Research Article ISSN 2639-9474

Nursing & Primary Care

Pain Coping Strategies Used and Its Perceived Effectiveness Among Patients Attending Sickle Cell Center in Benin City, Edo State, Nigeria

Timothy A Ehwarieme[1*], Mercy Ugboduma[2] and Uzezi Josiah[3]

[1]*Department of Nursing Science, School of Basic Medical Sciences, University of Benin, Benin City, Edo State, Nigeria.*

[2]*University of Phoenix, Arizona, USA.*

[3]*Department of Nursing Science, Delta State University Abraka, Delta State, Nigeria.*

[*]Correspondence:

Ehwarieme Timothy A, Department of Nursing Science, School of Basic Medical Sciences, University of Benin, Benin City, Edo State, Nigeria, Tel: +23408060696870; E-mail: timy4real12@gmail.com.

Received: 19 August 2021; **Accepted:** 16 September 2021

Citation: Ehwarieme TA, Ugboduma M and Josiah U. Pain Coping Strategies Used and Its Perceived Effectiveness Among Patients Attending Sickle Cell Center in Benin City, Edo State, Nigeria. Nur Primary Care. 2021; 5(5): 1-8.

ABSTRACT

Background: *Sickle cell anemia is prevalent in the society with pain as the key factor affecting the life of the individuals with the disease. A large number of sickle cell patients visit the health care facilities due to episode of pain crisis.*

Aim*: This study assesses pain coping strategies used and its perceived effectives among sickle cell patients attending sickle cell center in Benin City Edo State.*

Methods: *A cross sectional descriptive survey design was used to conveniently assess a total of 140 participants who attends the sickle cell center using self-structured questionnaire as instrument for data collection. The instrument was subjected to face and content validity as well as reliability using split half reliability test. Data were analyzed using descriptive and inferential statistics such as T-test, and multivariate logistic regression tests at 5%level of significant. Statistical Package for Social Sciences version (SPSS) 21.0 was use in all analysis.*

Result: *Findings from the study shows that use of pain reliefs, communication of pain to friends, prayers, hypnosis, guided imagery and Diversional therapy such as playing video games was the most commonly used coping strategies having a mean of >2.5. Pain coping strategies such as prayer, relaxation and use of pain relievers were the most effective coping strategies used (mean >2.5). Generally, about 66.4% of the entire population showed that coping strategies were effective to relief pain. Family and peer support were reported as the major factor influencing the use of coping strategies. Significant difference ($p<0.05$) was found in the coping strategies used by male and female respondents. Respondents who strongly agreed that economic factor played a major role in effective pain coping strategies were 0.328 times more (B-1.114; OR 0.328; CI 0.142-0.759, $p = 0.009$) likely to believe that coping strategies were effective. Also, respondents who chose routine checkups as a factor affecting pain coping strategies were 3.035 times more (B 1.110, OR;0.3035, CI;1.301-7083, $p = 0.010$) likely to choose those coping strategies were effective.*

Conclusion: *Considering the fact that pain is a lifelong issue for people with sickle cell disease, different coping strategies and how to effectively implement them should form the nucleus of health education given by nurses and other health care professionals to patients with sickle cell diseases. Patients should be taught on how to carry out these procedures themselves in order to manage pain in its prodromal phase as well as reduce frequent hospital visits and cost.*

Keywords
Pain, Coping Strategies, Sickle Cell Diseases, Effectiveness.

Introduction

Sickle cell disease (SCD) is one of the most common genetic haemoglobin disorders in the world [1]. According to statistics, SCD has affected 100,000 African-Americans [2]. The prevalence of sickle cell disorder in Nigerian is alarming when compared to other African countries in the world. It is estimated that out of 150,000 births annually, more than 100,000 Nigerian children are born each year with sickle cell disorder. Children affected with this disorder suffer a higher-than-average frequency of illness and premature death in the first five years of birth [3]. According to WHO, over 40 million Nigerians are carriers of the 'S' gene. Indeed, this number far exceeds the total population of every other affected African Country and several of them put together [4]. Despite the large number of people with Sickle Cell Disorder, the Nigerian society in general still has a negative image of sickle cell disease and reported negative perceptions and attitude [4].

