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Characterization of Medication Related Problems Among Patients with Cardiovascular Disease in Medical Ward of Mettu Karl Referral Hospital, South Western, Ethiopia: A Prospective Observational Study

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Abstracts: *Background:* Medication related problem is defined as: 'an event or circumstance involving drug therapy that actually or potentially interferes with desired health outcomes. Drug related problems are of a major concern in health care because of increased cost, morbidity and mortality. cardiovascular diseases are a group of disorders of the heart and blood vessels. *Objective:* To discover characterization of medication related problems and contributing factors among cardiovascular patients in the medical ward of Mettu Karl Referral Hospital. *Methods:* A facility based prospective observational study design was carried from April 07 /2021 to June 09/2021. Data was collected through employing check list and semi-structured questioner. Data was entered and descriptive statistical analysis was done using statistical packages for social sciences 25.0 version statistical software. Both bi-variable and multivariable analysis performed to determine the association between outcome and predictors variables. A p-value of less than 0.05 was considered significant. *Results:* The overall rate of medication related problems among cardiovascular patients in medical ward was 53 (58.2%). The patient's age group was in line of 36-59 years 49 (53.8%). Unnecessary drug therapy 15 (28.3%) were the mostly identified type of drug therapy problem followed by dosage too high 11 (20.8%). ACEIs 229 (17.1%) was commonly prescribed medication and potassium sparing 19 (2.2%) was least prescribed drugs. Age $\geq$ 60 years (AOR: 2.76; 95%CI: 1.342-3.945; P=0.004), rural area residents (AOR: 2.76; 95%CI: 1.014-2.758; P=0.003), length of hospital stay >7 days (AO R: 4.75; 95%CI: 2.986-11.723; P=0.007), number of medication >5 (AOR: 3.632-17.893; 95%CI: 2.986-11.723; P=0.001) were associated factor significantly causes medication related problems. *Conclusion and Recommendation:* The prevalence of medication related problems amid cardiovascular patients in medical ward was high. Less than half of patients were found to have co-morbidities and were had have social substance users. Hospitals and ministry of Health should have to establish pharmaceutical care services for better patient care.

Keywords: Medication Related Problems, Associated Factors, Cardiovascular Disease, Medical Ward, Mettu Karl Referral Hospital, Ethiopia

1. Introduction

Drug therapy problem is any undesirable event or circumstance experienced by a patient that involves or is suspected to involve drug therapy and that interferes with achieving the desired goals of therapy. DTPs have been categorized by different research groups into different classification systems. According to Cipolle text book of pharmaceutical care practice, there are seven categories of DTP that involve indication, effectiveness, safety and compliance [1]. The availability of large number of medicines and the constant efflux of new information make them

practically impossible for any health care professional to be updated in all aspects. Hepler and strand define pharmaceutical care as, the responsible provision of drug therapy for the purpose of achieving definite outcomes which improve the patient's quality of life' [2]. Drug-therapy problems are relatively common in hospitalized patients and can result in patient morbidity and mortality, and increased costs [3]. Epidemiologic transition which is taking place in every part of the world, among all races, ethnic groups, and cultures has resulted in the global rise in cardiovascular disorders. Cardiovascular diseases are a group of disorders of the heart and blood vessels. Cardiovascular diseases account for 7-10% of all adult medical admissions in African hospitals, heart failure contributing to 3-7% [4]. The associated factors to DRPs (patient related factors (age, sex, addictive drug use, level of education, marital status), diseases related factors (presence of co morbidity, number of co morbidity mental and behavioral problems), drug related factors (number of drugs pharmacological risk factors), and others (length of hospital stay) [5]. Cardiovascular diseases are a group of disorders of the heart and blood vessels. Most of patients with cardiovascular disease can be treated and managed by proper follow and check up in an outpatient department, though these CVDs accounts for 7-10% of all adult medical admissions in African hospitals [6]. Cardiovascular diseases account for about 25% of all deaths worldwide, and it is the highest proportion of all causes of death. In the developed countries about 50% of all deaths are due to cardiovascular diseases; meanwhile in developing countries that proportion is about 16%. However, the absolute number of death occurs in the developing countries. Therefore, according to the World Health Organization, 278% of all cardiovascular death occurs in those countries Emerging countries, including those from Latin America [7]. There are also new dimensions to this alarming situation. Over the past two decades, deaths from CVD have been declining in high-income countries, but have increased at an astonishingly fast rate in low-and middle-income countries. About 80% of cardiovascular and diabetes deaths are expected to occur in the emerging world [8].

