Patient's perception of pain and satisfaction with pain management undergoing abdominal surgeries

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Abstract
Introduction: Persistent pain after major abdominal surgery can lead to discomfort to the patients. There is a paucity of data regarding satisfaction of pain management in Indian post -surgical patients.
Objectives: To find out the prevalence of acute post-operative pain and level of patient's satisfaction for pain management in patients of elective abdominal surgeries.
Material and methods: Observational study using questionaire, visual analogue scale.
Results: At 5[th] post –operative hour, 35 patients having a score of 2, 128 had a score of 3 and 36 patients had a score of 4 with a mean score of 2.9 ± 0.61. The worst possible pain within 24 hours was found with a mean score of 8.9 ± 0.61.Average pain of score 6 was found in 146 patients and score of 7 was found in 45 patients with a mean of 6.1 ± 0.46. 79% and 83% of respondents reported that they were "satisfied" with how their nurses and physicians, respectively, responded to their complaints regarding pain.
Conclusions: Majority of the patients felt the post operative pain in 24 hours of the surgery with mild pain initially to worst possible pain later on .79% and 83% of respondents reported that they were "satisfied" with how their nurses and physicians manage their pain. In 63% patients the time lag for receiving the pain relief medication was 0 to 10 minutes. Hence we conclude that the Acute Pain Management Services (APMS) in surgery department is satisfactory.

Keywords: Visual analogue scale(VAS) of pain, Questionnaire based study, Post-operative pain.

Introduction
The World Health Organization defines pain as "an unpleasant sensory or emotional experience associated with actual or potential tissue damage, or described in terms of such damage".[1]Pain is the result of a complex interplay between signaling systems, modulation from higher centers and the unique perception of the individual.[2] When the condition that produces the pain resolves, or when the nociceptive input is blocked by a local anaesthetic or altered by a peripheral or central analgesic medication, the pain leaves.

Major abdominal surgical operations ideally require the Acute Pain Management Service (APMS) for regular pain assessment and timely management of breakthrough pains and complications in the postoperative period. Evidence has suggested that APMS has improved morbidity and reduced the duration of hospital stay. The American Pain Society Quality of Care Committee designated pain as the fifth vital sign, since then the health care professionals have become increasingly aware of proper pain management policies and the need to assess pain management outcomes.[3]

Persistent pain after major abdominal surgery can lead to shallow breathing which facilitates retention of secretion with eventual development of pneumonia contributing to organ dysfunction and prolonged convalescence. Therefore, ineffective postoperative pain management has physiological, psychological, ethical, and financial consequences. [3]

The degree of patient satisfaction could simply be a reflection of the performance of the health care providers and not an indication of the efficaciousness of pain management.[4] There is a paucity of data regarding this aspect in Indian post -surgical patients.

The rationale of this study is to assess pain management practices and their effectiveness after abdominal surgery in a tertiary care hospital .

Aim and Objectives
1. To evaluate the prevalence of acute post-operative pain in patients of elective abdominal surgeries.
2. To find out the level patient's satisfaction regarding nurse's and doctor's response for pain management

Material and Methods
Study design
Cross- sectional observational study.

Study group
Patients admitted in the wards of surgery department in the tertiary health care teaching institute for major/minor abdominal surgeries. (n=200)

Study duration
Two months from 1st May to 30th June 2019.

Study site
Surgical wards

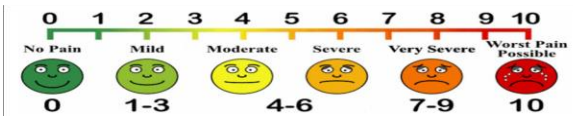
Inclusion criterias
Men and women in age group 18 -60yrs undergoing abdominal surgeries were included in the study.

Exclusion criteria
Patients undergoing surgeries other than abdominal surgeries, patients undergoing surgery for malignant disorder and trauma, patients receiving antipsychotic drugs, pregnant women were excluded from the study. The patients not willing to participate in the study.

Ethics and consent
Prior permission of Institutional Ethics Committee (Reg. no. ECR /1033 /Inst /MH /2018) was taken for conducting the study. Written informed consent was obtained from each participant after explaining them the study protocol. The study team did not interfere with any of the treatment aspects of the patients.