The psychosocial effect of sickle cell disorder is overwhelming and bothersome to parents, families, healthcare professionals and even the children affected by the disorder. Children with sickle cell disease are at risk for instability in almost every area of daily activities. Specifically, sickle cell disease has been connected with numerous signs of psychological estrangement including emotional and behavioural disorder, poor self-esteem and interpersonal functioning, restricted sports abilities and poor academic performance [5]. These patients require repeated visits to the emergency and hospital for medical care [6,7]. Therefore, SCD significantly affects the performance status [6], and quality of life in all dimensions [8] and can lead to reduced self-confidence, feelings of frustration, depression, anxiety, and stress [9,10]. In addition, the pain leads to high ingestion of narcotic drugs [11], which are the most used treatments for these patients [12]. Nevertheless, this can only relieve physical pain while chronic pain also affects the emotional, cognitive, and behavioral dimensions of patients [13]. Furthermore, the side effects of these drugs in the long term and their risk of abuse have created some concerns [14]. Furthermore, inadequate pain relief can be as harmful as the disease itself [15]. Additionally, a combination of pharmacological and non-drug treatments is suggested to manage pain in patients with SCD [6]. Non-drug treatments proposed by the National Institute of Health in 2014 include massage therapy, relaxation techniques, and hypnosis [16].

Pain as a key factor affecting the quality of lives of the individuals with Sickle cell disease and it is associated with life threatening exacerbation and has emotional and psychological significance, affecting quality of life. Sickle cell disease pain is complex and its characteristics cannot be adequately assessed by a numeric rating of pain intensity [17]. A large number of sickle cell patients visit the health care facilities due to crisis and a greater percentage of them visit as a result of pain. Intensely pain requiring hospitalization, opioid treatment or a combination which often begin at early age. Little is known about the management of pain crises managed at home, or about the prodromal period before pain intensifies to crisis. Overall, patients with sickle cell disease undergo hospitalization and re-hospitalization rates which increases health care expenditures medical expenditures for sickle cell disease tend to rise with age from infancy to young adulthood.

Cognitive behavioral therapies, which can include the use of guided imagery, incorporate the concepts of coping and self-efficacy. Such therapies can be effective in addressing the multidimensional nature of pain perception. There are a number of problems associated with pain which includes emotional disturbance, shock, and even death. The inability for the patient to cope with pain has thrown the patients and relatives to a state of emotional and economical imbalance. More worrisome, is that even with the development of different coping strategies, one still wonders why there is still an increase in the number of hospital visits and frequent admissions by sickle cell patients due to pain. Studies have been carried out to investigate the coping strategies used by sickle cell patients in different part of the world but there is dearth of empirical studies in these area in Edo state especially in Benin City which have a special center for sickle cell patients. Therefore, this study aimed to ascertain different pain coping strategies used and its effectiveness among sickle cell patients in Edo state.

Materials and Methods

Research design

In this study, the researcher made use of the cross-sectional descriptive survey design in a Sickle cell center, Benin City. The Sickle cell center commissioned in the year 1993 is situated in Oredo Local Government Area of Edo state, Nigeria. The center was built to provide health promotion, curative, preventive, and rehabilitative care to sickle cell patients.

Target population/sampling

The target population of the study comprised of sickle cell patients aged 12 years and above including males and females attending Sickle Cell Centre. According to the medical records there are approximately one hundred and forty (140) average monthly attendance. (Edo State Sickle Cell Centre Medical Records 2021) In this study, census sampling method was adopted which means all the target population that met the inclusion criteria was enlisted for the study using a convenience sampling technique.

Instrument for data collection

A self-structured questionnaire was used to collect data for this study. The questionnaires were divided into section A, B, C, and D to address the research question under investigation.

Section A comprised demographic data of the respondents from age 12 years and above,

Section B comprised a eleven (11) item question on the identification of coping strategies used to manage pain by the respondents using a Likert scale with an average mean score of 2.5 where item with an average mean score of 2.5 and above were regarded as coping strategies, while those with an average mean score of less than

2.5 was regarded as a non-coping strategies. Section C comprised an eight) (8) item question on the perceived effectiveness of the pain coping strategies used by the respondents using a Likert scale with an average mean score of 2.5 where items with an average mean score of 2.5 were classified as effective and items below 2.5 were considered not effective. Section D comprised a 6 (six) item question on the factors affecting the use of coping strategies by the respondents using a Likert Scale with an average mean score of 2.5 where factors with a mean cut off 2.5 were regarded as factors affecting utilization of these coping strategies while below 2.5 were considered not to affect the use of coping strategies.

Validity/ Reliability of instruments

Instrument was subjected to Content and face validity by two experts; a consultant's hematologist and a professor of measurement and evaluation. Subsequently the reliability of the instrument was ensured by administering the questionnaires to 10% of the sample size to in a similar population from another health institution that was not used for the study. Data generated were analyzed using split half reliability test. The Cronbach's alpha value gotten were .791, .751 and .702 for B, C and D respectively.

