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International Journal of Anesthesiology & Pain Medicine

2015
Vol. 1 No. 1:6

Cross Sectional Study of Pain Management Practice at Medical Wards of Jimma University Specialized Hospital (JUSH), South-west Ethiopia

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Abstract

Background: Data on the practice of assessment and management of pain at medical ward of JUSH is scant.

Objective: To examine the state of assessment and management of pain at JUSH medical wards.

Materials and Methods: A cross sectional study was conducted to evaluate the assessment and management of pain at JUSH medical wards from August 1-September 30/2014 GC. A total of 161 patients were included. Data was collected using interview and observation. Information about sociodemographic variables and about pain- collected through independent scoring of pain, and characterization of pain at admission, 4th hr, 8th hour 12th and 24th hr of their admission time using FPS (Facial Pain Scale) which was later categorized as: no, mild, moderate and severe pain if it falls at 0, 1-3, 5-7, and 8-10 respectively. Finally, individual patient's chart review was done. For the purpose of this study 9 data collectors were recruited and trained. Supervision was conducted during data collection. Data was analyzed using SPSS 20. Ethical clearance was obtained from the ethical committee of College of Public Health and Medical Science (CPHMS).

Results: From a total 195 admitted patients over 55 days, 161 patients who fulfilled the inclusion criteria were included in the study. The mean age (SD) was 49.89 (1.60) years, 29 (18.01%) were aged 65 or more and age ranges 19-84. About 69(42.8%) were females. The mean age (SD) of females and males was 42.99 (13.51) and 55.08 (15.10) years respectively. Before admission, 45 (28.30%), 80 (50.31%), and 22 (13.83%) had mild, moderate and severe pain respectively. At admission, 54 (33.96%), 88 (55.34%), and 4(2.51%) had mild moderate and severe pain respectively. After admission, 113 (%), 29(%) and 1 (%) had mild, moderate and severe pain respectively. About 80 (49.69%) and 51 (31.68%) of patients felt the worst degree of pain before and at admission respectively. Concerning the effect of pain, 71 (48.63%), 43(29.45%), and 23 (15.75%) of patients who experienced pain expressed that the pain interfered with their sleep, physical activity, and mood respectively. Pain aggravating conditions mentioned at 8th hour were IV/IM/IM medication, LP/ID/catheter.

At 24th hr, 43 (26.71%) of the patients both received analgesics their pain assessment and management documented, among these, 17 (39.53%) and 27 (62.79%) of drugs were ordered on regular and irregular basis respectively. The most commonly ordered drugs were diclofenac, paracetamol, and multiple, accounting for 21 (48.84%), 18 (41.8%), 4 (9.30%) respectively. Also six (3.73%) of all patients received analgesics as well as assessment and management of pain documented, and 12 (7.45%) patients' assessment and management was documented without the patient's receipt of analgesics. And 100 (62.11%) of patents neither received analgesics nor their assessment of pain/management documented. Pain was not measured using scales or ratings at all.

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The content of documents showed no recording about of time of assessment, of analgesic order, and schedule and route of analgesic administration. The expression of severity was subjective, without rating or scoring the degree of pain (not measured using FPS).

Conclusion: Majority of patients felt the worst degree of pain before and/or at admission. In medical wards, recognition, measurement of and recording of pain is poor. Sites of IV/IM/medication/LP/ID/catheter were implicated as pain aggravating conditions by majority of patients. Management of and recording of the process are unsatisfactory. Pain is ill-recognized, its assessment and management medical wards is unguided.

Recommendations: Introduction of guideline for assessment and management of pain, training of health workers based on the guidelines, implementation and subsequent evaluation, and optimal procedures during/after IV line /IM/ catheter /LP/ID to minimize the consequent pain, are recommended.

Keywords: Pain; Measurement; Jimma hospital

Received: September 10, 2015, **Accepted:** November 24, 2015, **Published:** December 03, 2015

Introduction

Assessment of pain include about issues of temporal pattern, location, description, intensity, aggravating and relieving factors, previous treatment and effect [1]. Interventions for pain must be tailored to each individual with the goal of preempting chronic pain and relieving breakthrough pain [2].

A hospital-based cross-sectional study to assess drug related problems(DRP) conducted at JUSH from February 2011 to March 2011 at medical ward showed that out of 257 study participants, 189 (73.5%) had DRPs. From the six classes of DRPs studied, 103 (32.6%) cases related to untreated indication or need additional drug therapy, and 49 (15.5%) cases related to high medication dosage. Unnecessary drug therapy in 49 (15.5%) cases, low medication dosage in 44 (13.9%) cases, and ineffective drug therapy in 42 (13.3%) cases were the other classes of problems identified. Noncompliance in 31 (9.8%) cases was the least prevalent DRP. The study concluded that drug-related problems were common among medical ward patients. Also, indication-related problems, untreated indication and unnecessary drug therapy were the most common types of DRPs among patients of medical ward [3].

A prospective cross sectional study conducted among 252 postoperative patients during February 13 to April 30, 2012, at surgical ward of JUSH showed that incidence of postoperative pain was 91.4%, and remained high over 3 measurements, 80.1% of the patients were undertreated, 50% of the patients were adequately satisfied with their pain management. As needed (prn), solo analgesic, null analgesic, and intramuscular orders were noted for 31.3%, 89.29%, 9.7% and 20.1% of the prescription orders respectively. Diclofenac and tramadol were the top prescribed medications, and only 57% of their dose was administered. It was concluded "Despite patients' paradoxical high satisfaction with pain management, the majority of patients were inadequately and inappropriately treated. Thus, further research is needed to determine how best to break down current barriers to effective pain management" [4].

A VISITING LECTURER PROGRAMME with key aims to develop and introduce a guideline for the management of pain was carried out from August-October 2012. Specific guidelines for pain management were designed for JUSH and introduced to all surgical wards, ICU and to the nursing staff, interns and residents running these areas. This was preceded by a number of teaching sessions involving over 150 staff on issues surrounding pain management and its importance. This teaching received feedback from trainees, such as: the need for further training and education in pain management, that the guideline will require follow -up training, and the need for updates for staff that have already been trained by successive visiting lecturer [5].

A record-review of 302 patient cards to assess the quality use analgesics in dental out patient in Jimma University Specialized Hospital, conducted from 22/01/2013-27/01/2013 showed that the most commonly prescribed non-opioid analgesic was diclofenac (43%) followed by paracetamol (36%) and concluded that the prescription analysis demonstrated that pain was neglected and the analgesics available are irrationally used [6].

