

**CHALLENGES FACED BY HEALTH WORKERS IN PREVENTING IMMUNE - DEFICIENCY DISORDERS AMONG PATIENTS IN GULU REGIONAL REFERRAL HOSPITAL. A CROSS SECTIONAL STUDY.**

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**Abstract**

**Background**

Immuno-deficiency disorders are conditions that impair the immune system's ability to defend the body against foreign or abnormal cells that invade or attack the body. The study aims to assess the Challenges faced by health workers in preventing Immuno-deficiency disorders among patients in the Gulu Regional Referral Hospital.

**Methodology**

The study considered a cross-sectional study where both quantitative and qualitative data collection methods to collect data from 30 respondents.

**Results**

The major challenges faced by the health workers were low attitude and willingness to focus on the prevention of immune deficiency disorders and low socioeconomic status. 17(56.7%) were not willing to sensitize patients to immune deficiency disorders, followed by 11(36.7%) of the respondents said they were willing and only 02(6.7%) said they never support. 30(100%) said health workers are required to have a good attitude towards sensitizing patients to immuno-deficiency disorders. 29(96.7%) said yes, while 01(3.3%) said no to the statement low socio-economic status hinders proper maintenance of a good immune system. As to whether it was true or false that patients who have a high misconception about immune deficiency disorder will have poor maintenance of their immune system, the majority 27(90%) said yes, while 03(10%) said no. The majority of respondents 16(53.3%) worked for only less than 2 years on patients with immuno-deficiency disorders, followed by 10(33.3%) of them who worked for 6-10 years.

**Conclusion**

The health workers at Gulu Regional Referral Hospital have a wide range of avoidable limitations that make them unable to effectively participate in the prevention of Immuno-deficiency disorders among patients which puts most patients at risk.

**Recommendation**

The health management team of GRRH should design a work plan that allows health workers to obtain regular training to improve their capacity in handling patients with immuno-deficiency disorders.

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**Keywords:** *Immunodeficiency disorders, Health workers, Gulu regional referral hospital*

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**Background of the study**

Immuno-deficiency disorders are conditions that impair the immune system's ability to defend the body against foreign or abnormal cells that invade or attack the body such as bacteria, viruses, fungi, and cancer cells. This type of disorder makes it easier for you to catch viruses and bacterial infections (Modell, 2018). Globally, the burden of immuno-deficiency disorders is very common in adults, particularly in Europe, where out of 2700 patients from 23 countries, over 900 patients are found to have immunodeficiency disorders. The global prevalence of the disorder is at 56.4% (Kindle, 2018). The major causes of this are the delays in early diagnosis of the condition early, and patients' inability to report early for diagnosis.

In Africa, immune deficiency disorder among patients in 50 public hospitals indicates 600 patients suffering from diseases as a result of poor immune systems. Cases of more immune deficiency disorders have been witnessed in Ethiopia, Seralione, Garbon, and Liberia. In Algeria and Asia where most hospitals cannot make early assessment and diagnosis of the disorder (WHO, 2020)

World Health Organization reveals that African countries have a poor health system accounting for the 34.3% prevalence of immune-deficiency cases in patients. In Sub-Saharan Africa, the prevalence of the immune-deficiency disorder among patients indicates over 41.1% admitted to hospitals for diseases as a result of weak immunity (Sadeghi, 2015). More than 40% of patients admitted to most hospitals have contracted other diseases due to weak immune systems, documented in

South Sudan and Congo (Sadeghi, 2015). In Uganda, over 51.1% of the patients are experiencing immune deficiency cases of being infected with other diseases (MOH, 2019). The weak immune systems of these patients are attributed to poor diet and imbalanced food nutrition in the body. The Ministry of Health has reported delays in early diagnosis of the condition, inadequate knowledge of the health workers, and low community sensitization on mechanisms of improving immunity being responsible for the above high prevalence.

