

## Nursing Performance Regarding Care of Children Suffering from Human Immunodeficiency Virus/AIDS

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### Abstract

**Background:** Human immunodeficiency virus (HIV) infection/ acquired immunodeficiency syndrome (AIDS) is one of the serious public health problems with severe impact on various facets of human life. **Aim:** Assessing knowledge, attitude and practice of nurses regarding care of children suffering from HIV/AIDS. **Design:** A descriptive design was utilized. **Setting:** The study was conducted at department number (1), Pediatric Intensive Care Unit (PICU), and dialysis unit in Homyat Hospital in EL-Abassia affiliated to Ministry of Health and Population. **Subject:** A convenience sample which included 100 nurses who are caring of children suffering from HIV/AIDS, also included 68 children suffering from HIV **Tools:** two tools were used to collect data: **1)** A pre designed questionnaire format to assess the characteristics of the study subjects, nurses knowledge, reported nursing care, preventive measure to prevent spread HIV and their attitude. **2)** Nurses practices (observational checklists). **Results:** The majority of the studied nurses had a good knowledge regarding care of children suffering from HIV/AIDS. While more than half of them had a negative attitude. In addition all of them had incompetent practices regarding care of children with AIDS. **Conclusion:** the majority of the studied nurses had a good knowledge. More than half of the studied nurses had a negative attitude. Moreover, all of the studied nurses had incompetent practice regarding care of children with AIDS. **Recommendation:** Provide educational programs about attitude and practice of nurses regarding care of children suffering from HIV/AIDS.

**Key words:** HIV/AIDS, nursing performance and children.

### Introduction

Human Immunodeficiency Virus (HIV) continues to be a major global public health issue, having claimed more than 32 million lives so far. However, with increasing access to effective HIV prevention, diagnosis, treatment and care, including for opportunistic infections, HIV infection has become a manageable chronic health condition, enabling people living with HIV to lead long and healthy lives. There were approximately 37.9 million people living with HIV at the end of 2018. In 2018, 62% of adults and 54% of children living with HIV in low- and middle-income countries were receiving lifelong antiretroviral therapy (ART) (WHO, 2019).

Most children who have HIV got it from their mother when she was pregnant, during the birth process, or from breastfeeding. Women who are tested, and then stick with treatment if they're positive, greatly lower the chance of passing the virus to their babies. This is the best way to prevent HIV in children. Youths are at

high risk of contracting HIV and other sexually transmitted infections (STIs) because of their vulnerability in terms of having multiple short term sexual relationships, incomplete social, emotional and psychological development, tendency to experiment with risky behaviors, financial dependence, age and inconsistent use of condom (Iwoi et al., 2017).

HIV is a retrovirus which attacks CD4 T lymphocytes eventually leading to the death of these cells and severe immunodeficiency of the individual who has acquired the infection. Once the CD4 count becomes too low, host immune defenses cannot fend off opportunistic infections and malignancies. Immune function is typically measured by CD4 cell count. The presence of a CD4 count of less than 200 or an AIDS-defining illness in a patient with HIV is the criteria for a diagnosis of AIDS. Treatment of AIDS is focused on the opportunistic illness or condition and decreasing the HIV viral load and monitoring for an increase in CD4 cells through antiretroviral therapy (ART) (Waymack & Sundareshan, 2019).

An infant may not have any obvious symptoms at first. As the immune system weakens, lack of energy, delayed growth and development, persistent fever, sweating, frequent diarrhea, enlarged lymph nodes, repeated or prolonged infections that don't respond well to treatment, weight loss, and failure to thrive. Symptoms vary from child to child and with age. Children and teens may have: skin rash, oral thrush, frequent vaginal yeast infections, enlarged liver or spleen, lung infections, kidney problems, memory and concentration problems, benign or malignant tumors. Children with untreated HIV are more vulnerable to developing conditions such as: chickenpox, shingles, herpes, hepatitis, pelvic inflammatory disease, pneumonia, meningitis (*AIDS Info, 2018*).