In A cross-sectional survey was conducted among 2013 graduating-class students of medical and paramedical students of Jimma University concluded "Unacceptable level of knowledge deficits and poor attitudes were distinguished in this study which augments the universal concern of inadequate knowledge and attitudes regarding pain management. The study also recommended that the situation demands various educational and quality improvement initiatives in pain management [7-9].

Materials and Methods

A cross-sectional study to assess pain management practice among patients admitted to medical ward of JUSH was conducted from Aug 1, 2014-Sep 30, 2014. Situated at 350 km to the southwest of Addis Ababa, and is the only referral hospital for South Western Ethiopia. With a catchment population of approximately 15 million people, it provides services for approximately 90,000

patients every year. JUSH has 450 beds [7]. Medical ward has 81 beds (medical A, B and C have 32, 40 and 9 beds respectively).

All patients admitted to the ward during the study period were considered for study and, among them, 161 patients who full filled the inclusion criteria were selected as study subjects. The technique was interview of patients and observation (measurement of vital sign, pain assessment and chart review). Independent assessment of pain at set times was conducted using standard tool for assessment of clinical practice of pain management, pain (onset, type, intensity, worst), pain aggravating conditions, non-pharmacological management of pain. Finally review of patient chart was done. The quantitative variables were age (measured to nearest year), temperature, respiratory rate, pulse rate (measured in in number per minute). The qualitative variables were sex, literacy, chief compliant, pain, pain aggravating conditions, non-pharmacological management of pain and analgesics (type, dose, pattern and route).

Inclusion criteria

Patients who are conscious, able to communicate and willing to participate in the study.

Exclusion criteria

Readmissions, transfer and referral outside Jimma zone.

Data collectors

Nine data collectors who were known to take annual leave (two years) for the purpose of his study (because of duty Rota matched the beginning of data collection) were recruited. Also their linguistic proficiency and experience were considered.

Data collection

Began on August 1, 2014, 8:00 pm and ended Sep 30, 2014 5:00 pm

Each included patients was followed for 24 hrs from the time of admission. Information was collected from each patient at set times: at admission 4th, 8th, 12th and 24th hr from the time of their admission using the schedule:

At admission

Ensure fulfillment of inclusion criteria, time/date/month/YY/AM/PM of admission, personal information, chief complaint, V/S, enquiry about pain that occurred before admission (experience, onset, type, intensity, duration, effect), and pain at admission.

At 4th hr

Time/date/month/YY/AM/PM, V/S, direct assessment of pain and pain aggravating conditions

At 8th hr

Time/date/month/YY/AM/PM, V/S, direct assessment of pain, and pain aggravating conditions

At 12th hr

Time/date/month/YY/AM/PM, V/S, direct assessment of pain, and pain aggravating conditions

At 24th hr

Time/date/month/YY/AM/PM, analgesic receipt, NP and

Chart Review

From each patient, a data collector ascertains receipt of analgesic (ordered, by patients request for prescription, or from outside sources) and the patient verify this by naming, identifying, or showing it. Data collector enquires about NP, reviews chart for written evidence about assessment of pain and management of pain.

Data Quality Control

Data collectors were freed from their regular work of assessment/management of patients. Training on objective, tools, measurement, patient inclusion, assessment of pain, ascertainment of analgesic, chart review and recoding were given. Similar thermometer and watch were used and supervision was conducted during data collection.

Data analysis

Results from patient interview, pain assessment and chart review was cleaned, coded and entered to computer using SPSS 20. Vital signs-temperature/RR/PR: measured and compared against standard normal for the same age and sex. Statistical summaries calculated for continuous variable intensity of pain categorized. Each patient was labeled as APMD, NAPMD, and IAPMD (defined below).

Ethical clearance was obtained from JUSH ethical committee of CPHMS and letter of cooperation was submitted for the hospital administration prior to data collection.

Operational Definition

Chief Compliant

Primal sign/symptom mentioned by patient, while at OPD, for which he/she sought the health care services. Patients with any two or more C/C are categorized “multiple”.

Before Admission

Refers to period of encompassing 24 hrs before the patient’s admission time.

At admission

Admission encompasses period 1 hour after admission time.

After admission

4th hr from time of admission.

Onset

Period when the pain start.

Pain aggravating condition

Conditions that made the pain worse.

Pain-in-Sequence

Sequence of various levels of severity of pain (the first/before

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admission based on patient's memory, second/at admission and third/after admission based on here and now).

Temporal Pattern of Pain

Frequency of its occurrence and change in intensity.

Worst degree of pain felt

Memorable moment when peak intensity of pain felt from among periods before, at, or after admission. Different periods with similar intensity and/or absence of pain are categorized separately.

Effect of Pain

Patient's memorable failure in psychological, physical, social function believed by patients to have happened due to pain before admission. Multiple effects of pain and absence of are categorized as "others".

Regularly ordered analgesic

Written document about analgesic that is to be administered at fixed interval and specific dose/analgesic.

Irregularly ordered analgesic

Written document about analgesic without clear/absence of fixed interval of administration.

Condition of analgesic order

Ordered by HP, through self-request or other.

Received pain medication (RPM)

Analgesics at the patient's disposal/administered or mentioned/characterized (as assessed at 24th hour).

Non pharmacological management of pain (NP)

If the patient gives affirmative response to questioning about whether the presence/action of caregivers effectively reduced their pain during any or whole of the previous 24 hrs, regardless of receipt of analgesic or not.

Documented/Not documented pain

Pain (or its absence) is mentioned/characterized /measured and documented on chart at 24th hour after admission.

Assessment of pain & management documented APMD

If pain is assessed, managed and documented at 24th hr after admission.

No Assessment of pain & management documented NAPMD

Neither assessed, managed and documented nor received analgesic at 24th hr after admission.

Incomplete Assessment & management documented IAPMD

Partially assessed/managed or documented at 24th hr after admission.

Pain Change

Degree of pain at 24th hr after admission compared to the patient's own degree of pain at 8th hr.

Results

Study participants

From a total 195 admitted patients over 55 days, 161 (82.56%) patients who fulfilled he inclusion criteria were included in the study. The mean age (SD) was 49.89 (15.60) years. The age ranges 19&84 years. About 69 (42.8%) were females. The mean age (SD) of females and males was 42.99 (13.51) and 55.08 (15.10) years respectively. There was statistically significant difference in mean ages between females and males (t159 = -5.257, p=0.000). About 77 (47.82%) wee literate and there was statistically significant difference in mean ages between literates and illiterates (t_{159}=-7.074, p=0.000). Based on combined sex-literacy, one way ANOVA was significant and only mean age difference between illiterate females and literate males was not significant on multiple comparisons, as shown in (**Table 1 and Figure 1**).