Most diseases of patients visiting Gulu Regional Referral Hospital are a result of weak immune systems with evidence of 23.4% of patients who easily get infected with diseases such as malaria, diabetes, and AIDS among others (Graziano (2017). Cases of immune deficiency in GRRH are attributed to delays in early diagnosis, poor hygiene, prolonged use of antibiotics, and severe burns among others (CDC, 2018). The study aims to assess the Challenges faced by health workers in preventing Immuno-deficiency disorders among patients in the Gulu regional referral hospital.

## **Methodology**

### **Study Design**

The study considered a cross-sectional study where both quantitative and qualitative data collection methods were used. This study design enabled the researcher to get the required data for the study in a feasible manner and within a reasonable time.

### **Study setting**

The study was conducted at Gulu Regional Referral Hospital (GRRH). The hospital is located in Gulu City in Northern Uganda. It is situated next to Police Station and it is 170 meters southwest. Nurses who work at GRRH are qualified and are registered fully by registered Uganda Nurses and Midwives Council. This hospital was selected because it is among the well-known large hospitals in Gulu City and they have OPD and general ward where patients suffering from different diseases are diagnosed. This made it a suitable place for the study.

### **Study Population**

This study targeted all health workers working in Gulu Regional Referral Hospital working on patients suffering from different diseases like HIV/AIDS, diabetes, and sickle cell among others.

### **Sample Size determination**

The sample consisted of 30 respondents, who were selected from Gulu Regional Referral Hospital. This is within range of the number recommended by UNMEB research guidelines 2019.

## **Sampling procedure**

A convenience sampling procedure was used by carrying out a survey and identifying health workers who were willing to take part in the study. Detailed explanations about the research were given and a consent form was signed later.

## **Inclusion and exclusion criteria**

### **Inclusion criteria**

All health workers working in GRRH were eligible to participate in the study.

### **Exclusion criteria**

Health workers who were not working on patients with chronic diseases at Gulu Regional Referral Hospital and had not consented to the study were not eligible to participate in the study.

## **The independent variables**

The attitude of health workers towards sensitizing patients on immune-deficiency disorders, factors hindering maintaining of good immune system among patients, and solutions by health workers in prevention and management of immuno-deficiency disorders.

## **The dependent variables**

Challenges faced by health workers in preventing immuno-deficiency Disorders.

## **Research Instruments**

Data was collected using an approved semi-structured questionnaire which comprised of both closed and open-ended questions. The questionnaire was approved during the pilot study to determine the reliability of this instrument.

## **Data Collection Procedure**

A letter of introduction from Lubaga Hospital Training Schools was obtained and submitted to

GRRH and Ethics committee who later granted permission. Permission was granted and the researcher was introduced to the potential respondents. Data was collected by distributing questionnaires to health workers who were willing to participate in the study.

## **Data management**

Data was managed by the researcher herself, the questionnaires were reviewed and summarised to obtain the results. The questionnaire was coded with

numbers and kept safe from access by unauthorized persons.

### Ethical Considerations

Confidentiality was observed during the study and only numbers instead of names were used to identify the respondents. Respondents only participated after signing a consent form. Questionnaires used in the study were not accessible to any person except the research supervisor on request.

### Data analysis and presentation

Data was first tallied manually and later entered, cleaned, and analyzed using Microsoft Excel 2013 computer software. Results were summarized in frequencies and percentages and presented in tables, pie charts, and graphs.

Table 1: Socio- Demographic characteristics (n=30).

Variables	Categories	Frequency	Percentage (%)
Age (in years)	18 – 28	15	50
	29 – 39	07	23.3
	40 – 50	08	26.7
Education status	Primary	09	30
	Secondary	05	16.7
	Tertiary	18	60
	No education	00	6.7
Marital status	Married	09	30
	Single	13	43.3
	Divorced/ separated	08	26.7
Years working as a health worker	Less than 2 years	14	46.7
	2-5 years	01	3.3
	6-10 years	05	16.7
	More than 10 years	11	36.7
Experience working on patients with immunodeficiency disorders	Less than 2 years	16	53.3
	2-5 years	01	3.3
	6-10 years	04	13.3
	More than 10 years	10	33.3