The most advanced stage of HIV infection is acquired immunodeficiency syndrome (AIDS), which can take from 2 to 15 years to develop if not treated, depending on the individual. AIDS is defined by the development of certain cancers, infections or other severe clinical manifestations (*WHO, 2019*).

Nurses are vital contributors along the continuum of care for patients with HIV/AIDS. It is important assess nursing attitudes towards HIV/AIDS patients to determine if attitudes need to be modified. However, preparing nursing to care for persons with HIV/AIDS safely and effectively is a complex process that involves more than the acquisition of scientific knowledge and the mastery of psychomotor skills (*EL-Nady, 2011*)

### **Aim of the study**

The aim of this study is to assess nursing performance regarding care of children suffering from human immunodeficiency virus/AIDS.

### **Research questions**

- 1- What is the knowledge of nurses regarding care of children suffering from HIV/AIDS?
- 2- What are the attitudes of nurses regarding care of children suffering from HIV/AIDS?
- 3- What are the practices of nurses regarding care of children suffering from HIV/AIDS?

### **Subject and Methods**

#### **1-Technical design:**

Technical design for the current study was included research design, setting of the study, sampling and tools of data collection for study

#### **Research Design:**

A descriptive design was used.

#### **Setting:**

This study was conducted at department number (1), Pediatric Intensive Care Unit (PICU), dialysis unit at Homyat Hospital in EL-Abassia, affiliated to Ministry of Health and Population (MOHP).

#### **Subject**

A convenient sample comprised of 100 nurses working with HIV children who attended the previously mentioned setting.

For children: the sample composed of 68 children with HIV. They ranged from 1 year to less than 18 years.

#### **Tools of data collection**

The data were collected through using the following tools:

#### **Tool I: A pre designed questionnaire:**

This tool was designed by researcher based on (*Abolfotouh et al., 2013*) and (*EL Nady et al., 2011*) and modified by the researcher under thesis supervisors. Written in a simple Arabic language to gather data included three parts: on scientific literature review to gather essential data included three parts:

#### **Part I: Socio-demographic data:**

##### **Characteristics of nurses include:**

Age, gender, level of education, previously attending educational or training related program.

##### **Characteristics of children include:**

Age, gender, level of education, diagnosis (early/late), before 3 months or after 3 months, length of illness, medical history, and social level.

#### **Part II: HIV Knowledge Questionnaire:**

To assess nurses knowledge about HIV-disease. The question sheet include 3 parts including the following:

**The first part:** Assessment knowledge of nurses about HIV-disease include the following:

- 1- Definition of AIDS.
- 2- Causes of AIDS.
- 3- Mode of transmission of infection
- 4- Symptoms of AIDS in children.
- 5- Complications of AIDS.
- 6- Supportive treatment.

**The Second part:** Nurse's knowledge regarding reported nursing care of children suffering from AIDS.

- 1- Opportunistic infection.
- 2- Provide adequate nourishment.
- 3- Infection control.

**The Third part:** Nurse's knowledge regarding preventive measure of prevent spread HIV infection

❖ **Scoring system:**

Each question was scored as the following: The correct answer was scored by "one score", and the incorrect answer was scored by "zero". These scores summed-up and converted into a percent score. Poor score (<60%), Average (60<75%) and good level of knowledge (score >75%).

**Part III: AIDS Attitude Scale:**

It was used to assess attitudes of nurses regarding HIV/AIDS children patients, this part was used 20 questions.

❖ **Scoring system:**

Positive attitude was scored by (1point), and negative attitude was scored by (zero). These scores summed-up and converted into a percent score. Positive Attitude if total score of a nurse is 60%. Negative Attitude if total score of a nurse is less than 60%.

