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RESEARCH ARTICLE

**OLIGOANALGESIA IN EMERGENCY DEPARTMENT: CONCORDANCE BETWEEN
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OF PAIN SEVERITY**

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ABSTRACT

Pain remains the most common complaint of patients visiting emergency department (ED), yet incidence of poor pain control remains on two digit figures in most emergency units with few references to effect of health worker assessment of pain. We investigate the degree and role of concordance of severity of pain assessment between the patients and health care workers in our emergency department. This prospective study recruited a total of 180 participants into the study with equal distribution between the doctors, nurses and patients. Relevant data were obtained through a pre form structured questionnaire. Data obtained include participants' sociodemographic characteristics, pain score on 100mm visual analog scale for different commonly performed painful procedures in emergency. A total of 637 procedures were analysed from 60 doctors, 60 nurses and 60 patients. The overall mean pain score for the doctors, nurses and patients were 6.2(±1.243), 3.968(±1.644) and 3.960(±1.823) respectively this was statistically significant when health care workers were compared with the patients (doctors versus patients p=0.0044, nurses versus patients p=0.0066). Nasogastric tube intubation was ranked as the most painful procedure by the patients, while health care workers ranked fracture of the long bone as the most painful procedure there was a poor correlation between health care workers and patients ranking of severity of pain (r < 0.5). The discordance and poor correlation between the health care workers and patients rating of pain was associated with poor assessment of pain and assumption by health care workers that patients exaggerate their pain.

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INTRODUCTION

Pain remains the most common complaint of patients visiting emergency department (ED) (Ducharme J, 1994). This ordinarily should not raise dust for any emergency worker. The astonishing thing is that, pain is often forgotten once the primary diagnosis is made (David EF et al, 2005). Several reasons have been identified for oligoanalgesia/poor pain control in the emergency department, such as opiphobia, lack of proper pain assessment, ethnicity bias, gender and age among others (Weinstein SM et al, 2000, Isabelle D et al, 2007, Thomas SH and Andruszkiewicz LM, 2004, Todd KH et al, 1993, Todd KH et al, 2000, Lasch KE, 2000). The most important single predictive factor identified by Bartfield and colleagues are the physicians' assessment and perception of pain (Bartfield JM, 1997). This further strengthens the previous report that the disparity seen in pain control comes from

physician's assessment and perception of pain rating, rather than the patients rating and perception of severity of pain or disease factors (James M, 2006), thus for adequate and optimal pain control, the attending physician must have correct perception, better understanding and estimate of patients pain level through proper assessment of patients pain severity. This requires appropriate communication using verbal and non verbal clues between the physician and patient, rather than an assumption of extent of patient's pain. A study previously reports that physicians are more likely to underestimate severity of patient's pain and adduce various reasons for exaggeration of pain (Bartfield JM, 1997). The first approach in proper pain management involves the acknowledgment, accurate measurement and perception of the patient's pain. The aim of this study is to compare patients' pain rating versus doctors and nurses rating for some commonly perform painful procedures in our emergency department.

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METHODS

This is a prospective study that was carried out in emergency department of Ladoke Akintola University of Technology Teaching Hospital (LTH) Ogbomosho over a 3 month period. The study recruited 60 doctors from various specialities, 60 nurses and 60 adult patients who were conscious, oriented and without neurological deficit. The data obtained from the participants included the sociodemographic characteristics of the participants, previous history of any painful procedure(s) and such procedure(s), numerical rating of pain associated with different common painful procedures using numerical rating scale from 0 to 100mm on a visual analog scale. All the procedures were explained to each patient prior to rating to cater for patients without previous experience of such procedure(s). Other data obtained from the health workers included year of practice, qualification, speciality and whether routinely or not routinely assessing pain score "objectively" using any pain scoring scale system. The statistical analyses were performed using a software package (Biostatistics 2 version 1.0.5 for ipad®). The descriptive components of our results are expressed in form of means, percentages while some are presented in form of charts and figures.

Test of significance was done using t-test and p value of less than 0.05 was considered to be statistically significant. Test of correlation was done using Pearson product moment of correlation (r), with poor correlation defined as $r < 0.5$ and good correlation taken as $r > 0.7$.

RESULTS

A total of 180 participants were recruited into the study with equal distribution among the doctors, nurses and patients. The sociodemographic and other characteristics of the participants are as shown in table 1.

Table I Showing the sociodemographic characteristics of our participants

Characteristics	Doctors	Nurses	Patients
Age range	28-53	24-55	18-74
Age (mean ± SD)	(37.4 ± 9.054)	(40 ± 9.710)	(43.73 ± 17.056)
Sex M:F	3.28 : 1	1: 5.66	1.14:1

Thirty four (56.66) doctors, 53 (88.33%) nurses and all the patients has had one or other painful procedure (s) in the past for various reasons.

A total of 637 procedures were analysed for the 10 commonly performed procedures in ED the overall mean pain score for the patients was 6.200 (±1.243), while for the doctors and nurses were 3.968 (±1.644) and 3.960 (±1.823) respectively. The mean pain scores for some commonly performed procedures among patients, physicians and nurses (Fig1).

There was a statistical significant difference and poor correlation in mean pain score rating for the commonly performed procedures in ED when doctors were compared with patients (mean difference = 2.2320, $p=0.0044$, $t=3.2498$, CI = 0.7891 – 3.6749, $r =0.4620$) and nurses with patients (mean difference = 2.240, $p=0.0069$, $t=3.0462$, CI = 0.6951 – 3.7849,

$r=0.2736$). Though differences were noted between doctors and nurses assessment but this was not statistically significant but shows a poor correlation (mean difference = 0.0080, $p = 0.9923$, CI = 1.7108 – 1.7268, $r = 0.3939$).

