



EXAMINING THE ROLE OF INFORMATION DISSEMINATION IN SENSITIZATION OF DRUG ADDICTION AMONG SICKLE CELL PATIENTS

Kubra Khadeeja Mundi¹, Comfort Adeline Uno², Amina Abubakar Saidu³, Rukaiya Musa⁴& Leah Yebo Gana⁵

^{1234&5}Department of Library and Information Science,
Federal University of Technology, Minna.

Email: comfort.uno@futminna.edu.ng, aminaabubakarsaidu@gmail.com,
rukaiyamsuleija@gmail.com & leah.tsado@futminna.edu.ng .

Abstract

The study proposes to examine the role of effective information dissemination in sensitization of drug addiction among sickle cell patients: using general hospital Minna as a case study. The study was guided by four (4) research objectives and questions using descriptive survey research design method. The population for the study was twenty-five (25) sickle cell patients and doctors. Total enumeration was used for the research and 25 copies of closed-structured questionnaire were distributed, 15 copies were retrieved and used for analysis. The study revealed the importance of information sensitisation on drug addiction of sickle cell patients: indicating that drug addiction sensitization would help them manage their health and positively influence their lifestyle and behaviour. In conclusion, information sensitization on drug addiction of sickle cell patients is essential in building intellectual capacity on the challenges faced by sickle cell patients and also highlights the benefit of this information to their lifestyle and overall management of their health. The study made some recommendations, one of which was to utilise all channels and medium of communication to cover larger audience and increase awareness on drug addiction in sickle cell patients.

Keywords: Sickle Cell Patients; Drug Abuse; Information; Sensitisation; healthcare Professionals.

Introduction

One of the most prevalent genetic diseases in the world, sickle cell disease is characterized by a tendency for hemoglobin molecules within red blood cells to polymerise and deform the red cell into a sickle (or crescent) shape, which causes characteristic vaso-occlusive events and accelerated hemolysis, it is most common in the Middle East, Mediterranean regions, Southeast Asia, and sub-Saharan Africa, especially Nigeria. This mutation in cell structure is inherited autosomal recessively, either as homozygous or double heterozygous states, and causes a variety of issues, such as discomfort anemia and increased susceptibility to infections (Tebbi, 2022). Patients who suffer from this disease earlier described are known as Sickle Cell patients and following the chronic pain associated with sickle cell crises, people may be exposed to medications that have the potential to cause dependency, such as opioid medication. The psychological toll of managing a chronic illness may also make Sickle Cell patients more vulnerable to various forms of addiction. This may include non-substance-related behaviors that serve as coping mechanisms as well as substance-related dependencies for pain management. Recognizing these challenges is essential for developing effective healthcare strategies that address both the physical and mental health of the affected individuals (Kuppusamy *et al.*, 2024).

The World Health Organization (WHO) and the Centers for Disease Control and Prevention (CDC) are two global health organizations that acknowledge sickle cell disease as a major global health challenge. They emphasize the impact of sickle cell disease on regions where it is highly prevalent, and also emphasize the significance of comprehensive approaches that include early diagnosis, access to medical care, and preventative measures. Spreading accurate information about addiction can help sickle cell patients take a proactive approach to managing both their medical condition and potential addiction risks. These individuals, already burdened by the challenges of managing a chronic illness, may face unique risks related to addiction. Therefore, it is important to educate them about the potential dangers, especially in the context of pain management. In order to address the overlap between sickle cell disease and addiction, it is crucial to customize the material to the unique needs and concerns of this community. Healthcare professionals, support groups and education can reduce addiction stigma by promoting open dialogue and understanding, ensuring sickle cell patients get the support they need for healthy life.

Problem Statement

Drug addiction is a growing public health concern that disproportionately affects vulnerable populations, including individuals with chronic illnesses such as sickle cell disease (SCD). Patients with SCD often experience recurrent episodes of severe pain, for which opioids and other strong analgesics are commonly prescribed. Prolonged use or misuse of these medications may lead to dependence or addiction, compounding the challenges faced by this population. Despite the clinical importance of appropriate pain management, there is limited emphasis on sensitisation and information dissemination regarding the risks of drug misuse and addiction among sickle cell patients. Sensitisation programs that provide accurate, accessible information about drug addiction, its consequences, and strategies for safe medication use may play a crucial role in prevention. However, there is a lack of empirical evidence on the effectiveness of such interventions in modifying knowledge, attitudes, and behaviours among individuals living with SCD. Without adequate sensitisation, patients may

be unaware of the long-term implications of drug misuse, increasing their susceptibility to addiction and negatively impacting their overall health outcomes.