**Tool II: Nurses Practices Scale (observation checklist):**

This tool was designed by the researcher under thesis supervisors, to observe practices of nurses regarding care for children with

HIV/AIDS, there were 12 observational checklist include the following:

- 1- Oral care.
- 2- Skin care.
- 3- Eye care.
- 4-Promote pulmonary health.
- 5-Assessment report.
- 6-General practices.
- 7-Providing health education.
- 8-Emotional support for family and children.
- 9-Nutritional support.
- 10- Preventive measures for infections.
- 11-General infection control.
- 12-Safety measures.

❖ **Scoring system:**

Each nurse observed during applying the mentioned practices, the correct step scored "one", and that incorrect step scored "zero". Then they scored as following: These scores summed-up and converted into a percent score. Competent if the percent score was 80% or more and incompetent if less than 80%.

**Content validity and reliability**

Content validity: It was be done based on result of pilot study and ascertained by a jury of three expertise from Pediatric Nursing to test its content validity by reviewing the tools clarity, relevance, comprehensives, simplicity and applicability for reliability test-retest was done (0.835).

**2- Operational Design**

The operational design for this study consisted of three phases, namely the preparatory phase, pilot study, and fieldwork.

**Preparatory Phase:**

This phase included reviewing of literature related to the performance of nurses regarding care of children suffering from HIV/AIDS by using books, articles, journals, and internet. This served to develop the study tools for data collection.

**Ethical Considerations:**

The research approval obtained from the Ethical Committee before starting the study.

Verbal approval obtained from the nurses before participation in the study; a clear and simple explanation given. They secured that all the gathered data was confidential and used for research purpose only. The nurses informed that they are allowed to choose to participate or not in the study and they have the right to withdraw from the study at any time.

#### **A pilot study**

A pilot study carried out on 10% (10 Nurses) working in HIV departments in Homyat Hospital in EL-Abassia, affiliated to (MOHP) in order to test the applicability of the constructed tools and the clarity of the included questions related HIV disease in children. The pilot has also served to estimate the time needed for each subject to fill in the questions. According to the results of the pilot, no modifications of the tool after pilot study. The pilot participants were included in the main study sample.

#### **Fieldwork:**

The data was collected from the previously mentioned setting by using the previous study tools in a period of seven months starting from the beginning October 2018 until the end of April 2019, The researcher has collected data at 3 days / weekly (Sunday, Monday and Wednesday) from 9 a.m. to 2 p.m. Data were collected throughout two tools at the first every nurse was interviewed individually for filling the structured interviewing questionnaire sheet. The time required for each nurse for answering the personal characteristic sheet was about 2-3 minutes. The questionnaire sheet was completed over a period of about 10 - 15 minutes. The time for observational checklist ranges from 9 a.m. to 2 p.m.

#### **3-Administrative Design:**

Approval obtained through on issued letter from the Dean of Faculty of Nursing, Ain Shams University to the Director of the previously mentioned setting. The researcher

then explained the purpose and the methods of the data collection.

#### **4-Statistical Design:**

The data obtained was organized, analyzed, and presented in the form of tables and figures using the Statistical Package for Social Sciences (SPSS) version 20. Qualitative variables was presented in the form of frequencies and percentages; quantitative variables was presented in the form mean and SD. Chi square and fishers tests  $\chi^2 = (o-E)^2/E$  were used to test the significance of results obtained. Statistical significant difference was considered at  $P < 0.05$  and insignificant at  $P > 0.05$ .

#### **Result:**

**Table (1):** shows that 50% of studied nurses age was between 30 < 40 years, the mean age was  $32 \pm 6.4$  years, 92% of them were female, 54% of them were nursing diploma degree. In addition, 53% of them has no attended previous training regarding AIDS. Also the years of experience in nursing care of children having AIDS were 5years, with mean  $5.8 \pm 3.9$  years respectively.

**Table (2):** shows that, 52.9% of the studied children were age ranging between 12 to less than 18 years with mean  $\pm$  SD  $10.7 \pm 5.9$  years, 54.4% of them were male. While, 91.2% of them were single and 44.1% of them were illiterate.