Drug therapy problem is one of the public health problems worldwide and has been significantly increased over the past few decades. It was estimated that around 5–10% of hospital admissions were due to DTPs, in which more than half of them are avoidable. Worldwide, more than half of all medicines are prescribed and dispensed inappropriately and half of the patients fail to take them correctly [9]. DTPs are very common in patients with cardiovascular disease including hypertension as reported by studies in different countries. In Malaysia and Jordan, the studies revealed an average of 2.15 and 6.31 DTPs per patient respectively [10]. In Africa, the mean DTP per patient of 1.46 at the fourth month drug therapy was reported in Nigeria [11]. DTPs with no resolution can contribute to repeated hospital admissions, prolonged hospitalizations and increased healthcare expenditures. The reason could be improper drug or the dosage, drug-drug interactions or the patient factors such as drug disease interaction or adherence problems or any other drug related problems. Cardiovascular diseases are the number one cause of death globally, more people die annually from CVDs than any other causes. Most developing countries will experience the double burden of pre-transitional and post-transitional disease [12]. Although HIV/ADIS is the leading cause of death in the sub Saharan region, CVD is the second leading killer over the age of 30 year (31-32). Now a days the developing countries contribute a greater share to the global burden of CVDs than the developed countries [13]. The potential costs of CVDs epidemic for African countries are staggering. It is estimated to cost (direct and indirect) $300 billion annually in USA, equal to the entire gross domestic product of the African continent. The study in public and private hospital in Addis Ababa showed greater than half of the deaths were due to cardiovascular diseases [14]. This shows appropriate management should be used to decreases such problem. On the hand other researcher found, even single-disease management does not appear promising as a strategy to care for patients [15]. Therefore, this survey will intended to ascertain the prevalence of DTPs and contributing factors amid cardiovascular patients in the medical ward of Mettu Karl Referral Hospital.

2. Materials and Methods

2.1. Study Area, Design, and Period

This was a facility based prospective observational survey design was carried out in MKRH located in Oromia regional state, Southwest Ethiopia, located at 600 km from Addis Ababa. The survey was employed from April 07/2021 to June 09/2021.

2.2. Study Population and Eligibility Criteria

All CVD patients who attending medical ward during of MKRH during the data gathering period & that fulfilled the inclusion criteria was study population. Patients who were greater than 18 years age and who had complete registration charts, patients whose hospital stays were greater than 2 days (48 hrs), Patient who were on drug therapy or who needs drug therapy during study period were included in the study. Patients discharged before cross checking the collected data, patients whose back ground information were incomplete or no drug orders on their charts, patients who were admitted to intensive care unit were excluded.

2.3. Sample Size Determination and Sampling Technique Procedure

The sample size was determined by using the single population proportion formula: The sample size was determined based on"P"value which was taken from FHRH, P=0.9, or 90%. $n = \frac{(Za/2)2\ P(1-P)}{d2}$, n= sample size, P=prevalence of drug therapy problem, d= margin of sampling error tolerated, z=the standard normal value at confidence interval of 95%. n= $(1.96)^2$ (1- 0.9) x (0.9)/ $(0.05)^2$=138. Since the total number of cardio vascular patients was less than 10, 000, reduction formula (correction formula) were applied as follow; n_f=n/ (1+ (n/N)), n_f =138/ (1+ (138/210)=83. When 10% contingency is added to

minimize non response rate, then final sample size was found to be 91. Convenience sampling technique was used to recruit samples for the study in each day of the data collection process until the desired sample size was obtained.

2.4. Variables

The dependent variable for this survey was occurrence drug therapy problems, and the independent variables were as follows: Social-demographic information such as (age, sex, marital status, educational background), Clinical characteristics such as (duration of treatment, number of drugs, poly pharmacy, length of hospital stay, social abuse, presence of co morbidity, traditional medicine use, type of CVD, presence of ADR).