Source: Primary data, 2023

## Results

### Socio-Demographic characteristics of respondents

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Table 1 reveals that the majority 15(50%) of respondents were between the age of 18-28 years, followed by 08(26.7%) between the age of 40-50 years. Findings on education status indicated that the majority 19(60%) of the health workers had obtained a tertiary level of education, most of whom were certificate holders, followed by some health assistance who stopped in primary 09(30%). This means that the majority of health workers were able to understand issues regarding immune-deficiency disorders at GRRH. Furthermore, the study findings also reveal that most of the respondents 13(43.3%) were single, followed by

09(30%) who were married. Most health workers who are single have less experience dealing with immunodeficiency disorders due to lack of exposure. The findings of the study on years of working as health workers indicate that the majority of respondents 14(46.7%) worked for only less than 2 years, followed by 05(16.7%) of those who worked for 6-10 years. This means that most health workers at GRRH had limited working experience and, hence could not understand much about the challenges they faced in preventing immune-deficiency disorders and their solutions. The study findings also indicate that the majority of respondents 16(53.3%) worked for only less than 2 years on patients with immunodeficiency disorders, followed by 10(33.3%) of them who worked for 6-10 years. This means that most health workers at GRRH had limited working experience with patients with immunodeficiency disorders.

**Table 2: Feelings towards sensitizing patients on immune-deficiency disorders (n=30)**

Feelings towards sensitizing patients on immunodeficiency disorders	Category of Respondents	Frequency	Percentage (%)
How do you feel towards sensitizing patients on immune-deficiency disorders	Willing	11	36.7
	Not willing	17	56.7
	I don't support	00	00
	I don't want completely	02	6.7
	<b>Total</b>	<b>30</b>	<b>100%</b>

Source: Primary data, 2023

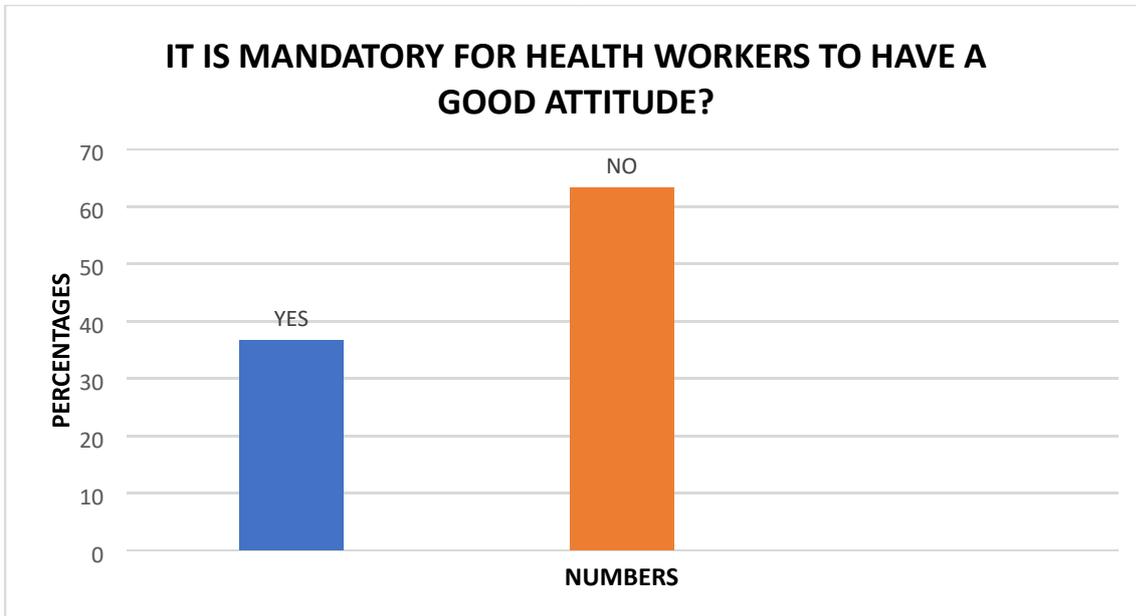
**Table 3: Opinions of health workers whether it's mandatory to have good attitude towards sensitizing patients on immune-deficiency disorders (n=30)**