Method of data collection

The researcher recruited the services of two health care providers in the sickle cell center. They were both trained on the contents and administration of the instrument. With the help of the research assistants, the instruments were administered to the respondents after obtaining consent with its content and aim explained to the respondent. This was done daily as the respondents present themselves for clinic. Administration and collection of the questionnaires lasted for a period of three (3) weeks from Monday to Friday and these questionnaires were distributed to respondents while they were in the waiting room before seeing the doctor.

Method of data analysis

Data were analyzed using made use of descriptive statistics analysis hypothesis were tested using inferential statistics such as using Chi square, T-test, and multivariate logistic regression tests. Statistical Package for Social Sciences version (SPSS) 21.0 was use in all analysis.

Ethical consideration

The researcher was aware of the issue of ethics and morals when it came to gathering the needed information from subjects. Voluntary participation, maintenance of anonymity and confidentiality was maintained throughout the study. The researcher obtained ethical clearance certificate with protocol number A732/T/1 from the research ethical and research committee of Edo State Hospital Management Board.

Results

Table 1: Socio-demographic Characteristics of Respondents.

Variables	Frequency (n = 140)	Percent
Age group (years)		
12 – 20	45	32
21 – 25	42	30
26 – 30	27	19.2
30 and above	26	18.5
Gender		
Male	62	44.2
Female	78	55.8
Marital Status		
Single	81	57.9
Married	53	37.9
Divorced	6	4.2
Religion		
Christianity	88	62.9
Islam	49	35.0
African Traditional Religion	3	2
Level of Education		
None	8	5.8
Primary	47	33.5
Secondary	56	40.0
Tertiary	29	20.7
Occupation		
Student	49	35.0
Business Executive	8	5.7
Civil Servant	13	9.3
Trader	27	19.3
Self employed	43	30.7

Mean age ± SD = 24.7 ± 7.7 years.

The table above shows the socio-demographic characteristics of respondents with 45(32.0%) of the respondents within the age range of 12 -20 years with a mean age of 24.7 ± 7.7 years. 62 (44.2%) were males, while 78 (55.8%) were females. 81 (57.9%) were single, 53 (37.9%) were married, 6 (4.2%) were divorced. Also, 8 (5.8%) of the respondents had no formal education, 47 (33.5%), 56 (40.0%), and 29 (20.7%) had primary, secondary, and tertiary level of education respectively. Majority 88 (62.9%) were Christians, Respondents' occupation showed that 49 (35.0%) were students, 8 (5.7%) were business executives, 13 (9.3%) were civil servants, 27 (19.3%) were traders, and 43 (30.7%) were self-employed.

This table shows the coping strategies used in the management of pain in sickle cell disease. The use of diversional therapies such as playing of video games to relieve pain had the highest mean value (3.0 ± 1.0), while engaging in relaxation techniques such as massage to reduce pain had the lowest mean value (2.1 ± 0.9).

Table above showed that pain relievers, music therapy, relaxation exercise and prayer were the most effective pain coping strategies used by the respondents.

Table 4 shows the factors affecting the utilization of pain coping strategies among respondents, with the presence of family and peer group support having the highest mean value (3.1 ± 0.9) while joining support groups had the lowest mean value (2.3 ± 1.1) which was also lower than the mean cut-off value of 2.5. it shows that only joining support group is not seen as a factor promoting the utilization of pain coping strategy by the respondents.

Table 2: Coping strategies used in the management pain in sickle cell disease.
n=140)

	Never (1) F (%)	Rarely (2) F (%)	Sometimes (3) F (%)	Always (4) F (%)	Mean	SD	Rmk
I take pain relievers such as aspirin, Paracetamol when I am having pain during sickle cell crisis. (Pain reliever)	18 (12.8)	37 (26.4)	45 (32.1)	40 (28.7)	2.7	1.0	CS
I make use of music therapy to distract me from feeling pain. (Music therapy)	48 (34.2)	37 (26.4)	36 (25.7)	19 (13.5)	2.2	1.1	NCS
I engage in relaxation techniques such as massage to reduce pain (Relaxation technique)	44 (31.4)	48 (34.2)	41 (29.2)	7 (5.0)	2.1	0.9	NCS
I pray when I experience pain during sickle cell crisis (Prayer)	18 (12.8)	29 (20.7)	48 (34.2)	45 (32.1)	2.9	1.0	CS
I carry out deep breathing exercises to cope with pain during sickle cell crisis (Deep breathing exercise)	30 (21.4)	50 (35.7)	29 (20.7)	31 (22.1)	2.4	1.1	NCS
I engage in hypnosis to reduce pain during crisis (Hypnosis)	36 (25.7)	30 (21.4)	36 (25.7)	38 (27.1)	2.5	1.1	CS
I use acupuncture when I am in pain (Acupuncture)	47 (33.6)	43 (30.7)	30 (21.4)	20 (14.2)	2.2	1.1	NCS
I communicate my pain to friends and family members during crisis (Communication with friends)	17 (12.1)	27 (19.3)	46 (32.8)	50 (35.7)	2.9	1.0	CS
I make use of diversional therapies such as playing of video games to relieve pain. (Diversional therapy)	12 (8.5)	30 (21.4)	43 (30.7)	55 (39.3)	3.0	1.0	CS
I make use of guided imagery to relieve pain during crisis Guided imagery	20 (14.3)	48 (34.2)	37 (26.4)	35 (25.0)	2.6	1.0	CS
I make use of bio feedback to relieve pain during crisis (Biofeedback)	48 (34.2)	41 (29.2)	22 (15.7)	29 (20.7)	2.2	1.1	NCS

