



# Knowledge, Attitudes and Practices in Issuing Antibiotics among Pharmacists in Ragama Medical Officer of Health area

Group B.2.2

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## INTRODUCTION

- Misusing antibiotics leads to serious negative consequences including antibiotic resistance and complications.<sup>(1)</sup> Pharmacists have a major role to play in its prevention.
- Ragama Medical Officer of Health (MOH) area hosts three large hospitals and daily attracts a considerable number of patients to the city.
- In Sri Lanka, issuing of pharmaceutical drugs is regulated via National Medical Regulatory Act and Cosmetic Device and Drugs Act<sup>(2)(3)</sup>.

## OBJECTIVES

- To describe knowledge;
  - To describe attitudes;
  - To describe practices ;
  - To determine the association between practices and knowledge;
  - To determine the association between self-reported and actual practices;
- on issuing antibiotics among pharmacists in Ragama Medical Officer of Health area.

## METHODOLOGY

**Study design** - A descriptive cross sectional study with an analytical component.

**Study setting** - Ragama MOH area.

**Study population** - Pharmacists of the pharmacies in the Ragama MOH area

**Sample size and sampling** - All pharmacies in the Ragama MOH area (N=20) were included in the study. Thus sampling not done.

**Data collection tools and procedures** - Data collection done from November to December 2019 using four visits to each pharmacy. Tools used were an interviewer administered questionnaire and three observation checklists for test purchasing.

1. **Visit 1** - Test purchasing 1 - requesting an antibiotic by its name without a prescription

2. **Visit 2** - Test purchasing 2 - requesting an antibiotic with an invalid prescription

3. **Visit 3** - Test purchasing 3 - requesting an antibiotic by presenting a symptom

4. **Visit 4** - An interviewer administered questionnaire to assess knowledge, attitudes and self-reported practices

**Data analysis** - Descriptive statistics - to describe knowledge, attitudes and practices. Mann Whitney U test and Chi Square tests were used to compare actual practices with self-reported practices and knowledge level. Data analysis done by SPSS and Microsoft Excel Software.

**Ethical issues** - The pharmacies were given a prior notice three weeks prior to the test purchases. Informed written consent was obtained prior to administering the questionnaire.

## RESULTS

### Description of Study Participants

**Table 1: Distribution of study participants based on sex and qualification status**

Characteristic		Number (%)
Sex	Male	11 (55%)
	Female	9 (45%)
Qualification status	Complete	14 (70%)
	Not Complete	6 (30%)

**Table 2: Distribution of participants based on age and working experience**

Characteristic	Mean (SD)	Range
Age	39.6 (10.9)	24 - 62
Work experience	14.3 (9.9)	3.5 - 32

**Table 3: Knowledge on Prescriptions**

Contents of a prescription	Correct responses	
	n	%
Name of the patient	18	90
Age of the patient	20	100
Prescribed date	20	100
Brand name	18	90
Generic name	20	100
The dose	20	100
The schedule	20	100
Signature and the stamp	19	95

### Knowledge on Issuing Antibiotics

**Table 4: Knowledge on Regulations**

Domain	Correct responses	
	n	%
Necessity for a valid prescription	17	85
National medical regulatory act	12	60
<b>Cosmetic Device and Drugs act</b>	<b>11</b>	<b>55</b>
<b>Poisons, Opium, Dangerous Drug act</b>	<b>10</b>	<b>50</b>

**Table 5: Knowledge regarding Antibiotics**

Domain	Correct responses	
	n	%
<b>Effective for viral infections</b>	<b>9</b>	<b>45</b>
<b>Effective for fungal infections</b>	<b>9</b>	<b>45</b>
Effective for bacterial infections	18	90
Effective for parasitic infections	17	85
Safe to use without prescribing	20	100
<b>Know antibiotics resistance</b>	<b>10</b>	<b>50</b>
Can cause side effects	20	100

**Table 6: Level of knowledge - Total scores**

Domain (Max)	Mean (SD)	Median	Range
Prescriptions (40)	37.6 (2.4)	36.0	32 - 40
Regulations (24)	16.5 (7.7)	18.0	4 - 24
Antibiotics (36)	24.5 (7.6)	24.0	13 - 36
Total (100)	78.6 (15.2)	76.0	54 - 100

