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Original article

FACTORS CONTRIBUTING TO DISPENSING ERRORS AMONG HEALTH WORKERS AT KAWOLO HOSPITAL, BUIKWE DISTRICT. A DESCRIPTIVE CROSS-SECTIONAL STUDY.

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Abstract

Background

The specific objectives of the study were to determine the; individual factors, health facility-related factors, and medicines-related factors contributing to dispensing errors among health workers.

Methodology

A descriptive cross-sectional study design was used to address the relationship between the study variables from 50 respondents with a simple random technique to select the study participants.

Results.

56% had ever experienced preventable dispensing errors, 75% didn't report it, 54% got tempted to be distracted at work, 66% said the quality of prescription writing of fellow workmates was fair, 72% were satisfied with their jobs, 68% noted that their fellow workmates are friendly and 50% had fair computer skills. 52% didn't have enough dispensers as per the ratio of patients,92% reported that the condition of their working environment was organized, 58% reported that sometimes workmates from different departments accessed the dispensing unit, 70% reported that medicines were assembled on shelves according to pharmaceutical therapeutic order, 60% never had enough space between medicines on shelves in their dispensing units, 90% agreed that the facility had policies related to dispensing.

58% agreed that they had ever experienced drug strength confusion during dispensing, 59% reported endocrine system agents as the classes of medicines they had ever experienced drug strength confusion during dispensing, 78% had never dispensed expired medicines accidentally, 48% had fair labelling strength for medicines, 54% agreed that the packaging of the medicine was decent.

Conclusion

Poor reporting systems, distraction at work, quality of handwriting skills, unauthorized access to dispensing units, inadequacy of dispensers as per the ratio of patients, lack of enough space, and drug strength confusion was factors contributing to dispensing errors among health workers.

Recommendations

Administration should minimize the work overload, limit unauthorized access to dispensing units, and enforce protocol for patient identification and verification of drugs dispensed.

Keywords: Dispensing, dispensing errors, health workers, Submitted: 2023-07-15 Accepted: 2023-08-17

1. Background of the study.

Medical errors such as dispensing errors are mistakes made at the pharmacy when a prescrip-

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tion is being provided. They are classified as content, labelling, and documentation errors (Gale - Institution Finder, 2019). However, about 61.4 million medical-related errors that occur globally and 4.8 million errors that occur in England per annum have the potential to cause moderate or severe harm, respectively (Elliot et al., 2020). This constitutes 27.8% of overall errors. Of these, 66.2 million (71.0%) occur in primary care, of which 22.5 million (33.9%) are in prescribing and 11.6 million (17.5%) in dispensing (Elliot et al., 2020).

Out of the 37 African countries that were members of the WHO Programme for International Drug Monitoring as of December 2020, only 15 (40.5%) had contributed ME reports with 99% (3,874) of these coming from three countries, namely Egypt, Morocco, and South Africa (Puijenbroek & Sabblah, 2022). The top five MEs reported by Med DRA were the inappropriate schedule of product administration (496, 11.6%), incorrect dose administered (11.1%), wrong product administered (7.3%), and product administration error (286, 6.7%) (Puijenbroek & Sabblah, 2022).

Many dispensing errors are made during the various phases of medicine usage in the hospital environment. In Sri Lanka, the high number of dispensing errors included labeling errors 63.1%; prescribing and dispensing errors 20.5%. Clinically significant medication interactions in prescriptions overlooked by pharmacists, 0.5%; documentation errors 10.6%; content errors 4.9%, medications dispensed in unsuitable packaging 0.4% and one case of medication dispensed to the wrong patient (0.01%) (Dilsha et al., 2020).

In Ethiopia, the incidence ranged from 0.1% for wrong drug/medication to 95.8% for drug omitted error (Bifftu et al., 2019). The incidence of each error ranged from 25.5% (29) to 58.5% for wrong time error, 4.2% to 53.7% for wrong dose errors, 0.3 to 40% for wrong route error, 0.4% to 30% for wrong patient error, 0.1% to 33.1% for wrong drug/medication error and 1.4% to 95.8% for omissions (Bifftu et al., 2019).

For the case of Uganda, 18% of healthcare professionals disclosed having made medication errors that had the potential to harm patients, while 41% (542/1323) acknowledged that they had ever identified potentially harmful MEs that were committed by another HCP. The rates of errors were categorized, with 15% prescription errors and 10% dispensing errors (Kiguba et al., 2015).

1.1. General objective.

To determine the factors contributing to dispensing errors among health workers at Kawolo Hospital, Buikwe district.

1.2. Specific objective.

- To determine the individual factors contributing to dispensing errors among health workers at Kawolo Hospital, Buikwe district.
- To determine the health facility-related factors contributing to dispensing errors among health workers at Kawolo Hospital, Buikwe district.
- To determine the medicine-related factors contributing to dispensing errors among health workers at Kawolo Hospital, Buikwe district.

2. METHODOLOGY.

2.1. Study design.

A descriptive cross-sectional study design was used to address the relationship between the study variables in this study. The design was preferred because it helped the researcher in quantifying the distribution of variables in the study population at one point in time.

2.2. Study setting.

The study was carried out from January to February 2023 at Kawolo Hospital which is located along the Jinja highway in the town of Lugazi, Buikwe district approximately 46 kilometers (29 mi) east of Mulago referral hospital. The health facility has a bed capacity of 300 with several departments such as Eye, ART, Dental, Laboratory, pharmacy, antenatal, OPD, Accident and Emergency; wards that include; medical, surgical,

gynecological, and obstetrics, pediatrics, maternity, major and minor theatres plus Nutrition department. The facility receives an average of 300 patients on daily from nearby areas and districts such as Namataba, Walusibi, Nakibizzi, Njeru, Mukono, Jinja, Buikwe, Lugazi, and others.

2.3. Study population.

This was comprised of health workers in Kawolo Hospital, Buikwe district, who were willing to participate in the study.

2.4. Sample size determination.

The sample size was determined using the formula below; QR/O (Burton, 1965)

Where;

Q= total number of days spent in data collection

R= Maximum time taken by the interviewer per day

O= Maximum time taken by the interviewer.

Therefore,

R= 5 Respondents

Q=5 days

O=1/2 Hours QR/O= 5X5/1/2

25x2= 50 Respondents

Therefore, the sample size the researcher used was 50 respondents.

2.5. Study variables.

Variables can be termed as any facet of a theory that can change or vary as part of the interaction within the theory.

2.5.1. Dependent variable.

The dependent variable was dispensing errors.

2.5.2. Independent variables.

Individual, health facility and medicines-related factors contributing to dispensing errors among health workers were the independent variables.

2.6. Selection criteria.

2.6.1. Inclusion criteria.

Health workers from different dispensing units in outpatient and inpatient departments that were present during the period of data collection and ready to consent were inclusively considered to be part of the study.