About 29(18.01%) were aged 65 or above years. The female to male ratio within age group decreased with age from 2.50 at age group 15-24.9 to 0.20 at age group 75-84.9. And proportion of literates within age group decreases with increasing age from 100% at age group 15-24.9 to 0% at 75.0-84.9 year. There was no literate female above 53 years of age, as shown in (**Table 2**).

Chief complaint

The prevalence of patients with multiple, fever, cough and body swelling was 57 (35.4%), 27 (16.8%), 33 (20.5%), and 44 (27.3%) respectively. There was significant difference in mean age by chief complaint $F_{3,157}$=5.526, p=0.001. On multiple comparisons, the mean age of those with BSW was significantly greater than those with fever, and multiple complaints. Among multiple complaints 29 (50.88%) were females. Among females, with multiple complaints half of were clustered in age group 19-34.9 years. Also, 30 (68.18%) of BSW were males 22 (73.33%) were aged 65 years or more years, as shown in (**Tables 3-4**).

Vital sign (Table 5)

Occurrence of Pain

Occurrence

About 147 (92.45) patients had experience of pain before admission. While 22 patients had severe pain before admission, only 4 at, and no patient with severe pain after admission (**Tables 6-8**).

Pain-triggering conditions during before admission

Pain triggering conditions during before admission as reported by patients were: physical activity 101(68.24%), and cough 3(2.03%), while 44(29.73%) were unknown.

Effect of the pain during before admission

The effect of the pain that occurred before admission was said to be on sleep, physical activity, mood, and other in 71(44.94), 43(27.21), 23(14.56), and 9(5.70) of all patients respectively, as shown in (**Tables 9-15**).

Table 1 Showing Summary Statistics of age by sex, and literacy status, JUSH 2014.

Sex	No. (%)	Median	Mean	SD	SE_M	$95\%CI_M$		Min.	Max.	t-test
Female	69(42.9)	42	42.99	13.51	1.63	39.74	46.23	19	84	t_{159}=-5.257
Male	92(57.1)	57	55.08	15.1	1.57	51.95	58.2	19	82	p=0.000
Total	**161(100.0)**	**48**	**49.89**	**15.6**	**1.23**	**47.47**	**52.32**	**19**	**84**	
Literacy	**No. (%)**	**Median**	**Mean**	**SD**	SE_M	$95\%CI_M$		**Min.**	**Max.**	**t-test**
Literate	77(47.82)	41	41.95	14.2	1.62	38.73	45.17	19	74	t_{159}=-7.074
Illiterate	84(52.17)	56	57.18	13.12	1.43	54.33	60.03	32	84	p=0.000
Total	**161(100.0)**	**48**	**49.89**	**15.6**	**1.23**	**47.47**	**52.32**	**19**	**84**	
Literacy-sex	**No. (%)**	**Median**	**Mean**	**SD**	SE_M	$95\%CI_M$		**Min.**	**Max.**	**F-test**
Literate Females	33(20.5)	32	34.03	8.67	1.501	30.96	37.1	19	53	$F_{3,157}$=33.512
Literate Males	44(27.3)	47.5	47.89	14.71	2.22	43.41	52.36	19	74	p=0.000
Illiterate Females	36(22.4)	51.5	51.19	11.87	1.98	47.18	55.21	32	84	
Illiterate Males	48(29.8)	63.5	61.67	12.28	1.77	58.1	65.23	32	82	
Total	**161(100.0)**	**48**	**49.89**	**15.6**	**1.23**	**47.47**	**52.32**	**19**	**84**	

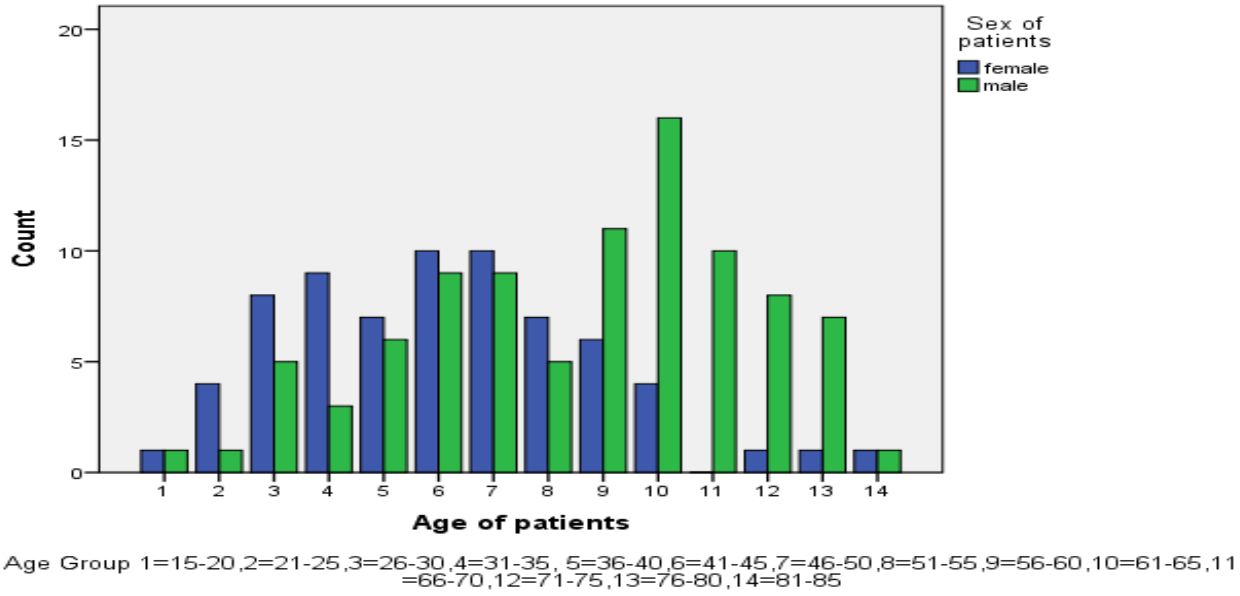


Figure 1 Bar Graph Showing Distribution of Study Subjects By Age Group and Sex, JUSH, 2014.

Table 2 Showing frequency of cases by age-group, sex, and literacy status, JUSH 2014.

Age (Years)	Female			Male			Total
	Literate	Illiterate	Total females	Literate	Illiterate	Total males	
15-24.9	5	0	5	2	0	2	7
25-34.9	15	2	17	6	2	8	25
35-44.9	8	9	17	11	4	15	32
45-54.9	5	12	17	8	6	14	31
55-64.9	0	10	10	12	15	27	37
65-74.9	0	1	1	5	13	18	19
75-84.9	0	2	2	0	8	8	10
Total	**33**	**36**	**69**	**44**	**48**	**92**	**161**

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Table 3 Showing summary statistics of age by chief complaint, JUSH 2014.