### Association between practices and knowledge

**Table 07: Actual practice vs knowledge score**

Positive test purchases	Median (IQR)	Mean (SD)	
0	76 (71-96)	81.0 (13.2)	U = 24 P = 0.447
1	92 (70-96.3)	85.5 (14.2)	
2	69 (64-92)	75.1 (14.4)	
3	68 (55-94)	72.5 (20.6)	

Knowledge level was not associated with the overall test purchasing performance

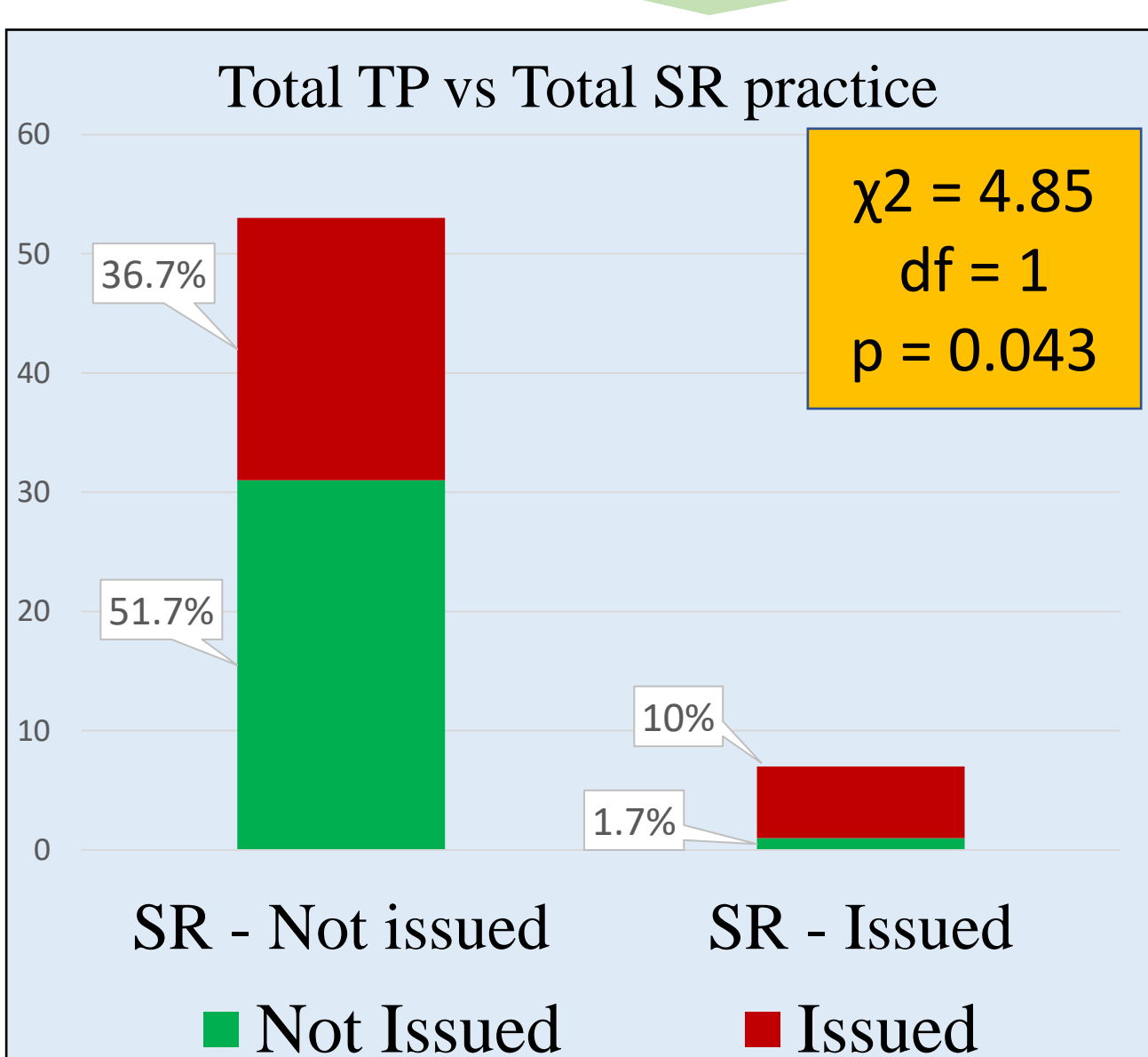