This study seeks to investigate the role of information dissemination in sensitisation of drug addiction, prevention behaviours, and attitudes towards medication use in sickle cell patients. The findings will provide valuable insights into the role of educational interventions in addressing drug addiction risks in this medically vulnerable group.

Objective of the Study

The aim of the study is to create awareness about drug addiction in sickle cell patients in Minna General Hospital, Niger State. However, the specific objectives were to:

1. Create awareness about drug addiction through dissemination of information regarding drug addiction to sickle cell patients in General Hospital Minna, Niger State.
2. Acquaint sickle cell patients and others with the necessary information regarding cause of addiction in sickle cell treatment procedures in General Hospital Minna, Niger State
3. Determine the prevalence of addiction among sickle cell patients in General Hospital in Minna, Niger State
4. Determine the strategies for dissemination of information about drug addiction to sickle cell warrior in General Hospital Minna, Niger State

Literature Review

Concept of Sickle Cell Disease

The genetic blood condition known as sickle cell disease (SCD) is characterized by anomalous hemoglobin, or hemoglobin S, in red blood cells, the distinctive hemoglobin structure of sickle cell disease causes red blood cells to take on a rigid sickle-like shape, which can result in a number of complications, the disease symptoms include recurrent episodes of pain known as "crises," which can range in severity from mild to severe and necessitate hospitalization. It is characterized by chronic anemia, predisposition to infections, harm to organs like the kidneys, liver, and spleen, the condition typically manifests in early childhood, with symptoms that can vary in severity among individuals. In other to control the pains felt by sickle cell patients, advances in medical management have been adopted including pain relief, blood transfusions and medications, also early diagnosis through newborn screening programs which enables proactive intervention is being employed however, challenges persist particularly in regions with limited access to healthcare (Tewari *et al.*, 2015).

The burden of sickle cell disease (SCD) services is increased by inadequate access to healthcare facilities, particularly in rural regions, where there may be lack of thorough genetic testing and counseling, which postpones early diagnosis and intervention stigmatization, breeding various misconceptions regarding the disease. This is why comprehensive healthcare policies tailored to Nigeria's unique sickle cell disease challenges are required, as well as more public health education. Collaboration between healthcare practitioners, politicians, and community stakeholders is crucial to increase control over sickle cell disease (SCD), improve patient outcomes, and ultimately reduce the socioeconomic impact of this genetic condition (Jain *et al.*, 2015).

To create awareness on sickle cell diseases so as to encourage people who are affected by sickle cell diseases, there is need for regular campaigns, sensitization through the use of social media platforms such as Instagram, twitter and facebook to share personal stories, instructional content and hashtags specific to disease. Also, Educating the public, medical professionals, and caregivers about sickle cell disease (SCD) through webinars and workshops is a great way to get started. Working together with healthcare providers guarantees that information is shared widely and awareness programs are planned. Teaching kids about SCD and encouraging support, interacting with schools produces a more welcoming atmosphere. Media collaborations with regional publications that feature SCD-related articles and interviews help to spread awareness. Deeper awareness can be fostered by virtual reality encounters that imitate the difficulties faced by sickle cell patients. Healthcare personnel learn more about the special needs of people with sickle cell disease (SCD) through interactive courses. Engaging the community can be achieved by setting up booths and participating in health fairs. Participation in online competitions and campaigns is encouraged, as is funding for SCD support and research groups. Influencer and celebrity partnerships increase the impact and reach of campaigns.

Contrary to popular belief, people with sickle cell disease who receive insufficient treatment may become addicted to drugs as a result of self-medicating to reduce their discomfort, because sickle cell disease (SCD) patients experience frequent episodes of pain, doctors may prescribe opioid medications for pain management, while these medications are necessary for treating severe pain, there is a risk of dependence and addiction which is one major concern for people with SCD (Dowell *et al*, 2016). In order to manage their chronic pain, sickle cell patients may become dependent on opioids, which can result in substance use disorders. Healthcare professionals must strike a careful balance when treating patients with chronic pain and the requirement for pain management. The sickle cell community needs education and awareness campaigns to draw attention to the possible risks of opioid use and to support alternate approaches to pain management, Healthcare providers should also carefully evaluate and modify drug schedules based on the unique requirements of each patient. To address the psychological and physical components of pain and addiction in sickle cell patients, a multidisciplinary approach involving addiction counseling and psychiatric assistance is necessary. Healthcare practitioners can better the overall well-being of sickle cell disease patients and reduce the risk of drug addiction by encouraging open communication and offering comprehensive care (Dart *et al*, 2015).

