

Major depressive disorder and sickle cell anemia: bidirectional comorbidities

Abstract

The purpose is to review the literature on the prevalence of depression in Sickle Cell Disease (SCD). To examine how factors such as social support, frequent vaso-occlusive pain crisis and/or hospitalizations, and severity of the disease affect the psyche and quality of life in adults with Sickle Cell Disease. Information obtained from Questia research database, the Centers for Disease Control and Prevention website, PubMed, and National Institute of Health website.

Keywords: sickle cell disease, depression, adults, social support, self-esteem.

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Abbreviations: SCD, sickle cell disease; CDC, centers for disease control and prevention; BDI, beck depression inventory; CBT, cognitive behavioral therapy; LEMPFSCD, longitudinal exploration of medical and psychosocial factors in sickle cell disease; SF-MPQ, short form-mcgill pain questionnaire; VAS, visual analog scale; QLS, quality of life scale; SES, self-esteem scale

Introduction

Sickle Cell Disease and depression are major health concerns as separate entities. Thousands of people are hospitalized from these diseases or complications. There are racial and ethnic disparities in healthcare where minorities are sometimes undertreated and symptoms of depression are sometimes overlooked. But what happens when these two illnesses are coupled together? As healthcare professionals we need to be more cognitive that people with SCD often experience symptoms of depression which affects their health and quality of life.

Discussion

Sickle Cell Disease (SCD) is an inherited group of disorders that affect the beta hemoglobin gene, the oxygen carrying part of a red blood cell (RBC). When the body is depleted in oxygen, the RBCs turn into an inflexible sickle or crescent shape, from its usual flexible donut shape, causing the sickled RBCs to lodge in small blood vessels. This event causes extreme pain at the site of occlusion, also known as a vaso-occlusive crisis. These crises damage tissues and organs by depriving them of oxygen rich blood. Major organs affected are the spleen, lungs, kidneys and brain.¹ Painful crises often occur in the joints, extremities, back, chest, abdomen, and penis. The severity of each crisis varies in each person and can cause physical complications and frequent hospitalizations.¹ These factors, in turn, can lead to emotional and psychological disturbances.² Currently, there is not a definitive cure for SCD except for a bone marrow transplant.

According to the Center for Disease Control and Prevention (CDC) millions of people throughout the world whose ancestors are of African, the Caribbean, South and Central America, India, Saudi Arabia, Italy, Turkey, and Greece descents are affected with SCD.³ The CDC reports that in the United States that approximately 100,000 Americans have SCD and that it occurs about "1 out of every 365 Black or African-American births."³ Depression is an affective disorder that is characterized by a depressed or sad mood, loss of

interest in activities that use to be pleasurable, psychomotor agitation or retardation, weight gain or loss, guilt, difficulties concentrating, fatigue, and thoughts of death. These symptoms usually last 2 or more weeks. The CDC states that depression is a burden to those that suffer from it and is a global concern.⁴ Many chronic illnesses or unhealthy behaviors cause depression. Depression can be diagnosed using the Beck Depression Inventory (BDI). It is a self ranking 21 item questionnaire that measures characteristic attitudes and depressive symptoms over the past two weeks, and is used worldwide by therapists.

Mental health and social health encompasses the quality of life among patients with SCD. The combination of SCD and depression increases psychological morbidity and mortality.^{2,5} Major Depressive Disorder is lower in Blacks than it is for Whites, but symptoms are usually greater. However, Black men are less depressed than Black women.⁶ Edwards et al.⁶ state that half of Black patients with SCD will experience one episode of depression in a lifetime.⁶

In 2005, Anie⁷ conducted a study about the psychological complications among children and adults with SCD. The primary objective was to "examine evidence for psychological complications."⁷ The researcher focused on three main areas which included psychological coping, quality of life, and neuropsychology. To test psychological coping an adapted pain coping strategies questionnaire was used. It found that negative thinking and passive coping was associated with pain crises and frequent hospitalizations. Anie⁷ determined quality of life to be consistent on two factors: 1. Activity and functioning, and 2. Anxiety and depression. Activity and functioning resulted in decreases within social activity, work and domestic roles, while anxiety and depression has been reported as low self-esteem, feelings of hopelessness due to frequent pain, hospitalizations, loss of schooling and employment. Both factors significantly reduced quality of life in adults with SCD, but were not significantly reduced when compared to other people with chronic illness or frequent hospitalizations.⁷ The third area of neuropsychology showed complications in adults with SCD due to cerebral vascular disease, hypoxia, and dementia. These "indicate attention/concentration and executive function problems."⁷ During this study 3 psychological interventions were also brought up which included psychological education, Cognitive Behavioral Therapy (CBT) and neuropsychology. Psychological education would benefit a patient's knowledge and awareness relating to their illness,

while providing mental support. CBT would challenge and change depressive thoughts, mood and behaviors, so that they can lead a more therapeutic and productive life. Neuropsychology was found to be more beneficial in children due to educational implications.⁷ Anie⁷ found that psychological complications are common among patients with SCD, and that it decreases their quality of life.

