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INDIVIDUAL FACTORS CONTRIBUTING TO POOR INVENTORY MANAGEMENT OF MEDICINES AMONG HEALTH WORKERS AT SOROTI REGIONAL REFERRAL HOSPITAL, SOROTI DISTRICT. A CROSS-SECTIONAL STUDY.

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Abstract

Background

To deliver quality health services, safe, effective, affordable, and quality medicines are needed. The study aims to assess the Individual factors contributing to poor inventory management of medicines among health workers at Soroti Regional Referral Hospital, Soroti district.

Methodology

A descriptive cross-sectional study in which a Purposive sampling technique was used to select 50 respondents. Data was analyzed manually by use of tally sheets, processed and analyzed using a simple electronic computer to compute frequencies and percentages.

Results

(60%) of the respondents were females whereas (40%) of the respondents were males. Most (48%) of the respondents were between 36-45 years whereas the least (6%) were 18-25 years. The majority (94%) of the respondents had ever taken integrated pharmaceutical logistics system (IPLS) training, pre-service training, and on the job. the majority (64%) of the respondents had work experience greater than 10 years. (86%) of the respondents were happy with working in the pharmacy. (68%) of the respondents were trained or oriented in EMLIP. (94%) of the respondents had ever experienced stockouts during their working experience.

Conclusion

Most respondents had never experienced stockouts. The majority of the respondents had a recommendable working experience. Some respondents had not taken Integrated Pharmaceuticals Logistics System (IPLS) training, pre-service training, and job training like computer maintenance and HMIS and a small percentage was not happy working in the pharmacy.

Recommendation

The government of Uganda through the Ministry of Health should recruit highly trained, competent, and qualified health workers in Integrated Pharmaceutical Logistics System (IPLS) training, pre-service training, and job training like computer maintenance and HMIS such that good and quality health services are provided to the health workers.

Keywords: *Inventory management, Pharmaceuticals Logistics System, Pre-service training, Medicines.*
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Background

To deliver quality health services, safe, effective, affordable, and quality medicines are needed. Inappropriate storage conditions, poor infrastructure, and poor medicine management practices may lead to poor medicine quality, stock damage, and expiration (Adut Jervase Manyuat, 2021). In MPPD of Rwanda, medicines are still expiring. During five years (from 2014 up to 2018) the total expired products were valued at RWF 6,046,778,655 for all program categories: HIV commodities had the largest share 53.3%, Essential Medicines 22.5%, Malaria 13%, Maternal Child Health commodities 5.7%, Products used for Community health workers 4.5%, TB products 1% and 0.1% for Family Planning products (Theogene Hakuzimana, 2021; Case of the medical procurement and production division Theogene Hakuzimana, 2021).

In health facilities in Oromia Regional State of Ethiopia, the facility's constitution of staff under pharmacy units was; 56.8% pharmacy degree holders and 21.6 % pharmacy diploma holders. About 21.6% of Nurse Diploma holders were serving as store persons in health centers. Almost all of the staff 94.6% have taken integrated pharmaceuticals logistics system (IPLS) training and few of them have taken service training (8.1%) and on-the-job training like computer maintenance and HMIS (5.4%). In government health facilities of Mazabuka district of Zambia, 100% of respondents

enjoyed working in the pharmacy, the majority 66.67% of the respondents were trained or oriented in EMLIP, out of these, and 53.33% stated that they had experienced some stockouts of some medical supplies while 13.33% never experienced any stock-outs during the same period. The last 33.33% of the respondents were not trained in EMLIP and 30% stated that they experienced stockouts of medical supplies while 3.33% of the respondents did not experience any stockouts of the commodities (Mwanangombe, 2019). The study aims to assess the Individual factors contributing to poor inventory management of medicines among health workers at Soroti Regional Referral Hospital, Soroti district.

Methodology

Study design

A descriptive cross-sectional study research design was used to carry out this study. It is descriptive because it provides information about the factors contributing to poor inventory management of medicines among health workers in Soroti Regional Referral Hospital, Soroti District Uganda in a statistical way also. It is cross-sectional because data is collected at one point in time in a short period.

Study Area

Soroti Regional Referral Hospital is situated in the western division, of Soroti district which offers services like forecasting, procurement, storage, and distribution of medicines and medical supplies, dispensing medicines to out and in patients, and counseling patients on proper medicine use.

Time Scope

The research study data collection is to be carried out in February 2023 for one month.

Study population

The study population consisted of pharmacists, pharmacy assistants, pharmacy dispensers, nurses, and clinical officers in Soroti Regional Referral Hospital. This group was chosen because they were involved in medicine inventory management due to the high unavailability of essential medicines through expiry, theft, stockouts, over overstocking of non-essential medicines which were all due to poor inventory management.