2.6.2. Exclusion criteria.

The study excluded health workers from different dispensing units in outpatient and inpatient departments who did "t consent voluntarily to participate in the study during the time of data collection.

2.7. Sampling technique.

A simple random sampling technique was used to select the study participants from the source population. The technique was preferred because it helped the researcher to get the statistical analysis related to sample distributions, hypothesis testing, and sample size.

2.8. Data collection methods.

2.8.1. Questionnaire.

Designing the questionnaire is a very important part of the research study. Meaningful responses from the participants can be obtained only if the questionnaire is structured efficiently, taking into consideration important aspects like the reliability and validity of the information requested. For this study, self-administered questionnaires were designed based on the specific objectives of which to collect quantitative data. Therefore, this type of questionnaire was preferred because it helped the researcher to reduce the possibility of getting bias from the respondents.

2.8.2. Observation.

To observe means to examine an object or an individual or group of people or an event with all of the senses. Therefore, the researcher critically observed key areas from different dispensing units such as, how medicines are placed on shelves, labeling, space, health workers on duty, and others. This enabled the researcher to write notes on everything that was observed relating them to the topic under study.

2.9. Data collection procedure.

After approval of the research proposal; an introductory letter from the Kampala School of Health Sciences research committee to the study area was obtained. When permission was granted; two research assistants were trained by the researcher, who then administered the questionnaire to the respondents. Participants who met the inclusion criteria were sampled either to self-administer the questionnaire or interviewed preferably in their dispensing units. Data collection took 20-30 minutes and the process continued until the required sample size was attained.

2.10. Piloting the study.

Pre-tests were carried out on 10 health workers at Mukono hospital and the information gathered was used to rectify and update the data collection tool. The results from the pre-tested questionnaires were not considered in the main study.

2.11. Quality control.

Since the study was carried out during working hours, respondents were given some extra time to self-administer the questionnaire depending on the work schedule to capture relevant information to answer research questions.

Standard operating procedures for coronavirus were strictly followed and maintained during the period of data collection.

2.12. Data management.

Data was analyzed using frequencies; missing values and invalid entries were counter-checked with the responses on the questionnaires for accuracy and where necessary the respondents were contacted for clarification.

2.13. Data analysis and presentation.

Data was analyzed manually; counted by tallying using a pen and A4 sheets of paper to generate the frequencies and percentages and presented on tables, bar graphs, and pie charts.

2.14. Ethical considerations.

After approval of the proposal by the supervisor, permission was sought from the Kampala School of Health Sciences research committee introducing the researcher to the medical superintendent of Kawolo Hospital, seeking permission to carry out the study, with the assurance of confidentiality. Once permission was granted; participants were informed of the purpose of the study and privacy during the interview. Respondents received an explanation of the study before enrolment and only those who were willing to participate were involved. Respondents were free to withdraw from the study at any time and strict confidentiality was observed. Initials and study numbers were used to identify the respondents instead of full names.

3. STUDY FINDNGS.

3.1. Demographic data.

In table 1, from the total sample of 50 respondents, majority of the respondents (60%) were females by gender whereas the minority (40%) were males.

Study findings further revealed that, most of the respondents (40%) were within the age bracket of 25-32 years whereas the least (14%) were within the age bracket of 40-45 years.

Basing on study results, majority of the respondents (52%) were enrolled nurses whereas the least (8%) were pharmacists.

In regards to working experiences, half of the respondents (50%) had worked for a period of 3-4 years at this facility whereas the least (6%) had worked for less than a year at this facility.

3.2. INDIVIDUAL FACTORS CONTRIBUTING TO DISPENSING ERRORS AMONG HEALTH WORKERS.

From figure 1, more than half of the respondents (56%) had ever experienced preventable dispensing errors whereas the least (10%) had never experienced dispensing errors.

Table 1: Shows the distribution of respondents according to their demographic data (N=50)

Gender	**Frequency(f)**	**Percentage (%)**
Male	20	40
Female	30	60
Total	**50**	**100**
Age (years)		
18-24	09	18
25-32	20	40
33-39	14	28
40-45	07	14
Total	**50**	**100**
Marital status		
Single	13	26
Married	31	62
Divorced	5	10
Widowed	1	2
Total	**50**	**100**
Qualiftcation		
Enrolled nurse	26	52
Pharmacy technician	20	40
Pharmacist	4	8
Total	**50**	**100**
Working experience		
Less than a year	3	6
1-2 years	8	16
3-4 years	25	50
5 years and above	14	28
Total	**50**	**100**

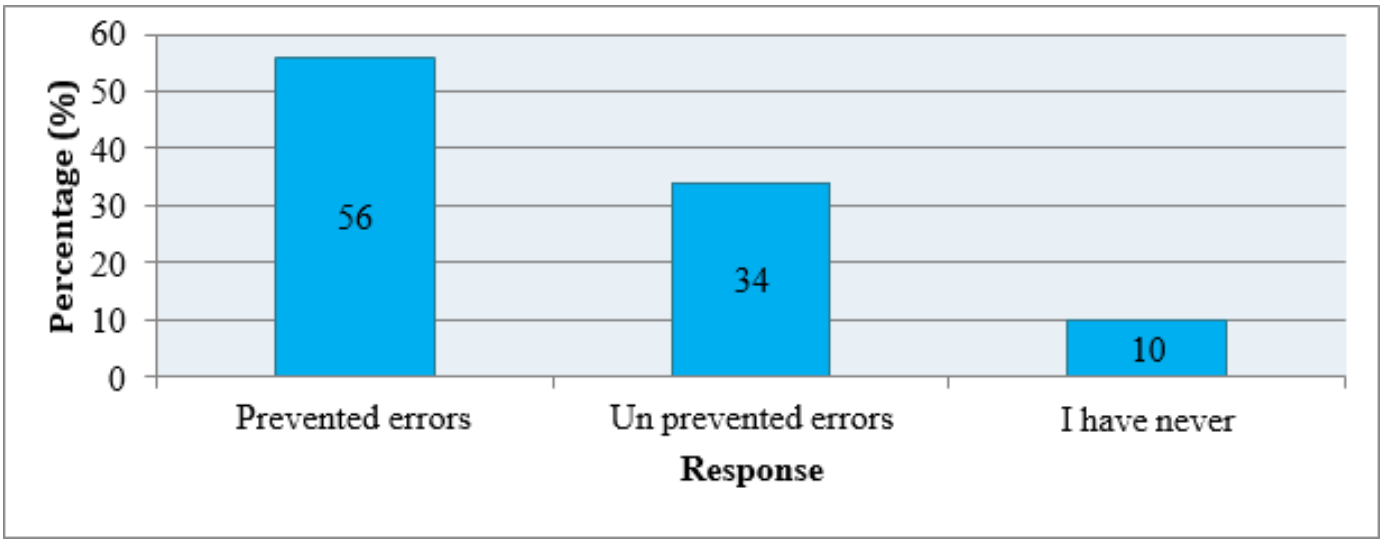

Figure 1: **Shows the distribution of respondents according to categories of dispensing errors they had ever experienced**(N=50)

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Table 2: **Shows the distribution of respondents according to whether in circumstances of any error they reported**

Response	Frequency (f)	Percentage (%)
Yes	10	25
No	30	75
Total	**40**	**100**

From table 2, majority of the respondents (75%) reported that in circumstances of any error they didn"t report whereas the minority (25%) reported that in circumstances of any error they reported.