## Practices in issuing antibiotics

### Self reported practices in issuing antibiotics

**Table 8: Self reported practices among pharmacists**

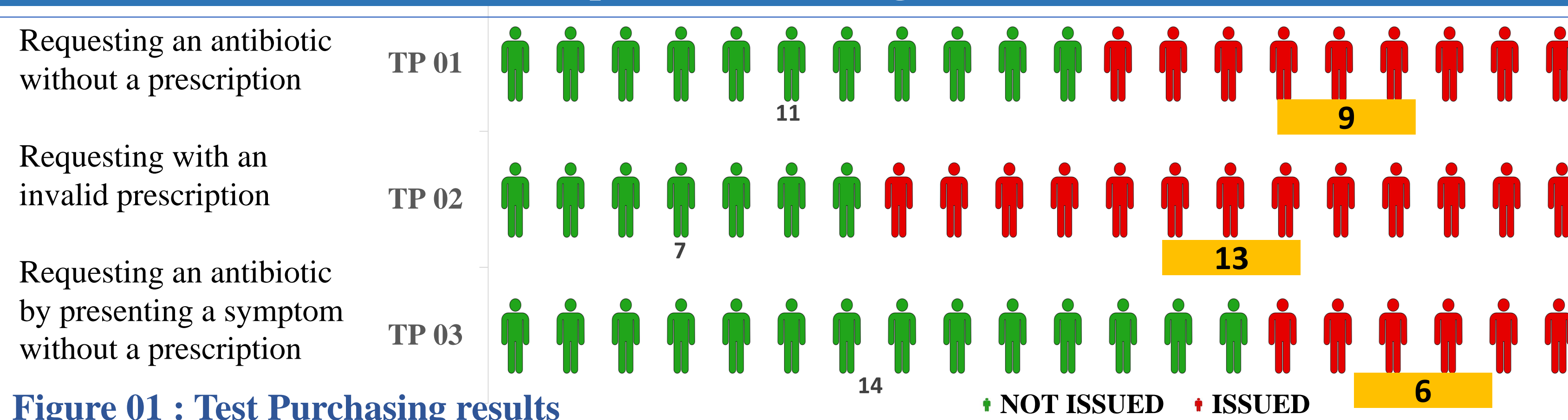
Requesting an antibiotic:	Will issue	%
Without a prescription	3	15%
With an invalid prescription	3	15%
By presenting a symptom	1	05%
<b>TOTAL</b>	<b>7</b>	<b>11.7%</b>

Self-reported practices (7/60; 11.7%) (Figure 04) differed significantly ( $\chi^2=4.855$ ;  $df=1$ ;  $p=0.043$ ) from the actual practice.