Study tools
Questionnaire: A predesigned & pre-validated questionnaire was used in the study to assess the post-operative pain status of the patients. The patients were made to understand the study survey in the language they understand. They were given 11 questions survey, modified from the American Pain Society's Patient Outcome Questionnaire and the Patient Opinion of Pain Management Tool.[5]

Visual Analogue Scale (VAS)
A following VAS was used to quantify the pain status of the patient and their pain perception was assessed on the numeric 0-10, indicating the strength of pain perceived from no pain to worst possible pain. This scale does not take into justification multi-dimentional approaches to pain management, which should not only include the concept of adequate pain control but also 'patient satisfaction with pain control.' [12]



Acute post-operative pain at rest was evaluated within 24 hrs of surgery, by visual analogue scale VAS.For further analysis, pain was classified as mild (VAS 1–3.5), moderate (VAS 4–6.5) and severe (VAS >6.5). The two questions (question numbers 6 and 7) were put to patients to rate their satisfaction required them to report satisfaction on a six-point likert scale.The treating physician and nursing staff were not aware of the study hypothesis or outcome measures.The second author who is 3nd MBBS student collected the data and was not a part of the team that provided peri-operative care to the patients

Scoring and assessment
The assessment of pain outcomes has been conducted by measuring each patients subjective level of pain control using pain intensity scales, most commonly the 0-10 numerical scale (0 being no pain and 10 being the worst pain imaginable).

This survey also examined different aspects of pain intensity and satisfaction. Pain intensity was measured by asking each patient to evaluate their present, most severe, and average pain levels within the last 24 hours (questions 5–7), and patient satisfaction was also measured (questions 7–11).

Statistical Analysis
All completed questionnaires were cross checked to ensure data consistency and completeness. All recorded data were coded and entered in the MS Excel 2019.

Analysis were performed using Statistical Package for the Social Sciences(SPSS) version for Windows software full version 23. Descriptive statistics and bivariate analysis were used for the analysis. And the relationship between the patient's level of pain and satisfaction with pain control has been calculated.

Results
A total of 200 patients participated in this study, 160 (80%) of the respondents were males and 40 (20%) were females. The mean age of respondents was 37.43± 10.32 years but the highest number of participant were found in the age group of 31-50 years (64%). [Fig.1 &2]

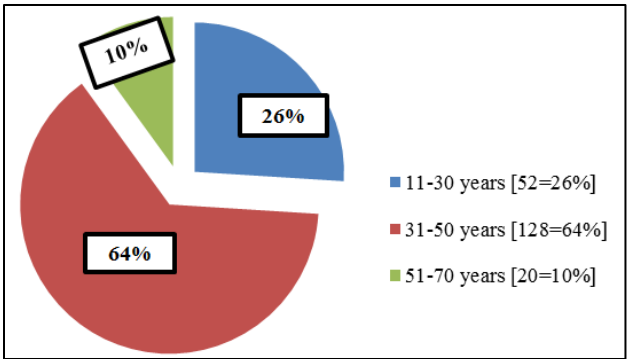


Fig. 1: Age distribuion of study population (n=200)

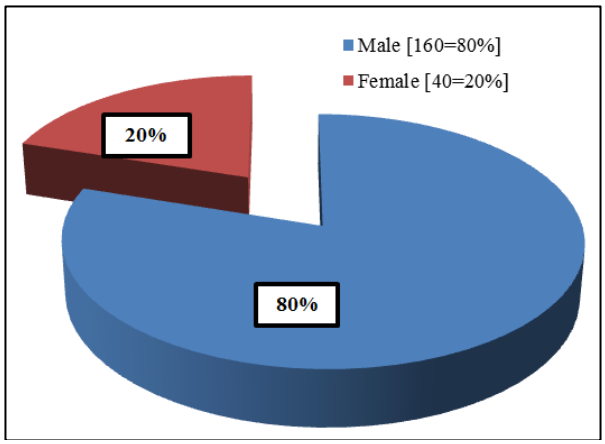


Fig. 2: Gender distribution of study population (n=200)

All the patients enrolled in the study had experienced pain in past 24 hours. Hence the patients were asked questions 4-6, which were qualitative questions designed to assess each patient's postoperative 5th hour pain, average and worst levels of pain control over the previous 24 hours. Responses of the patients on the Visual Analogue Scale are shown in Table 1 and Fig. 3. The Responses regarding pain management and patient satisfaction are projected in Table 3.

Table 1: Respondents response of pain on VAS [n=200]

Pain status at 5th post –operative hour,
• 35 patients had a score of 2,
• 128 patients had a score of 3,
• 36 patients had a score of 4.
Mean score 2.9 ± 0.61.
Worst possible pain within 24 hours,
• 46 patients had a score of 8,
• 125 patients had a score of 9,
• 28 patients had a score of 10
Mean score 8.9 ± 0.61.
Average pain
• 146 patients had a score 6,
• 45 patients had a score of 7
• Mean score 6.1 ± 0.46.