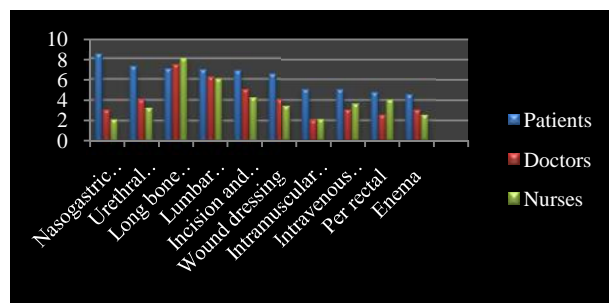


Fig 1 Showing the mean pain score for different procedures among patients, nurses and doctors.

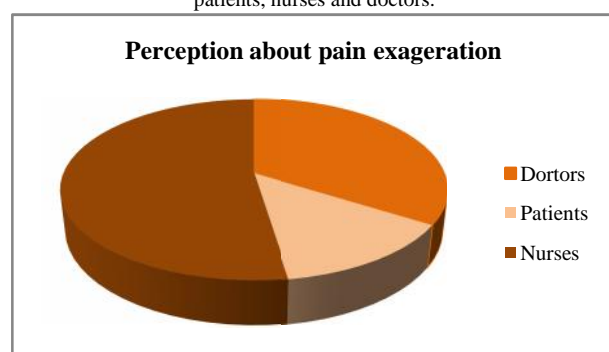


Figure 2 Pie chart showing relative proportion of doctors, nurses and patients who believe that patients themselves exaggerate their pain.

Fifty seven (95%) patients, 18 (30%) doctors and 27 (45%) nurses consider nasogastric (NG) intubation as the most painful procedure followed by urethral catheterisation in 42 (70%) patients, 21 (35%) of clinicians and 31 (51.7%) of nurses respectively. The arrangement of severity of pain among the patients, doctors and nurses shows poor correlation when patients were compared with doctors ($r= 0.4788$), patients compared with nurses ($r = 0.2485$) and doctors compared with nurses ($r = 0.393$) table 2.

Table 2 Showing relative ranking of how painful some commonly performed procedures in emergency department among patients, nurses and doctors.

procedures	Patients ranking	Doctors ranking	Nurses ranking
NG tube	1	7	8
Catheter	2	4	7
Fracture	3	1	1
Lumbar puncture	4	2	2
Incision and drainage	5	9	3
Wound dressing	6	5	6
Intramuscular injection	7	3	9
Intravenous canulation	8	6	5
Per rectal examination	9	8	4
Enema saponin	10	10	10

When doctors were asked about objective documentation of pain at ED only 2 (3.33%) out of the 60 physicians regularly assess severity of pain by one or other means of pain assessment scoring scale.

On over exaggeration of pain thirty five (58.3%) doctors believe that patients often exaggerate their pain others as shown in Figure 2.

DISCUSSION

Poor pain control in emergency department is a cause for concern as most of the patient presenting to emergency department still experience poor pain control in most of the emergency units (Cordell WH, 2002, Rupp T and Delaney KA, 2004, Ducharme J and Barber C 1995). Several factors have been identified for this phenomenon of oligoanalgesia in emergency department, such as opiphobia, ethnicity bias among others. Disconcordance between patients' perception of pain and that of the health care workers has previously been highlighted as a factor responsible for oligoanalgesia in emergency department, a factor strongly associated with oligoanalgesia by Battlefield and colleague. Our study further confirmed this previous finding of disparity in patients and physicians perception of pain as one the factor responsible for oligoanalgesia in our emergency department.

Another finding, of interest is in rating of pain for commonly performed procedure in emergency department. When patients were asked to rate procedures according to the severity of pain associated with different commonly performed procedures in emergency unit and compared to that of health care workers there was a statistical significant difference and poor correlation between the patients ranking and health care workers ranking. Nasogastric intubation was ranked as the most painful procedure as compared to fracture of long bone by health care workers as most painful procedure a similar phenomenon observed from another study (Singer AJ, 1999) followed by urethral catheterisation by patients. This is in contrary to health care workers ranking who ranked lumbar puncture second (Table 2). The ranking of nasogastric tube and urethral cauterisation as first and second most painful procedures, especially by those patients who has had previous experience with the procedure(s) may be due to poor lubrication in terms of poor volume and use of non anaesthetic lubricant, lack of patience by health care workers and poor instruction to the patient.

Our study further highlights the role of poor documentation and lack of objective assessment of patients' pain by the health care workers, a similar factor that has been previously identified as risk factor for oligoanalgesia in emergency department in other previous study (Green SM, 2012, Iyer RG, 2011) This may also contribute to such disparity seen in patients and health care worker perception and rating of pain as only about 3% of our health care workers routinely assess pain and rate it. Assessment and documentation of pain can be improved among health care workers through inclusion of pain score section in our vital signs sheet, this type of paper based proforma as aide-memoires, has been shown to improve quality of some commonly missed parameters in some audit study (Bateman N.D *et al*,1999, RCSE,1994)

The perception of health care workers as regard to exaggeration of pain by patients from a similar study (James M, 2006) was comparable to our finding as most of our health care workers

are of the opinion that most of the patients exaggerate their pain. This finding will in no doubt underestimate severity of pain of patients and probably make them give inadequate analgesia with resultant poor pain control.

CONCLUSION

In conclusion, our study shows significant level of discordant between health care workers and patients rating and perception of pain in our emergency department. The major identifiable factors for this in our study are poor assessment of patients' pain and assumption of exaggeration of pain by the patients. We therefore urge our health care worker to adequately asses patients severity of pain and to individualise patient when managing painful conditions

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