**Figure 04: Actual practices vs self reported practices**

### Actual practices in issuing antibiotics

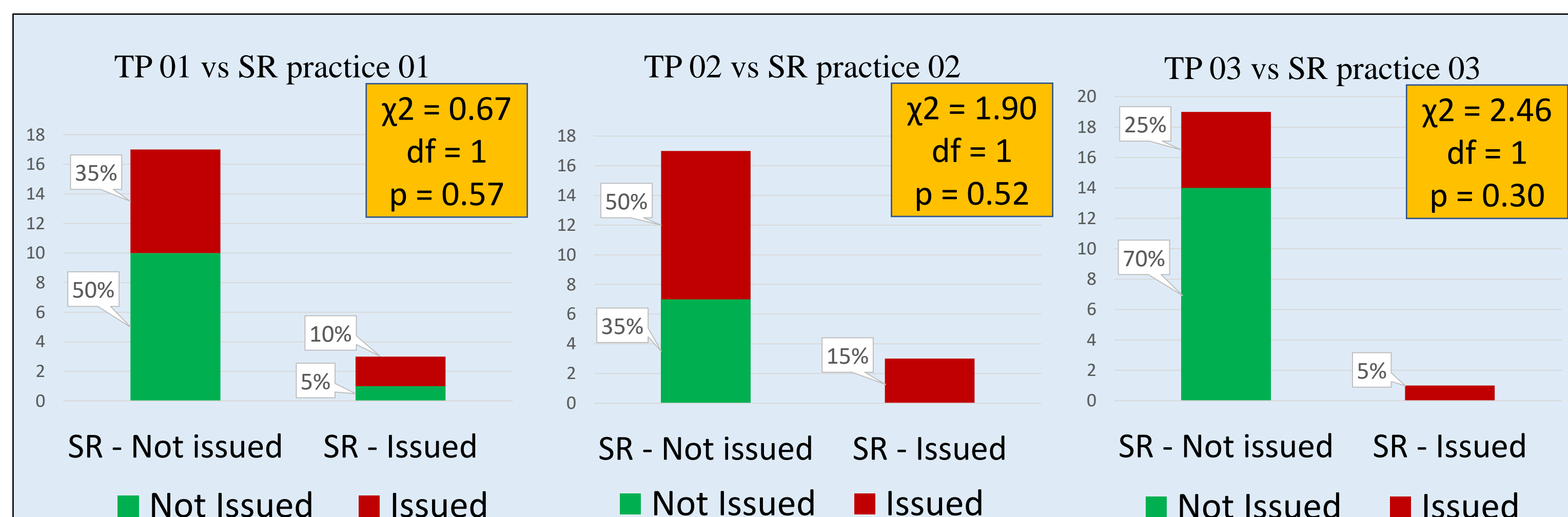


**Figure 01: Test Purchasing results**

Four pharmacists issued antibiotics in all three test purchasing (N=20). (Figure 02)