From figure 2, most of the respondents (54%) agreed that often they got tempted to distraction at work whereas the least (4%) had never been tempted to distraction at work.

From table 3, majority of the respondents (66%) reported that the quality of prescription writing of fellow workmates was fair whereas the minority (4%) reported that prescription writing of fellow workmates was poor.

From table 4, majority of the respondents (72%) were very satisfied with their jobs at the facility whereas the minority (6%) were not.

From figure 3, more than half of the respondents (68%) noted that their fellow workmates were friendly whereas the least (32%) noted that their fellow workmates were not friendly.

From figure 4, half of the respondents (50%) had fair computer skills whereas the least (16%) had poor computer skills.

3.3. HEALTH FACILITY RELATED FACTORS CONTRIBUTING TO DISPENSING ERRORS AMONG HEALTH WORKERS.

From figure 5, most of the respondents (52%) reported that they didn't have enough dispensers at the facility as per ratio of patients whereas the least (8%) were not sure about whether the facility had enough dispensers.

From table 5, almost all respondents (92%) reported that the condition of their working environment was organized whereas the least (8%) reported that the condition of their working environment was not organized.

From figure 6, more than half of the respondents (58%) reported that sometimes workmates from different departments accessed the dispensing unit whereas the least (12%) reported that the dispensing unit was a restricted access area.

From table 6, most of the respondents (52%) reported that hospital administrators organized an avenue for recognizing CPD participation to eliminate dispensing errors on monthly basis whereas the least (6%) reported on quarterly basis.

From table 7, majority of the respondents (70%) reported that medicines were assembled on shelves according to pharmaceutical therapeutic order whereas the least (12%) reported that medicines were assembled on shelves according to descending order.

From figure 7, most of the respondents (60%) reported that they never had enough space between medicines on shelves in their dispensing units whereas the least (40%) reported that they had enough space between medicines on shelves in their dispensing units.

From figure 8, nearly all respondents (90%) agreed that the facility had policies related to dispensing whereas the least (2%) disagreed.

3.4. MEDICINES RELATED FACTORS CONTRIBUTING TO DISPENSING ERRORS AMONG HEALTH WORKERS.

From table 8, more than half of the respondents (58%) agreed that they had ever experienced drug strength confusion during dispensing whereas the least (16%) didn"t recall.

From table 9, more than half of the respondents (59%) reported endocrine system agents as the class of medicines they had ever encountered drug strength confusion during dispensing

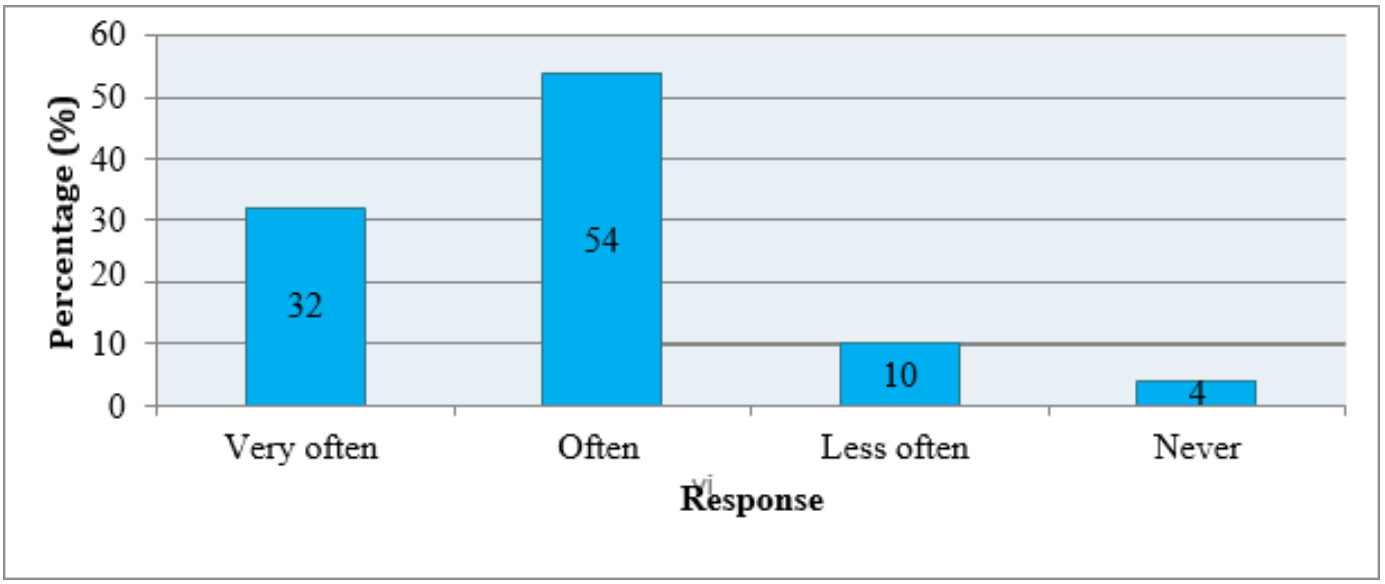

Figure 2: shows the distribution of respondents according to how often they got tempted to distraction at work

Table 3: Shows the distribution of respondents according to how they rated the quality of prescription writing of fellow workmates **(N=50)**

Response	Frequency (f)	Percentage (%)
Fair	33	66
Good	15	30
Poor	02	04
Total	**50**	**100**

Table 4: Shows the distribution of respondents according to whether they were satisfied with their current jobs at the facility **(N=50)**

Response	Frequency (f)	Percentage (%)
Less satisfactory	11	22
Very satisfactory	36	72
Not satisfactory	03	06
Total	**50**	**100**

Table 5: Shows the distribution of respondents according to the condition of working environment **(N=50)**

Response	Frequency (f)	Percentage (%)
Organized	46	92
Not organized	04	08
Total	**50**	**100**

