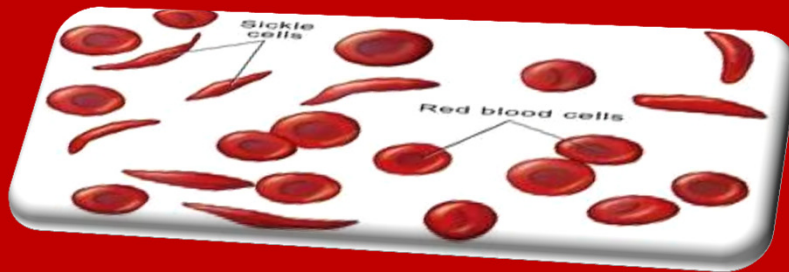


SICKLE CELL DISEASE PAIN MANAGEMENT IN ADOLESCENTS: A LITERATURE REVIEW

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INTRODUCTION

Sickle cell disease (SCD) pain continues to emerge among adolescents. Over 98,000 individuals are believed to have SCD within the United States.

1 out of 500 African Americans will be affected by SCD.

A significant impact of vaso-occlusive crisis has been shown to decrease the quality of life in children.

Pain management is multidimensional and includes pharmacological, physical, and psychological strategies.

Identify best practices regarding pain management in adolescents with sickle cell anemia.

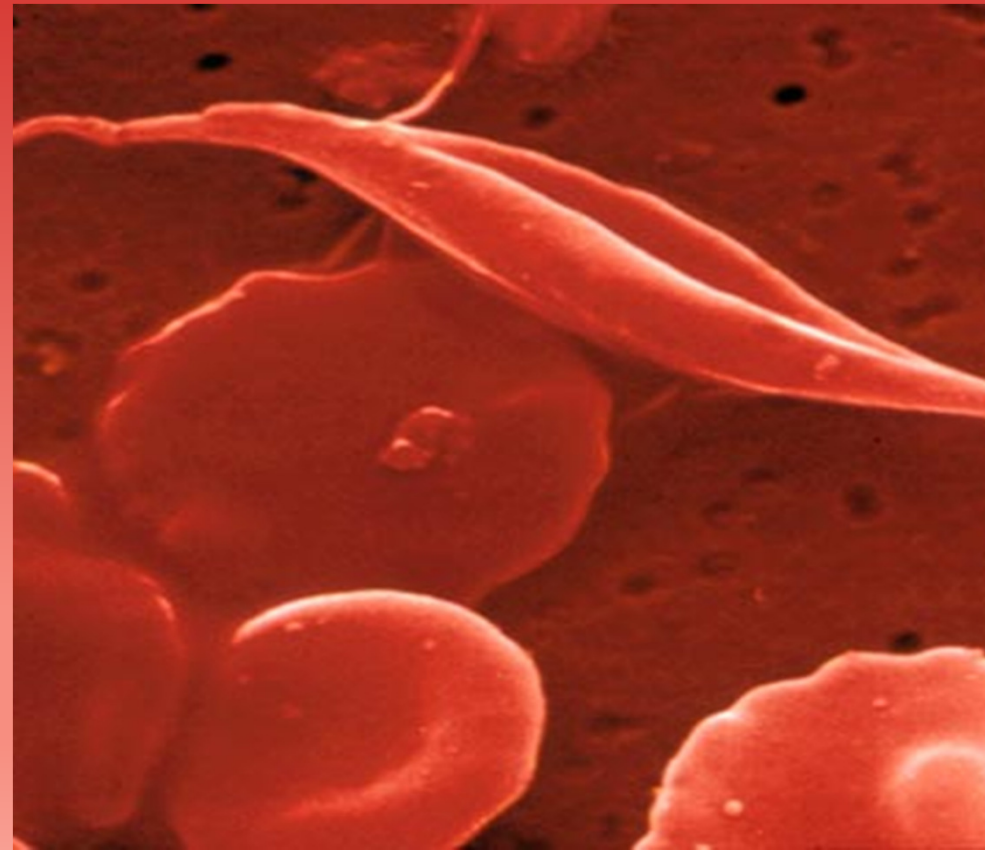
Nursing knowledge is critical to reducing the stigma and improving management of SCD pain.

SICKLE CELL DISEASE PAIN

Sickle cell disease (SCD) is characterized as the most prevalent genetic blood disorder that affects red blood cells worldwide (Myers, 2012).

SCD is characterized by recurrent acute severe pain episodes due to vaso-occlusive crisis (VOC).

A significant impact of VOC has been shown to decrease the quality of life in children.