Variables	Category of Respondents	Frequency	Percentage (%)
Is mandatory for health workers to have good attitude towards sensitizing patients on immune-deficiency disorders?	Yes	11	36.7
	No	19	63.3
	<b>Total</b>	<b>30</b>	<b>100%</b>

Source: Primary data, 2023

Figure 1: Opinions of health workers whether it's mandatory to have good attitude towards sensitizing patients on immune-deficiency disorders

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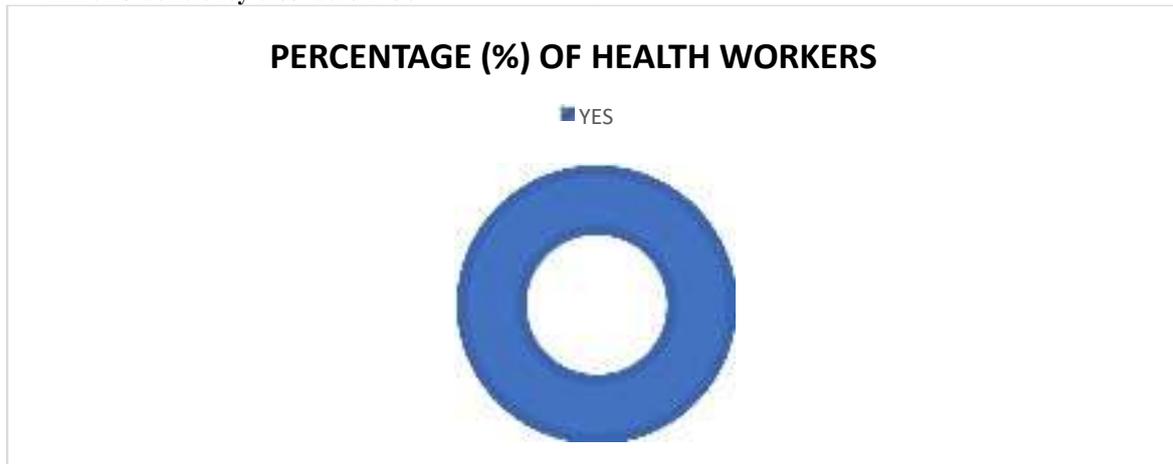
Source: Primary data, 2023

Table 4: Opinions and attitude of health workers towards sensitizing patients on immuno-deficiency disorders (n=30)

Variable	Frequencies	
Yes	30	100
No	0	0.0
<b>Total</b>	<b>30</b>	<b>100</b>

Source: Primary data, 2023

**Figure 2: Health workers are required to have good attitude towards sensitizing patients on immuno-deficiency disorders n=30**



**Attitude of health workers towards sensitizing patients on immuno-deficiency disorders**

**Feelings towards sensitizing patients on immune-deficiency disorders**

Table 2, shows that majority 17(56.7%) were not willing to sensitize patients on immune-deficiency disorders, followed by 11(36.7%) of the respondents said they were willing and only 02(6.7%) said they never support. Most health workers at GRRH who said they were not willing supported their opinions saying they had limited time to do so.

**Opinions of health workers whether it's mandatory to have good attitude towards sensitizing patients on immune-deficiency disorders**

Table 3 and figure 1 show that majority 19(63.3%) said it was not mandatory for health workers to have good attitude towards sensitizing patients on immune-deficiency disorders. This is followed by 11(36.7%) who said it was mandatory. This means that health workers in GRRH have negative attitude towards sensitizing patients on immuno-deficiency disorders.

**Opinions and attitude of health workers towards sensitizing patients on immunodeficiency disorders**

Table 4 and figure 2 show that all 30(100%) the respondents said health workers are required to have good attitude towards sensitizing patients on immuno-deficiency disorders. While none of them said no. This is

an indication that it is a requirement for health workers to have good attitude towards sensitizing patients on immune-deficiency disorders.