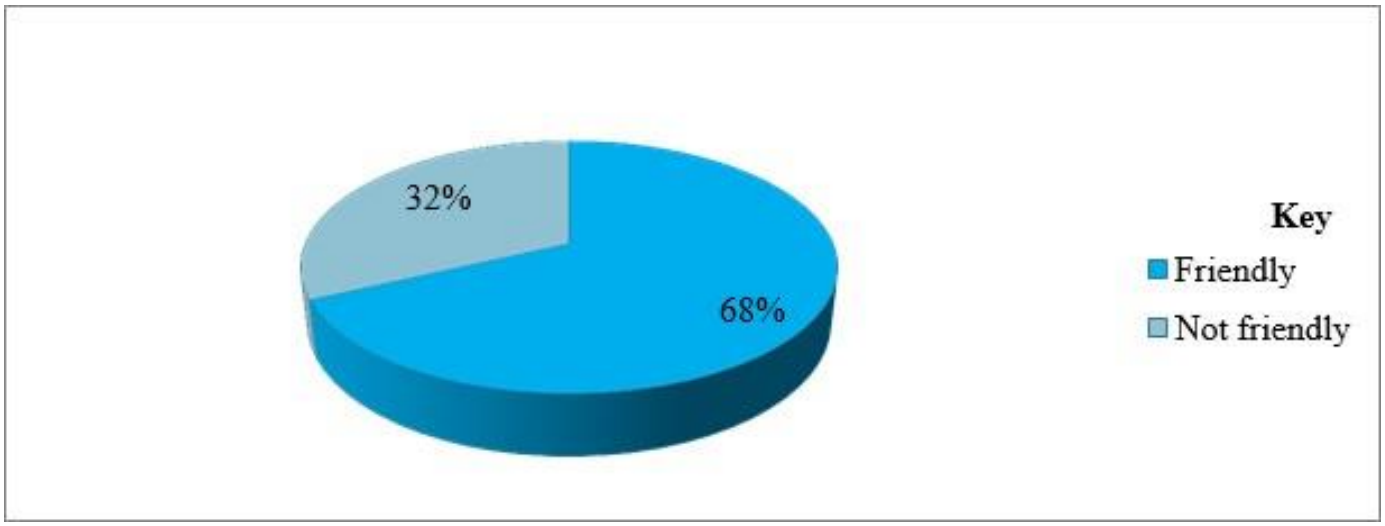

Figure 3: Shows the distribution of respondents according to how they perceived the interpersonal working relationship of fellow workmates

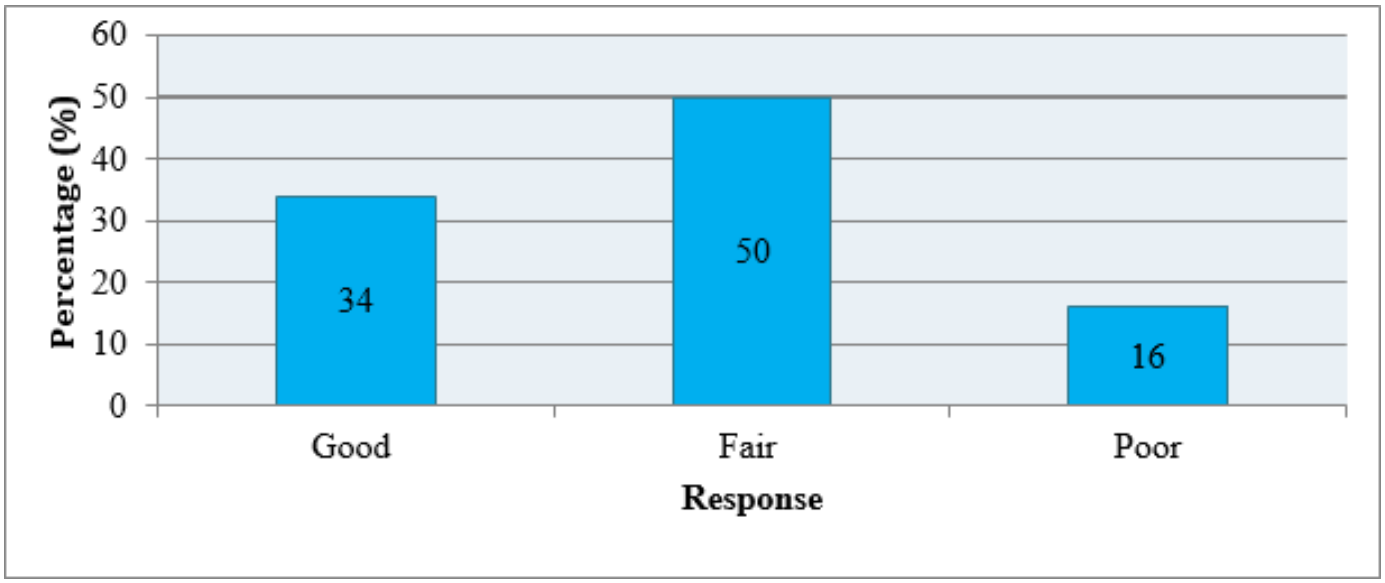

Figure 4: Shows the distribution of respondents according to how they rated their computer skills

Table 6: Shows the distribution of respondents according to when the hospital administrators organized any avenue for recognizing CPD participation to eliminate dispensing errors **(N=50)**

Response	**Frequency (f)**	**Percentage (%)**
Monthly	26	52
Quarterly	05	10
When needed	08	16
Others	11	22
Total	**50**	**100**

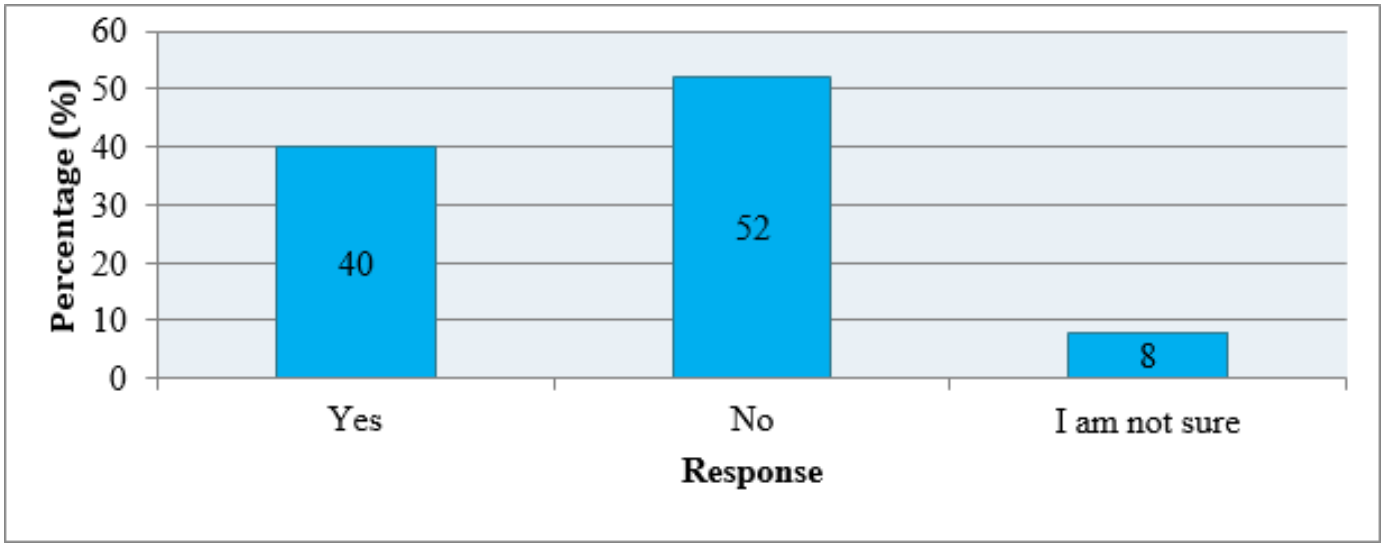

Figure 5: **Shows the distribution of respondents according to whether the facility got enough dispensers as per ratio of patients**(N=50)