SICKLE CELL DISEASE PAIN

Treating VOC pain should occur early and aggressively to prevent morbidity (Vijenthira et al., 2012).

SCD clients seen in the emergency room wait at least 4 hours before receiving their first dose of pain medication (Haywood, Tanabe, Beach & Lanzkron, 2013).

SCD clients can have acute or chronic pain or a combination of both resulting in malformed sickle shaped red blood cells.

Sickle shaped red blood cells cannot flow properly through the blood vessels and capillaries causing significant pain (Myers, 2012).

Both acute and chronic pain episode requires timely treatment.

SICKLE CELL DISEASE PAIN & EMERGENCY ROOM

SCD clients are seen as drug seekers once they enter the emergency room (Haywood et al, 2012).

An average of 197,000 emergency room visits occur each year, with an inpatient admission rate of 29% (Porter et al., 2012).

Cost for SCD clients seen in the emergency room for VOC has been estimated to be over \$356 million.



SICKLE CELL DISEASE PAIN & EMERGENCY ROOM

63% of nurses working with SCD clients believed addiction was a factor. 30% were reluctant to administer a high dose of analgesic (Porter et al., 2012).

Under treatment of pain occurs with SCD clients in a VOC due to the stigma. Research suggests that even though opioids were used for SCD clients with painful VOC episodes, dependency in SCD is not any different from other clients in the general population without SCD.

Drug seeking is often assumed by health professionals due to the excessive use of narcotics.

PAIN MANAGEMENT IN ADOLESCENT

SCD clients are not drug seekers but are seeking care due to the lack of 'psychosocial support, poor coping skills, and inappropriate therapeutic expectations" (Dampier et al., 2011, p. 128).

SCD pain management should be determined and will require multiple medications in which responses are made on a variety of neurochemical pathways.

Research indicated that **6%** of SCD clients die during childhood (Wang, Kavanagh, Little, Holliman, & Sprinz, 2011).

Research suggest there is evidence between gaps and variations in quality of care which contributes to mortality in children affected with SCD.

Poor outcomes are a factor in the quality of care in SCD.

PURPOSE FOR RESEARCH PAIN MANAGEMENT IN ADOLESCENT

Nursing knowledge is critical to reducing the stigma and management of SCD pain.

Identifying standards of care for this unique population can improve pain management and treatment.

Nurses play a vital role in the introduction of evidence-based practice within the clinical setting.

Nurses will serve as a catalyst providing scientific evidence to help them inform peers to facilitate change in adolescent SCD pain management.



RESEARCH FINDING

Efforts have been limited with improving quality care for children with SCD in comparison to other chronic illnesses that occur in children (Wang, Kavanagh, & Little et al., 2011).

Quality of care contributed to poor outcomes for children with sickle cell disease.

Due to the lack of quality measures for sickle cell children, a limited comprehensive and interdisciplinary system of care is developed.

Children who are diagnosed with sickle cell disease are at higher risk for acute and long term impediments leading to early mortality (Wang et al., 2010).

RESEARCH FINDING

Effort to improve and assess quality care for children diagnosed with sickle cell disease has been limited compared to children with other chronic conditions.

Over 200,000 sickle cell disease patients are seen in the emergency room each year for vaso occlusive crisis (Haywood et al., 2013).

Sickle cell patients who are seen in the emergency room are dissatisfied with the quality of care received.

Sickle cell patients are subject to delays and feel they wait longer to be seen by the doctor (Haywood et al., 2013).

Sickle cell patients wait as long as 4 hours before receiving their first dose of pain medication compared to patients with renal colic (Haywood et al., 2013).

RESEARCH FINDING

Research revealed that sickle cell disease patients waited longer than the general patient sample.

The severe pain scale used during triage showed 54% of sickle cell disease patients' rate pain a 7-10 on a scale of 0-10.

Longer wait times are contributed to both the race of sickle cell disease and the status (Haywood et al., 2013).

Sickle cell disease primarily affecting African Americans the impact of quality care is limited.



RESEARCH FINDING

Dampier et al. (2013) argued the need to optimize PCA dosing approaches for patients with sickle cell disease based on the impact of the “chronic anemia on opioid pharmacokinetics (p. 321).

Chronic anemia increases cardiac output which causes an increase in hepatic and renal flow.

Several analgesics such as morphine use a metabolic pathway to include hepatic and renal for excretion causing accelerated plasma clearance in sickle cell patients (Dampier et al., 2013).

Research recommends maintaining a steady drug level which can be maintained by the demand dose PCA strategy.