**Factors hindering maintaining of good immune system among patients**

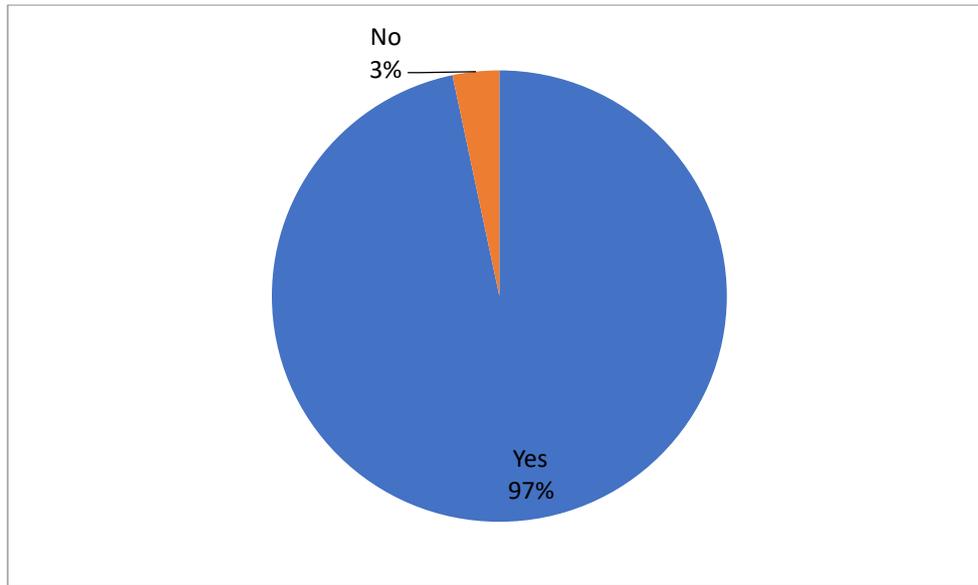
Figure 3, respondents were asked whether low socio-economic status hinders proper maintenance of good immune system. Majority 29(96.7%) said yes, while 01(3.3%) said no. The respondents stated that socio economic status gives capacity for the patients to afford enough balance diet and take good care of them. This is an indication that socio-economic status hinders maintaining a good immune system.

Table 5 and Figure 4, respondents were asked whether if a patient has chronic disease he or she will have a weaker immune system. Majority 28(93.3%) said yes, while 02(6.7%) said no. This confirms that if a patient has chronic disease he or she will have a weaker immune system.

Figure 5, respondents were asked whether lack of awareness by health workers hinders maintaining a good immune system. All the respondents 30(100%) said yes, while none said no. This confirms that lack of awareness by health workers hinders maintaining a good immune system.

Table 6, respondents were asked to state whether it was true or false that patients who have high misconception about immune-deficiency disorder will have poor maintenance of their immune system. Majority 27(90%) said yes, while 03(10%) said no. This shows that patients who have high misconception about immune-deficiency disorder will have poor maintenance of their immune system.

