

Evaluation of the Practices of Anesthesiologists in the city of Kinshasa on the Management of Post-Operative Pain

Réunilde Sifa Wabuza¹, Augustin Kadiata Bukasa^{1*}, Michaëlle Mambwe Kalungwishi¹, Chantal Nyemba Tshitata¹, Félicien Tshimungu Kandolo¹

¹Section of Nursing Sciences, Higher Institute of Medical Techniques of Kinshasa, City of Kinshasa, Democratic Republic of Congo

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*Corresponding author: Augustin Kadiata Bukasa

Section of Nursing Sciences, Higher Institute of Medical Techniques of Kinshasa, City of Kinshasa, Democratic Republic of Congo

Abstract

Introduction: The management of Postoperative Pain represents a public health problem. Throughout the world, this subject is the subject of numerous studies which emphasize the need to treat pain and evaluate practices. However, despite the progress made in the understanding of pain mechanisms, analgesic techniques, and the multiple recommendations made by learned societies in many countries, Post-Operative Pain is insufficiently addressed. The objective of our work was to evaluate the practices of anesthesiologists in the field of postoperative pain management in two health institutions in the city province of Kinshasa which are the Saint Joseph Hospital of Limeté and the Ngaliema Clinic. **Method:** The population of our study consisted of 23 anesthesiologists, 14 of whom were the subject of our occasional sample. To collect the data, we used the survey method supported by the techniques of direct observation, interviews and documentary analysis. At the end of our survey, the data was processed using descriptive analysis by calculating percentages and the average. **Results:** Regarding socio-demographic characteristics, the majority of subjects surveyed were male at level A1 (graduate, equivalent of bacc+3) and with professional experience of 10 years or more. Concerning the management of Post-Operative Pain, 48.5% provided the actual management of Post-Operative Pain; 17.1% provided pre-anesthetic information. Overall, the management of postoperative pain was achieved at 32.8%. **Conclusion:** Referring to our acceptability threshold set at 80%, we can affirm that the management of Postoperative Pain is not provided satisfactorily by the anesthesiologists of the two hospital institutions selected for the study.

Keywords: Evaluation, practices of anesthesiologists, management of post-operative pain.

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1. INTRODUCTION

Postoperative pain is one of the most common complications after surgery, and more than 47% of surgical patients suffer from postoperative discomfort worldwide. In Africa, due to lack of resources and other problems, postoperative pain is much more common than in developed countries. In addition, the literature shows that in Africa the reasons for inadequate management of postoperative pain are oriented from five angles: inadequate assessment of postoperative pain, lack of knowledge among health professionals, patient misconceptions, scarcity of resources, and lack of medications (Gao *et al.*, 2023).

Evidence has shown that more than three-quarters of patients report moderate, severe, or extreme postoperative pain during the postoperative period (Apfelbaum *et al.*, 2003; Kadović *et al.*, 2023).

Surgical procedures are in themselves key factors in the development of pain and opioid use globally (Hyland *et al.*, 2021). Severe postoperative pain has many negative effects, including possibly death, which can be a burden to both individuals and society as a whole. It is therefore increasingly important to effectively control postoperative pain (Gao *et al.*, 2023). Undertreated postoperative pain is often associated with delayed mobility leading to delayed wound healing and deep vein thrombosis, pneumonia, chronic pain, coronary ischemia, myocardial infarction, and depressed immune function. All of these factors affect economic and medical conditions, such as prolonged hospital stays, readmissions, and patient dissatisfaction with medical care (Admassu *et al.*, 2016; Bonkowski *et al.*, 2018). However, optimal postoperative management facilitates early hospital discharge and reduces postoperative complications, thereby increasing patient satisfaction (Fallatah, 2017).

Post-operative pain still poses a certain number of problems which, essentially, relate to a lack of knowledge of its determinants, a lack of treatment means and a lack of organization. We note that, throughout the world, effective analgesia for all operated patients without exception still remains the prerogative of a few reference centers.