Theoretical Framework

Health Belief Model (HBM)

The health belief model (HBM) is a foundational framework in health behavior research. It was conceptualized in the 1950s to help understand preventative health behavior by social psychologists working in the United States Public Health Service (USPHS). It is based on the understanding that a person's beliefs about health problems, perceived benefits of action, and barriers to action can explain engagement (or lack thereof) in health-promoting behaviours. The Health Belief Model supports the idea that sensitisation (i.e., providing targeted information and awareness) can influence the perceptions and behaviours of sickle cell

patients regarding drug use and addiction. Specifically, the following components of HBM are relevant:

1. Perceived Susceptibility – Sensitisation efforts can help sickle cell patients understand their unique risk of drug dependence due to frequent exposure to pain medications.
2. Perceived Severity – Educational interventions can highlight the serious consequences of drug addiction, including health deterioration, treatment complications, and psychosocial effects.
3. Perceived Benefits – Patients may recognize the advantages of adhering to safe drug-use practices, such as improved health outcomes and better quality of life.
4. Perceived Barriers – Sensitisation can address and reduce misconceptions or fears that prevent patients from seeking help or using alternatives to addictive medications.
5. Cues to Action – Information sessions, educational materials, and healthcare provider counseling act as cues that motivate patients to adopt preventive behaviours.
6. Self-Efficacy – Sensitisation can empower patients with the confidence and skills needed to manage their pain responsibly and avoid drug misuse.

The Health Belief Model provides a strong theoretical foundation for understanding how sensitisation affects attitudes and behaviours regarding drug addiction in sickle cell patients. By targeting beliefs and perceptions through tailored information, healthcare providers can influence safer health practices and reduce addiction risks in this vulnerable population. Etheridge, Sinyard and Brindle (2023)

Research Methodology

This study adopted a descriptive survey research design in order to gather information for the study. It also aimed at gathering data about people's choices, preferences, values, and likes and dislikes. The population of the study is 25 individual which constituted fifteen (15) medical Doctors and ten (10) sickle cell warrior in General Hospital Minna, Niger State. Total enumeration or census method was adopted for the study; this is because the population is manageable therefore no sample was taken. A close end structured questionnaire was the instrument used for data collection because it enables the respondent to respond to the questions within specified limit without the researcher interfering. The face and content validation of the research instrument was done with the help of the researcher's supervisor and some expert from the Department of Library and Information Science (LIS) in FUT Minna. The researcher distributed the copies of questionnaire to the respondent in general Hospital Minna. Both the distribution and collection of the copies of questionnaire lasted for about two weeks. The data collected from the respondents was organized and analysed using descriptive statistical tools involving frequency counts and percentages. Descriptive statistic according to Obaje and Amkpa (2013) enable a researcher to organize and summarise data in an effective and meaningful way.

Result and Discussion

Table 1 Response Rate

S/N	Respondent	Copies distributed	Copies returned	Percentage of copies returned
1	Doctors	15	10	66.7

2	Sickle cell warrior	10	5	33.3%
	Total	25	15	100%

Demographic Information of the Respondents

Table 2: Respondents Gender (sickle cell patients)

Gender	Frequency	Percentage
Male	2	40%
Female	3	60%
Total	5	100%

From the data presented in Table 2, it is obvious that the respondents here were sickle cell patients, 2(40%) of the respondents are male and 3(60%) are female.

Table 3: Respondents Gender (Doctors)

Gender	Frequency	Percentage
Male	6	60%
Female	4	40%
Total	10	100%

S/N	Options	Response on how effective is the dissemination of information about drug addiction in creating awareness among sickle cell patients in General Hospital Minna, Niger State									
		Agreed (A)		Strongly Agreed (SA)		Disagreed (D)		Strongly Disagreed (SD)		Remarks	
		F	%	F	%	F	%	F	%		
		Q		Q		Q		Q			
1	I believe that being informed about drug addiction is crucial for managing my health as a sickle cell warrior.	13	86.7 %	2	13.3 %	-	-	-	-	A	
2	The information received about drug addiction in sickle cell have increased my knowledge about the risks and consequences of drug addiction.	10	66.7 %	5	20%	-	-	-	-	A	
3	The communication channels used to disseminate information (e.g., pamphlets, workshops) drugs addiction in sickle cell patients is effective.	9	60%	6	40%	-	-	-	-	A	
4	I believe that the information dissemination about drug addiction have help me overcome the challenges faced by sickle cell patients.	1	6.7%	14	93.3 %	-	-	-	-	SA	
5	The information dissemination about drugs addiction for sickle cell patients has encouraged me to seek help or support if I face challenges related to drug addiction.	1	6.7%	14	93.3 %	-	-	-	-	SA	