RESEARCH FINDING

PCA dosing is frequently used to deliver parenteral opioid analgesics and appears greater than intermittent injections in SCD pain (Dampier et al., 2013).

Physicians will use PCA to treat severe vaso occlusive pain in SCD.

PCA dosing is determined based on the influence of chronic anemia opioid pharmacokinetics in SCD.

Maintaining a frequent demand dose PCA strategy will provide a steady state drug level in SCD patients (Dampier et al., 2013).

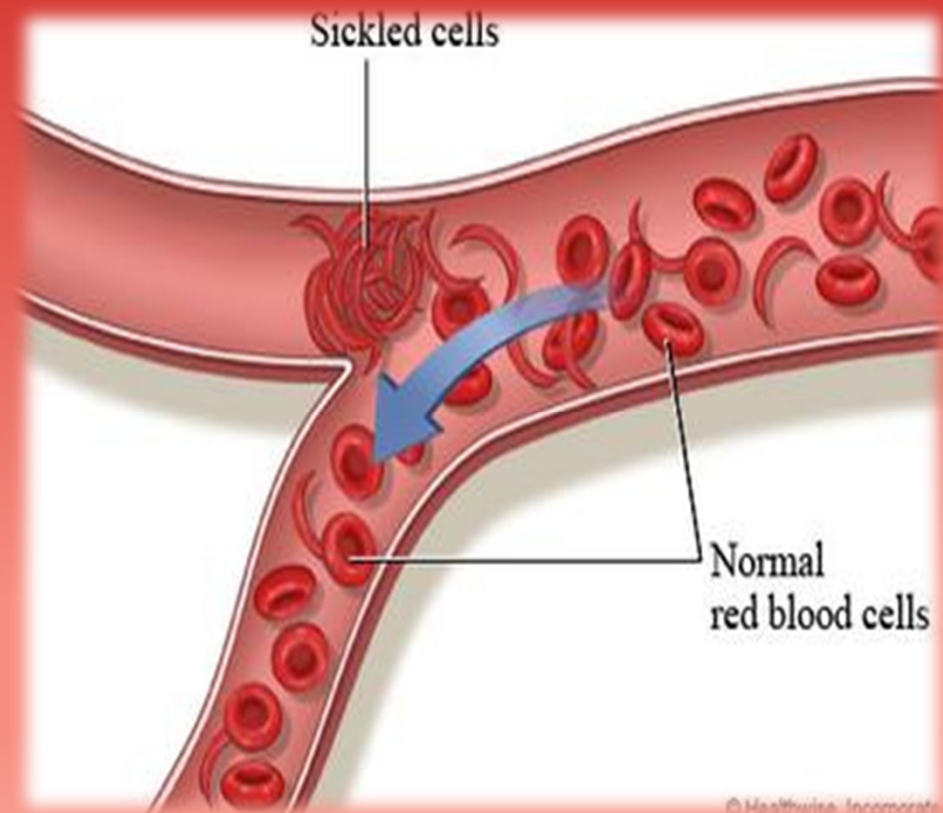
RESEARCH FINDING

Current practice in VOC need to improve and provide a benchmark to evaluate children with sickle cell disease for pain management (Vijenthira et al., 2012).

Utilizing the pain assessment and documentation practice as well as clinical outcomes will help identify areas for improvement in the clinical setting for hospitalized children with sickle cell disease.

Often pain remained untreated throughout the sickle cell disease patients' hospitalization.

24% of sickle cell disease patients seen in the emergency room had no documentation after triage.



RESEARCH FINDING

In order to combat pain in children with sickle cell disease, a pain assessment and documentation is necessary in clinical practice to decrease episodes.

Study results indicated that adequate pain relief for sickle cell pain is not being achieved in children with vaso occlusive crisis during hospitalization.

Of the literature review, all the researchers used either a PCA or some type of analgesia to manage pain in SCD clients.



IMPLICATIONS FOR NURSING PRACTICE

Review could help in promoting optimum SCD pain management in adolescents.

Adolescents with SCD are at risk for acute and long term impediments that lead to early mortality if pain management is limited.

Best practice guidelines for the management of acute pain crisis in sickle cell disease for nurses will result in better assessment of the pain in SCD clients and rapid medication treatment.

Nurses serve as a catalyst for the medical doctor and the SCD client.

Important that nurses understand the factors associated with SCD pain.

