DEPRESSION AND SLEEP IMPAIRMENT IMPACT ON PAIN AND QUALITY OF LIFE FOR SICKLE CELL PATIENTS

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Summary of Current Knowledge

- Vaso-occlusive crisis pain is both an acute and chronic factor for patients with sickle cell disease (SCD).
- Many complications associated with SCD have some aspect of pain associated with them (Ballas, 2011; Ballas et al., 2012).
- Acute, recurrent, and unrelenting pain is often joined by other affective disorders that affect pain chronicity.
- Some patients with SCD have depression and/or sleep disturbances that may affect pain levels and quality of life (QOL) (Ballas et al., 2012; Vichinsky, 2014).
- Patients with SCD have a higher incidence of depression and anxiety compared to those in the general population (Treadwell, Barreda, Kaur and Gildengorin, 2015).
- These psychiatric conditions may develop or worsen as a result of unmanaged acute or chronic pain (Ballas et al., 2012).

Purpose and Goal

- The purpose of this quality improvement project was to improve the process of evaluation and treatment of depression and sleep impairment in patients admitted with vaso-occlusive crisis (VOC).
- The goal of the project was to improve overall pain levels and quality of life for patients with SCD through efficient evaluation and treatment for depression and sleep impairment.

Outcomes & Objectives

- Develop an interprofessional, evidence-based guideline to evaluate the existence of depression and sleep impairment in all patients admitted for VOC.
- Assess 100% of patients admitted and readmitted during the project period for depression, sleep impairment, pain and QOL.
- Offer treatment to 100% of patients identified with depression and/or sleep impairment based on algorithm designed by the treatment team
- Patients who accept treatment will show a 50% improvement from baseline in depression and/or sleep impairment, pain and QOL

Conceptual Model

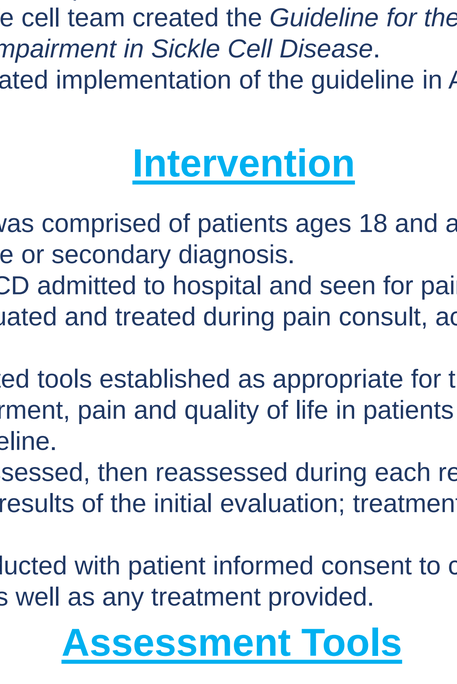
- The five phases of the Stetler Model were used to guide the process of translating existing research into evidence-based practice.
- An interdisciplinary sickle cell team created the *Guideline for the Evaluation and Treatment of Depression and Sleep Impairment in Sickle Cell Disease*.
- The sickle cell team initiated implementation of the guideline in August, 2016 as standard of care.

Intervention

- The patient population was comprised of patients ages 18 and above, admitted to the hospital with SCD as the principle or secondary diagnosis.
- All adult patients with SCD admitted to hospital and seen for pain management by Palliative Care Service were evaluated and treated during pain consult, according to the established guideline.
- Four reliable and validated tools established as appropriate for the use in the assessment of depression, sleep impairment, pain and quality of life in patients with sickle cell disease were incorporated in the guideline.
- Patients were initially assessed, then reassessed during each readmission for sickle cell pain crisis, regardless of the results of the initial evaluation; treatments were offered, if appropriate, based on the guideline.
- A chart review was conducted with patient informed consent to collect data on initial and follow-up evaluations, as well as any treatment provided.