6	I believe that the dissemination of information about drug addiction has been beneficial for sickle cell patients	9	60%	6	40%	-	-	-	-	A
7	I will make changes in my behaviour or lifestyle as a result of the information dissemination received about drug addiction.	10	66.7%	5	33.3%	-	-	-	-	A

From the data presented in Table 3, it is obvious that the respondents here were Doctors, 6(60%) were male while 4(40%) were female.

RQ1: How effective is the dissemination of information about drug addiction in creating awareness among sickle cell patients in General Hospital Minna, Niger State. Table 4

Key: A=Agreed SA=Strongly Agreed D=Disagreed SD= Strongly Disagreed

Table 4 revealed that Sickle cell patients unanimously agree that being informed about drug addiction is necessary in managing their welfare. 13(86.3%) agreed that being informed about drug addiction is crucial for managing their health as a sickle cell patient, 10(66.7%) agreed that the information they received about drug addiction in sickle cell have increased their knowledge about the risks and consequences of drug addiction, 9(60%) agreed that communication channels used to disseminate information (e.g., pamphlets, workshops) about drugs addiction in sickle cell patients is effective, 14(93.3%) strongly agreed that information dissemination about drug addiction have help them overcome the challenges they face, 14(93.3%) agreed that information dissemination about drugs addiction for sickle cell patients has encouraged them to seek help or support when they face challenges related to drug addiction, 9(60%) agreed that dissemination of information about drug addiction has been beneficial for sickle cell patients, 10(66.7%) agreed that they will make changes in their behavior or lifestyle as a result of the information dissemination received about drug addiction.

RQ2: What is the level of understanding among doctors regarding the method of disseminating information about awareness on causes of drugs addiction among sickle cell patients in General Hospital Minna, Niger State?

EXAMINING THE ROLE OF INFORMATION DISSEMINATION IN...

S/N		Options		Response on the level of understanding among doctors regarding the method of disseminating information about awareness on causes of drugs addiction among sickle cell patients in General Hospital Minna, Niger State							
		High (H)		Very high (VH)		Low (L)		Very low (VL)		Remark	
		F	%	F	%	F	%	F	%		
		Q		Q		Q		Q			
1	To what level are you satisfy with the available resources and information related to drug addiction about sickle cell disease	3	20%	2	13.3 %	7	46.7	3	20	L	
2	To what level do you frequently access educational materials or workshops on drug addiction on sickle cell disease	10	66.7 %	5	20%	-	-	-	-	H	
3	To what level are you confident in recognizing signs and symptoms of drug addiction about sickle cell disease	9	60%	6	40%	-	-	-	-	H	
4	To what level are you satisfied with the current methods employed in disseminating information about drug addiction in sickle cell patients?	7	46.7 %	2	13.3	5	33.3	1	6.7	H	
5	To what level are you satisfy with channels or platforms used for disseminating information about drug addiction in sickle cell patients?	1	6.7 %	14	93.3 %	-	-	-	-	VH	
6	To what level do you believe peer support plays a significant role in enhancing awareness and understanding of drug addiction within the sickle cell patients?	9	60%	6	40%	-	-	-	-	H	

KEYS: Very High-H, High-H, Low-L, Very Low-VL

Table 5 revealed the level of understanding among doctors regarding the method of disseminating information about awareness on causes of drugs addiction among sickle cell patients in General Hospital Minna, Niger State. 7(46.7%) of the respondent are not satisfied with the available resources and information related to drug addiction about sickle cell disease, 10(66.7%) of the respondent frequently access educational materials or workshops on drug addiction on sickle cell disease, 9(60%) agreed to being confident in recognizing signs and symptoms of drug addiction about sickle cell disease, 7(46.7%) are satisfied with the current methods employed in disseminating information about drug addiction in sickle cell patients, 14(93.3%) are satisfied with the channels or platforms used for disseminating information about drug addiction in sickle cell patients, 9(60%) believe that peer support plays a significant role in enhancing awareness and understanding of drug addiction within the sickle cell patients.

