

EXPLORING CLINICAL PHARMACISTS' PERCEPTIONS ON ANTIMICROBIAL STEWARDSHIP (AMS) PARTICIPATION AND THE DISCORD BETWEEN PHARMACY EDUCATION AND PRACTICE

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INTRODUCTION

Antimicrobial resistance (AMR) poses a major threat to the health of populations worldwide, puts achievements in medical advancements at risk, and increases morbidity, mortality and global economic burden (WHO, 2020). Antimicrobial stewardship (AMS) is a critical global intervention aimed at optimising antimicrobial use and decreasing AMR. At an institutional level, the AMS team must be multidisciplinary, consisting of a physician, clinical pharmacist, microbiologist, infection control representative and epidemiologist (WHO, 2015). Many studies have proven the value of pharmacists and their positive contribution to AMS as a result of their diverse role, drug expertise and contribution within this multifaceted multidisciplinary team in hospitals (Brink et al. 2016; Brink et al. 2017; van den Berg et al. 2020). Education, training and development of pharmacists and other disciplines forming part of the AMS team are crucial to achieving AMS objectives and reducing AMR (WHO 2015).

In South Africa, little is known about the relevance of pharmacists' training to meet AMS needs in South Africa and little is known about clinically practising South African pharmacists' attitudes, knowledge and perceptions on AMS and pharmacy education. Therefore, this study aimed to determine the attitudes, knowledge and perceptions of clinically practising pharmacists towards AMS participation and training in South Africa.

METHODS

A quantitative cross-sectional research design was selected for this study. The study was conducted using a self-administered survey. Data was analysed by using StataSE 17. Categorical variables were analysed using simple descriptive statistics. Mann-Whitney and Kruskal-Wallis tests were applied to determine differences between variables. A p-value of less than 0.05 was considered statistically significant. Reliability coefficient was tested - Cronbach's alpha score of 0.90 for perceptions, 0.91 for participation and 0.91 for factors affecting participation. This study was conducted among clinically practising pharmacists in public and private healthcare sectors in South Africa and included institutional pharmacists involved in clinical functions and AMS in public and private institutional sectors. The South African Society of Clinical Pharmacy (SASOCP) was approached to distribute the survey to its members.

RESULTS

Participant demographics

- The total number of responses was n=55
- The relevant demographics are summarised in the tables below.