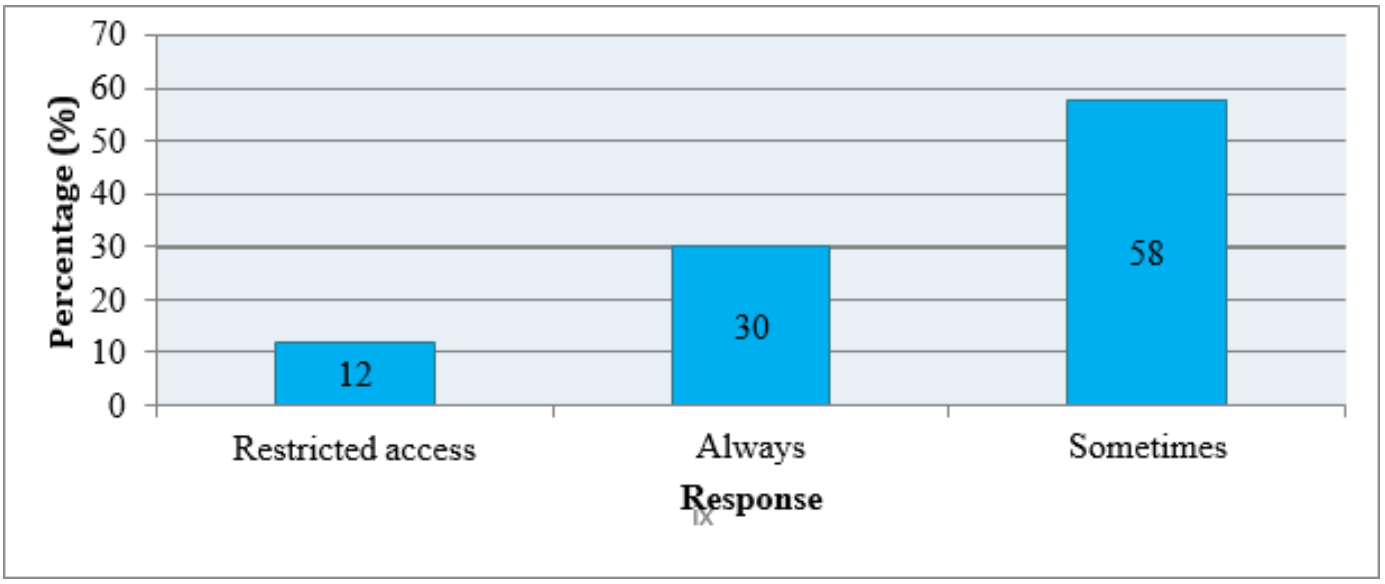

Figure 6: Shows the distribution of respondents according to how often other workmates from different departments accessed the dispensing units

Table 7: Shows the distribution of respondents according to how medicines were assembled on shelves **(N=50)**

Response	**Frequency (f)**	**Percentage (%)**
Descending order	06	12
Ascending order	09	18
pharmaceutical therapeutic order	35	70
Total	**50**	**100**

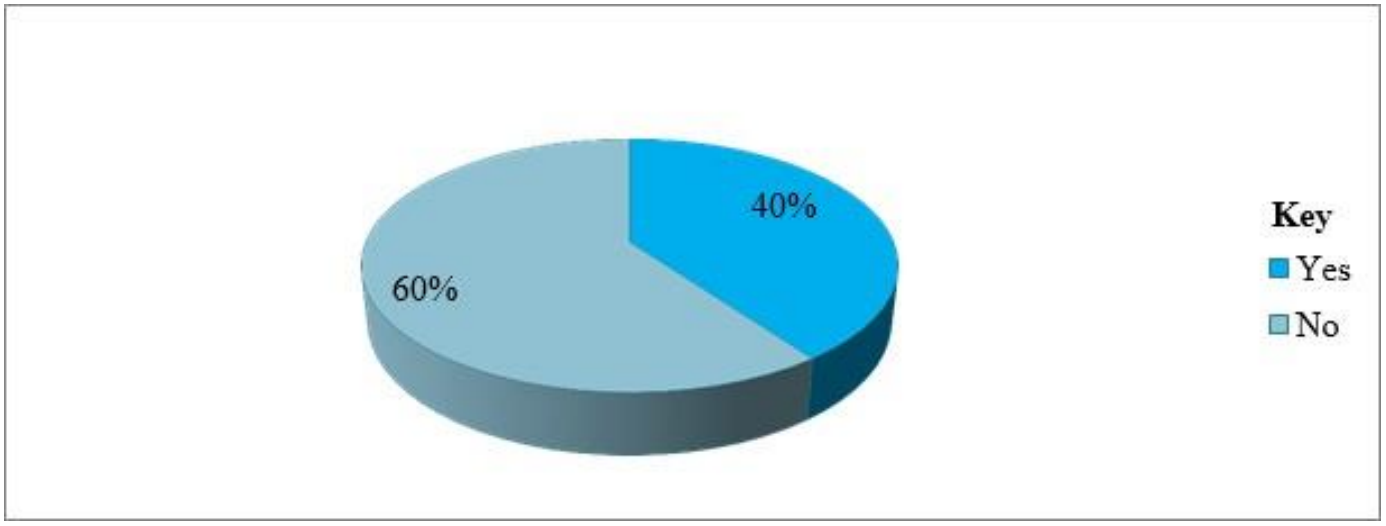

Figure 7: Shows the distribution of respondents according to whether the dispensing unit had got enough space between medicines on shelves