2.5. Data Collection Procedures

Data was gathered by interviewing participants and reviewing patient charts using structured and pretested questionnaire by trained data collectors. Data from medical record review included patient medical conditions and medications, Pertinent lab values, Relevant past Patient medical and medication history, prescribed medications with their indication, dosage regimen, documented ADR. In addition, face to face interview from participants was employed to collect data on the drug therapy problem using structured and pretested questionnaire to check the consistency. The interview questionnaire contained questions on the socio demographic characteristics, clinical characteristics and medication use behavior of patients. Drug related problems (DRPs) and possible causes of DRPs were identified using Cipolle's drug related problem identification tool pharmacotherapy text book and Ethiopian standard treatment guideline. Naranjo Adverse Drug Reaction Probability Scale was to identify ADRs. Adverse Drug Reaction Probability Scale was categorized by taking sum of 10 questions and grouped as definite, probable, possible or doubtful, if the total score is >9, 5–8, 1–4 and 0 respectively. Data was collected by interviewing participants and reviewing patient charts using structured and pretested questionnaire by trained data collectors. Data from medical record review included patient medical conditions and medications, Pertinent lab values, Relevant past patient medical and medication history, prescribed medications with their indication, dosage regimen, documented ADR. In addition, face to face interview from participants was conducted to collect data on the drug therapy problem using structured and pretested questionnaire to check the consistency. The interview questionnaire contained questions on the socio demographic characteristics, clinical characteristics and medication use behavior of patients. Drug related problems (DRPs) and possible causes of DRPs were identified using Cipolle's drug related problem identification tool pharmacotherapy text book and Ethiopian standard treatment guideline. Naranjo Adverse Drug Reaction Probability Scale was to identify ADRs. Adverse Drug Reaction Probability Scale was categorized by taking sum of 10 questions and grouped as definite, probable, possible or doubtful, if the total score is > 9, 5–8, 1–4 and 0 respectively.

2.6. Data Analysis

Data was coded, and then analyzed through employing statistical packages for social sciences 25.0 version statistical software. Categorical variables were expressed by percentage and frequency. Both bi-variable and multivariable analysis performed to determine the association between outcome and predictors variables. Variables with a P-value < 0.25 in the bi-variable analysis were selected for multivariable analysis. A p-value of less than 0.05 was considered significant.

2.7. Ethical Considerations

Ethical clearance was obtained from SWAN diagnostic pharmaceutical importer. Study participants were informed about behind the scenes, and oral consent was obtained from each participant. Thus, name and address of the patient was not recorded in data collection checklist.

2.8. Operational Definitions

1) *Drug therapy problem:* is an event or circumstance involving drug therapy that actually or potentially interferes with desired health outcomes.
2) *Cardiovascular disease:* are disease of the heart and blood vessels.
3) *Poly pharmacy:* consumption of five or more medications.
4) *Adverse drug reaction:* any response to a drug which is noxious and unintended and that occurs at normal therapeutic dose.
5) *Dosage regimen:* dose of the medication, frequency of administration, and duration of treatment.
6) *Hospital stay:* the duration from patient's admission till discharge.
7) *Co morbidity:* the presence of additional diseases in relation to an index disease.
8) *Unnecessary drug therapy:* a DTP that occurs when there is no valid medical indication for the drug at the time, or multiple drug products are used while only single-drug therapy is appropriate, or the condition is best treated with non drug therapy, or the medical problem is caused by drug abuse, alcohol use, or smoking.
9) *Needs additional drug therapy:* a DTP that occurs when there is a medical condition needing new drug therapy, or preventive therapy is needed to reduce the risk of developing a new condition, or a medical condition requires combination therapy for better efficacy.

3. Results

Socio-demographic characteristic of cardiovascular patients in medical ward

The study consisted of 53 (58.2%) males. Half 45 (49.5%) of

the respondents were live in the urban area. The patients age group were in line of 36-59 years 49 (53.8%). Less than half 42 (46.2%) of patients were found to have co-morbidities. Majority 41 (45.1%) of participants were married and 58 (63.7%) were uneducated. Only 37 (40.7%) of patients were had have social substance users. The magnitude of medication related problems among cardiovascular disease was 53 (58.2%).