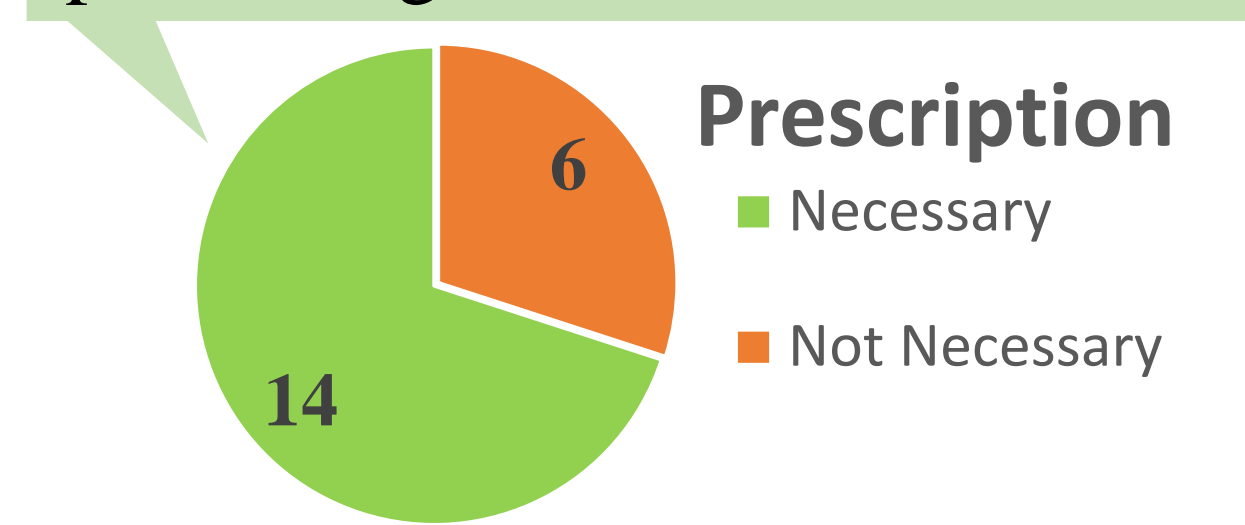


**Figure 02: Issuing antibiotics in test purchasing**



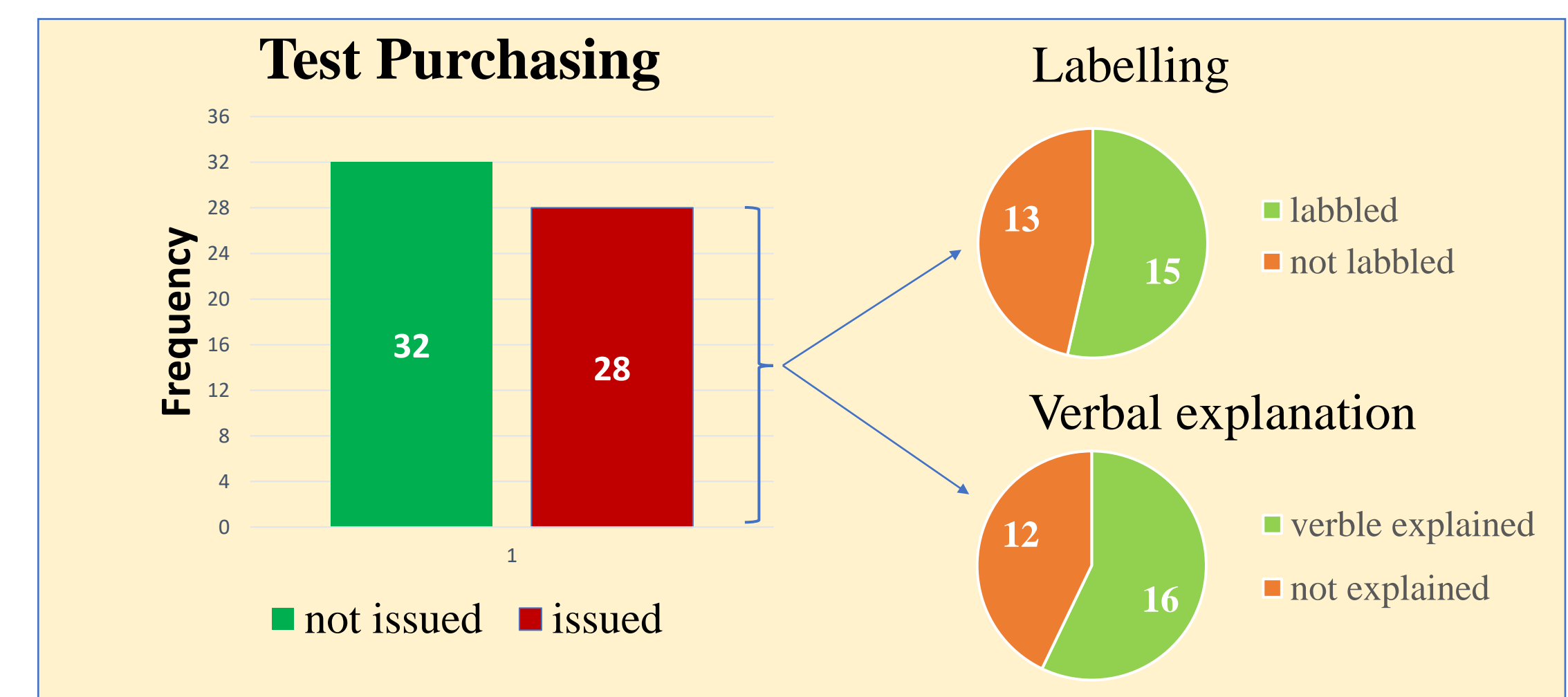
## Attitudes in issuing antibiotics

The majority (n=14; 70%) believed that prescription is a necessity in purchasing antibiotics.



**Figure 03: Attitudes in issuing antibiotics**

When antibiotics were issued (n=28): appropriate labelling - 15 (53.6%) verbal instructions - 16 (57.1%). (Figure 05)



**Figure 05: Practices in issuing antibiotics**

## LIMITATIONS

The study was conducted in a single MOH area. This will limit generalization of results as the related context depend on the ground level implementation of regulations and monitoring of adherence.

## CONCLUSIONS

Key knowledge components related to antibiotics was unsatisfactory even though the overall knowledge on prescriptions was satisfactory. Actual practices were unsatisfactory and differed from self-reported.

## RECOMMENDATIONS

Practices of the pharmacists should be regularly monitored and test purchasing can be useful in monitoring and improving issuing of antibiotics via private pharmacies.

## REFERENCES

- Aslam B, Wang W, Arshad MI, Khurshid M, Muzammil S, Rasool MH, et al. Antibiotic resistance: (2) National medical regulatory act (NMRA Act) No 05 of 2015 )
- Cosmetic Device and Drugs act (No 27 of 1980)

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