Grand mean ± SD = 2.5 ± 1.1; Mean cut-off = 2.5; Note: CS (coping strategy) NCS (not a coping strategy

Table 3: Effectiveness of coping strategies used in the management pain in sickle cell disease.

	Not effective (1) Freq (%)	Less Effective (2) Freq (%)	Effective (3) Freq (%)	Most effective (4) Freq (%)	Mean	SD	Remark
Use of pain relievers	26 (18.6)	29 (20.7)	40 (28.6)	45 (32.1)	2.7	1.1	Effective
Massage therapy	46 (32.8)	47 (33.5)	28 (20.0)	19 (13.6)	2.2	1.0	Not effective
Exercise	31 (22.1)	44 (31.4)	41 (29.2)	24 (17.1)	2.4	1.0	Non effective
Music therapy	34 (24.3)	35 (25.0)	28 (20.0)	43 (30.7)	2.6	1.2	Effective
Relaxation exercises	20 (14.3)	29 (20.7)	46 (32.8)	45 (32.1)	2.8	1.0	Effective
Deep breathing	41 (29.2)	30 (21.4)	40 (28.5)	29 (20.7)	2.4	1.1	Not effective
Guided imagery	45 (32.1)	41 (29.2)	37 (26.4)	17 (12.1)	2.2	1.0	Not effective
Prayer	23 (16.4)	26 (18.6)	48 (34.2)	43 (30.7)	2.8	1.1	Effective

Grand mean ± SD = 2.5 ± 1.0; Mean cut-off = 2.5

Table 4: Factors affecting the utilization of these pain coping strategies.

	Strongly Disagree (1) Freq (%)	Disagree (2) Freq (%)	Agree (3) Freq (%)	Strongly (4) Agree Freq (%)	Mean	SD	Remark
Good counseling on pain coping strategies	23 (16.4)	29 (20.7)	37 (26.4)	51 (36.4)	2.8	1.1	Factors
Family and peer group support	10 (7.1)	20 (14.3)	53 (37.8)	57 (40.7)	3.1	0.9	Factors
Economic factor	23 (16.4)	20 (14.2)	47 (33.5)	50 (35.7)	2.9	1.1	Factors
Routine checkup	13 (9.2)	34 (24.3)	52 (37.1)	41 (29.2)	2.9	0.9	Factors
Joining support groups e.g. sickle cell group	46 (32.9)	36 (25.7)	33 (23.6)	25 (17.8)	2.3	1.1	Not Factors
Adequate knowledge on the use of pain coping strategies	27 (19.3)	41 (29.3)	43 (30.7)	29 (20.7)	2.5	1.0	Factors
Grand Average mean					**2.75**		

Grand mean ± SD = 2.8 ± 1.1; Mean cut-off = 2.5

Table 5: Mean comparison of coping strategies used by sickle cell patients based on gender.

Coping Strategies	Male	Female	t	P
Pain relievers	2.78±0.88	2.76±1.09	0.167	0.867
Music therapy	2.05±1.00	2.28±1.09	–1.680	0.094
Relaxation techniques	2.10±0.93	2.05±0.88	0.441	0.660
Prayer	2.99±1.01	2.77±1.00	1.697	0.091
Deep breathing exercises	2.25±0.97	2.58±1.11	–2.406	0.017
Hypnosis	2.71±1.20	2.40±1.09	2.059	0.041
Acupuncture	2.12±1.03	2.20±1.08	–0.575	0.566
Communication of pain with friends and family	2.75±0.94	3.04±1.05	–2.216	0.028
Diversional therapies	3.14±1.01	2.92±0.93	1.777	0.077
Guided imagery	2.45±1.08	2.74±0.94	–2.190	0.029
Bio feedback	2.28±1.19	2.19±1.09	0.603	0.547

Test Result

There was a statistically significant difference in coping strategies used by male and female respondents using Independent T-test as seen among those who used deep breathing exercises (t = –2.406, p = 0.017), hypnosis (t = 2.059, p = 0.041), communication +with friends/family (t = –2.216, p = 0.028), and guided imagery (t = –2.190, p = 0.029) as their coping strategies.