Table 1. *Socio-demographic characteristic of cardiovascular patients in medical ward of MKRH, South western, Ethiopia, 2021 (n=91).*

Variables	Category	Frequency	Percent
Sex	Male	53	58.2
	Female	38	41.8
Age	≤ 35 years	26	28.6
	36-59 years	49	53.8
	≥ 60 years	16	17.6
Residency	Urban	45	49.5
	Rural	46	50.5
Marital status	Single	20	32.0
	Married	41	45.1
	Divorced	17	18.7
	Widowed	13	14.3
Educational status	Uneducated	58	63.7
	Educated	33	36.3
Social substance users	Yes	37	40.7
	No	54	59.3
Comorbidity	Yes	49	53.8
	No	42	46.2
Prevalence of MRPs	Yes	53	58.2
	No	38	41.8

Table 2. *Clinical characteristics of cardiovascular patients in medical ward of MKRH, South western, Ethiopia, 2021 (n=91).*

Variables	Category	Frequency	Percent
MMAPS-8	Low	45	49.5
	Moderate	29	31.9
	High	17	18.7
Laboratory values	Yes	37	40.0
	No	54	59.3
Drug interaction	Yes	21	23.1
	No	70	76.9
past medical history	Yes	38	41.8
	No	53	58.2
Past medication history	Yes	34	37.8
	No	57	62.6
Polypharmacy	Yes	26	28.6
	No	65	71.4
Length of hospital stay	≤ 7 days	33	36.3
	> 7 days	59	63.7
Naranjo adverse effects	Doubtful	16	17.6
	Possible	17	18.7
	Probable	34	37.4
	Definite	24	26.4
Number of medication	≤ 5 medication	33	36.3
	> 5 medication	58	63.7

Clinical characteristics of cardiovascular patients in medical ward

Regarding MMAPS-8, 45 (49.5%), 29 (31.9%), 17 (18.7%) were low, moderate and high respectively. Majority 54 (59.3%) of patients hadn't laboratory values and 70 (76.9%) were hadn't drug interaction. Less than half 38 (41.8%), 34 (37.8%), 26 (28.6%) of respondents were have past medical history, past medication history, and poly-pharmacy respectively.

Above half 59 (63.7%), 58 (63.7%) of participants were > 7 days length of hospital stay and > 5 number of medication. The majority 34 (37.4%) of patients have probable naranjo adverse effects followed by 24 (26.4%) definite naranjo adverse effects.

Commonly prescribed drugs and diagnosed disease among cardiovascular patients

Among 847 commonly prescribed medications ACEIs 229 (27.1%) was commonly prescribed drugs followed by 174 (20.5%) diuretics, 163 (19.3%) beta blockers and 132 (15.6%) calcium channel blockers and aspirin 10 (11.0%) was least prescribed medication followed by 9 (9.9%) statins and 90 (10.6%) statins, 40 (4.7%) aspirin and 19 (2.2%) potassium sparing. From 261 mostly diagnosed cardiovascular disease hypertension 109 (41.8%) was mostly diagnosed cardiovascular disease followed by 62 (23.8%) ischemic heart disease, 33 (12.6%) chronic heart failure and 24 (9.2%) coronary artery disease and 14 (5.4%) acute coronary syndrome was the less cardio vascular disease diagnosed followed by 10 (3.8%) myocardial infraction.

Table 3. *Commonly prescribed drugs and diagnosed disease among cardiovascular patients in medical ward of MKRH, South western, Ethiopia, 2021 (n=91).*

Variables	n (%)
Commonly prescribed medication	
ACEIs	229 (27.1)
Diuretics	174 (20.5)
Beta blockers	163 (19.3)
Statins	90 (10.6)
Calcium channel blockers	132 (15.6)
Aspirin	40 (4.7)
Potassium sparing	19 (2.2)
Mostly diagnosed cardiovascular disease	
Hypertension	109 (41.8)
Ischemic heart disease	62 (23.8)
Acute coronary syndrome	14 (5.4)
Coronary artery disease	24 (9.2)
Chronic heart failure	33 (12.6)
Myocardial infraction	10 (3.8)
Others	9 (3.4)

Table 4. *Type of MRPs among cardiovascular patients in medical ward of MKRH, South western, Ethiopia, 2021 (n=91).*

Variables	Category	Frequency	Percent
Indication	Unnecessary drug therapy	15	28.3
	Needs additional drug therapy	7	13.2
Safety	Ineffective drug	4	7.5
	Dosage too low	5	9.4
Effectiveness	Adverse drug reaction	2	3.8
	Dosage too high	11	20.8
Compliance	Noncompliance	9	17.0

Type of MRPs among cardiovascular patients in medical ward

The present study revealed that unnecessary drug therapy 15 (28.3%) was the mostly identified type of drug therapy problem followed by dosage too high 11 (20.8%), non compliance 9 (17.0%) and needs additional drug therapy 7 (13.2%) and dosage too low 5 (9.4%) was the least occurred type of MRPs followed by ineffective drug 4 (7.5%) and

adverse drug reaction 2 (3.8%).