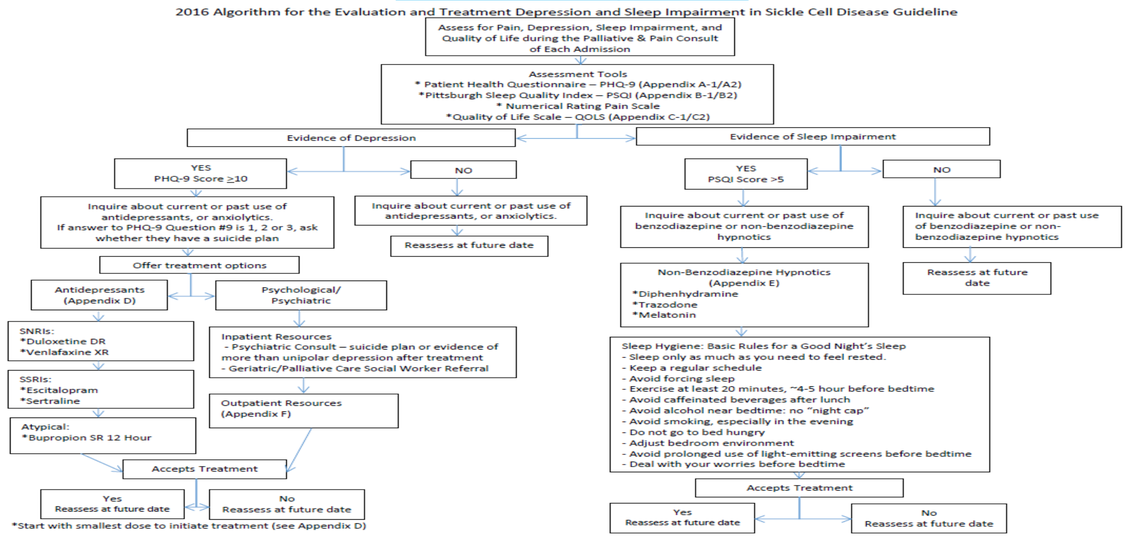
Assessment Tools

- ***The Patient Health Questionnaire (PHQ-9).*** Nine question self-assessment tool used to screen for and monitor treatment for depression (Maurer, 2012).
- ***The Pittsburgh Sleep Quality Index (PSQI).*** Tool using seven domains to measure quality and patterns of sleep in the adult (Smyth, 2012).
- ***Numerical Rating Pain Scale (NRS) and Simple Descriptive Pain Scale (SDPS).*** NRS – Verbal 0-10 scale, with "0" being no pain, and "10" being worst possible pain. SDPS - Patient asked to describe whether their pain is "better", the "same" or "worse" as compared to previous evaluation (Pasero & McCaffery, 2011).
- ***The Quality of Life Scale (QOLS).*** 16-item self-assessment tool adapted for use in patients with chronic illnesses (Burckhardt, 2003; Burckhardt & Anderson, 2003).



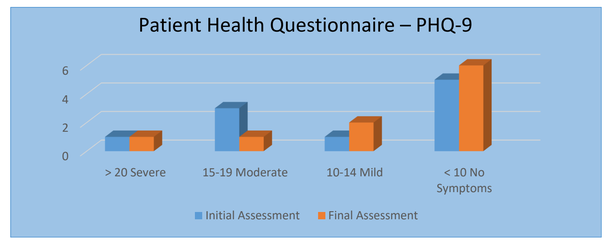
"Ten Redefined"