It is therefore logical to note that problems related to the management of post-operative pain remain. According to a study carried out by the Tunisian Society of Anesthesia, Analgesia, and Resuscitation (STAAR) in the departments of different surgical specialties and Anesthesia-resuscitation, 88% of patients report having suffered intense pain post-operatively. In 58% of services, there is no written protocol for postoperative analgesia. Pain monitoring is not systematic and the assessment, when present, is limited in almost all cases to a simple verbal question. As a result, patients report requesting therapeutic intervention several times before benefiting from it. The main causes of this inadequate care were first and foremost a lack of resources (50%), followed by an insufficient number of nursing staff (39%) given the volume of the operating program (Gaye *et al.*, 2016).

To improve the effectiveness of future pain management, a thorough analysis of the current reasons for inadequate postoperative pain management is necessary (Gao *et al.*, 2023). Optimal management of postoperative pain is an integral part of the responsibility of healthcare professionals, which requires assessment, treatment and reassessment.

Various organizations have generated guidance on postoperative pain management, enhanced recovery strategies, multimodal analgesic and anesthetic techniques, and postoperative opioid prescribing. Yet, full integration of these recommendations into standard practice at the institutional level remains elusive, and persistent postoperative pain and opioid use pose a significant societal burden (Hyland *et al.*, 2021). In France, the French Society of Anesthesia-Resuscitation has designed an online tool, AlgoSFAR, allowing an audit of practices concerning postoperative pain. By analyzing data from several centers, this study aimed to evaluate postoperative pain management and suggest improvements (Rouxel *et al.*, 2021).

The fight against post-operative pain is the priority in the management of the operated patient. Unfortunately, the treatment of this pain is still insufficient, which leads to unnecessary suffering, anxiety for the patient and in certain cases, a prolongation of the hospital stay.

However, the quality of the information given remains difficult to assess and, in certain cases, the information or “too much” information can worsen post-operative pain. The information must therefore be

adapted to each psychological profile, something which is not easy to do (Robin-Quach, 2009). This psychological dimension, often neglected, must be integrated when approaching the patient and in the relationship that will be established with him. Listening is therefore essential and is best carried out during the surgical consultation followed by the anesthesia consultation. Taking these different stages into account allows the patient to more easily approach the experience of the intervention, and allows for good progress because Post-Operative Pain is one of the causes which delays progress in many operated patients. Certain studies, including those of the WHO (2010), demonstrate that effective control of acute post-operative pain reduces the incidence of physiopathological complications of the surgical procedure and allows a reduction in the length of the patient's hospital stay (World Health Organization, 2011).

In our observation, certain hospital institutions in the city province of Kinshasa such as the Ngaliema clinic and the Saint Joseph Hospital, many patients complain of pain in the immediate post-operative period. It is therefore currently necessary that given the consequences of post-operative pain, any surgical procedure, no matter how small, must benefit from a good pain assessment in order to administer effective and appropriate therapy.

2. METHODS

2.1 Study framework

To construct an acceptable sample, our study was carried out in two institutions, namely the Saint Joseph Hospital of Limeté and the Ngaliema Clinic. These two hospital structures are located in the city province of Kinshasa, in the Democratic Republic of Congo.

2.2. Population and Sample

The population is made up, in the present study, of trained resuscitation anesthetists employed in the two health structures surveyed in the provincial city of Kinshasa, in particular those of the Ngaliema Clinic and the Saint Joseph Hospital in Limeté. The expected population is 23 anesthetists, all categories combined. For our study, our sample is occasional and consists of 14 subjects selected after application of the following selection criteria: Be staff trained in anesthesia-resuscitation; Be involved in one of the two study structures; Have followed an operation from the Pre-Anesthetic Consultation until post-operative.

2.3 Data collection method, technique and instrument

In this study, we used the survey method which consists of collecting information on a situation with a view to analyzing it. As a technique, the present study is based on the technique of direct observation, interview and documentary analysis.

To collect data, we used a “CHECK LIST” which has two main parts, namely the sociodemographic characteristics of the subjects surveyed, and the elements of postoperative pain management. This data collection took place from July 5 to September 4, 2022.

2.4 Data processing

After encoding the data in Microsoft Office Excel 2010, the analysis was carried out using SPSS software version 20. We used descriptive analysis by calculating percentages and the average.