**Figure (1):** illustrates that, 86% of the studied nurses have good knowledge.

**Figure (2):** illustrates that, 56% of the studied nurses have a negative attitude. While 44% of the studied nurses have a positive attitude towards the care of children with AIDS.

**Figure (3):** illustrates that, the all of the studied nurse incompetent practices regarding care of children with AIDS.

**Table (3):** illustrates that, there was statistically significant relationship between studied nurses' knowledge and their Level of education, years of experience in nursing care

of children having AIDS ( $P < 0.05$ ). While, there was statistically insignificant relationship between studied nurses' knowledge and their age, gender and attained previous training program about AIDS ( $P > 0.05$ ).

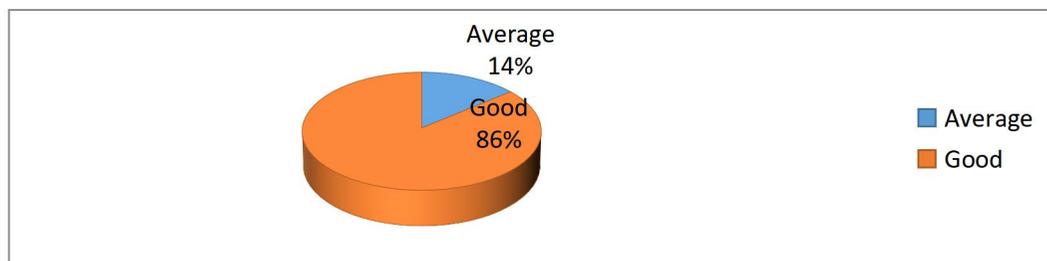
**Table (4):** illustrates that, there was statistically significant relationship between studied nurses' attitude and their attained previous training ( $P < 0.05$ ). While, there was statistically insignificant relationship between studied nurses' attitude and their age, gender

**Table (1):** Distribution of studied nurses according to their Characteristics (n=100).

Nurses' characteristics	Total number = 100	
	No.	%
<b>Age/ years</b>		
20 - < 30	40	40.0
30 - < 40	50	50.0
40 - < 50	10	10.0
<b>Mean <math>\pm</math> SD</b>	<b>32 <math>\pm</math> 6.4</b>	
<b>Gender</b>		
Male	8	8.0
Female	92	92.0
<b>Level of education</b>		
Nursing Diploma degree.	54	54.0
Technical Health Institute Diploma.	32	32.0
Bachelor of nursing	14	14.0
<b>Attained previous training program about care of children having AIDS.</b>		
Yes	41	41.0
No	59	59.0
<b>Years of experience in nursing care of children having AIDS.</b>		
Less than 5 years	53	53.0
5 - < 10 years	29	29.0
10 - $\leq$ 15 years	18	18.0
<b>Mean <math>\pm</math> SD</b>	<b>5.8 <math>\pm</math> 3.9</b>	

and years of experience in nursing care of children having AIDS ( $P > 0.05$ ).

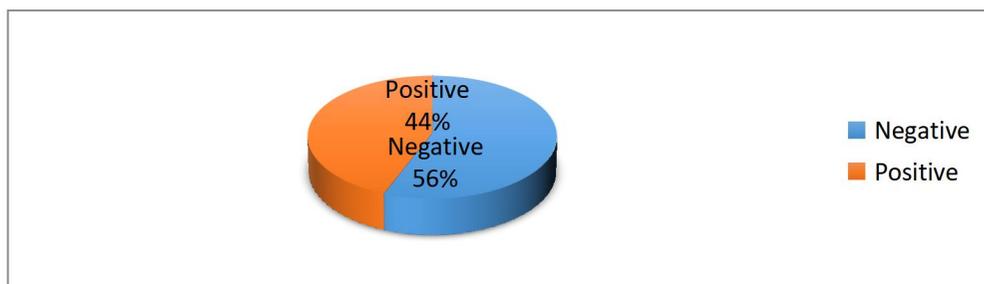
**Table (5):** illustrates the positive correlation between nurses' knowledge and their attitude for children with HIV/AIDS ( $r=0.242$ ). While, there was negative correlation between nurses' knowledge and their practices for children with HIV/AIDS ( $r=0.016$ ). In addition, negative correlation between nurses' attitude and their practices for children with HIV/AIDS( $r=0.078$ ).