Edwards et al.⁶ did a study to evaluate the rates among depression, suicidal ideation and suicide attempts among black patients with SCD. The study was a cross-sectional survey over a year of 67 Black patients with SCD. The survey was interplay among psychological, psychosocial factors, and pain with clinical outcomes with patients SCD. Testing via LEMPFSCD was used with the following examined content: demographics, pain, psychopathology, negative effect, and socially desirable responding. Thirty-six percent of the patients experienced depression 30 days prior to study and 29% experienced during anxiety. According to BDI 22% of patients reported depressive symptoms. Patients that were currently seeking professional help for their depression from a psychiatrist were reported at 33%. Other psychological symptoms reported were hopelessness, fatigue, appetite disturbance, irritability, anhedonia, apathy, aggression, violence, and crime spells. The results were the same among all of the participants no matter the age or gender. The survey found that 29% have thought of suicide, but only 8% had attempted suicide. Pain ratings did not affect suicidal ideation or attempts. Nor, did the number of hospitalizations effect the ideas of suicide or attempts.⁶ Edwards et al summarized that Blacks do experience depressive symptoms, but in a non-traditional way than other groups, and are more likely to be under diagnosed or undertreated⁷ Imhonde et al.² performed a study to “examine the influence of social support, self-esteem and depression on the quality of life”² in patients that suffered from SCD.

This study included 52 patients that had SCD. They were given a questionnaire that included these 5 sections: Demographic Variables

- i. Quality of Life Scale (QLS)
- ii. Depression Scale
- iii. Social Support Scale
- iv. Self-Esteem Scale (SES)

Demographics asked their age, sex, education level and religion. The QLS is a questionnaire consisting of 27 items with four subscales. The subscales were “Physical well-being (related to physical well-being and some symptoms), Social/family well being (includes items to explore emotional support from family and friends and communication about the illness), Emotional well-being (evaluates some emotional symptoms and coping with the illness, and Functional well-being (includes items exploring functional well-being, acceptance of the illness and an overall evaluation of the quality of life.”² The Depression scale used the BDI to assess mood. The Social Support scale measured how much support the participants received from their family, friends, and community. The Self -Esteem scale assessed the subjects self esteem. The results of this study showed that social support and depression were moderately correlated, but depression and self- esteem were not. Self-esteem was however highly correlated to social support, but not a predictor of quality of life. Imhonde et al.² found that good social support improved quality of life, while depression had a negative impact on the quality of life in people with SCD.

Conclusion

As Anie⁷ speculated, we don't know whether depression and anxiety results from living with SCD, or if frequent pain episodes and hospitalizations cause depression.⁷ All the studies confirmed that there needs to be more research in this field of study. There was a consensus within all three studies that people with SCD do experience depression and anxiety regardless of the patient's age or gender. Anie⁷ found that with frequent vaso-occlusive crises and frequent hospitalizations, depression is increased.⁷ The percentage of patients that were depressed was not higher than other groups with chronic illnesses. Depression increased as the severity of the disease increased. In Edwards, et al., they found that the symptoms of depression reported, were not considered to be signs of depression by the patient themselves.⁶ They implied that Blacks with chronic illnesses “suffer in silence,” or do not experience symptoms of depression, especially before committing suicide. This may be due to the social stigma in the Black community that if you admit that you are depressed, that people or society would think you are “crazy” and shun you, so therefore Blacks do not report symptoms to their physician. These patients need to be made aware that people with chronic illnesses do experience signs and symptoms of depression, and that it is acceptable to talk about it with their healthcare provider. There are so many diverse populations in the United States that Edwards et al suggested that there needs to be different models for evaluating depression in each group.⁶ Religion should also be looked at as important factors as to why these patients do not report depressive symptoms or think they are depressed. Healthcare professionals need to inform and educate these patients on SCD and depression. Patients with SCD should be screened at every visit for symptoms of depression. Psychological therapies should be offered as a standard of care, and CBT and/or antidepressants should be started immediately. It was shown that having a good support system improved one's quality of life.² More support groups should be developed for those patients who do not have the support of family or friends.

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Conflict of interest

The author declares no conflict of interest.

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