Factors contributing to MRPs among cardiovascular patients in medical ward

Patients whose age ≥ 60 were 2.76 times more likely had drug therapy problems (AOR: 2.76; 95%CI: 1.342-3.945; P=0.004) than other counterparts and rural residents were 1.87 times more likely had drug therapy problems (AOR: 2.76; 95%CI:

1.014-2.758; P=0.003) had more MRPs than those dwell in urban area and length of hospital stay were > 7 days (AOR: 4.75; 95%CI: 2.986-11.723; P=0.007) were 4.75 times more likely had drug therapy problems than those stay ≤ 7 days. Respondents who taken > 5 number of medication (AOR: 5.8; 95% CI: 2.986-11.723; P=0.001) were 5.8 times more likely had drug therapy problems than ≤ 5 number of medication.

Table 5. *Factors contributing to MRPs among cardiovascular patients in medical ward of MKRH, South western, Ethiopia, 2021 (n=91).*

Variables	category	n (%)	AOR (95% Cl)	P-value
Age	≤ 35 years	26 (28.6)	1	
	36-59 years	49 (53.8)	0.764 (0.321-1.143)	
	≥ 60 years	16 (17.6)	2.76 (1.342-3.945)	0.004
Residency	Urban	45 (49.5)	1	
	Rural	46 (50.5)	1.87 (1.014-2.758)	0.003
Polypharmacy	Yes	26 (28.6)	1	
	No	65 (71.4)	1.34 (0.0675-1.4967)	0.052
Length of hospital st ay	≤ 7 days	33 (36.3)	1	
	> 7 days	54 (59.3)	4.745 (2.986-11.723)	0.007
Co-morbidities	Yes	49 (53.8)	1	
	No	42 (46.2)	1.890 (0.748-1.983)	0.05
Number of medicat ion	≤ 5 medication	33 (36.3)	1	
	> 5 medication	58 (63.7)	5.8 (3.632-17.893)	0.001
Social drug users	Yes	37 (40.7)	1	
	No	54 (59.3)	0.867 (0.0574-1.219)	0.428
MMAPS-8	Low	45 (49.5)	1	
	Moderate	29 (31.9)	1.54 (0.786-1.1438)	0.09
	High	17 (18.7)	0.756 (0.0275-1.027)	0.847
Drug interaction	Yes	21 (23.1)	1	
	No	70 (76.9)	1.435 (0.964-1.427)	0.054

4. Discussion

Detecting and resolving as well as preventing drug-related problems is vital to ensure rational medication use which optimizes the therapeutic benefits and minimize the possible adverse effect from medications [16]. The goal of drug therapy is to achieve defined therapeutic outcomes and improve the patient's quality of life while minimizing patient risk. But inappropriate use of drugs during disease management may lead to drug therapy problems [17].

In our survey the prevalence of medication related problems was 58.2% which is less than the study conducted in Adama General Hospital 80.7%, Jimma University specialized hospita 73.5% [18, 19]. The difference is due to the physician prescribed to cardiovasucar patients the avail medication and patients received the prescribed drugs accordingly based on affordability medicine. The current survey was higher than the survey employed in cardiology ward of a Spain teaching hospital 29.8%, Ayder Referral Hospital 52.9% [20, 21]. This was due to in our study clinical pharmacy were not part icipated to solve the drug therapy occurred among cardiovascular disease in medical ward. The current survey was in line with the study employed in Alem Ketema Enat Hospital 62% [22]. The similarity was due to in both study area their were no inter- contact between physician and pharmacist during the round.

The current study showed hypertension 41.8%, ischemic heart disease 23.8%, chronic heart failure 12.6% were the

majorly diagnosed disease which was somewhat in line with the survey carried out in Felege Hiwot referral hospital which showed hypertensive heart disease (32%), rheumatic heart diseases (31.6%) and functional heart failure (18.4%) [23] as a major diagnosis. This due to currently patients who was unable to read and write were not corrictify their life style modification rather they used sedentary life style which exaggerated the cardiovasucar disease, and they hadn't use salt free diet accordingly.