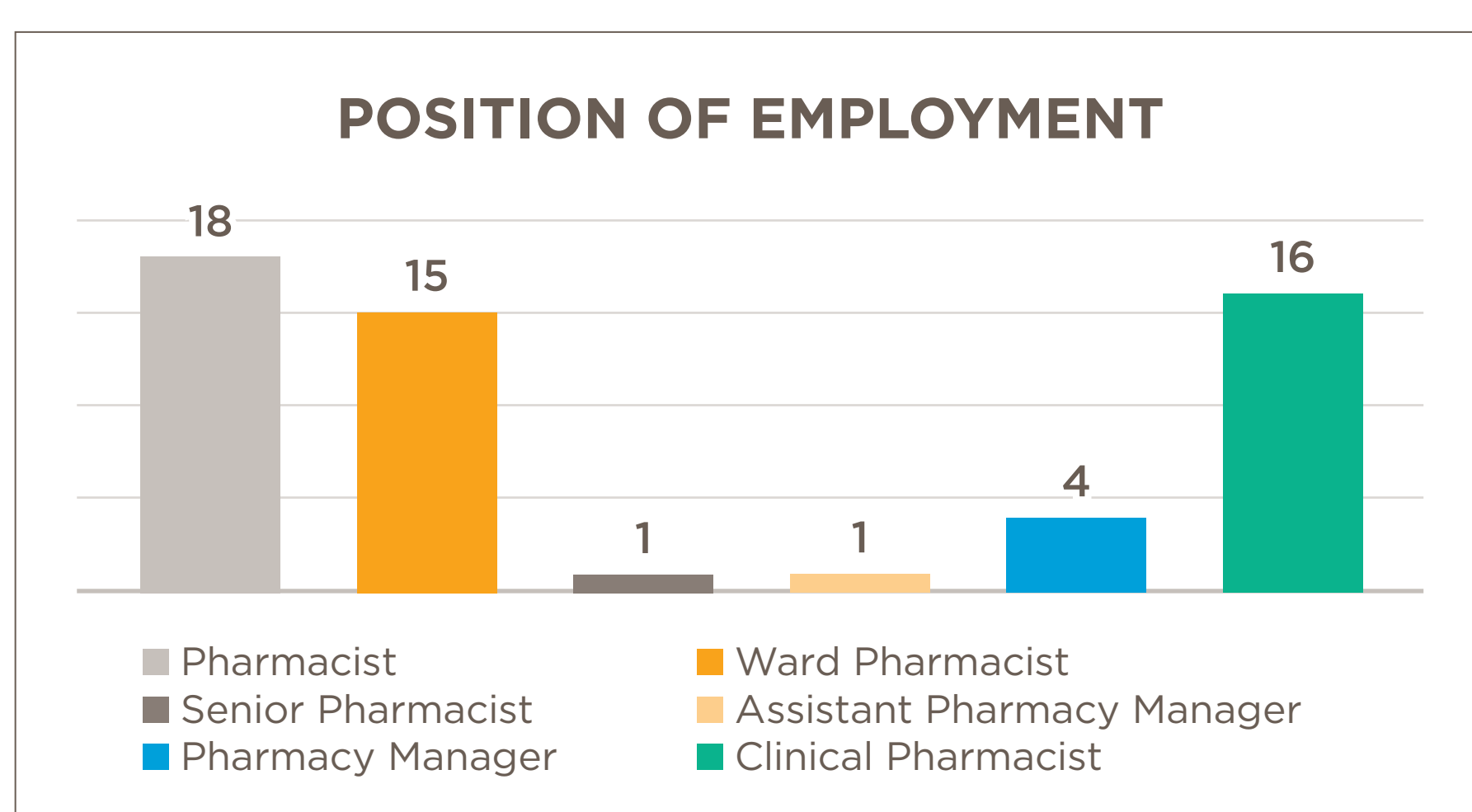


Figure 1: Participants' position of employment

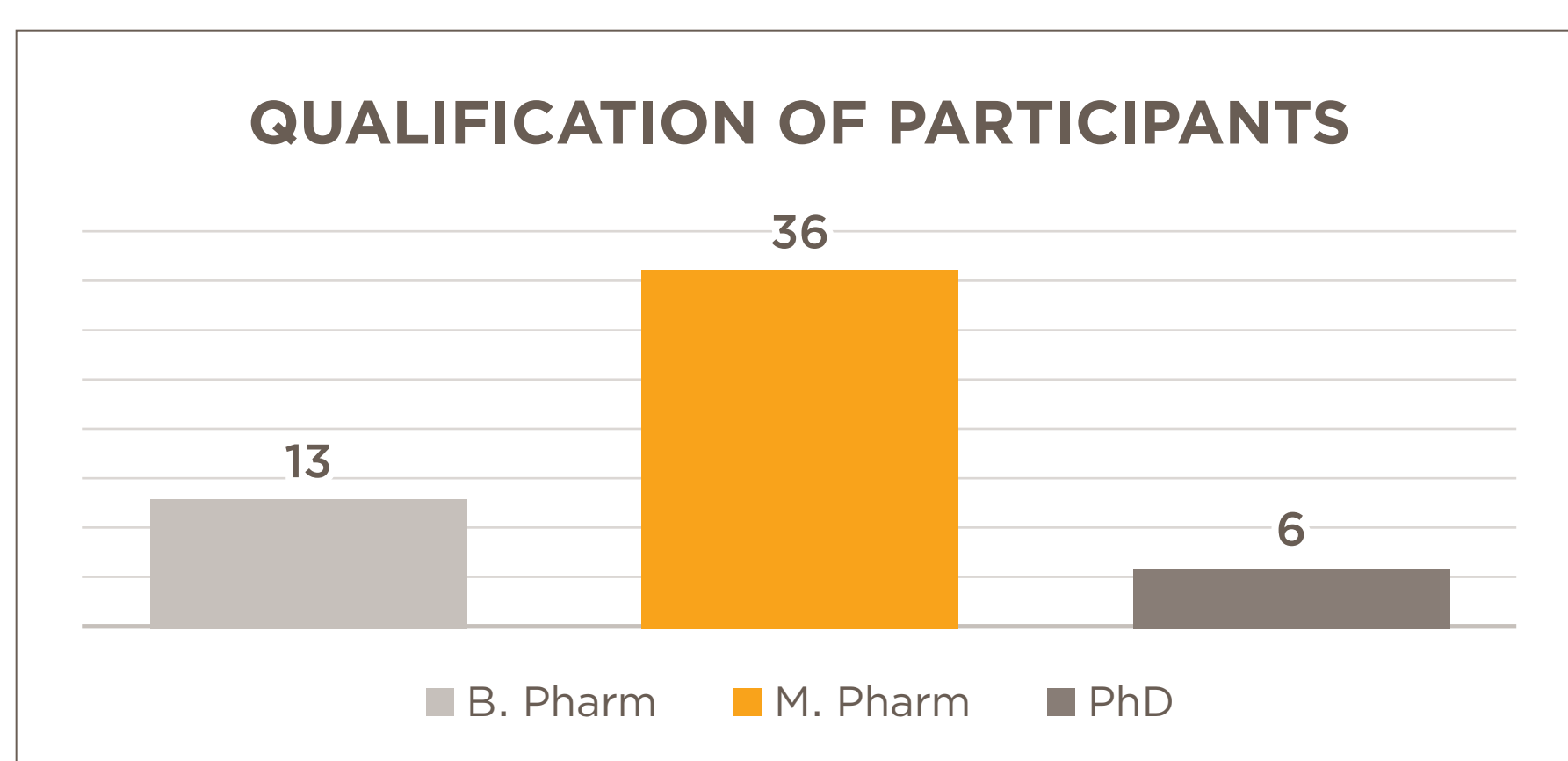


Figure 2: Qualification of participants

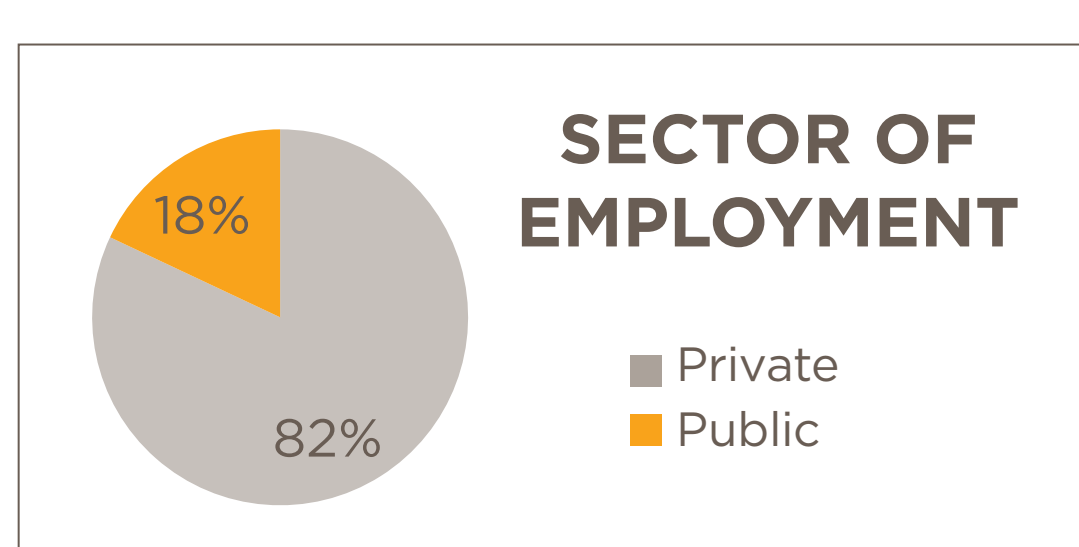


Figure 3: Sector of employment

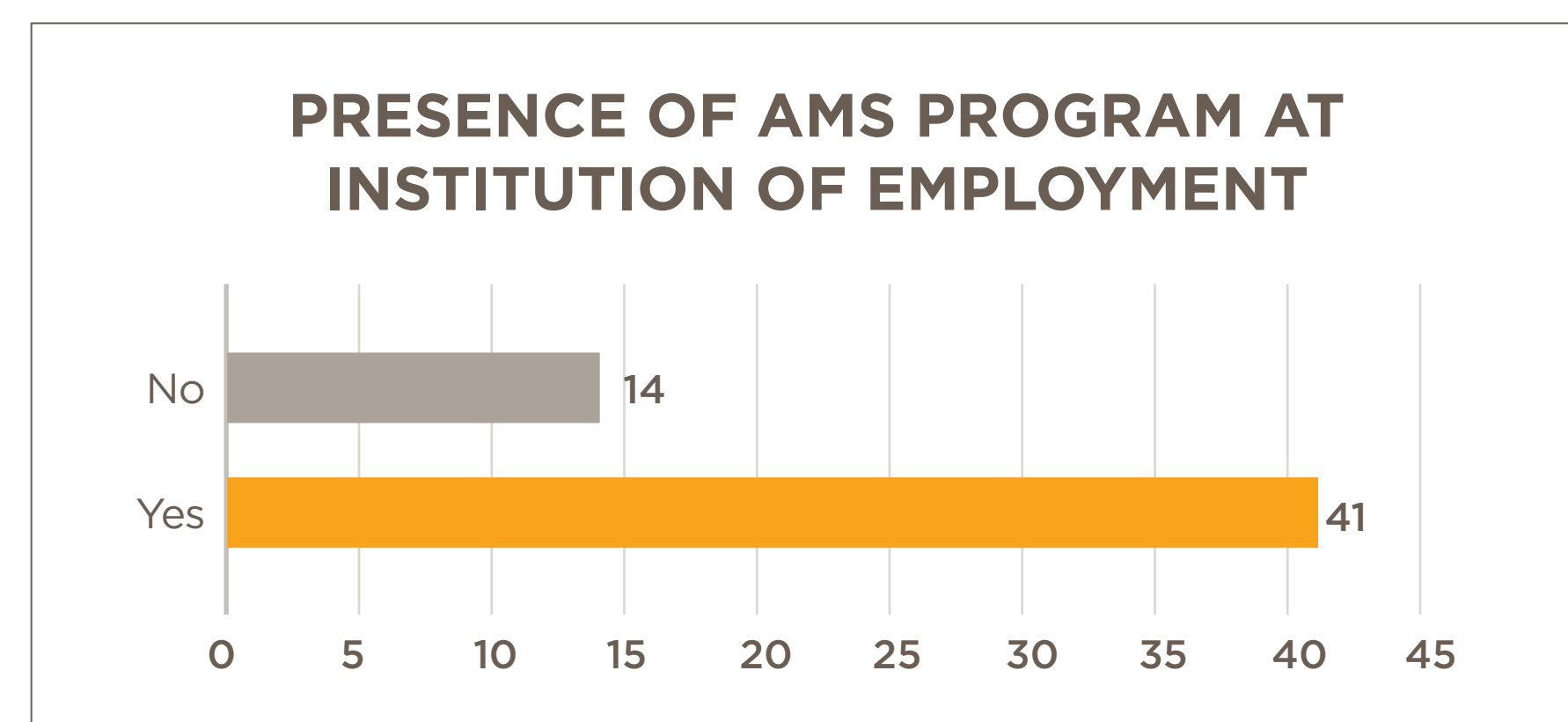


Figure 4: Presence of AMS programme at institution of employment

Exploring the attitudes and knowledge of clinical pharmacists towards AMS and AMS participation

- Pharmacists demonstrated good attitudes, knowledge and perceptions towards AMS (median 4.3)
- Pharmacists demonstrated good levels of participation in AMS activities overall (median 7.8)
- The differences between total overall participation and demographic groups were analysed and the following statistically significant differences were found:
 - The various current positions of employment showed statistical differences $P=0.015$ with ward pharmacists, senior pharmacists, assistant pharmacy managers and clinical pharmacists, showing higher levels of participation compared to pharmacists (median 5.4) and pharmacy managers (median 6.2)
 - Pharmacists with less than a year of experience showed higher levels of participation (median 9.8; $P=0.005$) followed by pharmacists with more than 10 years of experience (median 8; $P=0.005$)
 - Pharmacists employed in the private sector showed higher participation (median 8; $P=0.01$) compared to those employed in the public sector
 - Pharmacists working in an institution with an AMS programme demonstrated much higher levels of participation in AMS (median 8) compared to those working without an AMS programme (median 5.2), $P=0.004$

