cognitive Behavioral Therapy (CBT) is extensively supported as an early intervention, with 52.8% of individuals in agreement and 17.2% in strong agreement, underscoring its acknowledgment as a non-pharmacological approach for chronic pain management. Ultimately, a significant majority (62.1%) of participants agree that the selection of painkillers should be predicated on pain severity, with 21.3% expressing a strong endorsement of this methodology.

Keywords: *Public Pharmacists, Pediatric Palliative Management, Community-based Pharmacies, Pharmaceutical Storefronts, Awareness, Perspectives.*

1. INTRODUCTION

Approximately 1.18 million kids globally need PPM, while over 48,500 babies, children, and adolescents in England and Wales and 498,000 in America endure a dangerous or life-limiting disease. The wide range of these illnesses and the distinct PPM requirements vs adults result in diverse and intricate indications to treat. Appropriate symptom treatment in children varies considerably according to age, treatment, biological and intellectual growth, and capacity to speak and comprehend [1].

Literature on the knowledge of family caregivers and PP in giving medications for illness and PM in this group is insufficient.[12]. Caregivers and PP may lack the expertise to effectively alleviate symptoms while minimizing adverse effects, such as drowsiness [21]. The apprehension of making mistakes may result in inadequate or unsuitable dosages of painkillers. Consequently, parents will relocate their children from their favored care facility if enough symptom alleviation cannot be achieved.[2]. Healthcare experts characterize home PPM as 'challenging, intricate, and uncertain,' indicating a potential deficiency in the necessary skills and training to assist caregivers and PP [3].

A professional recommendation from the UK National Institute for Health and Treatment Excellence (NITE) for pediatric treatment relies on the results of 22 systematic research studies. Four studies evaluated the efficacy of therapies for anxiety, breathing difficulties, epileptic attacks, and PPM [22]. Only the later evaluation identified papers that satisfied the inclusion criteria, which only pertained to pharmaceutical therapies. Despite these evaluations providing crucial insights, to current knowledge, no comprehensive study has investigated the obstacles and enablers of PPM. NITE highlighted PPM as an academic objective and advocated for more investigation into the determinants affecting the chosen location of hospice care, positing that symptom control is crucial in this decision-making process.[4]. A more thorough comprehension of this might

guide the development of treatments based on research to enhance how to manage symptoms, enhancing care for kids and their caregivers [5]. The study aimed to determine and synthesize the available literature on obstacles and enablers encountered by patients, family caregivers, and PPs in treating pediatric symptoms.[15].

2. RELATED WORKS

A growing number of patients requiring PM are being managed in general medical offices using an integrated approach to treatment collaboration, often employing a blend of generic and specialized palliative care methodologies. Professional PPM serves as a cost-efficient substitute for hospital-based treatment, enhancing outcomes for patients and caregivers via greater interaction and treatment planning, superior symptom control, increased psychological support, and fewer requirements for hospital stays [16].

Caretakers for PPM require intricate support networks to fulfill their tasks effectively, and engagement in PM has been shown to enhance these caretakers' mental and emotional wellness and resilience. Notwithstanding these advantages, several acknowledged obstacles can affect the execution of PPM, including disparities in accessible assistance across regions, discrepancies in the identification and referral of appropriate patients to PPM programs, and deficiencies in education and certification for PPs responsible for providing PPM.[6]. An additional obstacle is the inconsistency in drug management strategies and availability of PSs and assistance, which may affect the appropriate treatment of symptoms for patients in the neighborhood [7].

Patients receiving PPM may present with several concurrent illnesses necessitating intricate and adaptive treatment protocols. PPs may assume vital responsibilities in this context by performing diverse clinical pharmaceutical functions, such as conducting drug reviews, optimizing treatment for alleviating symptoms, tracking and disclosing side effects and responses, and providing assistance and instruction for patients and their families [17]. The PP may also aid in providing patients, caregivers, and other healthcare professionals access to medications and medication-related details.[8].