Table 6: Logistic Regression Model for the association between factors affecting use of pain coping strategies and its perceived effectiveness.

Predictor	B (regression co-efficient)	Odds Ratio	95% CI for OR		P – Value
			Lower	Upper	
Good counseling on pain coping strategies					
Strongly agree	-0.571	0.565	0.234	1.365	0.204
Strongly disagree		1			
Family and peer group support					
Strongly agree	0.175	1.192	0.561	2.532	0.648
Strongly disagree		1			
Economic factor					
Strongly agree	-1.114	0.328	0.142	0.759	0.009
Strongly disagree		1			
Routine checkup					
Strongly agree	1.110	3.035	1.301	7.083	0.010
Strongly disagree		1			
Joining support groups e.g. sickle cell group					
Strongly agree	1.070	2.915	0.981	8.665	0.054
Strongly disagree		1			
Adequate knowledge on the use of pain coping strategies					
Strongly agree	0.601	1.824	0.678	4.902	0.234
Strongly disagree		1			

*Reference category R^2 = 21.5% – 29.9% CI= Confidence Interval

Test Result

The variables in this model accounted for 21.5% – 29.9% of the variations observed in the outcome variable (perceived effectiveness of pain coping strategies). Respondents who strongly agreed that economic factor played a major role in effective pain coping strategies were 0.328 times more likely to believe that coping strategies were effective, and this association was statistically significant (p = 0.009). Also, respondents who chose routine checkups as a factor affecting pain coping strategies were 3.035 times more likely to choose those coping strategies were effective, and the association was statistically significant (p = 0.010). All other factors affecting coping strategies were not statistically shown to improve effectiveness of pain coping strategies. There is a significant relationship between factors affecting the use of pain coping strategies and its perceived effectiveness.

Discussion of Findings

Findings from this study show that a greater percent of the respondents were young adults between the age of 12 to 25years which was 62% of the respondents and majority (55.8%) them were females with a mean age ± SD of 24.7 ± 7.7 years. Similar findings were also reported by [3] in Oyo Nigeria, where most 68.4% were adolescents and young adults between ages 13 to 20 years. These similarities could be attributed to the fact that sickle cell crisis begins at an early age which could be the reason for an increase in the number of adolescent respondents in both studies. However, the present study differs from the study of [3], in that majority of their study participants were male as against female in the present study. The reason for females being more than males in the present study is not known, maybe it could be attributed to geographical location. Similarly, the findings of [18] in Ghana, where the majority of the participants were females agrees with the findings of the present study but differ in the age range of 20 and 39 years old compare to the present study of 13 to 20 years. These findings are generally consistent with findings of previous studies that have examined the socio-demographic characteristics of SCD patients in other parts of the world [19, 20]. Life expectancy of people with SCD is reduced considerably, especially among children and older people. This indicates that SCD-related mortality is likely to be higher among children and older people and less in those from 20 to 29, which partly explains why majority of SCD patients were between 13 and 20 years old. The results also showed that most of the participants were females. Gender role socialization and expectations may have accounted for more females reporting SCD and its associated complications. In Nigeria culture, males are likely to show courage, strength and strength during times of crisis and are expected to be the bread winners, to be leaders in their family and to endure pain [21]. This is supported by the fact that females generally report or complain more than males when they are suffering from different types of illnesses [22].

Findings from the study showed pain coping mechanism used by the respondents were taking of pain reliever, prayer, relaxation exercises, hypnosis communication with friends and guided imagery. However diversional therapy such as playing video games received the highest mean among all the coping strategies used by the respondents. These findings are in line with the study of [23], where out of the 251 coping strategies identified in the study, one of the most frequently used was problem solving which included diversional therapy such as watching television, playing