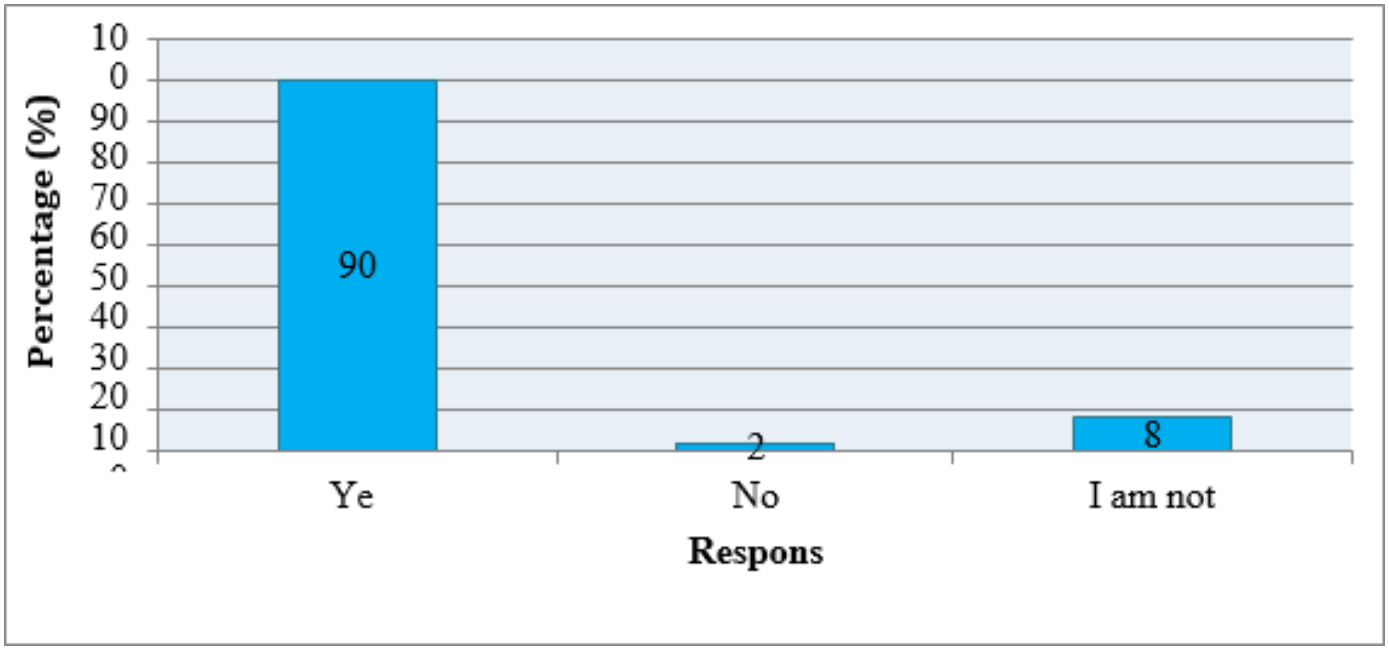

Figure 8: Shows the distribution of respondents according to whether the facility had policies related to dispensing **(N=50)**

Table 8: **Shows the distribution of respondents according to whether they had ever experienced drug strength confusion during dispensing**

Response	**Frequency (f)**	**Percentage (%)**
Yes	29	58
No	13	26
I don"t recall	08	16
Total	**50**	**100**

Table 9: Shows the distribution of respondents according to the classes of drugs in which they had ever encountered drug strength confusion during dispensing **(N=29)**

Response	Frequency (f)	Percentage (%)
Central nervous system agents	1	3
Endocrine system agents	17	59
Cardiovascular agents	4	14
Others	7	24
Total	**29**	**100**

whereas the least (3%) reported central nervous system agents.

From figure 9, majority of the respondents (78%) had never dispensed expired medicines accidentally whereas the minority (2%) often dispensed expired medicines accidentally.

From figure 10, most of the respondents (48%) reported that labeling strength for medicines at the facility was fair whereas the least (8%) reported that it was poor.

From the table above, more than half of the respondents (54%) reported that the condition of medicine packaging at the facility was descent whereas the least (2%) reported that the condition of medicine packaging at the facility was poor.

4. Discussion of ftndings.

4.1. Individual factors contributing to dispensing errors among health workers.

The study results depicted that more than half of the respondents (56%) had ever experienced preventable dispensing errors, which means that they were detected during the dispensing process before the drugs had left the pharmacy. The study results were in agreement with Khaled (2015), where findings showed that the majority of dispensing errors (96.9%) were prevented.

Furthermore, the majority of the respondents (75%) reported that in circumstances of any error, they didn"t report it. This implies that health workers were afraid of related outcomes after reporting and therefore, in circumstances when health workers were having poor reporting systems, such behaviors could cause adverse drug effects to patients and burden to the hospital administration. The study results were in line with Chuang et al (2021), where (54%) of the participants never reported the errors.

However, most of the respondents (54%) agreed that often they got tempted to distracted at work. The researcher also observed this error; probably this happened when some health workers were destructed by phone calls and patients congregating around pharmacy windows. The study results were in agreement with Jacione et al (2019), where findings showed that (50%) had ever been interrupted/distracted.

To add on that, the majority of the respondents (66%) reported that the quality of prescription writing of fellow workmates was fair. Often in circumstances where health workers were not fully able to read the prescription orders, they made their best guess and this also added more risk to the patient. The study results agreed with Al Worafi et al (2018), where findings showed that poor handwriting by (66%) of respondents was considered a major cause of the error.

The study also revealed that more than half of the respondents (68%) noted that their fellow workmates were friendly. In the long run, this improved on interpersonal collaboration between health workers and reduced the dispensing errors that could arise from unpleasant fellow workers. The study results were in disagreement with Al Dossari et al (2014), where transcribing errors made up 49% of the total reported medication errors because they breakdown the communication between the physicians and nurses during the verbal order.

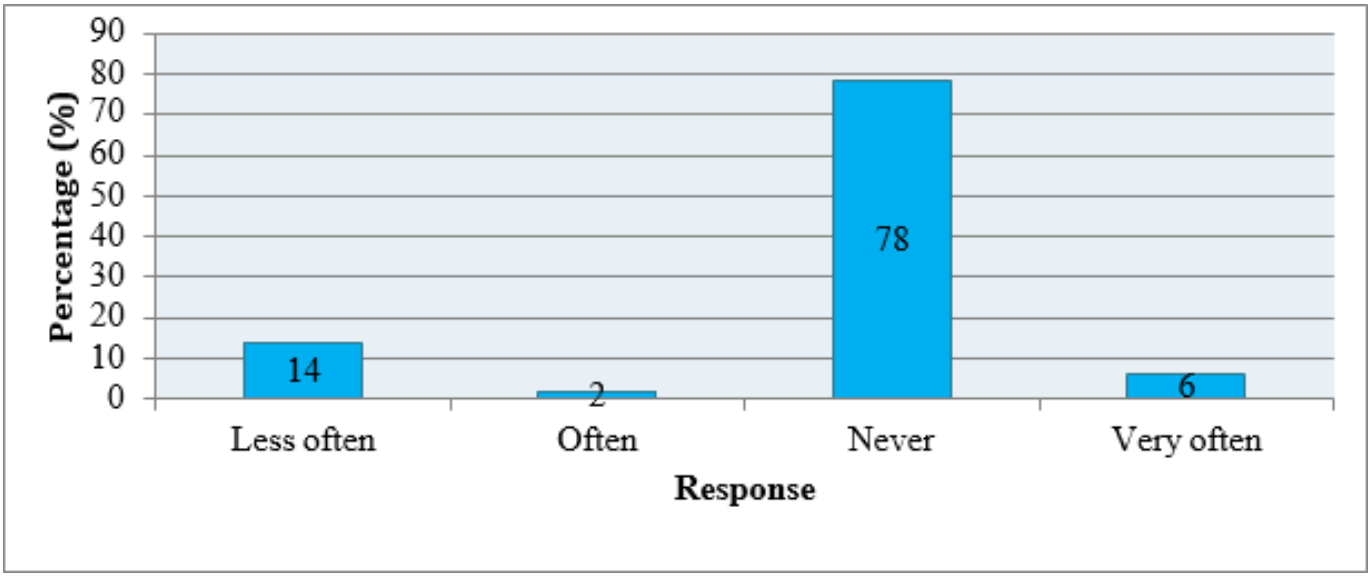

Figure 9: Shows the distribution of respondents according to how often they dispensed expired medicines accidently

