Pain Quality and Location Reported During Outpatient Visits and Inpatient Stays in Adults with Sickle Cell Disease

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Problem

❖ Patient-reported verbal pain quality descriptors and locations will augment comprehensive pain assessment.
❖ Studies suggested that patient with widespread chronic pain may have severe intense pain.
❖ Yet, information is scarce on pain quality and location in adults with sickle cell disease (SCD).

Aim

To describe self-reported **pain quality** and **location** during outpatient and inpatient visits by adults with SCD

Methods

Design

Retrospective secondary analysis

Measures

❖ **PAIN*ReportIt*®**, a comprehensive computerized pain assessment tool

❖ Pain quality word descriptors (total 78 descriptors)
❖ Pain intensity average (0-10)
❖ Pain locations (total 48 areas)
❖ Pain body surface area (PBSA) measured by pixels on a 2D body diagram.

Sample

❖ 116 adults with SCD-related pain (≥ 3 on scale 0-10)
❖ Subjects with at least 1 outpatient and 1 inpatient visit during the study period

Data Source

❖ UIC SCD **PAIN*ReportIt*®** study-phase 2(R01HL078536)

Analysis

❖ Descriptive and correlations statistics in SPSS
❖ 2D body outline image analyzed in ImageJ software

Age (year)	Mean (SD)	**33**	**(12)**
Sex	Male	**35%**	
	Female	**65%**	
Ethnicity	African American	**98%**	
	Other	**2%**	
Education	≤ High School	**49%**	
	Vocational School	**14%**	
	Some College	**28%**	
	College or Higher	**7%**	
	Unknown	**3%**	
SCD Type	SS	**78%**	
	SC	**11%**	
	Other	**11%**	

Table 1: Demographics and characteristics at baseline

Results

Inpatient   **Outpatient**

Front   Back   Front   Back
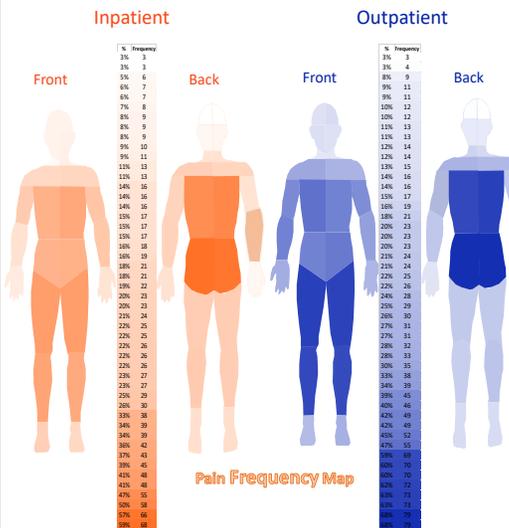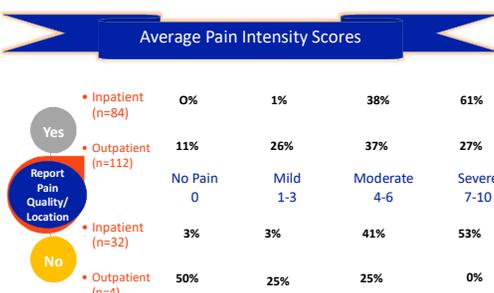

Pain Frequency Map

Figure 1. Color grid shows the frequency of each pain area marked as painful and % of individuals that reported pain in a specific area, darker color indicates higher frequency

Average Pain Intensity Scores

	No Pain 0	Mild 1-3	Moderate 4-6	Severe 7-10
Yes Inpatient (n=84)	0%	1%	38%	61%
Yes Outpatient (n=112)	11%	26%	37%	27%
No Inpatient (n=32)	3%	3%	41%	53%
No Outpatient (n=4)	50%	25%	25%	0%

(Report Pain Quality/ Location)

Inpatient / Outpatient	Intensity	Quality	PBSA	Location
Average Pain Intensity	1 / 1	-.01	.06	-.1
Pain Quality Descriptors	.12 / 1	1	**.21***	**.24****
Pain Body Surface Area	.06 / 1	.09	1	**.32****
No. Pain Location	.08 / 1	**.35****	**.39****	1

Table 2: Positive significant correlations between pain characteristics are displayed in orange for inpatient and blue for outpatient.
**. Correlation is significant at the 0.01 level (2-tailed)
*. Correlation is significant at the 0.05 level (2-tailed)

Results Cont.

Pain Characteristics	Inpatient Mean ± SD	Outpatient Mean ± SD	P
Average Pain Intensity Score (0-10)	**7 ± 2**	5 ± 3	<.001
Pain Quality Descriptors (78 words)	15 ± 14	**19 ±11**	.004
Pain Body Surface Area (pixel counts)	8911 ± 9080	**9473 ± 9255**	.6
No. of Pain Location (48 areas)	**12±9**	12±8	.91

Table 3: Results from Paired t-test for the differences between inpatient and outpatient

❖ On average, inpatient had a higher mean pain intensity compared to outpatient who had higher mean pain quality descriptor.

❖ Greater **PBSA** as measured by the pixel count was associated with higher number of **verbal pain descriptors** and **locations** during both inpatient and outpatient visits. However, there was no association between pain **intensity** and pain **quality**, **locations** and **PBSA**.

Discussion and Conclusion

❖ Greater proportions of **chest, back** and **lower extremities** pain in SCD were consistent with the SCD pathophysiology, e.g. frequent crisis pain reported in chest, back and long bones.
❖ Average **pain intensity** was **higher** during the inpatient stays compared to outpatient which may have interfered with patient's self-reporting quality and location during the visit.
❖ Using **2D body diagram** to document pain location to precisely quantifying the painful body areas may help determining the origin, type of pain and to guide diagnosis.
❖ **PAIN*ReportIt*®** assessment tool and **pain frequency map** valuable for future clinical and experimental pain studies.

Future Directions

❖ Dermatomes associated with each pain location
❖ Determine a specific PBSA value that may predict patient admission to hospital or conditions that require immediate medical attention.

Acknowledgements

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