Chief Complaint	No. (%)	Median	Mean	SD	SE_M	95% CI_M		Min.	Max.	F-test
Multiple	57(35.4)	43	42.25	16.2	2.15	40.95	49.55	19	82	$F_{3,157}$=5.526, p=0.001
Fever	27(16.8)	46	46.19	13.96	2.69	40.66	51.71	22	71	
Cough	33(20.5)	52	52.06	13.26	2.31	47.36	56.76	26	74	
Body Swelling	44(27.3)	60	56.57	15.1	2.23	51.98	61.16	22	84	
Total	**161(100.0)**	**48**	**49.89**	**15.6**	**1.23**	**47.47**	**52.32**	**19**	**84**	

Table 4 Showing frequency of cases by age group, chief complaint and sex, JUSH 2014.

Age group	Multiple			Fever			Cough			Body Swelling			Total		
	Females	Males	Total	Females	Males	Total	F Females	Males	Total	Females	Males	Total	Females	Males	Total
<35	15	4	19	4	3	7	1	1	2	2	2	4	22	10	32
35-44.9	6	5	11	4	1	5	3	6	9	4	3	7	17	15	32
45-54.9	7	3	10	4	3	7	2	5	7	4	3	7	17	14	31
55-64.9	1	9	10	2	4	6	5	4	9	2	10	12	10	27	37
Ø 65	0	7	7	1	1	2	0	6	6	2	12	14	3	26	29
Total	29	28	57	15	12	27	11	22	33	14	30	44	69	92	161
Literate	20	10	30	8	4	12	2	16	18	3	14	17	33	44	77
Illiterate	9	18	27	7	8	15	9	6	15	11	16	27	36	48	84
Total	29	28	57	15	12	27	11	22	33	14	30	44	69	92	161

Table 5 Showing the vital sign of patient, JUSH 2014.

Vital Sign	Time				
	At admission	4th hour	8th hour	12th hour	24th hour
Temperature (°C)					
Low	8(4.97)	8(4.97)	8(4.97)	5(3.10)	5(3.10)
Normal	36(22.36)	55(34.16)	86(53.42)	118(73.29)	127(78.88)
High	117(72.67)	98(60.87)	67(41.61)	38(23.60)	29(18.01)
Total	**161(100.0)**	**161(100)**	**161(100)**	**161(100.0)**	**161(100)**
RR (no/min)	**At admission**	**4th hour**	**8th hour**	**12th hour**	**24th hour**
Low	0	0	0	0	0
Normal	33(20.50)	50(31.05)	75(46.58)	96(59.63)	102(63.35)
High	128(79.50)	111(68.95)	86(53.42)	65(40.37)	59(36.64)
Total	**161(100.0)**	**161(100)**	**161(100)**	**161(100)**	**161(100)**
PR (no/min)	**At admission**	**4th hour**	**8th hour**	**12th hour**	**24th hour**
Low	0	0	0	0	0
Normal	30(18.63)	50(31.0)	75(46.58)	99(61.49)	104(64.60)
High	131(81.37)	111(68.95)	86(53.42)	62(38.51)	57(35.40)
Total	**161(100)**	**161(100)**	**161(100)**	**161(100)**	**161(100)**

Pain aggravating conditions at 8th hr

Also, (at 8th hour after their admission) sites of IV line, IV medication, IM, LP, ID catheter were mentioned as their pain aggravating conditions (and here the pain is localized type), as shown in (**Table 16**).

Chart Evaluation at 24th Hr after Admission at 24th hr (Tables 17-21).

Discussion

Over 55 days, at the assessment of pain using FPS showed all patients experienced pain during before and the first 24 hrs.

Pain before admission was said to be triggered by physical activity 101 (68.24%), cough 3 (2.03%), while 44 (29.73%) could not remember/would not. Also, effect of pain was said to be on sleep/inability to fall asleep, physical activity/inability to work, mood/lowered state, and other/appetite, as recalled by 71 (44.94%), 43 (27.21%), 23 (14.56%) and 9 (5.70%) of patients. Thus we note physical activity as pain precipitating event or as restrictive condition/effect of pain. Similarly, cough as pain precipitating condition or chief complaint. Cough can also present as chief complaint without pain.

The worst degree of pain felt (from among before, at, after) by patients also agree with a highest degree of pain as indicated by FPS. However, patients had difficulty of choice for example when

Table 6 Showing summary statistics of age by period and degree of severity of pain, JUSH 2014.

Period	Severity	No.	Median	Mean	SD	SE_m	95%CI		Min.	Max.
Before admission	No	12	50.00	52.50	17.66	5.10	41.28	63.72	26	84
	Mild	45	52.00	52.62	15.22	2.27	48.05	57.20	24	78
	Moderate	80	47.00	49.00	15.74	1.76	45.00	52.50	19	82
	Severe	22	49.00	46.59	15.21	3.24	39.85	53.33	22	69
	Other*	2	-	-	-	-	-	-	38	52
	Total	**161**	**48.00**	**49.89**	**15.60**	**1.24**	**47.47**	**52.32**	**19**	**84**
At admission	No	13	52.00	53.31	17.12	4.76	42.94	63.68	26	84
	Mild	54	51.50	51.07	15.40	2.09	46.87	55.28	19	78
	Moderate	88	47.00	48.41	15.67	1.67	45.09	51.73	19	82
	Severe	4	59.00	35.01	14.44	7.22	35.01	80.99	39	74
	Other*	2	-	-	-	-	-	-	38	52
	Total	**159**	**48.00**	**49.89**	**15.60**	**1.24**	**47.47**	**52.32**	**19**	**84**
After admission	No	18*	47.50	50.39	15.94	3.76	42.46	58.32	26	84
	Mild	113	51.00	49.70	15.82	1.49	46.75	52.65	19	82
	Moderate	29	49.00	50.76	15.10	2.80	45.01	56.50	27	79
	Severe	0	-	-	-	-	-	-	-	-
	Other*	1	-	-	-	-	-	-	38	38
	Total	**161**	**48.00**	**49.89**	**15.60**	**1.24**	**47.47**	**52.32**	**19**	**84**

* Measurement of degree of severity of pain not made.

Table 7 Showing summary statistics of type of pain before admission by age group, JUSH 2014.