Sample size determination

A sample size of health workers in Soroti Regional Referral Hospital was determined using Burton's formula given below, (Burton's 1965).

S=2(QR) O:

Where:

S=required sample size.

Number of days the researcher spent while collecting data.

Maximum number of people per day.

Maximum time the interviewer spent on each participant.

2×5×10×0.5

=50

Therefore, the researcher used 50 respondents.

Study variables

Poor inventory management was the dependent variable whereas the independent variables were the individual-related factors and health system-related factors.

Sampling techniques

A purposive sampling technique was used to select the respondents of the study because some health workers had the desired character.

Data collection tool and pretesting of the questionnaire

A well-organized semi-structured questionnaire, with close-ended questions, was prepared in English by the researcher and questions were interpreted by the health workers. This tool was utilized because it was easy to administer, quick in data collection, and less expensive while collecting data for analysis to address a research problem.

Quality control

The questionnaires were formulated in English language and pretested in Health Center iii, Soroti district.

The major aim was to ensure that they were valid, reliable, and relevant to the study.

Data collection procedure

A letter of introduction was obtained from the Kampala School of Health Sciences and it was taken to Soroti Regional Referral Hospital, Soroti district, Uganda to obtain permission from the hospital administration. After permission was granted, the researcher consented to all the respondents and thereafter, administered the questionnaire.

Data management

The data collected was checked for completeness and locked in a cupboard and the keys were accessed by the researcher.

Data analysis and presentation

Data was analyzed manually by use of tally sheets, processed and analyzed using a simple electronic computer to compute frequencies and percentages (using the Excel computer program); then presented in terms of percentages, distribution tables, pie charts, and bar graphs for easy interpretation of the study findings.

Ethical considerations

Before the collection of data for the study, the proposal was first approved by the research committee of the school. The researcher then sought permission from the administration of the facility to collect data from the

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Original Article

health facility. A consent form was filled out by the respondents after explaining the purpose of the study to them. The respondents were assured of confidentiality as no name appeared on the questionnaire. No participants were forced to participate in the study and all the study materials used during the interview were safely kept under lock and key accessible by the researcher only.

Results

Table 1: HEALTH WORKERS' BIO DATA. (N = 50)

Variables		Frequency (N)	Percentage (%)
Sex	Male	20	40%
	Female	30	60%
Age	18-25	3	6%
	26-35	18	36%
	36-45	24	48%
	45 and above	5	10%
Marital Status	Single	17	34%
	Married	23	46%
	Divorced	4	8%
	Widow/widower	6	12%
Occupation	Certificate holder Nurse	33	66%
	Pharmacist	1	2%
	Pharmacy technician	3	6%
	Diploma holder Nurse	13	26%

Table 1, most (60%) of the respondents were females whereas the least (40%) of the respondents were males. Most (48%) of the respondents were between 36-45 years whereas the least (6%) were 18-25 years. Most (46%) of the respondents were married whereas the least (2%) were widows/widowers.

Individual factors contribute to poor inventory management of medicines among health workers.

Figure 1: Showed whether employees had ever taken integrated pharmaceuticals logistics system (IPLS) training, pre-service training, and on job training like computer maintenance and HMIS. N=50

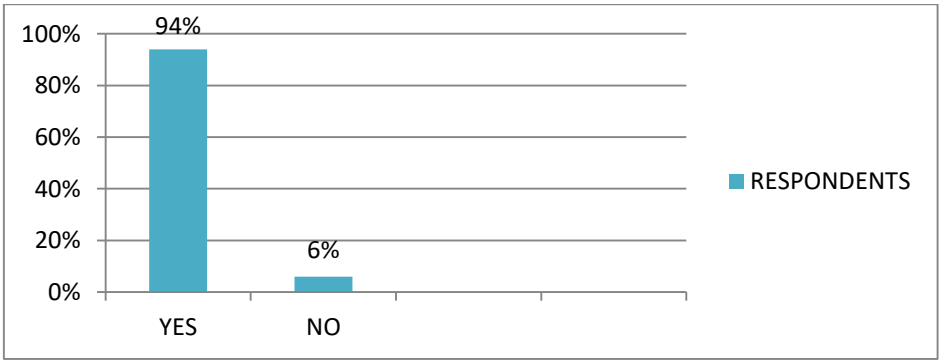

Figure 1 The majority (94%) of the respondents had ever taken integrated pharmaceutical logistics system (IPLS) training, pre-service training, and on job training like computer maintenance and HMIS whereas the least (6%) had not.