**Figure (1):** Percentage distribution of studied nurses according to their total knowledge regarding care of children suffering from AIDS (n=100) AIDS (n=100).

**Table (2):** Distribution of studied children according to their Characteristics.

Children' characteristics	Total number = 68	
	No.	%
<b>Age/ years</b>		
1- < 3	11	16.2
3 - < 6	9	13.2
6 - < 12	12	17.7
12 - ≤ 18	36	52.9
<b>Mean ± SD</b>	<b>10.7 ± 5.9</b>	
<b>Gander</b>		
Male	37	54.4
Female	31	45.6
<b>Marital status</b>		
Single	62	91.2
Married	6	8.2
<b>Level of education</b>		
Illiterate	30	44.1
Primary	18	26.5
Preparatory	5	7.4
Secondary	11	16.2
Technical	4	5.9

**Figure (2):** Distribution of studied nurses according to their total attitude regarding care of children suffering from AIDS (n=100).**Figure (3):** Distribution of studied nurses according to their total practices regarding care of children suffering from AIDS.

**Table (3):** Relation between nurses' characteristics and their total knowledge regarding care of children suffering from AIDS.

Nurses' characteristics	Nurses' total knowledge				Chi-square	
	Average		Good		X <sup>2</sup>	P value
	NO	%	NO	%		
<b>Age/ years</b>						
20 < 30	6	15	34	85	0.498	0.779
30 < 40	6	12	44	88		
40 < 50	2	20	8	80		
<b>Gender</b>						
Male	0	0	8	100	Fisher's	0.596
Female	14	15.2	78	84.5		
<b>Level of education</b>						
Nursing diploma degree.	8	14.8	46	15.2	2.909	0.234
Technical Health Institute Diploma.	6	18.8	26	81.2		
Bachelor of nursing	0	0	14	100		
<b>Attained previous training program about palliative care.</b>						
Yes	7	17.1	34	82.9	Fisher's	0.561
No	7	11.9	52	88.1		
<b>Years of experience in nursing</b>						
Less than 5 years	8	15.1	45	84.9	5.572	0.062
5 < 10 years	1	3.4	28	96.6		
10 ≤ 15 years	5	17.8	13	72.2		

Statistically insignificant differences (P > 0.05)

**Table (4):** Relation between nurses' characteristics and their total attitude regarding care of children suffering from AIDS.

Nurses' characteristics	Nurses' total attitude				Chi-square	
	Negative		Positive		X <sup>2</sup>	P value
	NO	%	NO	%		
<b>Age/ years</b>						
20 < 30	24	60	16	40	5.844	0.055
30 < 40	30	60	20	40		
40 < 50	2	20	8	80		
<b>Gender</b>						
Male	6	75	2	25	Fisher's	0.460
Female	50	54.3	42	45.7		
<b>Attained previous training program about palliative care.</b>						
Yes	21	51.2	20	48.8	Fisher's	0.539
No	35	59.3	24	40.7		
<b>Years of experience in nursing</b>						
Less than 5 years	34	64.2	19	35.8	3.783	0.151
5 < 10 years	15	51.7	14	48.3		
10 ≤ 15 years	7	38.9	11	61.1		

Statistically insignificant differences (P > 0.05)

**Table (5):** Correlation between the studied nurses' total knowledge, total practices and their attitude regarding care of children suffering from AIDS.