Type of Pain before admission	No. (%)	Median	Mean	SD	SE_M	95% CI_M		Min.	Max.
No Pain/record	13(8.12)	52.00	53.15	17.70	4.91	42.46	63.85	26	84
Continuous	84(52.50)	46.00	47.89	16.88	1.84	44.23	51.56	19	82
Intermittent	63(39.37)	53.00	51.71	13.14	1.65	48.41	55.02	22	76
Total	160(100.0)	48.00	49.89	15.60	1.23	47.47	52.32	19	84

Table 8 Showing frequency by age group, period, and degree of severity of pain, JUSH 2014.

	Severity of Pain														
	Before Admission					At Admission					After Admission				
	No.	Mild	Moderate	Severe	Total	No.	Mild	Moderate	Severe	Total	No.	Mild	Moderate	Severe	Total
<35	2	7	16	7	32	2	8	22	0	32	3	23	6	0	32
35-44.9	2	9	18	2	31	2	12	16	1	31	3	24	4	0	31
45-54.9	3	8	15	4	30	3	12	15	0	30	6	18	7	0	31
55-64.9	2	10	19	6	37	3	12	20	2	37	2	29	6	0	37
≥ 65	3	11	12	3	29	3	10	15	1	29	4	19	6	0	29
Total	12	45	80	22	159	13	54	88	4	160	18	113	29	0	160
Literacy	**Before Admission**					**At Admission**					**After Admission**				
Lit-F	0	10	16	7	33	0	8	25	0	33	1	26	6	0	33
Ill-F	6	9	19	1	35	6	12	17	0	35	8	25	2	0	35
L-M	5	12	19	8	44	5	15	22	2	44	6	27	11	0	44
I-M	1	14	26	6	47	2	19	24	2	47	3	35	10	0	48
Total	12	45	80	22	159	13	54	88	4	159	18	113	29	0	160

Table 9 Showing summary statistics by effect of the pain during before admission, JUSH 2014.

Effect or Pain	No. (%)	Median	Mean	SD	SE_M	95% CI_M		Min	Max
Sleep	71(44.94)	47.00	48.75	16.074	1.908	44.94	52.55	19	79
Physical activity	43(27.21)	53.00	53.86	13.394	2.043	49.74	57.98	29	82
Mood	23(14.56)	40.00	42.91	15.562	3.245	36.18	49.64	22	74
Other	9(5.70)	55.00	48.11	12.840	4.280	38.24	57.98	28	63
No Pain	12(7.59)	57.00	54.67	17.583	5.076	43.50	65.84	26	84
Total	158(100)	48.00	49.70	15.528	1.235	47.26	52.14	19	84

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Table 10 Showing frequency of cases by effect of pain during before admission and severity, JUSH 2014.

Effect of the pain Before admission	Degree of the pain before admission				
	Mild	Moderate	Severe	No	Total
Sleep	19	35	16	0	70
Physical Activity	15	23	5	0	43
Mood	6	14	1	1	22
Other	4	5	0	0	9
No	0	1	0	11	12
Total	44	78	22	12	156

Table 11 Showing frequency of cases by effect of pain during before admission, chief complaint and age group, JUSH 2014.

Effect and/or Pain before admission	Chief Complaint at OPD	Age group (in years)					
		≤34.9	35-44.9	45-54.9	55-64.9	≥ 65.0	Total
Sleep	Multiple	9	7	8	2	3	29
	Fever	1	2	1	2	0	6
	Cough	1	5	4	4	5	19
	Body Swelling	4	1	2	6	4	17
	Total	15	15	15	14	12	71
Physical activity	Multiple	2	4	1	4	3	14
	Fever	0	1	3	3	2	9
	Cough	0	2	1	3	0	6
	Body Swelling	0	5	3	2	4	14
	Total	2	12	8	12	9	43
Mood	Multiple	7	0	1	3	0	11
	Fever	4	0	2	0	0	6
	Cough	0	1	0	1	1	3
	Body Swelling	0	1	1	0	1	3
	Total	11	2	4	4	2	23
Other	Multiple	1	0	0	1	0	2
	Fever	1	0	1	1	0	3
	Cough	0	1	0	1	0	2
	Body Swelling	0	0	0	2	0	2
	Total	2	1	1	5	0	9
No Pain	Multiple	0	0	0	0	1	1
	Fever	1	2	0	0	0	3
	Cough	1	0	2	0	0	3
	Body Swelling	0	0	1	2	3	6
	Total	2	2	3	2	4	13
Total		**32**	**32**	**31**	**37**	**27**	**159**

Table 12 Showing summary statistics of age by worst intensity felt, JUSH 2014.

Worst Degree of Pain felt at	No. (%)	Median	Mean	SD	SE_M	95% CI_M		Min.	Max.
						Lower	Upper		
Before admission	80(49.69)	52.00	51.05	16.261	1.818	47.43	54.67	19	82
At admission	51(31.68)	45.00	47.49	15.119	2.117	43.24	51.74	22	76
After admission	7(4.35)	47.00	50.00	16.723	6.321	34.53	65.47	28	74
Other*	23(14.28)	52.00	51.17	14.285	2.979	45.00	57.35	26	84
Total	161(100.00)	48.00	49.89	15.598	1.229	47.47	52.32	19	84

*Other: Includes 11 patients with no pain and 12 with same intensity at different time.

Table 13 Showing frequency of cases by age group and duration of worst intensity of pain felt, JUSH 2014.

Age Group	Worst Degree of Pain felt at				
	Before admission	At admission	After admission	Other*	Total
<35	17	12	1	2	32
35-44.9	10	13	2	7	32
45-54.9	17	7	2	5	31
55-64.9	20	12	0	5	37
≥ 65	16	7	2	4	29
Total	**80**	**51**	**7**	**23**	**161**

Table 14 Showing Comparison of Worst Degree of Pain Felt Using FPS vs. Patient Response, JUSH 2014.