Numerous essential medications are not accessible in formulations or dosages specifically designed for children. Consequently, caregivers may be compelled to alter recommended drugs to accommodate the patient's requirements [9]. Adjustments, including tablet squeezing pill opening, dissolution, and management via tube feeding, may occur several times.[10]. When not detailed in the overview of product features, these practices constitute unapproved utilization of drugs, potentially resulting in altered dosages and modified drug absorption [19]. The clinical ramifications for patients include an elevated risk of harmful consequences and inadequate symptom management. Furthermore, altering medicine before delivery appears to adversely affect compliance with therapy [11], which is essential for ensuring optimal symptom management.

The effects of prolonged treatment on PPs of children with enduring disorders such as allergies, schizophrenia, cystic fibrosis, insulin resistance, attention deficit disorder, persistent gastrointestinal illnesses, or transplant patients have been examined [12]. PPs often express worries over the suitability of continuous therapy and its possible adverse effects, drug administration and ingestion at school, disruption of social engagement, inflexibility of the therapy schedule, and compliance with treatment protocols. Supporting PPs is intricate and requires collaboration among nurses, doctors, social workers, and CbPs. These might be beneficial in addressing PP fears and uncertainties. It is well established in older individuals that it offers advantageous services, including enhanced pharmaceutical concordance and compliance, diminished risk of side effects or distribution mistakes, and reduced hospital return visits [13]. This might provide several advantages for child patients and their family members; however, the existing research on this demographic is inadequate, and there are no studies within the context of PPM.

3. PPS AWARENESS, PERSPECTIVES, AND FUNCTIONS IN PPM

3.1 Learning strategy

Numerical, cross-sectional research was performed to examine the awareness, perspectives, and functions of PPM. Information was collected using an online, unidentified survey aimed toward PPs to facilitate rapid, effective data acquisition. No private or sensitive data was gathered to preserve confidentiality and guarantee privacy. The average duration for completing the survey was roughly 10 minutes.

3.2 Formulation and Procedure of the Questionnaire

The inquirer was equipped after an exhaustive examination of pertinent literature on PPM. The data collecting technique has two parts: one addressing the socioeconomic background of PPs, including age, sex, experience, academic credentials, etc., and the other evaluating their awareness, perspectives, and functions for PPM. The awareness and perspective inquiries include four domains: the varied characteristics of pain, pain evaluation and quantification, pain management, and medical conditions or pain symptoms. The assessments addressed issues such as previous learning on PPM, the frequency of such learning, the place and presumed etiology of encountered pain, already diagnosed painful ailments, and other variables influencing referrals and interest in additional training, regardless of the training that had been previously received.

On a 5-point Subjective scale, 10 out of 22 learning items were evaluated (Strongly accept; Accept; Neutral; Oppose; Strongly oppose). The responses to the six questions were classified and utilized to evaluate expertise. The remaining inquiries with multiple choices were categorized into right, wrong, and ambiguous. A preliminary evaluation was performed to verify the reliability of the research instrument, and items that did not accurately assess participants' perceptions were excluded. Three information collectors conducted the information gathering; all with a Bachelor of Pharmacy (BPharm) degree. The primary investigators instructed the information catchers on the research instrument and ethical issues over two days. The information was input into Epi-Info Version 7.2.1.0 and evaluated with SPSS Version 25. The following segments have been employed:

Part 1: Socio-demographic Attributes

This survey component aimed to create a socioeconomic overview of the PPs by addressing key factors such as age, sex, job experience, educational attainment, and previous engagement. The survey consisted of six open-ended inquiries, starting with a request for participants to specify their sex and then classifying them by age category. The evaluation of previous experience as a PP included alternatives from recent graduates to those with over a decade of experience. The subsequent inquiry pertained to educational attainment, followed by an examination of employment location, including diverse locations. Respondents were asked about their experience in PPM and were allowed to name the source if relevant. This portion ended by questioning the source of their pharmacy degree, asking whether it was an undergraduate or postgraduate degree.