Items	Total nurses' knowledge		Total nurses' attitude	
	R	P	R	P
Total nurses' performance	0.016	0.016	0.078	0.441
Total nurses' attitude	0.242	0.015*	-	-

\*Correlation is significant at p < 0.05

## Discussion

Pediatric HIV is a major world health problem, which is progressing at an alarming rate. Children infected with HIV usually have higher viral load, weaker immune system, variable latency period, fewer opportunistic infections and fewer medicines approved for management. Knowledge of the clinical profile in HIV infected children will help in better understanding of the disease and management *Ravichandra et al., (2017)*.

Regarding the age of the studied nurses, the present study revealed that half of them were aged from 30 to less than 40 years, with mean age of  $32 \pm 6.4$  years, most of them were females. From researcher point of view that older nurses had higher level of knowledge.

These results were in agreement with those of *Boakye & Mavhandu, (2019)* who studied "Nurses knowledge, attitudes and practices towards children patients with HIV and AIDS" stated that the mean age of the studied nurses was  $31.2 \pm 6.7$  and the great majority of studied nurses were female.

Regarding level of education of studied nurses, the present study findings revealed that, more than half of them had nursing diploma. From researcher point of view this may have been due to the fact, that the nursing institutes provide the health agencies with large numbers of graduated diploma nurses, when compared to nursing faculties.

This result was supported by research study about "Diffusion of HIV/AIDS knowledge, positive attitudes, and behaviors through training of health professionals" by *Wu et al., (2014)* who found that, more than two fifths of nurses had diploma degree and work as staff nurses. While this result was in disagreement with *Watkins & Gray, (2016)* about "Human immunodeficiency virus/acquired immune deficiency syndrome: A survey of the knowledge, attitudes, and beliefs of Texas registered nurses" who mentioned that the educational degree of most participants' nurses in their study was bachelor and rests of them were master.

Concerning children characteristics, the findings revealed that more than one third of them were in 15 less than 18 years old with mean  $10.7 \pm 5.9$  years. Moreover, the current study revealed more than half of studied children were males, and nearly to half of children were illiterate.

This was in an agreement with the study results of *Agarwal et al., (2014)* about "Correlation between clinical features and degree of immunosuppression in HIV infected children" and reported that, vertical transmission was predominant route of transmission during first 15 years of life and more common in male. On the other hand, this finding supported by the finding of *Ravichandra et al., (2017)* about "Opportunistic infections in HIV infected children and its correlation with CD4 count". Who reported that majority of children were more than 7 years, more than half of the children were males, in the study about "opportunistic infections in HIV infected children and its correlation with CD4 count".

As regard the total scores of nurses' knowledge regarding HIV/AIDS, the current study found that, the majority of studied nurses had a good knowledge. From the researcher point factors positively influencing levels of knowledge and attitudes were previous experience of providing care to HIV/AIDS patient or knowing someone with the infection, and willingness to provide care to HIV/AIDS patients. Supplementary education is needed to strengthen nurses' knowledge.

This study was unsupported by the finding of *Iwoi et al., (2017)* who studied "Assessment of the Level of Knowledge, Attitude, and Practice with Regard to Care of Children Living with HIV/AIDS among Nursing and Midwifery Students in Cameroon" reported that, the nursing and midwifery students had a moderate level of HIV/AIDS knowledge.

This study was unsupported by the finding of *Uwalaka & Matsuo, (2012)* who studied; "Impact of knowledge, attitude and believes about AIDS on sexual behavioral change among college students" in Nigeria and

reported low level of HIV/AIDS knowledge among college students where they found a large proportion of their sample don't have accurate knowledge regarding HIV/ AIDS.

This study was supported by the finding of *Suominen et al., (2013)* who studied "Nurses' knowledge and attitudes to children with HIV/AIDS--an international comparison between Finland, Estonia and Lithuania" reported that, the whole sample of nurses showing the highest knowledge levels towards patients with HIV/AIDS.