FPS		Patient Response				
Sequence*	**Worst**	**Worst degree of pain felt during (response by patient questioned after 4th hr.)**				
A	Before	Before admission	At admission	After admission	Other	Total
MOMIMI	**29**	**25**	2	0	2	29
SEMOMO	**12**	**12**	0	0	0	12
SEMOMI	**8**	**8**	0	0	0	8
MOMINO	**3**	**1**	0	0	2	3
SEMIMI	**2**	**1**	0	1	1	2
Total	**54**	**47**	2	1	5	54
B	Same	Before admission	At admission	After admission	Other	Total
MIMIMI	20	13	6	0	1	20
MOMOMO	11	6	1	3	1	11
Total	31	19	7	3	2	31
C	Before or at	Before admission	At admission	After admission	Other	Total
MOMOMI	30	11	17	0	2	30
MOMONO	3	2	1	0	0	3
Total	33	13	18	0	2	33
D	At admission	Before admission	At admission	After admission	Other	Total
MIMOMI	19	1	18	0	0	19
MOSEMI	3	0	3	0	0	3
MIMONO	1	0	0	1	0	1
MOSEMO	1	0	1	0	0	1
Total	24	1	22	1	0	24
E	No pain before-at-after	Before admission	At admission	After admission	Other	
NONONO	11	0	0	0	**11**	**11**
F	At or after	Before admission	At admission	After admission	Other	Total
MIMOMO	**4**	**0**	**1**	**2**	**1**	**4**
G	**Before/ after**	**Before admission**	**At admission**	**After admission**	**Other**	
MINOMI	**1**	**0**	**1**	**0**	**0**	**1**
H	**After**	**Before admission**	**At admission**	**After admission**	**Other**	
NONOMI	**1**	**0**	**0**	**1**	**0**	**1**
I	Before and at not measured	Before admission	At admission	After admission	Other	
VVMO	**1**	0	0	0	**1**	**1**
J	Before-at-after unmeasured	Before admission	At admission	After admission	Other	
VVV	1	0	0	0	**0**	**1**
Total	**161**	**80**	**51**	**7**	**23**	**161**

*No- Patient had no pain *MI-Mild degree of pain *MO-Moderate degree of pain *SE-severe degree of pain.

pain before and at admission were both moderate. The worst degree of pain felt depends on the current degree of pain which in turn may be the result of interventions.

Also, (at 8th hr after their admission) sites of IV line, IV medication, IM, LP, ID catheter were mentioned as their pain aggravating conditions (and here the pain is localized type), even though these were actually the means of investigation or treatment

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Table 15 Showing Frequency of Worst Degree of Pain Felt Using FPS by Social variables JUSH, 2014.

Variable		FPS										
		A	B	C	D	E	F	G	H	I	J	Total
Age	<35	12	7	8	3	2	0	0	0	0	0	32
	35-44.9	11	7	6	4	1	1	0	1	0	1	32
	45-54.9	11	7	5	4	3	0	0	0	1	0	31
	55-64.9	16	4	5	8	2	1	1	0	0	0	37
	≥ 65	8	6	5	5	3	2	0	0	0	0	29
	Total	58	31	29	24	11	4	1	1	1	1	161
Sex-education	Literate Female	11	7	9	5	0	1	0	0	0	0	33
	Illiterate Females	11	5	7	6	6	0	0	0	0	1	36
	Literate Male	18	10	3	6	4	2	0	1	0	0	44
	Illiterate Males	18	9	10	7	1	1	1	0	1	0	48
	Total	58	31	29	24	11	4	1	1	1	1	161
CC	Multiple	21	11	15	7	0	1	1	0	0	1	57
	BSW	16	8	6	6	6	1	0	0	1	0	44
	Cough	13	7	3	4	3	2	0	1	0	0	33
	Fever	8	5	5	7	2	0	0	0	0	0	27
	Total	58	31	29	24	11	4	1	1	1	1	161
Type of pain	Continuous	29	17	20	13	0	4	0	0	0	1	84
	Intermittent	27	14	9	10	0	0	1	1	1	0	63
	No	2	0	0	0	11	0	0	0	0	0	13
	Total	58	31	29	23	11	4	1	1	1	1	161
Effect	Sleep	34	12	12	10	0	2	0	0	0	1	71
	PHA	15	12	8	8	0	0	0	0	0	0	43
	Mood	6	4	6	3	0	2	0	1	1	0	23
	Other	2	1	2	3	0	0	1	0	0	0	9
	NA	1	0	0	0	11	0	0	0	0	0	12
	Total	58	29	28	24	11	4	1	1	1	1	158

Table 16 Showing the frequency of pain aggravating conditions, JUSH 2014.

Pain aggravating	Degree of Pain at 8th hour				
	0	**1-3**	**4-7**	**8-10**	**Total**
IV/IVL/IM	0	32	85	44	161
Catheter	0	5	5	0	10
LP/ID	0	0	1	3	4
Total	**0**	**32**	**85**	**44**	**161**

Period	Degree of Pain				
	No	**Mild**	**Moderate**	**Severe**	**Total**
Before	12	45	80	22	159
At	13	54	88	4	159
After	18	113	29	0	160
8th hour	0	32	85	44	161
At 24th hour	21	113	28	1	161

(including pain) or follow up by the practicing physician. These actions must be in such a way to minimize the pain.

About 43 patients had their assessment/ management documented as well as the patients received analgesics implied their respective chart. The contents of the documents showed: absence of recording about of time of assessment, time of analgesic order, and schedule and route of analgesic administration, the expression of degree of pain being subjective

Table 17 Showing frequency of charts' documentation of pain assessment/ medication by receipt of pain medication, JUSH 2014.

Patients receive analgesic?	Documentation of assessment/management		
	APMD	NAPMD	Total
RPM	**43**	**6**	**49**
Not RPM	**12**	**100**	**112**
Total	**55**	**106**	**161**

Table 18 Showing summary statistics of age by receipt of medication and assessment/documentation of pain, JUSH 2014.

Variables	No.	Median	Mean	SD	SE_M	95% CI_M		Min	Max	Test
Both APMD and RPM	43	43.00	44.02	14.74	2.25	39.49	48.56	19	71	t_{141}=-3.013
Neither APMD nor RPM	100	52.50	52.55	15.84	1.58	49.41	55.69	19	84	
Total	**143**	**49.00**	**49.99**	**15.95**	**1.33**	**47.35**	**52.62**	**19**	**84**	p=0.003
RPM	49	45.00	44.71	14.64	2.09	40.51	48.92	19	71	t_{141}=-8.257
Not RPM	112	52.00	52.16	15.52	1.47	49.25	55.07	19	84	
Total	**161**	**48.00**	**49.89**	**15.60**	**1.23**	**47.47**	**52.32**	**19**	**84**	p=0.003
No APMD but RPM	6	49.50	49.67	14.12	5.77	34.85	64.49	28	66	t_{16}=0.114
APMD but not RPM	12	44.00	48.92	12.70	3.67	40.85	56.99	32	75	
Total	**18**	**45.00**	**49.17**	**12.77**	**3.01**	**42.81**	**55.52**	**28**	**75**	p=0.911
APMD	56	44.00	45.23	14.26	1.90	41.41	49.05	19	75	t_{159}=2.830
No APMD	105	52.00	52.38	15.77	1.54	49.33	55.43	19	84	
Total	**161**	**48.00**	**49.89**	**15.60**	**1.23**	**47.47**	**52.32**	**19**	**84**	p=0.005

without rating or scoring the degree of pain (not measured using FPS), and conditions under which the analgesics were ordered that is mostly irregular and upon patients request. Together, these point to unguided assessment and management of pain during the first 24 hours. This also made difficult to know whether the measure of severity of pain after admission was affected by drug or not.