**Figure 3: Low Socio economic status hindering maintaining of good immune system among patients (n=30)**

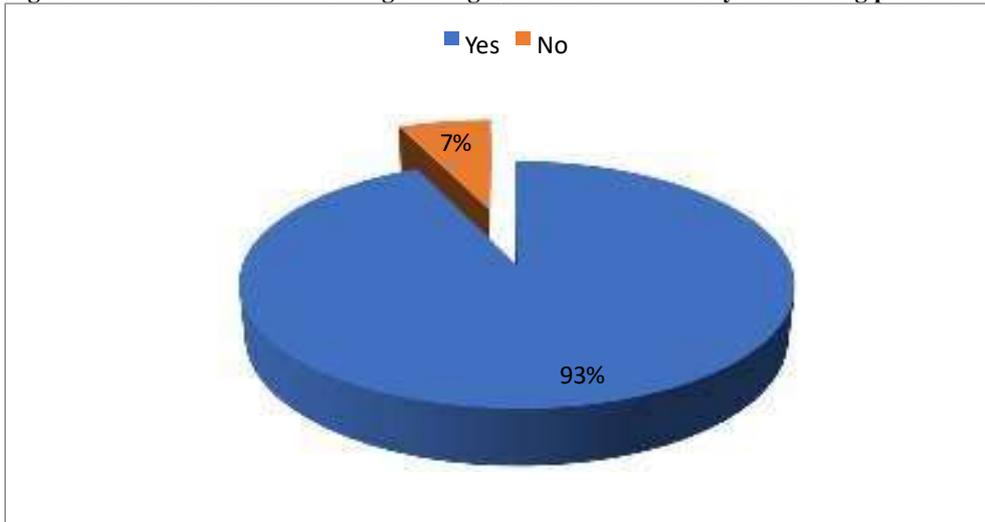


**Table 5: Chronic disease hindering leading to a weaker immune system among patients**

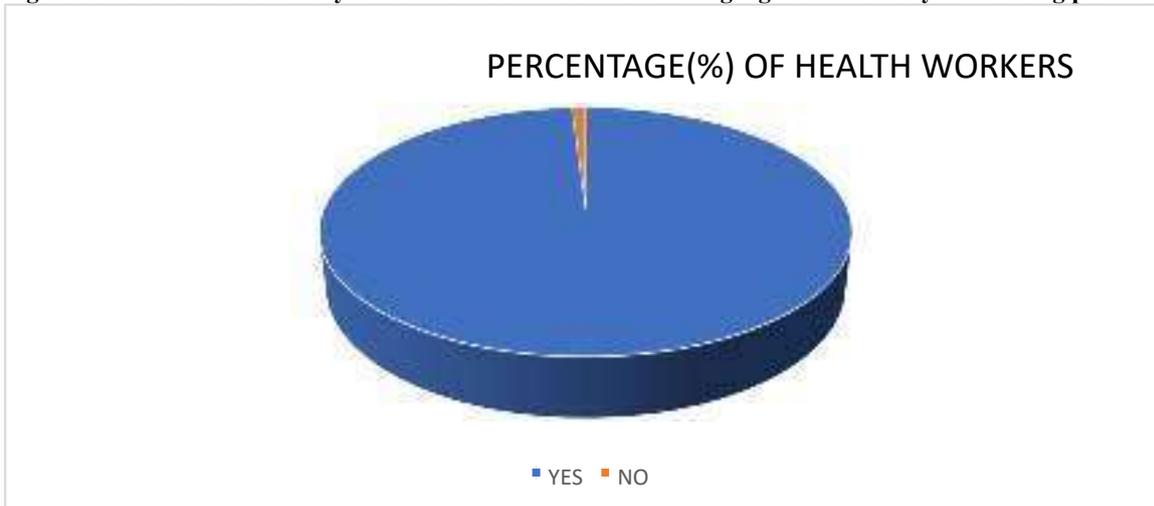
Variable	Frequencies	Percentages (%)
Yes	28	93.3
No	02	6.7
<b>Total</b>	<b>30</b>	<b>100</b>

Source: Primary data, 2023

**Figure 4: Chronic disease hindering leading to a weaker immune system among patients**



**Figure 5: Level of awareness by health workers hinder maintaining a good immune system among patients**



**Table 6: Patients who have high misconception about immune-deficiency disorder will have poor maintenance of their immune system**

Variable	Frequencies	Percentages (%)
True	27	90
False	03	10
<b>Total</b>	<b>30</b>	<b>100</b>

Source: Primary data, 2023

**Table 7: Solutions by health workers in prevention and management of immune deficiency disorders among patients**

Solutions by health workers in prevention and management of immune-deficiency disorders	Category of Respondents	Frequency	Percentage (%)
Compliance with health care guidelines	Yes	27	90
	No	03	10
	<b>Total</b>	<b>30</b>	<b>100%</b>
Educating patients	Yes	17	56.7
	No	13	43.3
	<b>Total</b>	<b>30</b>	<b>100%</b>
Provision of health education on prevention of immune-deficiency orders.	Yes	28	93.3
	No	02	6.7
	<b>Total</b>	<b>30</b>	<b>100%</b>
Hospital visits by individuals for better prevention and management of immuno-deficiency disorders	True	30	100
	False	00	0.0
	<b>Total</b>	<b>30</b>	<b>100%</b>

Source: Primary data, 2023

### Solutions by health workers in prevention and management of immune deficiency disorders among patients

Table 7, respondents were asked about the solutions by health workers in the prevention and management of immune deficiency disorders. The study findings indicate that the majority 27(90%) of the respondents said compliance with health care guidelines, saying following guidelines providers will enable health workers to know the key indicators of an improved immune system. While 03(10%) respondents said no. This shows that compliance with healthcare guidelines can be used in the prevention and management of immune deficiency disorders.