As health care providers, an open mind is essential in providing quality care

IMPLICATIONS FOR NURSING: BEST PRACTICE GUIDELINE

The best practice guidelines for nurses should include the following;

Rapid clinical assessment of VOC

Age appropriate pain scale

Pharmacological management as prescribed by medical doctor

Monitor patient's pain every 20 minutes until pain controlled and stable

Vital signs

Hydration

Oxygen saturations.

IMPLICATIONS FOR NURSING: BEST PRACTICE GUIDELINE

The implications for best practice guidelines will help nurses be able to assess the SCD client with an open mind and not readily identify adolescent clients as drug seekers.

Nurses should be able to recognize and assess SCD pain.

Best practice guidelines will also help nurses with reassessment of SCD pain and ongoing pain management to reduce morbidity and mortality in this population.

Rapid assessment and treatment of SCD pain in children and adolescents using clinical practice guidelines will improve care and reduce bias in this population.

RECOMMENDATIONS FOR PRACTICE CHANGE

Evidence based practice guidelines should be developed for consistency among health care providers, especially nurses caring for SCD clients.

The recommended changes include providing a clinical protocol for nurses caring for a SCD client in a VOC pain crisis.

A written clinical protocol would serve as a tool for the initial client assessment and reassessment in which prompt safe analgesia administration can be administered in a SCD VOC pain episode.

The best practice guidelines for SCD clients with VOC pain will include the following: assessment, diagnosis, plan, implementation, and evaluation.

RECOMMENDATIONS FOR PRACTICE CHANGE

The assessment component will start with the initial assessment of precipitating contributory factors in SCD clients with acute pain, the nurse will also gather information about the SCD client to write a personalized care plan.

Nursing diagnosis will be deemed as “acute pain” related to SCD VOC crisis.

The nursing plan will consist of a pain management algorithm, an age appropriate pain scale, documentation of severity of pain, provide rapid pain control, intravenous fluids, and monitoring vital signs.

Implementation of the clinical protocol will provide rapid pain control in SCD client. Initial treatment of SCD VOC pain will occur within 30 minutes of admission to the emergency room (Glassberg, Parekh, & Zempsky, 2011).

Evaluating the SCD client's pain management will help determine if the analgesic treatment is effective.

CONCLUSION

Managing SCD VOC pain can be difficult.

The clinical practice recommendations will contribute to nursing knowledge, improving health outcomes for SCD clients and family members.

SCD VOC pain continues to play an integral part in increasing morbidity and mortality.

Managing SCD pain often can be complicated due to the stigma surrounding the clients with the disease.

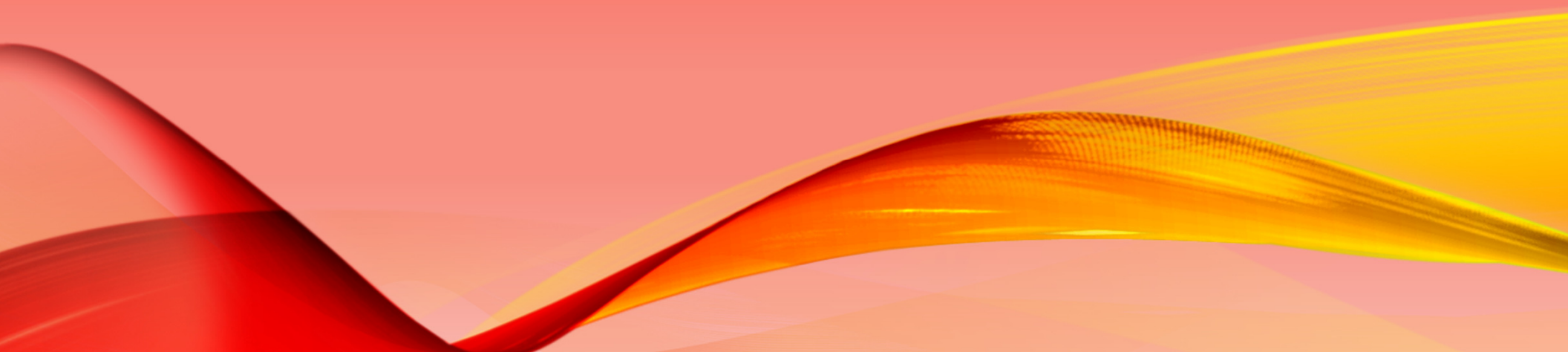
In order to better manage SCD VOC pain, nurses need more education on the disease process and the importance of managing SCD pain.

Early pain intervention can reduce morbidity and mortality in SCD clients.

Establishing best practice clinical guidelines will serve as a tool to promote wellness and provide standards of care for clients experiencing SCD VOC pain.

QUESTIONS

Wilson



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