games, praying and cognitive restructuring. It is surprising to know that pain coping strategies such as relaxation techniques, deep breathing exercise, acupuncture and biofeedback were not among the commonly used strategies by the respondents during pain crises as they received the lowest mean. Reason for this is not known but its cloud be connected to lack of adequate knowledge of these coping strategies among the respondents. In contrast to the finding of the present study, is a study from United State which reported that guided relaxation received the highest mean in their study, the study suggested that guided relaxation received the highest mean of usage because it could be seen as cost- effective and efficacious way to reduce pain among the respondents [24]. Furthermore, a review study by [25], reported that massage therapy is one of the most common pain coping strategy used by patients with Sickle Cell Disease. Although the reason for massage being common isn't known, it was believed that the respondents in the study were taught ways to effectively carry out the massage therapy and so had good knowledge and experience of it making it the most commonly used. Moreover, the study results of [26] in Enugu Nigeria showed that 52.8% of patients with sickle cell used painkillers, hydrotherapy, and massage as a way to deal with the pain. Carpenter et al, study reported resting, praying, hoping, and massaging as four common methods used to combat the pain of their children [27]. In addition, [28], showed that younger people use massage therapy more significantly (P=0.02) to relieve their pain. This could be the reason massage therapy was not the most commonly used in the present study as a good number of the respondents were adults. Different from previous studies, 92% of patients participating in the Thompson and Eriator study reported that they had experienced pain lasting from six months to more than two years, and 91.6% reported the use of at least one type of complementary medicine; however, only14% of patients had used massage therapy [29]. These results of other studies showed that parents knew that the use of complementary medicine was effective in reducing pain and improving the life quality of their children. The low use of massage therapy and other pain coping strategies in some of these studies as well as the present study is probably due to the unfamiliarity of patients with these strategies and its application by the patients, leading to a low effectiveness. It is therefore pertinent for health care professionals to health educates sickle patients on the various coping strategies as well as teaching them the various techniques to apply in using these strategies in during pain crises.

Findings from this study showed that relaxation, and prayer were perceived as being the most effective coping strategies with highest mean values, while massage therapy and guided imagery had the lowest mean values and was therefore regarded as ineffective. Supporting these findings is [30], where it was reported that relaxation technique was the most effective coping strategies used by sickle cell patients. In addition, the findings of the present study were consistent with that of Barakat et al, whose results indicated that coping strategy of rumination and prayer explains 9% of total score changes in pain intensity of patients with chronic and non-chronic headache [31]. Furthermore, supporting the present study is [18] in Ghana, who reported that while pains of varied nature and severity were the major reasons for attending hospitals in Sickle Cell Disease condition, going to the hospital as well as having faith in God were the most frequently reported mechanisms for coping with an unbearable Sickle Cell Disease attack. Although prayer is considered to be a coping strategy but it has cognitive and behavioral components. Religion is often seen as a kind of escape from reality, denial, or avoidance, this view is simplistic and conventional. Religious coping strategies can be adaptive, active, and difficult, especially when God is considered as benevolent and helpful. The reason why Prayer was the most effective pain coping techniques as asserted by the respondents may be due to the fact that majority of the respondents were religious people and most of them belonged to at least one of the three major religions in Nigeria.

The findings from this study also show the factors affecting the utilization of pain coping strategies among respondents. The presence of family and peer group support was regarded as a major factor that affects the utilization of coping strategies hence had the highest mean value while joining support groups had the lowest mean value and is regarded as not being a factor. This is in line with findings of [32] in US which findings suggest a relatively high degree of congruence between child coping and parent coping assistance strategies, providing further support for the socialization of coping model and reinforcing its relevance among families of children with SCD. In addition, Hildenbrand et al, showed the effect of family and peer group support. Parents were found to help in decision making, providing problem focused support and helping in religious or spiritual coping [32].

Consistent with similar mixed methods investigations of coping with SCD pain, Mitchell et al who reported that children and parents in their study reported a diversity of coping and coping assistance strategies [33]. It is assumed that approaches differ in their effectiveness giving to specific (e.g., age-related level) and situational (e.g., acute vs. chronic stressor) factors, children and families may profit from developing a various group of approach and avoidance-oriented strategies to effectively traverse the variety of psychosocial and physical demands associated with painful crises. Therefore, education and support may be beneficial to help families learn additional skills for coping with SCD.

Furthermore, interventions to teach children and parents appropriate circumstances for using different strategies and alternative techniques for controlling pain crises may be helpful. Thus, in addition to helping families widen their coping catalogues and apply techniques strategically, interventions should also be tailored to each family's experience to strengthen children and parents' self-efficacy in using preferred methods of coping.

This is in line with the submission of Hildenbrand et al, whose findings suggest a relatively high degree of similarity between child coping and parent coping assistance strategies, providing further support for the socialization of coping model and reinforcing its relevance among families of children with SCD [32]. Overall, these findings are consistent with prior research suggesting that

caregivers play an important role in helping children manage sickle cell pain crises, underlining the usefulness and significance of including and partnering with caregivers to support children's physical and psychosocial health [34,35].