The study findings also indicate that 28(93.3%) of the respondents said educating patients can be used in the prevention and management of immune deficiency disorders. Most respondents said that when patients are educated they will know what to do. While 13(43.3%) said no.

Respondents were also asked whether organizing meetings with pregnant mothers improves home delivery, the majority 28(87.5%) said the provision of health education on disease management to clients by health workers can be used in the prevention and management of immune deficiency disorders and 02(6.7%) said no. This means that the provision of health education on disease management to clients by health workers can be

used in the prevention and management of immune deficiency disorders.

Finally, respondents were asked whether hospital visits by individuals for better prevention and management of immune-deficiency disorders can be used in the prevention and management of immune-deficiency disorders. All 30(100%) of the respondents said yes and no one said no. Therefore, hospital visits by individuals for better prevention and management of immunodeficiency disorders can be used by health workers at GRRH.

### **Other solutions by health workers in the prevention and management of immune deficiency disorders among patients**

Respondents' opinions regarding other solutions by health workers in the prevention and management of immune deficiency disorders among patients at GRRH were described as;

Most health workers stated that there should be routine supervision of all health workers working on patients with immune deficiency disorders. This will improve their ability to improve on immune systems of patients.

Some of the respondents also stated that the health facilities should carry out regular training and workshops with health workers on issues regarding the management and administration of immune-deficiency disorders.

## **Discussion**

### **Socio-demographic information of respondents**

The findings of the study regarding the age of respondents reveal that the majority 15(50%) of respondents were between the age of 18-28. Health workers of this age bracket have less work experience. Regarding the education status of respondents, 19(60%) of the health workers had obtained a tertiary level of education, most of whom were certificate holders. This shows that Health workers were quite knowledgeable about the prevention of immunodeficiency disorders. The findings also reveal that some of the respondents 13(43.3%) were single. This means that they were dedicated to work but had limited time for sensitization while on duty. The years of experience of health workers reveals that some of the respondents 14(46.7%) worked as health workers for only less than 2 years. Health workers at GRRH are quite experienced but have no time due to the overwhelming number of patients they treat. The findings further revealed that other respondents 16(53.3%) worked for only less than 2 years on patients with immunodeficiency disorders. This means that most health workers at GRRH had limited working experience with patients with immune deficiency disorders.

### **Attitude of health workers toward sensitizing patients to immune-deficiency disorders**

The findings reveal that the majority 17(56.7%) of respondents are not willing to sensitize patients to immune-deficiency disorders. The findings of the study agree with Caporale et.al, (2018) in the findings from health workers which indicate that they are not willing to sensitize patients to immune-deficiency disorders since patients are not always willing to attend to them. The findings of the study also revealed that the majority 19(63.3%) said health workers didn't need to have a good attitude towards sensitizing patients to immune-deficiency disorders, saying most patients are not willing to be sensitized. Some of them also said the health workers have limited time to do so. However Barragan, (2019) strongly encouraged that it is very mandatory to sensitize patients to immune-deficiency disorders. The findings of the study also show that health workers have poor attitudes toward sensitizing patients to immune deficiency disorders. The study finding agrees with Caporale et.al, (2018) who reported poor attitudes of health workers toward sensitizing patients to immune-deficiency disorders. The findings of the study reveal that the majority 30(100%) of the respondents said health workers are required to have a good attitude towards sensitizing patients to immune-deficiency disorders.