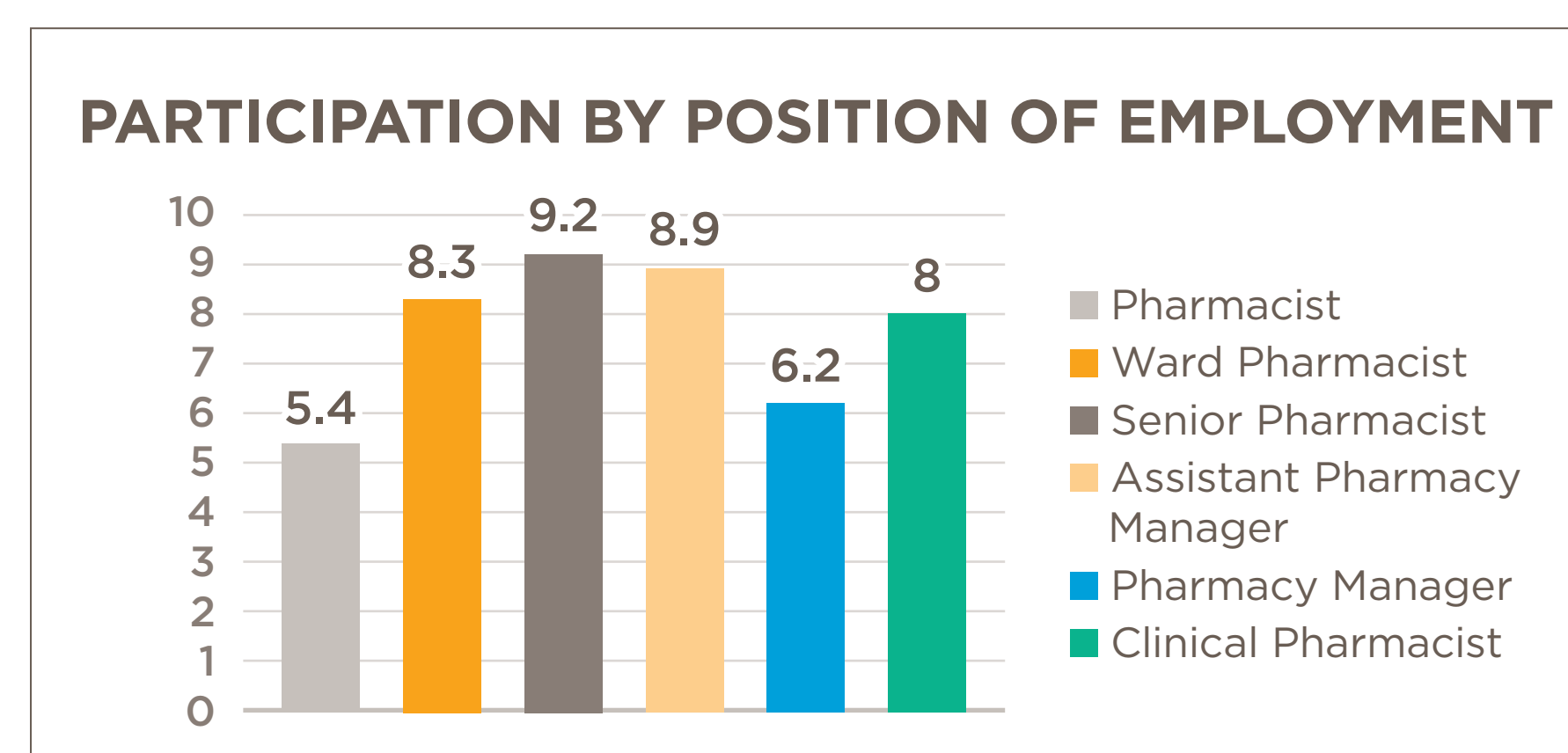


Figure 5: Participation score by position of employment

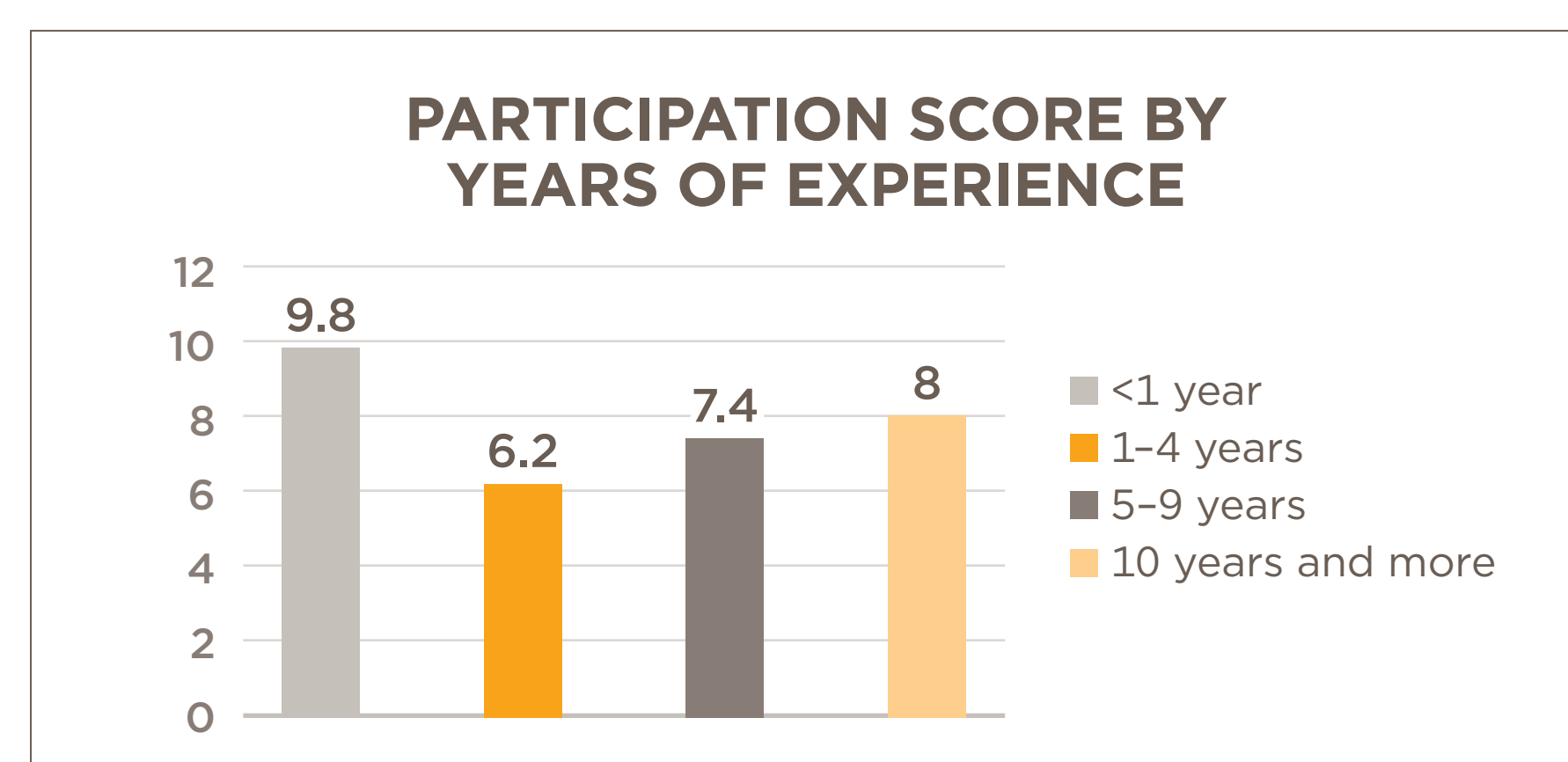