Findings from the study showed that there is a significant difference in the coping strategies used by male and female respondents as seen among those who used deep breathing exercises ($t = –2.406$, $p = 0.017$), hypnosis ($t = 2.059$, $p = 0.041$), communication with friends/family ($t = –2.216$, $p = 0.028$), and guided imagery ($t = –2.190$, $p = 0.029$). There was a statistically significant relationship between socio-demographic characteristics of respondents (such as occupation, marital status, age, gender and level of education) and the likelihood of using the different coping strategies. Respondents who strongly agreed that economic factor played a major role in effective pain coping strategies were 0.328 times more likely to believe that coping strategies were effective, and this association was statistically significant ($p = 0.009$). Also, respondents who chose routine checkups as a factor affecting pain coping strategies were 3.035 times more likely to choose those coping strategies were effective, and the association was statistically significant ($p = 0.010$). All other factors affecting coping strategies were not statistically shown to improve effectiveness of pain coping strategies. It is therefore pertinent that factors such as age, levels of education (income), gender and social relations (marital status) should be considered seriously in the education of sickle cell disease patients with regards to pain management to facilitate healing and restoration of quality of life.

Implications for nursing

Nurses and midwifes constitute a large proportion of the health care team hence there is a need to be well informed about the coping strategies of sickle cell patients so they can take adequate measures to help patients in coping with pain during sickle cell disease crisis. Different coping strategies and how to carry them out should form the nucleus of health education given by nurses to patients with sickle cell diseases. Patients should be taught on how to carry out these procedures themselves in order to manage pain in its prodromal phase as well as reduce frequent hospital visits and cost.

Conclusion

Considering the fact that pain is a lifelong issue for people with sickle cell disease, it is necessary that pain coping strategies are learnt in order to reduce pain. Perceived effectiveness of the coping strategies will lead to improved management of sickle cell pain, and reduced occurrences of complication that arise from pain. The study has shown that family and peer group support play a major role in influencing the utilization of coping strategies. In addition, patients who involved in routine checkup viewed coping strategies as effective, although this research does not ascertain the knowledge of the sickle cell patients on coping strategies, it may however play a role in its perceived effectiveness.

References

1. Wright J, Ahmedzai SH. The management of painful crisis in sickle cell disease. Curr Opin Support PalliatCare. 2010; 4: 97-106.
2. http://www.nhlbi.nih.gov/health/dci/Diseases/Sca/SCA_WhoIsAtRisk.html.
3. Ajibade B, Akinpelu A, Olaoye J, et al. Perceived psychosocial impact and coping strategies among people living with sickle cell disease in a local government of oyo state Nigeria. International Journal of Cell. Animal Biology and Genetics. 2018; 3: 1-37.
4. WHO. Sickle Cell Disease Prevention and Control. 2014.
5. Reiter N, Gargardt V, Shart. Peer Relationships and emotional well-being of children with sickle cell disease a controlled replication child neuropsychology. 2007; 13: 173-187.
6. Taylor LE, Stotts NA, Humphreys J, et al. A review of the literature on the multiple dimensions of chronic pain in adults with sickle cell disease. J Pain Symptom Manage. 2010; 40: 416-435.
7. Brousseau DC, Owens PL, Mosso AL, et al. Acute care utilization and re-hospitalizations for sickle cell disease. JAMA. 2010; 303: 1288-1294.
8. Menezes AS, Len CA, Hilario MO, et al. Quality of life in patients with sickle cell disease. Rev Paul Pediatr. 2013; 31: 24-29.
9. Anie KA, Egunjobi FE, Akinyanju OO. Psychosocial impact of sickle cell disorder perspectives from a Nigerian setting. Global Health. 2010; 6: 2.
10. Mahdi N, Al-Ola K, Khalek NA, et al. Depression anxiety and stress comorbidities in sickle cell anemia patients with vaso-occlusive crisis. J Pediatr Hematol Oncol. 2010; 32: 345-349.
11. Ballas SK, Gupta K, Adams-Graves P. Sickle cell pain a critical reappraisal. Blood. 2012; 120: 3647-3656.
12. Brown SE, Weisberg DF, Balf-Soran G, et al. Sickle cell disease patients with and without extremely high hospital use pain opioids and coping. J Pain Symptom Manage. 2015; 49: 539-547.
13. Williams H, Tanabe P. Sickle Cell Disease A Review of Non pharmaco-logical Approaches for Pain. J Pain Symptom Manage. 2016; 51: 163-177.
14. Franklin GM. American Academy of Non Opioids for chronic non cancer pain a position paper of the American Academy of Neurology. Neurology. 2014; 83: 1277-1284.
15. Lu K, Cheng MC, Ge X, et al. A retrospective review of acupuncture use for the treatment of pain in sickle cell disease patients' descriptive analysis from a single institution. Clin J Pain. 2014; 30: 825-830.
16. National Institute of Health. Evidence based management of sickle cell disease expert panel report. Bethesda Maryland National Institute of Health. 2014.
17. Abadesso C, Pacheco S, Céu Machado M, et al. Pain in Children and Adolescents with Sickle Cell Disease Multidimensional Assessment. Journal of Pediatric Hematology/Oncology. 2020; 42.
18. Adzika VA, Glozah FN, Ayim-Aboagye D, et al. Socio-demographic characteristics and psychosocial consequences of sickle cell disease the case of patients in a public hospital in Ghana Journal of Health Population and Nutrition. 2017; 36: 1-10.