### **Factor hindering maintaining of good immune system among patients**

In the majority 29(96.7%) low socio-economic status of a patient hinders maintaining a good immune system. The finding is in line with Callan et. al., (2018) who explain that the low social-economic status of people is responsible for the improper maintenance of a good immune system. The majority 28(93.3%) of respondents also stated that if a patient has a chronic disease they will have a weaker immune system. The study finding is in line with Andreasen et.al, (2019) who revealed that patients with debilitating diseases such as diabetes mellitus, also those with chronic diseases like HIV have weak immune systems. The study findings note that all respondents 30(100%) lack of awareness by health workers to patients hinder maintaining a good immune system. According to Chackerian et.al. (2019), a lack of awareness and health education to patients and the community hinders the proper maintenance of a good immune system, similar to what was found in the study. The finding of the study also reveals that the Majority 27(90%) said that patients who have high misconceptions about immune-deficiency disorder will have poor maintenance of their immune system. It is similar to a study by Anderson (2019) who posits that misconception of patients is a major hindering cause to maintaining good immunity.

## **Solution by health workers in prevention and management of immune deficiency disorders among patients.**

The study findings reveal that the majority 27(90%) of the respondents said compliance with health care guidelines. This is in line with the WHO (2020) which states that health workers should comply with the guidelines for managing immune-deficiency disorders among patients. The study findings also indicate that 28(93.3%) of the respondents said educating patients can be used in the prevention and management of immune deficiency disorders. This agrees with Abraham (2019) who reveals that continuous health education in the community regarding immune-deficiency disorders and immune system maintenance has improved the maintenance of a good immune system. The study also reveals that the majority 28(87.5%) said the provision of health education on disease management to clients by health workers can be used in the prevention and management of immune deficiency disorders. This is in agreement with Agarwal and Nayak (2018) who emphasize their findings saying when health workers provide health education to patients and the community, they will gain more knowledge on ways of maintaining good immune systems. All 30(100%) of the respondents said hospital visits by individuals for better prevention and management of immuno-deficiency disorders can be used by health workers at GRRH. The findings agree with Agur (2017) who states that health workers need to carry out home visits in the community and conduct community outreach to diagnose health-related problems particularly issues about their immune system.

## **Conclusion**

The health workers at Gulu Regional Referral Hospital have a wide range of avoidable limitations that make them unable to effectively participate in the prevention of Immuno-deficiency disorders among patients which puts most patients at risk. Health workers of GRRH have a negative attitude towards sensitizing patients on immunodeficiency disorders due to limited time. Health workers also thought it was necessary to sensitive patients but had limited time to sensitize patients due to the overwhelming flow of patients. This means that health workers have a poor attitude towards sensitizing patients.

The low socioeconomic status hinders a good immune system. Therefore health workers should encourage patients to visit hospitals early enough to obtain adequate information, proper diagnosis, treatment, and preventive measures.

## **Limitations of the study**

Some health workers could not participate because they were busy attending to patients.

## **Recommendations**

The following are the recommendations based on the findings:

The health management team in GRRH should strengthen supervision and encourage health workers towards a positive attitude, and sensitization to help in the prevention of immunodeficiency disorders.

The health management team of GRRH should design a work plan that allows health workers to obtain regular training to improve their capacity in handling patients with immuno-deficiency disorders.

The Ministry of Health should put strong guidelines and standards on the prevention and management of immuno-deficiency disorders.

Health workers should be encouraged by hospital administrators to have a positive attitude toward maintaining the good immune system of patients with immune deficiency disorders.

## **Implication to Nursing Practice**

The study has the following implications:

Health workers especially nurses need to understand the ways of maintaining the proper immune system.

Nurses will be able to change their attitudes towards patients with immuno-deficiency disorders. They will also be able to create time for sensitization on the prevention of immunodeficiency disorders.

Health workers will also understand the value of health educating patients on ways of prevention and maintenance of a good immune system.

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## List of Abbreviations and Acronyms

**AIDS** - Acquired Immune Deficiency Syndrome

**CDC** - Centre for Disease Control

**GRRH** - Gulu Regional Referral Hospital

**HIV** -Human Immune Deficiency Virus

**MOH** - Ministry of Health

**OPD** - Out Patient Department

**UNMEB** - Uganda Nurses and Midwives Examinations Board

**WHO**- World Health Organization

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## Conflict of interest

No Conflict of interest

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