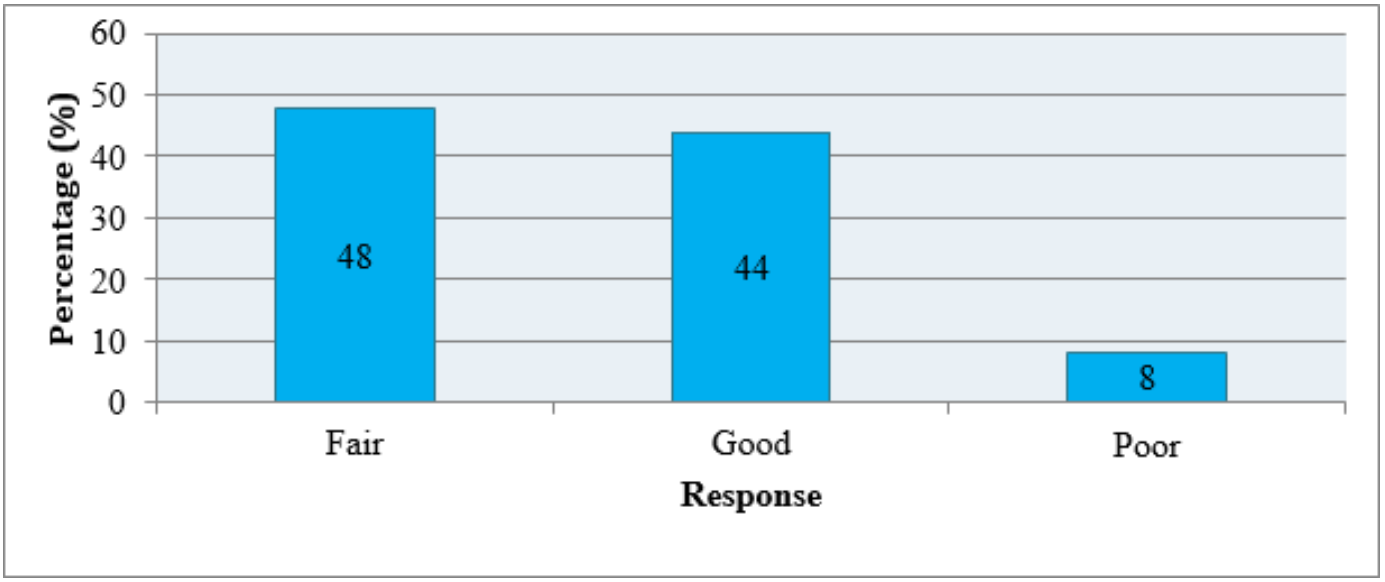

Figure 10: Shows the distribution of respondents according to how they rated the status of Labeling strength for medicines at this facility

Table 10: Shows the distribution of respondents according to the condition of medicine packaging at the facility **(N=50)**

Response	**Frequency (f)**	**Percentage (%)**
Descent	27	54
Wonderful	22	44
Poor	01	2
Total	**50**	**100**

4.2. Health facility-related factors contributing to dispensing errors among health workers.

The study further revealed that most of the respondents (52%) reported that they did "t have enough facility dispensers as per the ratio of patients. This could be probably attributed to the ratio of patients the facility received that outweighed the number of dispensers on duty and as a result, having a high number of patients turn up. Some health workers probably faced dispensing errors from overworking. Findings were in agreement with Jacione et al (2019), where results showed that work overload and a low number of employees contributed to DE as noted by (68%) of the respondents.

Findings depicted that more than half of the respondents (58%) reported that sometimes workmates from different departments accessed the dispensing unit. Therefore, unauthorized staff imposed destruction and interruptions to health workers who were on duty. Stand still, they dislocated medicines on shelves hence leading to drug miss shelving errors. This was in agreement with a study that was done in Saudi Arabia by Al-Arifi (2014), where findings showed that unauthorized persons (cleaners) could empty the delivery boxes and put the stock on the pharmacy shelves (50%), which may lead to the medicines being put in the wrong place.

Most of the respondents (52%) reported that hospital administrators organized an avenue for recognizing CPD participation to eliminate dispensing errors every month. Such response denoted that some health workers infrequently utilized CPD participation to eliminate dispensing errors. The current study results were not in line with Dessalegn et al (2017), where respondents mentioned that there was not any effective training for new staff (75.2%).

Based on the study findings, most of the respondents (60%) never had enough space between medicines on shelves in their dispensing units. The researcher directly observed this; hence giving an overview of monitoring errors that may result from medication safety rounds at the facility. This was in line with Khaled (2015), where participants noted a lack of enough space between the medicines (60%), which led to staff mixing the medicines

Nearly all respondents (90%) agreed that the facility had policies related to dispensing. However, dispensing errors were still occurring amidst the policies and therefore, this confirmed that the facility health workers were either reluctant or they never followed policies. The study results were in line with Al Worafi et al (2018), where most of the participants (70%) were aware of any policy on medical error reporting.

4.3. Medicines-related factors contributing to dispensing errors among health workers.

About the study findings, more than half of the respondents (58%) agreed that they had ever experienced drug strength confusion during dispensing. This could be a result of the fact that some drugs had got names, labeling, and packaging that confused as the study is yet to ascertain. This was in agreement with Dessalegn et al (2017), where (74.4%) had ever experienced similar/confusing names.

Moreover, (59%) of respondents reported endocrine system agents as the class of medicines that had ever encountered drug strength confusion during dispensing. This was attributed to the fact that these medicines had got look like and sounded like drug names and probably with similar packaging that turned out to confuse health workers who had inadequate knowledge of drug strength. Study results were not in line with Khaled (2015), where the frequency of medication errors based on the classes of drugs (according to BNF V.65 classification) involved in dispensing errors were cardiovascular agent drugs (n = 150, 23.5%).

The majority of the respondents (78%) had never dispensed expired medicines accidentally. This implied that a significant number of health workers were very vigilant about checking expired dates for medicines. The current study results agreed with Emmerton & Rizik (2016), where the incidence of dispensing expired medicine was not identified by (66%).