Part 2: Awareness, Perspectives, and Functions

The second section of the survey sought to assess the awareness, perspectives, and functions of PPs regarding PPM and the use of different painkillers. Consisting of ten inquiries, it was centered on both non-opioid and opioid painkillers. Non-opioid medications, mostly over-the-counter basic painkillers, co-analgesics such as additives (e.g., psychiatrists), and combinations of painkillers were evaluated. Replies were documented on a 5-point Likert scale, from "Strongly Oppose" to "Strongly Accept," enabling a detailed evaluation of PP viewpoints. All inquiries were restricted, allowing a systematic assessment of participants' expertise. The topics addressed encompassed PPM protocols, the feeling of pain in kids, drug preference, the application of Cognitive Behavioral Therapy (CBT) for ongoing pain, analgesic efficacy, the function of antidepressants in PPM, and a mixture of painkillers for enhanced pain relief. CBT was investigated because of its extensive acknowledgment as a psychological intervention for persistent pain. It aims to help people recognize and replace detrimental thinking habits with happier, more beneficial alternatives. CBT approaches are often used in pain treatment to assist patients in formulating coping mechanisms, managing stress, and improving their general state of life. PPs may significantly contribute to patient education on CBT as a supplementary treatment for persistent pain, emphasizing its advantages in conjunction with pharmaceutical therapies.

Part 3: Self-identified Proficiency

The third section of the survey focused on the self-assessed proficiency of licensed PPs in PPM, consisting of 10 items. Most queries were restricted, with a limited number permitting flexible replies. The part addressed several facets, like counseling patients on over-the-counter painkillers, non-pharmacological PM strategies, knowledge of possible medication interactions, and understanding of rules and regulations about painkillers. The inquiries additionally examined acquaintance with clinical recommendations, self-evaluated understanding of controlled drugs and pain treatment, and perspectives on the necessity for more training. Response forms used a 5-point Likert scale. A supplementary question was developed into a four-option format, accompanied by a sub-question that required respondents to explain their reasoning for their answers, therefore facilitating a thorough evaluation of PP competencies and expertise in PPM.

Part 4: Facilitators and Obstacles

This segment examined the determinants affecting the involvement of PPs in pain treatment, with 10 questions of both closed and flexible formats. The discussion started by highlighting the distinct hurdles PPs have while managing persistent pain patients, including obstacles such as knowledge deficiencies, communication limitations, and unease in providing counsel to certain demographics. PPs may also identify other issues that are not highlighted. The section next evaluated the disparities identified among persistent pain patients, including elevated pharmaceutical use and heightened occurrences of anxiety or despair. PPs also contemplated their cooperation with other healthcare providers, their position in patient outreach, and the consequences of restricted PPM. They were requested to evaluate the cooperation's efficacy and involvement in interdisciplinary talks. PPs assessed how pharmacy workflow and staffing levels influenced their capacity to provide thorough PM counsel and the significance of explicit rules and norms. The part finished by requesting PPs perspectives on elements that enhance successful pain treatment in a PP to thoroughly understand their problems, needs, and contributions in this area, providing insights for enhancement and advancement.

3.3 Results

Of the 125 PPs solicited for the research, 100 consented to participate and submitted the survey responses. Figure 1 depicts the socio-demographic Attributes of Respondents who Completed the Questionnaire on PPM.

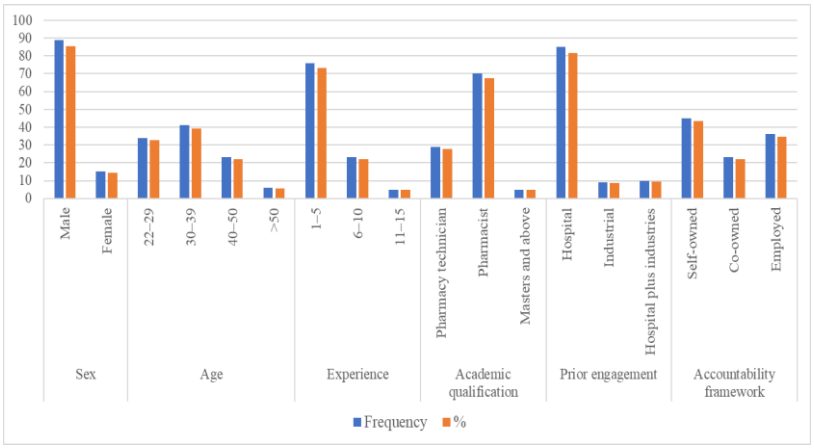

Figure 1: Socio-demographic attributes of respondents who completed the questionnaire on PPM

The socio-demographic characteristics of the respondents indicate a predominantly male workforce (84.9%) with a lesser proportion of females (15.1%). The bulk of respondents belonged to the 30–39 age bracket (40.1%), followed by the 22–29 age group (31.6%), suggesting a workforce mostly in early to mid-career phases, with most possessing 1–5 years of experience (74.2%). Regarding credentials, 66.4% were PPs, 28.3% were pharmacy technicians, and just 5.1% had higher degrees (Masters and above), underscoring a lack of specialization among the cohort.