Concerning the Distribution of studied nurses according to their total attitude regarding care of children with AIDS the current study reported that, more than half of the studied nurses had a Negative attitude, while more than one third of them had a Positive regarding care of children with AID.

These results are supported with a study done by *Hassan & Wahsheh, (2016)* who studied "Knowledge and attitudes of Jordanian nurses towards children patients with HIV/AIDS: findings from a nationwide survey" showed the total attitude of participants towards patients with HIV/AIDS was negative.

While these results are supported with a study done by *Montazari, (2015)* who studied "AIDS Knowledge and attitude: result from a population - based survey" in Tehran, reported that the total Nurses experienced in caring for children with AIDS were less fearful and concerned about providing care and had more positive attitudes toward child care.

On assessing total nurses' practice of studied nurses regarding care of children with AIDS, the current study clarified that all nurses had incompetent level of practice regarding care of children with AIDS/HIV.

This result was in agreement with the study done by *Delobelle et al., (2013)* who found that the majority of the studied subjects had poor scores related to caring of AIDS children.

This study was unsupported by the finding of *Iwoi et al., (2017)* reported that, the overall level towards care of PLHIV among

nursing and midwifery students was moderate at best.

As regard relations between the studied nurses' characteristics and their total knowledge there was statistically significant relationship between studied nurses' knowledge and their Level of education, years of experience in nursing, years of experience in nursing care of children having AIDS ( $P < 0.05$ ); while, there was statistically insignificant relationship between studied nurses' knowledge and their age, gender, marital status, attained previous training program about palliative care and years of experience in nursing ( $P > 0.05$ ).

Also the same result illustrates that there were a positive correlation between nurses' knowledge and their attitude for children with HIV/AIDS ( $r=0.242$ ).while, there are negative correlation between nurses' knowledge and their practices for children with HIV/AIDS( $r=0.016$ ). In addition, negative correlation between nurses' attitude and their practices for children with HIV/AIDS( $r=0.078$ ).

In the same line with the study done by *Shaikh et al., (2016)* in a study about "Knowledge and attitudes of Pakistani medical students towards HIV-positive and/or AIDS patients" reported that there were a significant positive statistical correlations between students' knowledge and their attitude and practices toward children's with HIV/AIDS.

Although in the results of study by *Chen et al., (2014)* report that 96.3 percent of nurses had good knowledge about AIDS, but had a negative attitude to AIDS patients'

This study was unsupported by the finding of *Mulauzi et al., (2011)* reported that, the majority of the sample had a high level of HIV knowledge and had a positive attitude towards caring of HIV/AIDS patients, while there was significant statistical positive correlations between Attitudes and practices toward children's with HIV/AIDS.

In conclusion, may be fear of AIDS transmission persists despite the increased use of recommended precautions is the reason in that the nurses had negative attitude and insufficient practice regarding care of children

having HIV/AIDS, Therefore, in-services training to update on HIV/AIDS knowledge to modify attitudes towards caring of HIV/AIDS patients should be implemented, increase in educational awareness and Helping nurses deal with their concerns about caring for persons with AIDS has Important.

### Conclusion

Based on the study finding it concluded that, the majority of the studied nurses have a good knowledge regarding care of children suffering from HIV/AIDS. More than half of the studied nurses have a negative attitude. Moreover, all of the studied nurses incompetent practices regarding care of children with AIDS. There was the positive correlation between nurses' knowledge and their attitude for children with HIV/AIDS. While, there was negative correlation between nurses' knowledge and their practices for children with HIV/AIDS. In addition, negative correlation between nurses' attitude and their practices for children with HIV/ AIDS.

### Recommendations:

**Based on the finding of this study, the following recommendation are proposed:-**

- 1-Provide educational programs about attitude and practices of nurses regarding care of children suffering from HIV/AIDS.
- 2-Providing health education programs in schools to raise students' awareness about HIV/AIDS and its prevention, instilling values in the souls and paying attention to proper sexual education regarding homosexual practices among young people.

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