RQ3: What is the current prevalence of drug addiction among sickle cell patients in General Hospital Minna, Niger State?

Table .6

S/ N	Options	Response on the respondent on current prevalence of addiction among sickle cell patients in General Hospital Minna, Niger State								Re ma rk
		High (H)		Very high (VH)		Low (L)		Very low (VL)		
		FQ	%	FQ	%	FQ	%	FQ	%	
1	To what level do you think addiction is a common concern among sickle cell patients at General Hospital Minna?	10	66.7	5	20	-	-	-	-	L

2	To what level are you aware about other sickle cell patients struggling with drugs addiction.	11	73.3 %	4	26.7 %	-	-	-	-	H
3	To what extent do you believe Drugs addiction affects the overall sickle cell warrior?	10	66.7 %	5	33.3 %	-	-	-	-	H
4	To what level will you rate support services rendered for sickle cell patients dealing with Drugs addiction	7	46.7 %	2	13.3 %	5	33.3 %	1	6.7 %	H
5	To what extent do you believe lack of awareness contributes to the prevalence of Drugs addiction among sickle cell patients	1	6.7%	14	93.3 %	-	-	-	-	VH
6	To what level would you rate the current prevalence of addiction among sickle cell patients in General Hospital Minna	-	-	-	-	9	60 %	6	40 %	L
7	How often do you engage in discussions with sickle cell patients about Drugs addiction	5	33.3 %	10	66.7 %	-	-	-	-	VH

KEYS: H=High VH=Very high L= Low VL= Very low

Table 6 revealed the level of understanding among doctors regarding the method of disseminating information about awareness on causes of drugs addiction among sickle cell patients in General Hospital Minna, Niger State it can be deduce that 10(66.7%) of the respondent believe that addiction is a common concern among sickle cell patients at General Hospital Minna, 11(73.3%) of the respondent are aware about other sickle cell patients struggling with drugs addiction, 10(66.7%) believe Drugs addiction affects the overall sickle cell warrior, 7(46.7%) of the respondent give high frequency to the support services rendered for sickle cell patients dealing with Drugs addiction, 14(93.3%) of the respondent believe that lack of awareness contributes to the prevalence of Drugs addiction among sickle cell patients, 9(60%) of the respondent agreed that the current prevalence of addiction among sickle cell patients in General Hospital Minna is common, while 10(66.7%) of the respondent said that they often engage in discussions with sickle cell patients about Drugs addiction.

RQ4: What strategies are most effective for disseminating information about drug addiction to sickle cell patients in General Hospital Minna, Niger State

Table 7

S/ N	Options	Response rate on strategies that are most effective for disseminating information about drug addiction to sickle cell patients in General Hospital Minna, Niger State								
		Agreed (A)		Strongly agreed (SA)		Disagreed (D)		Strongly disagreed (SD)		Remark
		FQ	%	FQ	%	FQ	%	FQ	%	
1	I believe that interactive workshops and group sessions are effective strategies for disseminating information about drug addiction to sickle cell patients	10	66.7	5	20	-	-	-	-	A
2	I find written materials, such as pamphlets and brochures, to be effective in conveying information about drug addiction to sickle cell patients	9	60%	6	40%	-	-	-	-	A
3	I think one-on-one counseling sessions are effective for personalized information dissemination about drug addiction to sickle cell patients	10	66.7%	5	33.3%	-	-	-	-	A
4	I believe that digital platforms, such as online resources and webinars, are effective in reaching and informing sickle cell patients about drug addiction.	2	13.3	13	86.7	-	-	-	-	SA
5	I believe peer-led discussions and support groups are effective strategies for disseminating information about drug addiction to sickle cell patients	14	93.3%	1	6.7	-	-	-	-	A

6	I believe that utilizing social media platforms (e.g., Facebook, Twitter) is an effective strategy for disseminating information about drug addiction to sickle cell patients	9	6 0 %	6	40 %	-	-	-	-	A
7	I find the use of multimedia content (e.g., videos, podcasts) to be an effective way to convey information about drug addiction to sickle cell patients	5	3 3 .	10	66. 7%	-	-	-	-	SA