Stand still, most of the respondents (48%) reported that labeling strength for medicines at the facility was fair. Therefore, there could be a possibility of exposing health workers to dispensing errors that could result from confusion about labeling strength for medicines. The study results differed from Jacione et al (2019), where results indicated that the lot was absent in 41.8% of the labeling errors and the main documentation error was the lack of the reviewer"s signature (77.5%).

5. Conclusion.

Based on the overall findings acquired from the study, the following conclusions were made:

The study discovered that preventable errors were common as (56%) of respondents had ever experienced preventable dispensing errors, and poor reporting systems since (75%) reported that in circumstances of any error, they don't report, distraction at work as (54%) agreed that often they got tempted to distraction at work and quality of handwritings skills as (66%) reported that the quality of prescription writing of fellow workmates was fair, were the major individual factors contributing to dispensing errors among health workers.

The study established that inadequacy of dispensers as per the ratio of patients as reported by (52%) of respondents, unauthorized access to dispensing units as evidenced by (58%) who noted that sometimes workmates from different departments access the dispensing unit and lack of enough space as agreed upon by (60%) of the participants were the main health facility related factors contributing to dispensing errors among health workers.

Overall medicine related factors contributing to dispensing errors among health workers were mainly drug strength confusion as (58%) of the participants agreed that they had ever encountered drug strength confusion during dispensing, with (59%) confirming endocrine system agents and medicine labeling errors and few of the participants (48%) acknowledged that labeling strength for medicines at the facility was fair.

Generally, the researcher concluded that; preventable errors were common, poor reporting systems, distraction at work, quality of handwritings skills, unauthorized access to dispensing units, inadequacy of dispensers as per ratio of patients, lack of enough space, drug strength confusion majorly from endocrine system agents and medicine labeling errors were the foremost factors contributing to dispensing errors among health workers.

6. Recommendations.

From the perspective of the pharmacy distribution system and quality assurance, the Ministry of Health and National drug authority should consider developing additional policies and procedures to identify errors at each step of the dispensing process and voluntary non-punitive reporting systems to identify areas for improvement in this process.

Kawolo Hospital should also set and implement strategies that will enlighten health workers to have CPD and these errors would be less common with more extensive knowledge of ICT and experience.

In addition, to the reduction of complexity in the act of prescribing more so writing errors, the researcher strongly recommends the introduction of automation by Kawolo Hospital, improving the prescriber"s knowledge through education, use of online aid and feedback control systems, and monitoring the effects of interventions can help in the reduction of prescription interpretation errors.

Efforts should also be made by the Kawolo Hospital administration to minimize the work overload, limit unauthorized access to dispensing units, and enforce protocol for patient identification and verification of items dispensed.

Finally, further research would be directed toward determining effective strategies for minimizing dispensing errors and improving patient safety.

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8. List of abbreviations

ADEs : Adverse Drug Events

ADRs : Adverse Drug Reactions

CPD : Continuous Professional Development

DE: Dispensing Errors

HCP : Health Care Professional

L&D : Luton and Dunstable University Hospital NHS Foundation Trust

ME: Medical Errors

Med DRA : Medical Dictionary for Regulatory Activities

MoH : Ministry of Health

MRPs : Medicine Related Problems

SKMC : Saud King Medical City

SPD : Sensory Processing Disorder

USD : United States Dollar

WHO : World Health Organization

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10. References.

1. AL -Arifi M. N. (2014). Community pharmacists" attitudes toward dispensing errors at community pharmacy setting in Central Saudi Arabia. *Saudi Pharmaceutical Journal, 22*, 195-202.
2. Al-Dossari D. S., Al-Zaagi I. A., Al-Saud, S. D., Al-Bedah A. M., & Qureshi N. A. (2014). A comparative analysis of electronic prescribing near misses in King Saud Medical City, Riyadh, Saudi Arabia. *British Journal of Pharmaceutical Research*, 10-88.
3. Al-Worafi YM, Alseragi WM, Seng LK, Kassab YW, Yeoh SF, Ming LC, . Moklesur Rahman Sarker, Khairulanwar Husain. (2018). Dispensing Errors in Community Pharmacies: A Prospective Study in Sana'a, Yemen. *Arch Pharma Pract, 9* (4), 1-3.
4. Bifftu B.B, Tewolde A.W. (2019). Incidence of medication administration errors in Ethiopia: A systematic review and meta-analysis of observational studies. Journal of Patient Safety and Quality Improvement. *Journal of Patient Safety and Quality Improvement*, 167-175.
5. Chuang S., Grieve K.L., Mak,V. . (2021). Analysis of Dispensing Errors Made by First-

Year Pharmacy Students in a Virtual Dispensing Assessment Pharmacy . 9-20.

6. Dessalegn Asmelashe Gelayee, Gashaw Binega Mekonnen. (2017). Perception of Community Pharmacists towards Dispensing Errors in Community Pharmacy Setting in Gondar Town, Northwest Ethiopia. *BioMed Research International, 2017*.
7. Dilsha, R.A.N., Kularathne, H.M.I.P., Mujammil, M.T.M. . (2020). Nature of dispensing errors in selected hospitals providing free healthcare: a multi-center study in Sri Lanka. *BMC Health Serv Res* , 20-114.
8. Elliott A Rachel, Elizabeth Camacho, Fiona Campbell, Dina Jankovic, Marrissa Martyn St James, Eva Kaltenthaler, Ruth Wong, Mark J Sculpher, Rita Faria. (2017). *Prevalence and economic burden of medication errors in the NHS in England Rapid evidence synthes.*
9. Emmerton, L. M., Rizk M. F. (2016). Look-alike and sound-alike medicines: risks and „solutions. *International journal of clinical pharmacy, 34*, 4-8.
10. Jacione Lemos Botelho MaiaI, Rosângela Fernandes Lucena BatistaII, Mário Borges RosaIII Rio de Janeiro. (2019). Factors associated with medication dispensing errors: contribution to improve medication systems . *J. of pharmacy*, 1-10.
11. Khaled Abdulrahman Aldhwaihi. (2015). *Types and contributing factors of dispensing errors in hospital pharmacies.*
12. Kiguba R, Waako P, Ndagije HB, Karamagi C. (2015). Medication error disclosure and attitudes to reporting by healthcare professionals in a sub-Saharan African setting: a survey in Uganda. *Drugs Real World Outcome, 2* (3), 273-287.
13. Puijenbroek Eugene van & Sabblah George. (2022). *Medication error reporting for patients in Africa – the time to act is now.*
14. *Gale—Institution Finder*. (n.d.). Retrieved August 16, 2023, from https://galeapps.gale.com/apps/auth?userGroupName=&origURL=https%3A%2F%2Fgo.gale.com%2Fps%2Fi.do%3Fid%3DGALE%257CA624028508&prodId=GVRL