In 100 charts, neither assessment/management documented nor the respective patients receive analgesics even though all had various degree of pain which show absence of intervention at least during the first 24 hrs. This shows unrecognized/ill recognized pain.

Twelve charts contained documentation of assessment and management. Yet the patients did not receive analgesic at 24th hour after admission. Six charts contained no documentation of assessment and management. Nevertheless, the patients had analgesics at their disposal. We learned that they requested prescription and procured them.

In all charts there was no mention about NP. In this study, the assessment of NP was solely based on the patient's own belief (affirmation or rejection) of the idea about whether his/her caregiver/relatives' presence and/or behavior effectively resulted in reduction of his/her pain during the previous 24 hrs. It must be clear that all patients had caregivers/relatives, all were asked the same question and disregarding whether the patient received analgesic or not. The challenge in this respect was the existence, definition ad meaning of NP, the role of caregivers in bringing the patients, as negotiators with health worker in securing prescription/analgesic/purchase analgesic.

Noting teaching of large number staff, and Specific guidelines for pain management were designed for JUSH and introduced to all surgical wards, ICU and to the nursing staff, interns and residents running these areas during 2012, the feedback given by trainees (4), and the state of practice of pain management at various sections (3,4,6) and teaching (7). We appreciate the efforts made by A VISITING LECTURER PROGRAMME (5) that it was timely. Thanks to all who contributed to this work. The authors failed to find any evidence as to whether there was subsequent change in management practice at surgical ward, and whether the experience was adopted and expanded to other areas like medical ward. Our study shows this was unlikely, but there is a lesson that must be learnt.

Conclusion

In medical ward, pain assessment and management lacked measurement using scale, sustained follow up and documentation

Majority of patients felt the worst degree of pain before and/or at admission.

While FPS were appropriate for illiterate, literate and result of worst degree of pain felt according to FPS agreed with worst degree of pain felt by patient like difficulty answering worst degree of pain felt in particular situations (for example, pain before, at and after admission were all moderate based on FPS) was observed.

Emergent pain due to procedures on sites of IV line /IM/ catheter / LP/ID constituted most emergent pain and affects nearly all patients.

Changes in pain severity where not tracked, emergent pains were undetected.

Majority of patients with pain were unmanaged and considerably proportion where treated with unguided management.

Recommendation

Introduction of standard assessment and management of guideline

Training of health workers based on guidelines

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Table 19 Showing Comparison of Patient Assessment and Chart Findings, JUSH 2014.

Assessment		Charts Reviewed				
Issue	Number of Patients	Both APMD and RPM	No RPM but APMD	RPM but no APMD	Neither APMD nor RPM	Total
	N=161	**n=43**	**n=12**	**n=6**	**n=100**	**N=161**
1. Occurrence of pain	**159**	**43**	**12**	**6**	**100**	**161**
2. Measurement of pain						
• Use of scale	**159**	**0**	**0**	**0**	**0**	**0**
3. Characterization of Pain						
• Pain onset						
Before	127	25	4	0	0	29
At	18	18	8	0	0	26
After	3	0	0	0	0	0
Total	**148**	**43**	**12**	**0**	**0**	**55**
• Type of pain						
Continuous	84	20	0	0	0	20
Intermittent	63	23	0	0	0	23
Total	**147**	**43**	**0**	**0**	**0**	**43**
Worst degree of pain felt						
Before	80	0	0	0	0	0
At	51	0	0	0	0	0
After	**7**	**0**	**0**	**0**	**0**	**0**
Total	**138**	**0**	**0**	**0**	**0**	**0**
• Aggravating factors						
IV/IVL/IM	161	0	0	0	0	0
Catheter	10	0	0	0	0	0
LP/ID	4	0	0	0	0	0
Total	**161**	**0**	**0**	**0**	**0**	**0**
• Effect of pain						
Sleep	71	0	0	0	0	0
Physical activity	43	0	0	0	0	0
Mood	23	0	0	0	0	0
Other	9	0	0	0	0	0
No	12	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**

Implementation and subsequent evaluation of outcomes of pain management

Procedures on sites of IV line /IM/ catheter /LP/ID must be done optimally to minimize the consequent pain

Further research on format of tool

Strengths and weaknesses of the study

Health workers (data collectors were free from their routine work)

Information was gathered independently and from multiple sources

Assessment of NP is open for question

Assessment of pain without treating pain-ethical concern

Information on vital sign was not utilized-ethical concern

Acknowledgements

We like to thank CPHMS for supporting this research. We are also grateful to all patients who were willing to be included in this study.

Consent form-omitted

JUSH, Department of Internal Medicine.

Data collection tool for the study on Assessment of clinical practice of pain management among patient admitted to Medical.

Ward during August 1 – September 30/2014

At admission

General Information

Hospital card No._____

Ward _____

Date of admission _____/_____/_____(date/ month/ year)

Table 20 Showing Comparison of Information about Patient Management from Chart vs. from Patients, JUSH 2014.

4. Management of pain	Both APMD+RPM N=43				No RPM but APMD N=12	RPM but no APMD N=6	Neither APMD nor RPM N=100	Total N=161
	Regular		Irregular	Total				
	BID	TID Total						
A. Analgesic								
Diclofenac	5	2 7	14	21	9	0	0	30
Paracetamol	0	8 8	10	18	3	0	0	21
Multiple analgesics	0	2 2	2	4	0	0	0	4
Tramadol	0	0 0	1	1	0	0	0	1
Total	**5**	**12 17**	**27**	**44**	**12**	**0**	**0**	**56**
B. Route	**Regular**		**Irregular**	**Total**				
	BID TID Total							
IV	3 1 4		7	11	6	0	0	17
Oral	0 8 8		10	18	3	0	0	21
IM	2 1 3		9	12	3	0	0	15
Multiple	0 2 2		1	3	0	0	0	3
Total	**5 12 17**		**27**	**44**	**12**	**0**	**0**	**56**
C. Frequency of order/ patient/24hr	Regular		Irregular	Total			0	
1x	-		1	1	8	0	0	9
2x	-		9	9	3	0	0	12
3x	-		11	11	1	0	0	12
Total	**-**		**21**	**21**	**12**	**0**	**0**	**33**
D. Pre procedure analgesic	Regular		Irregular	Total			0	
Yes	2		0	2				
E.NP/PM								I
NP	Both APMD and RPM				No RPM but APMD	RPM but no APMD	Neither APMD nor RPM	Total
Yes	23				6	3	4	36
No	20				6	3	96	125
Total	43				12	6	100	161

Table 21 Showing Pharmaceutical, NP pain management vs. Pain Pattern Using FPS, JUSH 2014.