KEYS: H=High VH=Very high L= Low VL= Very low

From table 7, it revealed that 10(66.7%) of the respondent agreed that interactive workshops and group sessions are effective strategies for disseminating information about drug addiction to sickle cell patients, 9(60%) of the respondent agreed that written materials such as pamphlets and brochures, to be effective in conveying information about drug addiction to sickle cell patients, 10(66.7%) of the respondents agreed that one-on-one counselling sessions are effective for personalized information dissemination about drug addiction to sickle cell patients, 13(83.7%) of the respondents strongly agreed that digital platforms, such as online resources and webinars are effective in reaching and informing sickle cell patients about drug addiction, 14(93.3%) of the respondent agreed that peer-led discussions and support groups are effective strategies for disseminating information about drug addiction to sickle cell patients, 9(60%) of the respondents agreed that utilizing social media platforms (e.g., Facebook, Twitter) is an effective strategy for disseminating information about drug addiction to sickle cell patients, 10(66.7%) of the respondents strongly agreed that multimedia content (e.g., videos, podcasts) to be an effective way to convey information about drug addiction to sickle cell patients.

Discussion of the Findings

Table 4 and 5 showed that dissemination of information about drug addiction among sickle cell patients in General Hospital Minna is effective. Most of the respondents agreed that information on drug addiction changed their behaviour towards managing the disease, helped them in facing the challenges of the disease and also the risk involved in misuse of painkillers. It also revealed the use of some communication channel such as pamphlets, workshops in disseminating information. However, doctors in General Hospital Minna expressed dissatisfaction with the available resources and information related to drug addiction in sickle cell disease. The result also showed that the Doctors are quite satisfied with the current methods and channels employed in delivering information on drug addiction for sickle cell disease and agreed that peer support plays a crucial role in improving awareness and understanding of drug addiction within sickle cell patients.

Table 6 and 7 revealed various channels and platforms suitable for conveying information on drug addiction among sickle cell patients. Interactive sessions like workshops, group session, pamphlets and brochures are effective methods in conveying information on drug addiction.

Counselling was identified as a method of passing information on a personal level, social media such as twitter, facebook as well as multimedia content like podcast, videos were all found to be effective means of communicating information on drug addiction among sickle cell patients.

This findings is supported by Obeagu and Adias (2024) findings on the role of social media as a tool for sickle cell disease awareness. Social media platforms provide the space for peers to connect, share experiences and access information in real-time providing a sense of belonging and empowerment. Through online support groups, hashtags and virtual communities, individuals can find validation, encouragement and practical advice from others facing similar challenges, fostering resilience and improving coping strategies.

Conclusion

A good number of respondents acknowledged that information dissemination about drug addiction among sickle cell patients has not only aided in managing their health but also played a crucial role in overcoming personal challenges, fostering positive behaviour and lifestyle changes. A significant number of doctors express satisfaction with current information dissemination methods and show confidence in identifying addiction, dissatisfaction exists with the available resources for disseminating information. The study also provides insight into doctors' awareness and concerns regarding drug addiction among sickle cell patients, some doctors perceive addiction as a common issue exacerbated by the daily pain faced by sickle cell patients, acknowledging its impact on their overall well-being. Effective strategies for disseminating information about drug addiction to sickle cell patients, as identified by doctors, these strategies encompass interactive workshops, written materials, one-on-one counselling, digital platforms, peer-led discussions, and multimedia content. Although the study was limited to doctors and sickle cell patients in General Hospital Minna, Niger state. Overall, the findings underscore the multifaceted nature of addressing drug addiction in sickle cell patients and the importance of comprehensive and varied information dissemination strategies. This study contributes significantly to the field of librarianship by illuminating the critical role of information professionals in addressing health crisis through targeted information dissemination strategies. Specifically, it explores the connection between health information services and drug addiction awareness among individuals living with sickle cell disease.

Recommendations

Based on the findings of the study, the following recommendation were made:

1. The ministry of health should allocate additional resources to improve the availability and accessibility of information on drug addiction for sickle cell patients.
2. The ministry of health should implement a diverse range of information dissemination methods, considering the preferences and needs of sickle cell patients, such as interactive workshops, written materials, one-on-one counselling, digital platforms, peer-led discussions, and multimedia content to ensure comprehensive coverage.
3. A collaboration between healthcare providers, researchers, and community organizations to enhance the effectiveness of information dissemination among sickle cell patients ensuring open communication channels to address the concerns and needs of both sickle cell patients and healthcare professionals.

4. Ministry of education should develop and implement awareness initiatives to educate both sickle cell patients and the broader community about the risks and consequences of drug addiction, this could involve community outreach programs, educational campaigns, and collaboration with schools and local institutions.

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