Regarding the evaluation of pain management among anesthesiologists, given that pain is the basic element of greatest concern in an operated patient, we set our acceptability criterion at 80%. This means that anything carried out at or above this threshold was considered to be properly insured. It was the same throughout the care.

3. RESULTS

Table 1: Sociodemographic characteristics of anesthesiologists

Features	Effective, n=14	%
Sex		
Male	12	86
Feminine	02	14
level of studies		
Graduated in Anesthesia and Resuscitation (A1)	09	64.3
Degree in Anesthesia and Resuscitation (L2)	03	21.4
Resuscitator anesthesiologist	02	14.3
Seniority in completed year		
< to 10	06	43
From 10 to 20	05	36
> at 20	03	21

It appears from this table that 86% of respondents are male; 64.3% of respondents are graduates, 21.4% are licensees and 14.3% are doctors;

43% of subjects have less than 10 years of seniority, 36% have seniority of between 10 and 20 years and 21% have professional experience of more than 20 years.

Table 2: Elements of postoperative pain management

Elements of DPO support	not	neither	%
Pre-anesthetic information			
Explain the nature of the intervention	14	10	71.4
Explain the use of DPO rating scales	14	0	0
Inform about the treatment of DPO	14	2	14.2
Educate on the use of non-drug means to combat DPO	14	0	0
Inform about the side effects of painkillers	14	0	0
AVERAGE	14	0.8	17.1
DPO support itself	not	neither	%
Anticipate the onset of pain by administering anti-inflammatory drugs + peripheral analgesics	14	14	100
Evaluate the intensity of the DPO	14	10	71.4
Administer analgesics according to pain threshold level	14	10	71.4
Monitor possible side effects and intervene if necessary	14	0	0
Ask the patient to protect the surgical site with hands flat on the wound during coughing, vomiting or mobilization.	14	0	0
AVERAGE	14	2.4	48.5

This table shows us that 71.4% of respondents explain the nature of the intervention to patients and 14.2% provide information on the treatment of DPO. Explanation of the use of DPO evaluation scales, education on the use of non-drug means to combat DPO and information on the side effects of analgesics are elements that are not covered. by none of the anesthetists. In conclusion, the average shows us that pre-anesthetic information is achieved at 17.1%.

As for the treatment itself, we note that 100% of anesthesiologists anticipate the appearance of DPO by administering anti-inflammatory drugs + peripheral analgesics; 71% assess the intensity of pain and administer analgesics according to the pain threshold level. However, they do not monitor side effects or ask patients to protect their wounds during mobilization. Ultimately, the actual coverage of the DPO is assured at 48.5%.

Table 3: Summary representation of the results

INFORMATION	not	neither	%
Explain the nature of the intervention	14	10	71.4
Explain the use of DPO rating scales	14	0	0
Inform about the treatment of DPO	14	2	14.2
Educate on the use of non-drug means to combat DPO	14	0	0
Inform about the side effects of painkillers	14	0	0
AVERAGE	14	0.8	17.1
PROPER MANAGEMENT OF DPO			
Anticipate the onset of pain by administering anti-inflammatory + peripheral analgesics	14	14	100
Evaluate the intensity of the DPO	14	10	71.4
Administer analgesics according to pain threshold level	14	10	71.4
Monitor possible side effects and intervene if necessary	14	0	0
Ask the patient to protect the surgical site with hands flat on the wound during coughing, vomiting or mobilization.	14	0	0
AVERAGE	14	2.4	48.5
OVERALL AVERAGE	14	1.6	32.8

It appears from this table that overall, DPO coverage is provided at 32.8%.

Table 4: Comparison of results by gender

Elements	Sex					
	Male			Feminine		
	not	n_i	%	not	n_i	%
PRE-ANAESTHETIC INFORMATION						
Explain the nature of the intervention	12	8	66.6	2	2	100
Explain the use of the APO rating scales	12	0	0	2	0	0
Inform about the treatment of DPO	12	2	16.6	2	0	0
Inform about the side effects of painkillers	12	0	0	2	0	0
Educate on the use of non-drug means to combat DPO	12	0	0	2	0	0
AVERAGE	12	0.8	16.6	2	1	50
PROPER MANAGEMENT						
Anticipate the appearance of DPO by administering anti-inflammatory + peripheral analgesics	12	8	66.6	2	2	100
Evaluate the intensity of the DPO	12	0	0	2	2	100
Administer analgesics according to pain threshold level	12	0	0	2	2	100
Monitor possible side effects and intervene if necessary	12	0	0	2	0	0
Ask the patient to protect the surgical site with hands flat on the wound during coughing, vomiting or mobilization.	12	0	0	2	0	0
AVERAGE	12	0.6	13.3	2	3	60
OVERALL AVERAGE	12	0.7	14.9	2	2	55