Variable		FPS										
		A	B	C	D	E	F	G	H	I	J	Total
PM and Document	Neither APMD nor RPM	39	18	13	13	11	3	1	1	1	0	100
	Both APMD and RPM	16	8	9	10	0	0	0	0	0	0	43
	APMD but not RPM	2	3	5	1	0	0	0	0	0	1	12
	No APMD but RPM	1	2	2	0	0	1	0	0	0	0	6
	Total	58	31	29	24	11	4	1	1	1	1	161
NP	No	46	22	23	17	11	4	1	0	1	0	125
	Yes	12	9	6	7	0	0	0	1	0	1	36
	Total	58	31	29	24	11	4	1	1	1	1	161

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Time of admission _____:_____(hour/min./ am/pm)

Time of initiation of interview _____:_____(hour/min./ am/pm)

Referral _____self-referral_____

Personal information

Full name _____

Age (in complete year)_____/_____/_____

Sex _____

Educational / literacy status _____

Clinical

Chief compliant_____(from OPD card)

V/S Temp._____(in) RR _____ (No/min) PR _____ (No/min)

Pain related

Onset of pain

Pain onset A. Before admission _____ B. At admission_____

Type of pain _____

_____

What precipitates _____ _____

Effect of the pain _____ _____

Intensity _____ _____

After admission (4th for)

Clinical

Date/time/ hour/min./ am/pm_____

Vital Sign: Temperature _____ in degree Celsius, RR_____ no/min, PR_____ no/min

Procedure _____ 5.4. Pre-procedure anti-pain? _____What_____

Pain

6.1. Site _____

Intensity _____

What makes pain /if any worse? _____

What makes pain /if any better? _____

The worst degree of pain felt at._____

At 8th

Clinical

Date/time/_____hour/min./_____am/pm _____

Vital Sign Temperature _____oc. RR _____no/min, R_____no/min

Procedure _____

Pre-procedure anti-pain? _____ What_____

Pain related

site _____

What makes pain /if any worse?_____

What makes pain /if any better?_____

The worst degree of pain felt at._____

Intensity _____

At 12th

Clinical

Vital sign : Temperature _____oc., RR _____ no/min, PR _____no/min

At 24th Clinical

Vital Sign: Temperature _____oc., RR _____ no/min, PR _____no/min

Pain intensity_____

Anti-pain? _____

Surgical procedure? _____

Pre procedure antipain? _____

Chart Evaluation

Occurrence_____

Assessment _____

Measurement_____

Character _____

Management

Drug_____

Type _____

Route _____

Pattern _____

Condition_____

Surgical Procedure _____

Pre procedure analgesics_____

NP

Did your care giver help, during the previous 24 hours, in decreasing pain?_____

Change

Improved_____ Deteriorate _____No change_____

Current Diagnosis/assessment_____

This article is available in: http://anaesthesia-painmedicine.imedpub.com/archive.php

Thank You!!

Time _____

Date _____

Name of data collector_____

Signature _____

Facial verbal and numeric pain rating scale

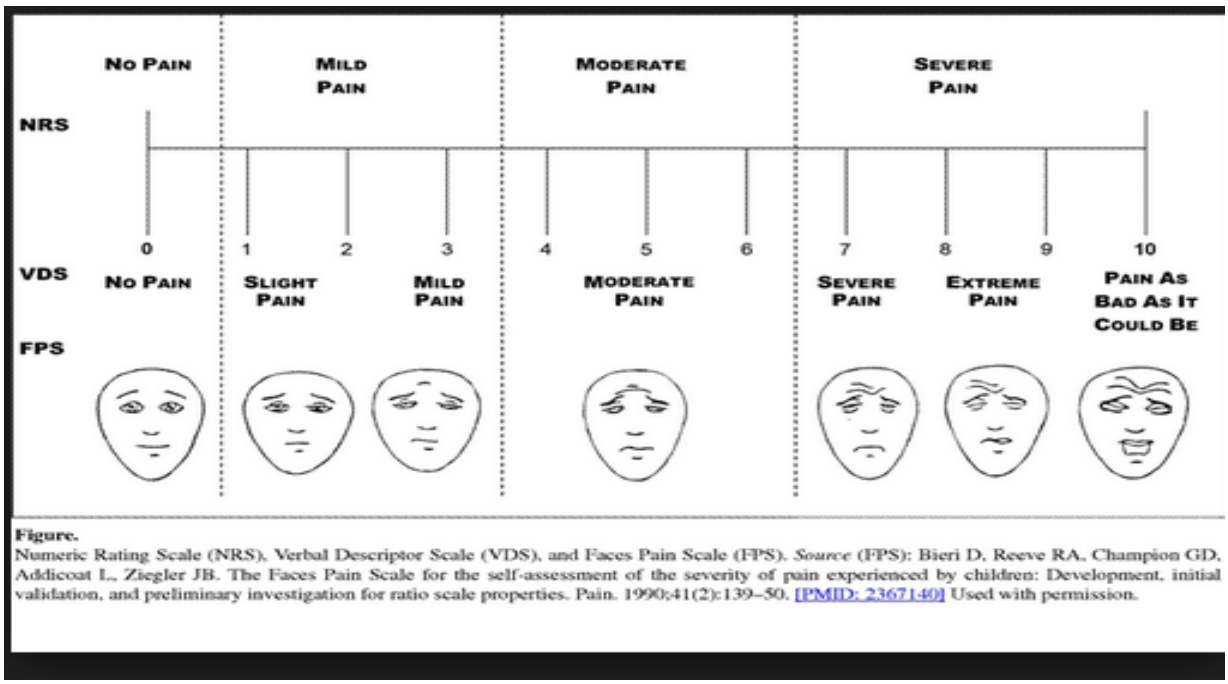


Figure.
Numeric Rating Scale (NRS), Verbal Descriptor Scale (VDS), and Faces Pain Scale (FPS). *Source* (FPS): Bieri D, Reeve RA, Champion GD, Addicoat L, Ziegler JB. The Faces Pain Scale for the self-assessment of the severity of pain experienced by children: Development, initial validation, and preliminary investigation for ratio scale properties. Pain. 1990;41(2):139–50. [PMID: 2367140] Used with permission.

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