Most responders (81.7%) have previous experience in medical environments, whereas just 8.8% had industrial experience, and 10.1% had experience in both sectors. Regarding ownership forms, 42.9% operated independently owned pharmacies, 35.2% were employed, and 21.9% co-owned their enterprises. The workforce makeup indicates a substantial percentage of professionals possessing fundamental skills and less experience, potentially impacting the provision of specialized services like PPM. The statistics reveal a robust clinical foundation from previous hospital exposure; nonetheless, there is a need for further training and education to rectify deficiencies in competence and confidence in handling challenging patients.

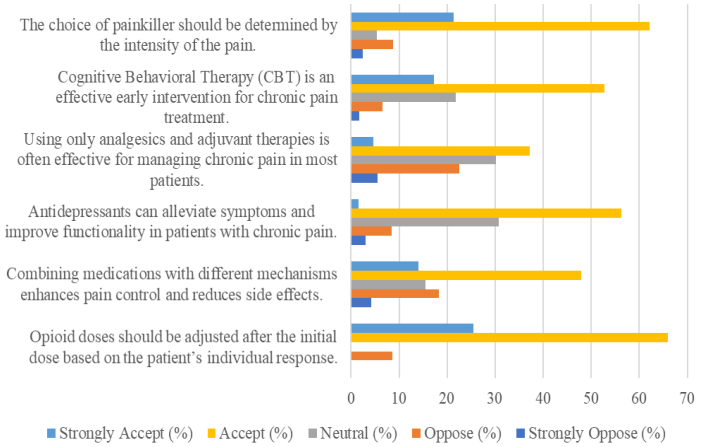

Figure 2: The extent of awareness among the participants about particular elements of PPM

Figure 2, entitled "The Extent of Awareness among PPs about Specific Elements of PPM," elucidates PPs' perspectives concerning various facets of PPM. A significant proportion of respondents (65.9%) agree that analgesic dosages must be tailored according to the particular patient's reaction, with 25.5% expressing strong endorsement of this assertion, reflecting a consensus on the necessity for individualized dosing regimens. Likewise, 47.9% concur, and 14.1% strongly concur that the amalgamation of drugs with diverse mechanisms, such as opioids, might improve pain management while mitigating side effects; nonetheless, a portion of individuals (22.5%) indicated dissent or neutrality. Concerning the administration of antidepressants to mitigate symptoms and enhance functioning in chronic pain patients, a majority (56.2%) acknowledge its efficacy, but a significant proportion (30.8%) exhibit ambivalence, indicating divergent perspectives.

When evaluating alternative options, 37.2% concur that the exclusive use of analgesics and adjuvant medicines may successfully manage chronic pain, whereas a notable minority (28.1%) either dissent or maintain a neutral stance. Cognitive Behavioral Therapy (CBT) is extensively supported as an early intervention, with 52.8% of individuals in agreement and 17.2% in strong agreement, underscoring its acknowledgment as a non-pharmacological approach for chronic pain

management. Ultimately, a significant majority (62.1%) of participants agree that the selection of painkillers should be predicated on pain severity, with 21.3% expressing a strong endorsement of this methodology. These results emphasize the need for customized pain treatment techniques and multidisciplinary approaches in pediatric pain management, highlighting the need for more education and consensus among healthcare practitioners.