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Figure 2: Showed the work experience of the respondents. N=50

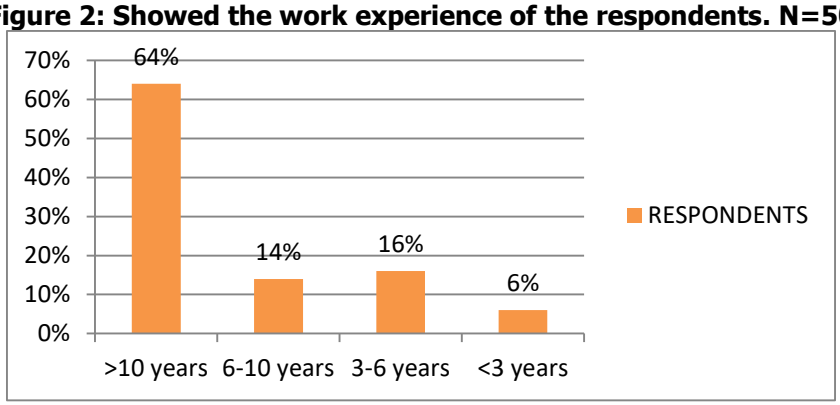

Figure 2, the majority (64%) of the respondents had work experience greater than 10 years whereas the least (6%) of the respondents had work experience below 3 years.

Figure 3: Showed whether respondents were happy working in the pharmacy. N=50

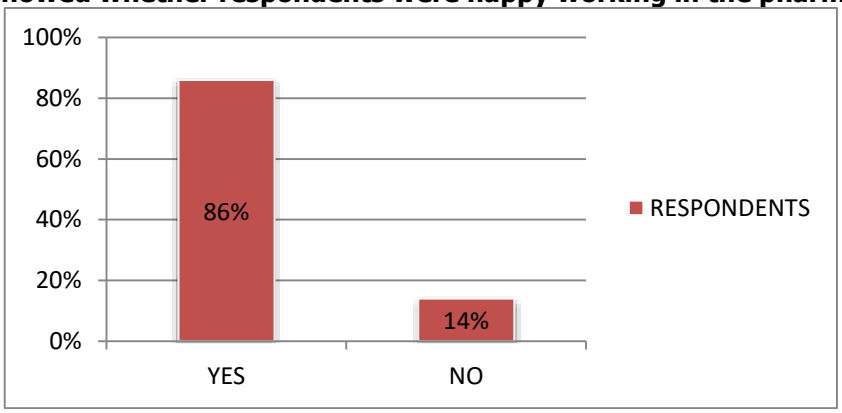

Figure 3, the majority (86%) of the respondents were happy with working in the pharmacy whereas the least (14%) were not happy working in the pharmacy.

Figure 4: Showed whether respondents were trained or oriented in EMLIP. N=50

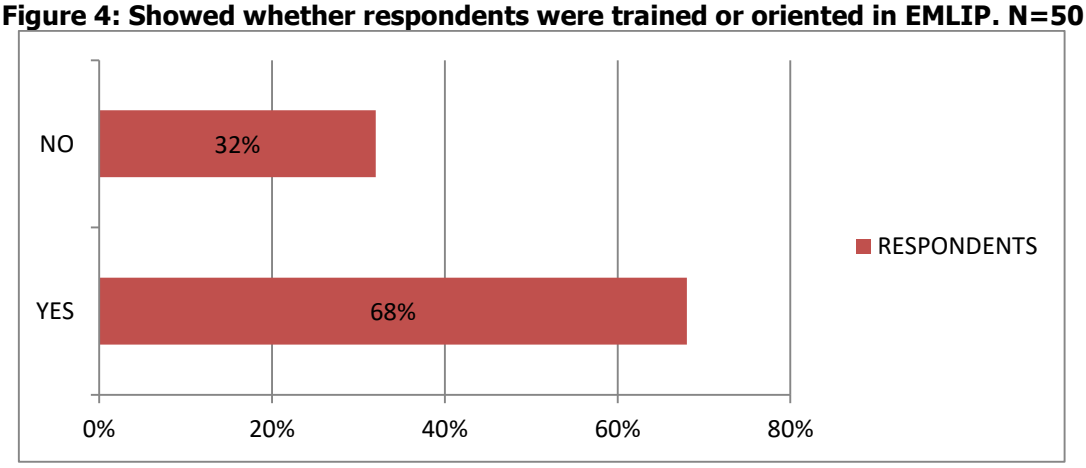

Figure 4, the majority (68%) of the respondents were trained or oriented in EMLIP whereas the least (32%) were not trained or oriented in EMLIP.