19. Amaral JL, Almeida NA, Santos PS, et al. Socio-demographic economic and health profile of adults with sickle-cell disease. Rev Rene. 2015; 16: 296-305.

20. Asnani MR, Fraser R, Lewis NA, et al. Depression and loneliness in Jamaicans with sickle cell disease. BMC Psychiatry. 2010; 10: 40.

21. Ampofo AA, Boateng J. Multiple meanings of manhood among boys in Ghana. In From boys to men social construction of masculinity in contemporary society. Landsdowne University of Cape Town Press. 2007.

22. Ilesanmi OO. Gender differences in sickle cell crises implications for genetic counselling and psychotherapy. J Psychol Psychother. 2013; 3: 123.

23. Garioli, DS, Paula, KMP, Enumo SRF. Evaluation of pain coping in children with sickle cell anemia. Studies of Psychology. Campinas. 2019; 36: e160079.

24. Ezenwa, MQ, Yao YY, Engelan CGA. Randomized controlled pilot study feasibility of a tablet-based guided audio-visual relaxation intervention for reducing stress and pain in adults with Sickle Cell Disease. Journal of Advanced Nursing. 2016; 72: 1452-1463.

25. Ahmadi M, lkhani M, Beiranvand S, et al. Massage for Pain Management in Patients with Sickle Cell Disease A Review Study Jundishapur J Chronic Dis Care. 2018; 7: e62315.

26. Ikefuna AN, Emodi IJ, Ocheni S. Clinical profile and home management of sickle cell-related pain the Enugu Nige- ria experience. Pediatr Hematol Oncol. 2009; 26: 309-312.

27. Oliver-Carpenter G, Barach I, Crosby LE, et al. Disease management coping and functional disability in pediatric sickle cell disease. J Natl Med Assoc. 2011; 103: 131-137.

28. Sanders KA, Labott SM, Molokie R, et al. Pain coping and health care utilization in younger and older adults with sickle cell disease. J Health Psychol. 2010; 15: 131-137.

29. Thompson WE, Eriator I. Pain control in sickle cell disease patients use of complementary and alternative medicine. Pain Med. 2014; 15: 241-246.

30. Kazak A, Ozkaraman A. The Effect of Progressive Muscle Relaxation Exercises on Pain on Patients with Sickle Cell Disease Randomized Controlled Study. Pain Management Nursing. 2020.

31. Barakat L, Lash LA, Lutz MJ, et al. Psychosocial adaptation of children and adolescents with sickle cell disease. Comprehensive Handbook of Childhood Cancer and Sickle Cell Disease A Bio-psychosocial Approach. Cary NC Oxford University Press. 2006.

32. Hildenbrand AK, Lamia BS, Barakat P, et al. Coping and coping assistance among children with sickle cell disease and their parents J Pediatr Hematol Oncol. 2015; 37: 25-34.

33. Mitchell MJ, Lemanek K, Palermo TM, et al. Parent perspectives on pain management coping and family functioning in pediatric sickle cell disease. Clin Pediatr Phila. 2007; 46: 311-319.

34. Lutz MJ, Barakat LP, Smith-Whitley K, et al. Psychological adjustment of children with sickle cell disease Family functioning and coping. Rehabilitation Psychology. 2004; 49: 224-232.

35. Kupst MJ, Bingen K, Brown, RT. Stress and coping in the pediatric cancer experience. Comprehensive Handbook of Childhood Cancer and Sickle Cell Disease. New York Oxford University Press. 2006; 35-52.