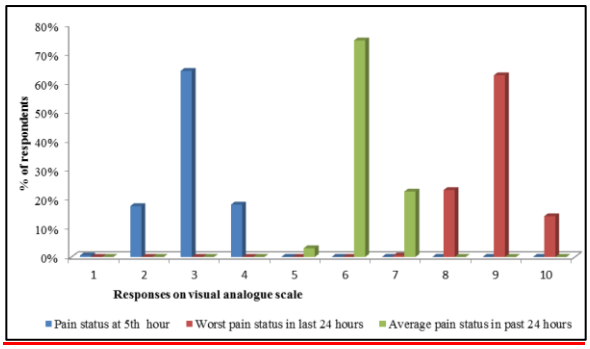


Fig. 3: Visual Analogue scale responses in the study population

Table 2: Responses regarding pain management and patient satisfaction(n=200)

Level of satisfaction	Patients satisfaction regarding nurse's response for pain management. n (%)	Patients satisfaction regarding doctor's response for pain management. n (%)
Very dissatisfied	0	0
Slightly satisfied	32 (16)	21 (10.5)
Dissatisfied	10 (5)	8 (4)
Satisfied	158 (79)	166 (83)
Slightly dissatisfied	0	0
Very satisfied	0	4 (2)

Questions 7-10 were designed to assess patient satisfaction with pain control and evaluate the various factors that contribute to patient satisfaction.(Table 3 in addition to Fig. 4 &5) shows that in total, 79% and 83% of respondents reported that they were "satisfied" with how their nurses and physicians, respectively, responded to their complaints regarding pain.. The question regarding waiting time for the administration of pain medication demonstrated varying results (question 9). Among respondents who requested pain medication, 26 (63%) received medication within 10 minutes of asking, 56 (28%) within 11–20 minutes and 18 (9%) within 21–30 minutes.

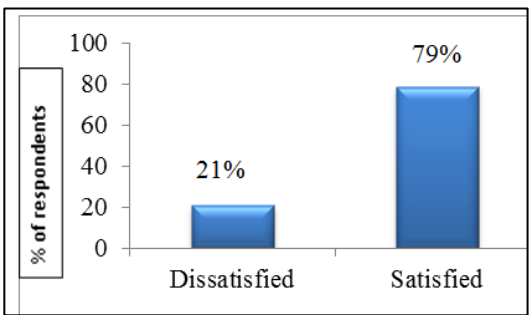


Fig. 4: Satisfaction level with doctors response to patients need of pain medication.

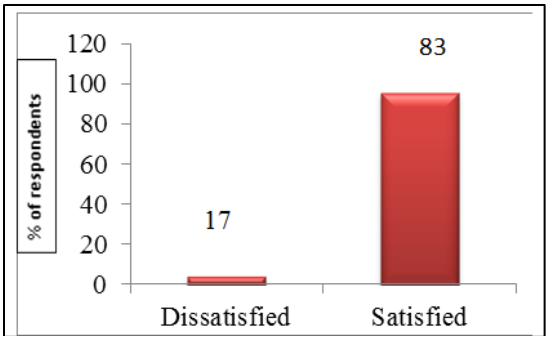


Fig. 5: Satisfaction level with doctors response to patients need of pain medication

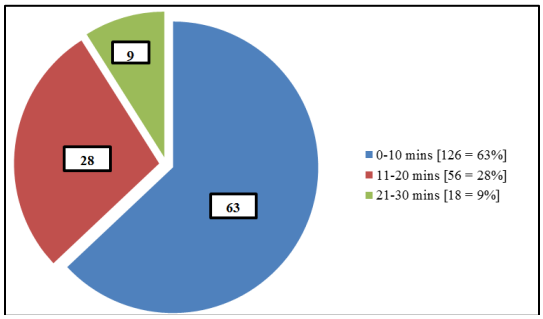


Fig. 6: Time lag for receiving the pain relief medication in the study population (n=200)

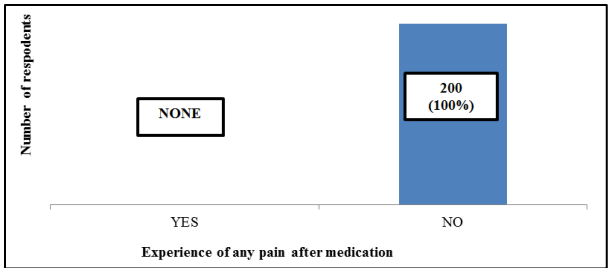


Fig. 7: Post medication pain status (n=200)

Spearman's rank correlation coefficients were calculated to determine the relationship between each patient's level of pain and their satisfaction with pain control. Based on the 200 participants who answered questions, the correlation coefficient was determined to be r = 0.117 (95% confidence interval =0.096 to 0.139). A slight, but non-significant, upward trend line was observed (i e, satisfaction increased as the level of pain increased). This positive correlation was not significantly different from 0, as implied by the 95% confidence interval, indicating the insignificance of the trend line.