In our study indication (unnecessary drug therapy 28.3%) was followed by safety dosage too high 20.8% were the most cause of medication related problem where consistent with the study conducted in Ayder Referral Hospital [21] which displayed the majority of MRPs were related to indication of therapy (unnecessary drug therapy 32.5% and needs additional drug therapy 24.9% followed by safety (dose too high 22.7%).

In current survey ACEI inhibitors (27.1%), diuretics (20.5%) and beta blockers (19.3%) were the commonly used drugs among cardiovascular patients which was conformable with the survey carried out in Gebretsadik Shawo General Hospital [22] which revealed ACEI inhibitors (44%) and Calcium channel blockers (44%) were the commonly used drugs among cardiovascular patients. Due to ACEIs were treat most cardiovascular disease, it mostly prescribed drugs in most study. In our study 17.0% patients had non-compliance to the medication given to him/her were lower than the study conducted in Gebretsadik Shawo General Hospital [22] which revealed around 28.22% number of patients were non compliant. Forget taking the medication was

the major non-compliance issue. The difference was due to study sample size and patients in survey were afford their medication and swallow it somewhat accordingly. Our study were in line with the study conducted in Venezuela 13% showed relatively lower rates of non compliance. Due in both study area patients acquire their medication and had get enough education on how they use it.

In present study patients with older age were more likely to develop MRPs than younger patients where in line with the survey employed in Jimma University Specialized Hospital [24] which showed, patients with older age were more likely to develop DTP than younger patients. The similarity were due to renal function which was an important parameter for appropriate drug choice and adequate dosage adjustments were declined and hepatic which was use for drug metabolism were declined, then more drug accumulate in the blood stream and cause the medication related problems.

The present study revealed that age ≥ 60 years were 2.76 times more likely had medication related problems (AOR: 2.76; 95%CI: 1.342-3.945; P=0.004) than other counterparts, rural residents were 1.87 times more likely had medication related problems (AOR: 2.76; 95%CI: 1.014-2.758; P=0.003) had more medication related problems than those dwell in urban area, length of hospital stay > 7 days were > 7 days were 4.75 times more likely had medication related problems (AOR: 4.75; 95%CI: 2.986-11.723; P=0.007) than those stay ≤ 7 days and number of medication >5 (AOR: 5.8; 95%CI: 2.986-11.723; P=0.001) were 5.8 times more likely had medication related problems than ≤ 5 number of medication were contributing factors which were contrary to study conducted in clinical pharmacy-naïve hospital Sweden [25] which showed that the number of drugs was the only associated factor remaining significant in the multivariate model (multiple OR). The difference were in olders age the patients forget to take the pills as recommended by the physicians, rural residents was no enough money to afford the medication or they not went to hospital as they feel ill, those who stay in the hospitals above >7 days perhaps not feel well or uneager to accept the medication unless aid by others and those taken medication above 5 may refused to which taken foremost or on how they taken it were the predictors MRPs respectively.

5. Conclusion and Recommendation

The magnitude of medication related problems among cardiovascular patients in medical ward was high. Less than half of patients were found to have co-morbidities and were had have social substance users. Above half of participants were less than seven days length of hospital stay and greater than five number of medication. The majority of patients have probable naranjo adverse effects. ACEIs was commonly prescribed drugs and potassium sparing was least prescribed drugs. Hypertension and ischemic heart disease were the mostly diagnosed cardiovascular disease. Age ≥ 60 years, rural area residents, length of hospital stay >7 days, number of medication >5 were associated factor significantly causes medication related problems. Hospitals and ministry of Health should have to establish pharmaceutical care services for better patient care.

Abbreviations

ACEIs: Angiotensinogen Converting Enzyme Inhibitor, ADR: Adverse drug reaction, CVD: Cardiovascular Disorders, DRPs: Drug Related Problems, DTPs: drug therapy problems, HIV/ AIDS: Human Immune Virus/Acquired immunodeficiency syndrome, MKRH: Mettu Karl Referral Hospital, MMPAS: Morisky Medication Adherence Predictor Scale, MRPs: Medication Related Problems.

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