From this table, we note that female anesthesiologists take care of DPO at 55% and male anesthetists at 14.9%.

Table 5: Comparison of results according to level of study

Elements	Level of studies								
	Graduated			Licensed			Doctor		
	not	n_i	%	NOT	n_i	%	not	n_i	%
PRE-ANAESTHETIC INFORMATION									
Explain the nature of the intervention	9	7	77.7	3	2	66.6	2	1	50
Explain the use of the APO rating scales	9	0	0	3	0	0	2	0	0
Inform about the treatment of DPO	9	2	22.2	3	0	0	2	0	0
Inform about the side effects of painkillers	9	0	0	3	0	0	2	0	0
Educate on the use of non-drug means to combat DPO	9	0	0	3	0	0	2	0	0
AVERAGE	9	1	19.9	3	0.6	13	2	0.5	10
PROPER MANAGEMENT									
Anticipate the appearance of DPO by administering anti-inflammatory + peripheral analgesics	9	9	100	3	3	100	2	2	100
Evaluate the intensity of the DPO	9	5	55.5	3	3	100	2	2	100
Administer analgesics according to pain threshold level	9	5	55.5	3	3	100	2	2	100
Monitor possible side effects and intervene as needed	9	0	0	3	0	0	2	0	0
Ask the patient to protect the surgical site with hands flat on the wound during coughing, vomiting or mobilization.	9	0	0	3	0	0	2	0	0
AVERAGE	9	2.1	42.2	3	3	60	2	3	60
OVERALL AVERAGE	9	1.5	30.9	3	1.8	36.6	2	1.7	35

From this table, we note that licensed anesthesiologists cover DPO at 36.6%, anesthesiologists at 35% and graduates at 30.9%.

Table 6: Comparison of results according to level of seniority

Elements	Seniority in completed year			From 10 to 20			> 20		
	not	n_i	%	not	n_i	%	not	n_i	%
PREANAESTHETIC INFORMATION									
Explain the nature of the intervention	6	3	50	5	4	80	3	3	100
Explain the use of the APO rating scales	6	0	0	5	0	0	3	0	0
Inform about the treatment of DPO	6	2	33.3	5	0	0	3	0	0
Inform about the side effects of painkillers	6	0	0	5	0	0	3	0	0
Educate on the use of non-drug means to combat DPO	6	0	0	5	0	0	3	0	0
AVERAGE	6	0.8	16.6	5	8	16	3	1	20
PROPER MANAGEMENT									
Anticipate the appearance of DPO by administering anti-inflammatory + peripheral analgesics	6	6	100	5	5	100	3	3	100
Evaluate the intensity of the DPO	6	2	33.3	5	5	100	3	3	100
Administer analgesics according to pain threshold level	6	2	33.3	5	5	100	3	3	100
Monitor possible side effects and intervene as needed	6	0	0	5	0	0	3	0	0
Ask the patient to protect the surgical site with hands flat on the wound during coughing, vomiting or mobilization.	6	0	0	5	0	0	3	0	0
AVERAGE	6	1.6	33.3	5	3	60	3	3	60
OVERALL AVERAGE	6	1.2	24.9	5	0.4	38	3	2	40

We note from this table that anesthesiologists with more than 20 years of experience cover DPO at

40%, those with 10 to 20 years do so at 38% and those with less than 10 years of seniority cover it at 24.9%.