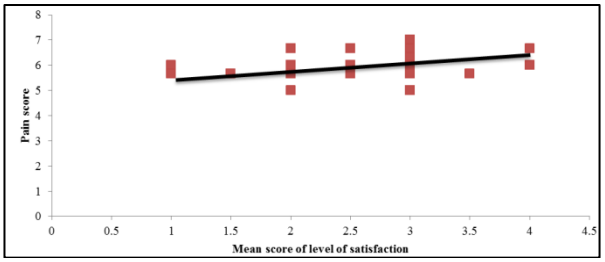


Fig. 8: Relationship between patient satisfaction and pain control (n = 200).

Note: Spearman correlation (95% CI): 0.117 (0.096 to 0.139)

Discussion

In the present cross- sectional ,observational study, total of 200 patients undergoing abdominal surgeries participated, their perception of acute post-operative pain and satisfaction with pain management status was assessed using a questionnaire, VAS, 6 point likert scale .This tool not only assesses pain control but also patient satisfaction with pain control.[6]

In the present study it was seen that acute post-operative pain at 5th hour and upto 24 hours is prevalent in patients undergoing elective abdominal surgeries. Many studies in literature report prevalence of postoperative pain .[7-12]

In the present study patients reported mild pain in early hours after surgery and worst possible pain after some hours of surgery which was very severe and overall average pain was severe. These findings coincides with findings from other studies.[13-15]

In the present study, 79% and 83% of respondents reported that they were "satisfied" regarding their care giving nurse's and treating doctor's responses for their pain management respectively .Ingrid Svensson et al. reported that gender, age, pre-operative expectation and actual experience of pain relief, and the overall pain experience were the factors associated with the probability of being satisfied/dissatisfied. [16] In our study maximum respondents to this question were men but this may be due to more number of males in the study population .Likewise maximum respondents were from age group 31-40yrs. Teresa A pellino et al. suggested no significant effect on gender and perception of pain. [12]

In a study conducted by Jorge Malouf et al it was seen that patients were highly satisfied with pain management, even when they were in pain. Moreover, it establishes that patient dissatisfaction with treatment was highly related to the satisfaction with caregivers and pain intensity[16]

Stahmer et al reported that there is a significant association between changes in pain intensity (PI) and

pain relief. Greater reductions in PI are required for patients presenting with more severe initial pain to achieve relief compared with those who have lesser initial PI. While there is a linear relationship between increasing pain relief and satisfaction, relief of pain appears to only partially contribute to overall satisfaction with pain management. Patient satisfaction with pain management is associated with the amount of pain relief achieved. Considering the overall high level of satisfaction, it appears that pain relief alone is not the only factor that affects patient satisfaction with pain management.[17]

In the present study 63% participants suggested that time lag for receiving the pain relief medication after complaining of postoperative pain during the 24 hours study period is 0 to 10 minutes and in 28% cases the time lag is 11 to 20 minutes. This finding of the present study correlates with the finding of the study by shay Phillips et al.[18]

In the study done by shay Phillips et al. the correlation coefficient was determined to be r = −0.31 (95% confidence interval = −0.79 to 0.39). This negative correlation was not significantly different from 0, as implied by the 95% confidence interval, indicating the insignificance of the trend line. But in contradiction to their study, in the present study spearman's rank correlation coefficients was determined to be r = 0.117. It shows the positive co-relation between patient's level of pain and their satisfaction with pain control.[18]

A misunderstanding held by many health care practitioners is that low pain intensity scores are revealing positive patient satisfaction and that high pain intensity scores are indicative of negative patient satisfaction. Indeed, there is a remarkable biological, social, psychological element to pain that should not be unnoticed and could explain why the use of pain severity scales as the sole measure of clinical outcomes is suboptimal. Physicians and nurses are aware of the scary task of educating patients about the importance of pain control. The number of interruptions made by the nursing staff during the night can also influence the patient's level of satisfaction (ie, patients who report a high number of interruptions may report low levels of satisfaction).

While this study demonstrates the importance of addressing patient satisfaction as an independent variable of pain management, the strength of this study could be limited by the fact that we used a self-reported survey, therefore, the results are not validated. Like most surveys, this study is subject to both response and non-response bias. In terms of response bias, patients may answer survey questions by reporting how they think the questions should be answered instead of how they truly feel. In addition, some patients may respond to survey questions by reporting the most extreme response, especially if they experienced a positive or negative encounter with a health care provider that day. Another factor that cannot be ruled out is the biases of family members who help the patient complete the survey. Pain is subjective phenomenon, not felt by brain but by the person.

Conclusions

Majority of the patients felt the post operative pain in 24 hours of the surgery with mild pain initially worst possible pain later on .79% and 83% of respondents reported that they were "satisfied" with how their nurses and physicians manage their pain.63% participants suggested that time lag for receiving the pain relief medication in the study population is 0 to 10 minutes. Hence we conclude that the Acute Pain Management Services (APMS) in surgery department is satisfactory.

Source of funding

None.

Conflict of interest

None.

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