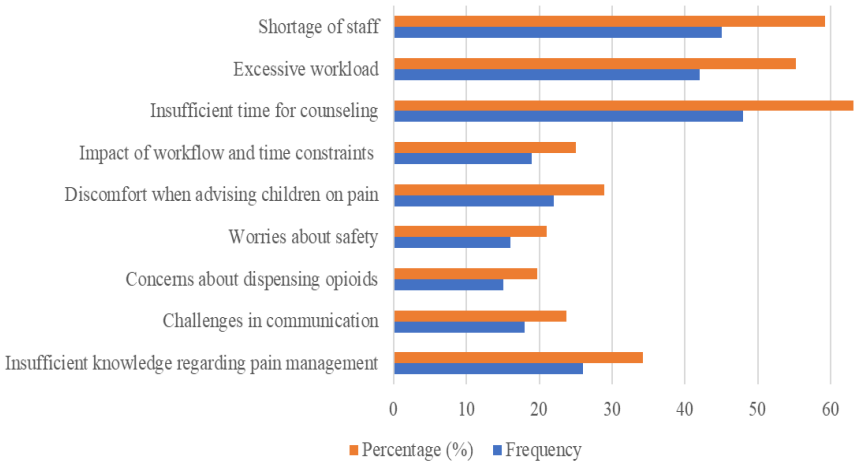

Figure 3: Evaluation of obstacles to efficient PPM in CbP

Figure 3 elucidates the obstacles encountered in achieving effective PPM in CbP contexts. The primary difficulty, identified by 63.16% of respondents, is the inadequate time allocated for patient counseling, highlighting the considerable time constraints faced by healthcare personnel. Staff shortages (59.21%) and excessive workloads (55.26%) quickly follow, highlighting systemic inefficiencies in resource allocation and human management. These results underscore that temporal and human resource limitations significantly hinder pharmacists' capacity to provide comprehensive, personalized pain management counsel. The significant percentages indicate that resolving these concerns might greatly enhance the quality of care delivered in these environments.

Moreover, a deficiency in pain management expertise, reported by 34.21%, and unease in counseling children (28.95%) indicate significant competence and comfort-level deficiencies among clinicians. Additional impediments include communication difficulties (23.68%) and safety apprehensions (21.05%), with reluctance to prescribe opioids (19.74%) stemming from worries over abuse or regulatory complications.[23]. These obstacles together highlight the need for augmented training programs centered on pain management and refined communication procedures. Efforts to alleviate these challenges must also include the institutional variables influencing workflow and patient involvement to enhance the efficacy of PPM in CbP management.[18]

Respondents identified many critical characteristics that enhance good pain treatment in pharmacies. The significance of having competent personnel with pain management and pharmacology expertise was highlighted, underscoring the need for a proficient team to deliver excellent assistance.[20]. Customized strategies to address each patient's unique pain concerns and general health condition were essential for successful guidance and suggestions. Access to information training and follow-up services to assess treatment responses and handle issues were emphasized as crucial. Collaboration with healthcare providers to maintain uniformity in treatment programs was important. Additional facilitators were patient adherence, adequate staffing levels, advocacy for topical analgesics, and proficient patient counseling.[14]. Communication abilities, both with clients and within the pharmaceutical team, were often highlighted, alongside the significance of ongoing professional growth via training and experience. Several replies indicated the need for greater resources, including more time for patient encounters, clearer protocols, and enhanced staffing, all intended to augment pharmacists' involvement in pain treatment.

4. CONCLUSION

This study examined PP's knowledge, viewpoints, and roles in Pediatric Palliative Management (PPM) in Community-based Pharmacies (CbP) and Pharmaceutical Storefronts (PSs). Exploratory research was conducted using SPSS version 25 to gather, analyze, and assess the acquired data. The research further investigated potential facilitators and barriers, along with the implementation of existing rules. Of the 125 PPs recruited for the study, 100 accepted to participate and submitted their survey replies. In assessing other choices, 37.2% agree that the exclusive use of analgesics and adjuvant medications may effectively treat chronic pain, whereas a significant minority (28.1%) either disagree or remain indifferent. Cognitive Behavioral Therapy (CBT) is widely endorsed as an early intervention, with 52.8% of persons in agreement and 17.2% in strong agreement, highlighting its recognition as a non-pharmacological method for chronic pain treatment. A substantial

majority (62.1%) of participants agree that the choice of analgesics should be based on pain intensity, with 21.3% demonstrating strong support for this approach.

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