Table 7: Comparison of results according to structures

Elements	Structures			H. Saint Joseph			Clin. Ngaliema		
	not	neither	%	not	neither	%	not	neither	%
PRE-ANAESTHETIC INFORMATION									
Explain the nature of the intervention	11	8	72.7	3	2	66.6	3	2	66.6
Explain the use of DPO rating scales	11	0	0	3	0	0	3	0	0
Inform about the treatment of DPO	11	2	18.10	3	0	0	3	0	0
Inform about the side effects of painkillers	11	0	0	3	0	0	3	0	0
Educate about the side effects of painkillers	11	0	0	3	0	0	3	0	0
AVERAGE	11	0.9	18.1	3	0.6	13.3	3	0.6	13.3
PROPER MANAGEMENT									
Anticipate the appearance of DPO by administering anti-inflammatory + peripheral analgesics	11	7	63.6	3	3	100	3	3	100
Evaluate the intensity of the DPO	11	7	63.6	3	3	100	3	3	100
Administer analgesics according to pain threshold level	11	7	63.6	3	3	100	3	3	100
Monitor possible side effects and intervene as needed	11	0	0	3	0	0	3	0	0
Ask the patient to protect the surgical site with hands flat on the wound during coughing, vomiting or mobilization.	11	0	0	3	0	0	3	0	0
AVERAGE	11	1.9	38.1	3	3	60	3	3	60
OVERALL AVERAGE	11	1.4	28.1	3	1.8	36.6	3	1.8	36.6

It appears from this table that DPO treatment is carried out on average at 36.6% in the Ngaliema Clinic and at 28.1% in the Saint Joseph Hospital in Limeté.

4. DISCUSSION

4.1. Sociodemographic Characteristics

The results in Table 1 show that, of our respondents, 86% are male and 14% female. We estimate that men predominate (86%) because, in developing countries, socio-economic conditions and certain African

cultures favor men's studies. Which goes against the objectives of UNESCO which continues to popularize the education of all children, in this case girls (UNESCO, 2020). This underrepresentation of female subjects (14%) can also be explained by the fact that the anesthesia profession is very stressful. It turns out that graduated anesthetists represent 64.3%. We attribute these results to the fact that the Higher Institute of Medical Techniques of Kinshasa delivers more than ten first cycle diplomas each year. Licensees represent 21.4%; these results can be explained by the fact that

many graduated anesthesiologists prefer to change direction in the second cycle. As for doctors, the representation is 14.3% because anesthetist candidates are rare and the only training school for the latter only issues one or two diplomas per year.

Anesthesiologists with 0 to 10 years of seniority represent 43%. This number is 36% between 10 and 20 years old and 21% over 20 years old; the curve is therefore decreasing. However, anesthesiologists with more than 10 years of professional experience represent 57% of all study subjects.

5.2. Elements of postoperative pain management

Information is provided on average at 17.1%. These results are low compared to our acceptability criterion set at 80%. These results are linked to the lack of communication. Whereas communication and information aim to improve the experience of painful experiences. The patient must be able to understand the progress of the procedures, the type of pain expected and the therapeutic means to calm it" (Bruder M *et al.*, 2009).

Along the same lines, QUINOT (1996) insists on the importance of warning the patient of the need to note the effectiveness of the treatment so that he understands that the doses and drugs can be adapted to any development.

In our results, no anesthesiologist has either explained the use of DPO assessment scales, nor educated on the use of non-drug means of combating DPO, nor informed about the side effects of analgesics. However, everyone agrees that the management of DPO depends on the pain threshold; can we manage the DPO well without evaluating the threshold? The answer is probably "No". This can be explained by the unavailability of materials in the service (evaluation scale).

Confirming the results of our study, a study carried out in Ethiopia, focusing on the views of patients, health professionals and hospital managers on the obstacles and favorable factors to quality pain management in Ethiopian hospitals, shows that the barriers identified ranged from a lack of empathy among healthcare professionals to a positive social assessment of patients' ability to cope with pain. They also included the lack of emphasis on pain and its management during early medical training, as well as the lack of available resources. Improving healthcare professionals' ability to create supportive relationships with patients and increasing professionals' cultural competence are essential ingredients of future pain education interventions (Belay & Yirdaw, 2022).