Figure 5: Showed had ever experienced stock out during your working experience. N=50

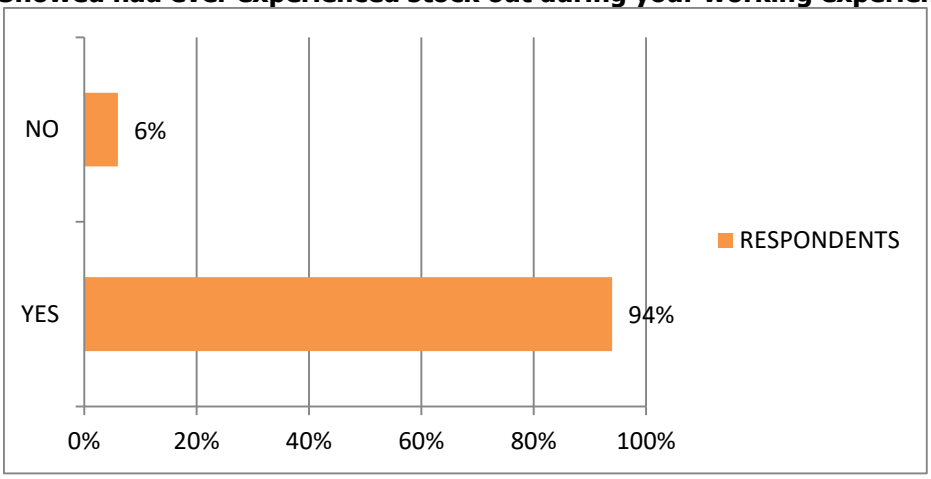

Figure 5, the majority (94%) of the respondents had ever experienced stockouts during their working experience whereas the least (6%) had never experienced stockouts in their working experience.

Discussion

The study results showed that (6%) had not taken integrated pharmaceuticals logistics system (IPLS) training, pre-service training, and on-the-job training like computer maintenance and HMIS. According to the researcher, there is still a very big gap because (94%) of the respondents had ever taken which is in line or agreement with (94.6%) according to (Tadesse Gudeta Gurmu, 2017).

The study results also showed that (6%) of the respondents had work experience below 3 years which contributed to poor inventory management of medicines. According to the researcher, there is still a gap because (64%) of the respondents had work experience greater than 10 years which does not agree with the (25%) of the respondents who had between 6 to 10 years of work experience (Wodajo, 2018).

The study results also revealed that (14%) of the respondents were not happy working in the pharmacy which also contributed to poor inventory management of medicines. According to the researcher, there is still a big gap because (86%) of the respondents were happy working in the pharmacy which is therefore in agreement with the (100%) of the respondents who enjoyed working in the pharmacy according to (Mwanangombe, 2019).

The study results also showed that (32%) of the respondents were not trained or oriented in the Essential Medicines Logistics Improvement Program. According to the researcher, there is still a big gap because the majority (68%) of the respondents were trained or oriented in the Essential Medicines Logistics Improvement Program which is in agreement with (66.67%) of the respondents who were trained or oriented in EMLIP according to (Mwanangombe, 2019).

The study findings showed that the majority (94%) of the respondents had ever experienced stockouts during their working experience. According to the researcher, there is still a gap because (6%) of the respondents had never experienced stockouts during their working experience which is in line with the (3.33%) of the respondents who did not experience any stockouts according to (Mwanangombe, 2019).

Conclusion

Most respondents had never experienced stockouts, Majority had a recommendable working experience above 3 years. Some respondents had not taken Integrated Pharmaceuticals Logistics System (IPLS) training, pre-service training, and job training like computer maintenance and HMIS and a small percentage was not happy working in the pharmacy.

Recommendation

The government of Uganda through the Ministry of Health should recruit highly trained, competent, and qualified health workers in Integrated Pharmaceutical Logistics System (IPLS) training, pre-service training, and job training like computer maintenance and HMIS such that good and quality health services are provided to the health workers.

Acknowledgment

My diploma in pharmacy course and the research process have been a long process that has enabled me to learn from others. It has not been an easy process and therefore, I would like to first give thanks to the Almighty God for His grace and blessings upon my life throughout this process not forgetting my lecturers and course mates, thank you for feeding my mind. Indeed, the Lord is my shepherd, I shall not want. My heartfelt thanks go to my father, Dr. Erechu Sam Richard for his assistance financially, valuable input, support, and encouragement throughout. Your generous support and advice have greatly contributed a lot to the production of this dissertation. Last but not least, I would like to thank my supervisor Mr. Were Amiri for all the time and support

given to me in developing this study, thanks please. You were and you are my great source of strength. Finally, my heartfelt thanks go to the Soroti Regional Referral Hospital administration for allowing me to carry out the research study in their facility and to the study participants for their thoughts, ideas, and feelings with me.
May the Lord reward you abundantly.

Abbreviations

EMLIP: Essential Medicines Logistics Improvement Program
IPLS: Integrated Pharmaceuticals Logistics System

Source of funding

There was no source of funding.

Conflict of Interest

No conflict of interest was declared.

Author Biography

Ivan Emwochu is a student of a diploma in pharmacy at Kampala School of Health Sciences.
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