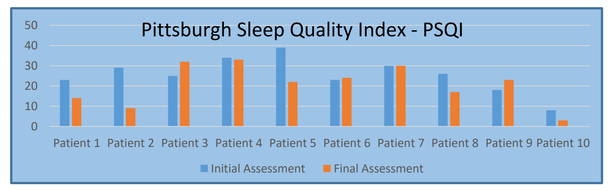
Guideline Algorithm

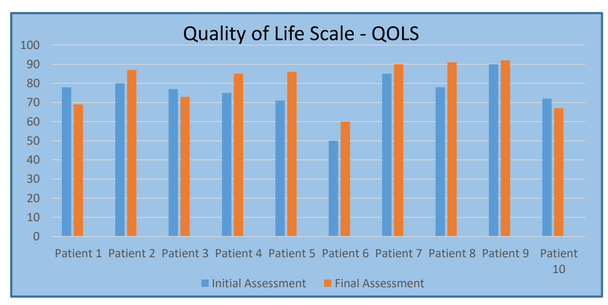


Results

Patient Demographics		
Variable	N	Percentage
Gender		
- Male	2	20
- Female	8	80
Ages		
- 18-20	2	20
- 21-30	4	40
- 31-40	2	20
- 41-50	1	10
- 51-60	1	10
Race/ethnicity		
- Black/African American – Non Hispanic	9	90
- Black/African American – Hispanic	1	10
Genotype		
- homozygous hemoglobin SS (HbSS)	8	80
- hemoglobin Sβ⁰-thalassemia (Hb Sβ⁰-thalassemia)	1	10
- Combination (HbSS and Hb Sβ⁰-thalassemia)	1	10







- 15 patients were assessed for the initial assessment; 10 patients signed consents
- 32 assessments were completed between September 13, 2016 and March 10, 2017
- Patient Health Questionnaire (PHQ-9)
  - 60% showed improvement (p=.029)
  - 50% depressed on initial assess; 40% on final assess
- The Pittsburgh Sleep Quality Index (PSQI)
  - 60% showed improvement
  - 100% had poor sleep quality on initial; 90% on final assess
- Quality of Life Scale (QOLS)
  - 70% showed improvement
  - Average 75.6 on initial assess; Average 80 on final assess
- Admissions decreased over time for each patient evaluated for the project (i.e. those that signed consents, as well as those not readmitted)

Correlations

		NRS	Global PHQ9	Global PSQI	Global QOLS
NRS	Pearson Correlation	1	.381*	.396*	-.262
	Sig. (2-tailed)		.031	.025	.147
	N	32	32	32	32
Global PHQ9	Pearson Correlation	.381*	1	.469**	-.468**
	Sig. (2-tailed)	.031		.007	.007
	N	32	32	32	32
Global PSQI	Pearson Correlation	.396*	.469**	1	-.323
	Sig. (2-tailed)	.025	.007		.071
	N	32	32	32	32
Global QOLS	Pearson Correlation	-.262	-.468**	-.323	1
	Sig. (2-tailed)	.147	.007	.071	
	N	32	32	32	32

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Limitations

- Small convenience sample, only those patients who were hospitalized were assessed.
- Not all patients who had initial assessment were readmitted, limiting ability to reassess.
- Short time span for follow-up after initial assessment.

Conclusions

- The small sample size impacts the ability to generalize the results, however the results do provide sufficient information to consider feasibility of expanding use of the assessment and treatment guideline to the outpatient setting for use in the outpatient Sickle Cell Clinic.

Implications for Nursing

- Palliative care advanced practice nurses (APNs) provide support and symptom management to patients with life-limiting and serious illnesses, including patients with SCD, as a means of improving quality of life.
- This project has significance for APNs in both palliative care and specialty SCD/Hematology care as a means to translate existing research into evidence-based practice; as well as provide an efficient and effective means to evaluate and treat depression and sleep impairment and their impact on pain and quality of life.

References

- Available upon request – please email author at ssimo0856@gmail.com

Special Recognition

- Special thanks to the Sickle Cell project team and support services of Bridgeport Hospital for the assistance with this project and dedication to the care of our patients with sickle cell disease.
- Special thanks to Hertz Nazaire, Haitian-born, Bridgeport, CT artist for allowing the use of his artwork "Ten Redefined" – he ***PAIN***ts to show the impact sickle cell disease and depression have on his life. (http://www.nazaire.info)