In relation to the elements of the actual management of the DPO, in practice observed on the ground, the average achievement is 48.5%. Indeed, the anticipation of the DPO by the administration of the anti-

inflammatory + peripheral analgesics is guaranteed 100%; the evaluation of the intensity of the DPO and the administration of analgesics according to the level of pain were carried out in 71.4%. Monitoring of side effects of painkillers is poor. These results would be linked to the overload of anesthesiologists' schedules, which could lead to neglect of certain things to save time. Similar results are found by Dessié *et al.*, where they found that although more than half of the nurses in the study area had adequate knowledge in POP management, only a small number had a positive attitude. Attending training in POPs management and having access to read journals were significantly associated with good knowledge and attitude towards POPs management; therefore, regular continuing education and access to reading materials are recommended to improve the quality of patient service (Dessie *et al.*, 2019).

The explanation on the methods of protecting the surgical site during coughing, vomiting and mobilization efforts is also zero. And yet medications alone cannot effectively combat DPO. A muscle pull can cause pain despite the administration of analgesics which have a role in raising the level of the pain perception threshold. This is the reason why the Belgian Pain Institute (2000) suggests asking the patient to protect the surgical site with flat hands during coughing, vomiting and mobilization efforts. A study conducted in Ghana also states that patient satisfaction with the postoperative pain management received was generally high among a significant majority of patients. And among the factors that influence patient satisfaction with the postoperative pain management received, the type of analgesia and pain relief methods (Pearson coefficient = 0.523, p-value <0.05), the patient's ability to request more pain relief (Pearson coefficient = 0.29, p-value <0.05) (Tano *et al.*, 2021).

Elsewhere, such as in Ethiopia, caregivers seem to have a high level of knowledge, attitude and practice regarding postoperative pain management. A study conducted at XX Referral Hospital found that healthcare professionals had good knowledge (58.4%), unfavorable attitude (44.9%) and poor practices (24.58%) regarding for postoperative pain management (Negash *et al.*, 2022).

The results indicate that female anesthetists handle DPO at 55% and male anesthetists at 13.3%. This could be linked to the compensatory nature specific to women, although there are some exceptions. However, drawing a parallel with Table I, we see that of the subjects surveyed, 86% are male and that only 13.3% of them provide care for DPO. This reveals a serious problem in the management of DPO which is inadequate according to the result above revealing a percentage of 32.8% for the management of DPO.

Licensed anesthetists cover DPO at 36.6%; anesthetists at 35%, and graduates at 30.9%. Indeed, after

the first cycle, several anesthesiologists first work before continuing their studies and enter the field more experienced. These results refer us to those found above which show that the more the years of service increase, the more there is an improvement in the way of providing service. It is then appropriate to affirm that the experience acquired enriches knowledge and practice. Furthermore, it appears that among the reasons for inadequate management of postoperative pain in Africa are detailed from five angles: inadequate assessment of postoperative pain, lack of knowledge among health professionals, ideas patient misinformation, scarcity of resources and lack of medicines (Gao *et al.*, 2023).

The treatment of DPO is carried out on average at 36.6% in the Ngaliema Clinic and at 28.1% in the Saint Joseph Hospital in Limeté. These results may be influenced by the economic level of patients attending these different institutions. Indeed, at the Ngaliema Clinic, when you prescribe analgesics, you are certain that the patient will get them; which is not always the case for patients at Saint Joseph Hospital where the majority of patients are destitute and often arrive when they have exhausted their money in peripheral health centers which refer them when the possibilities of treatment are available. medical burden have been exhausted, and in some cases, when the patient has exhausted all his means.

5. CONCLUSION

This study evaluates the practices of anesthetists in the field of DPO management in two health institutions in the city province of Kinshasa which are the Saint Joseph Hospital of Limeté and the Ngaliema Clinic.

It turns out that regarding the management of the DPO, 48.5% ensured the actual management of the DPO; 17.1% provided pre-anesthetic information. Overall, DPO management was achieved at 32.8%. Referring to our acceptability threshold set at 80%, we can affirm that the management of DPO is not provided satisfactorily by the anesthesiologists of the two hospital institutions selected for the study.

To the management committees of the Saint Joseph Hospital of Limeté and the Ngaliema Clinic to make available the necessary materials for the management of DPO; To organize from time to time in-service training for anesthetists on the management of DPO; To increase the number of anesthetists to enable them to carry out all their tasks.

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