Figure 6: Participation scores by years of experience

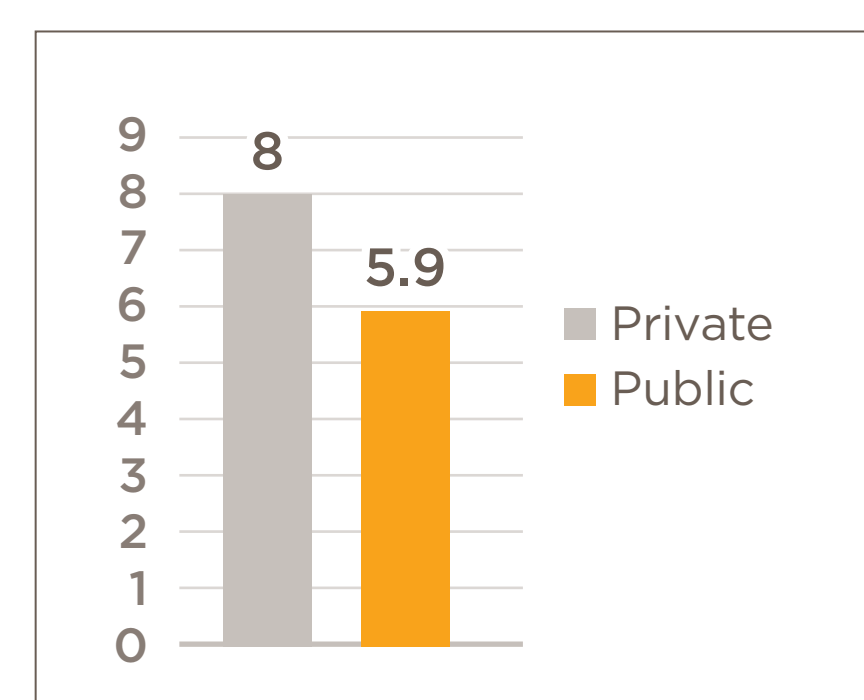


Figure 7: Participation by sector of employment

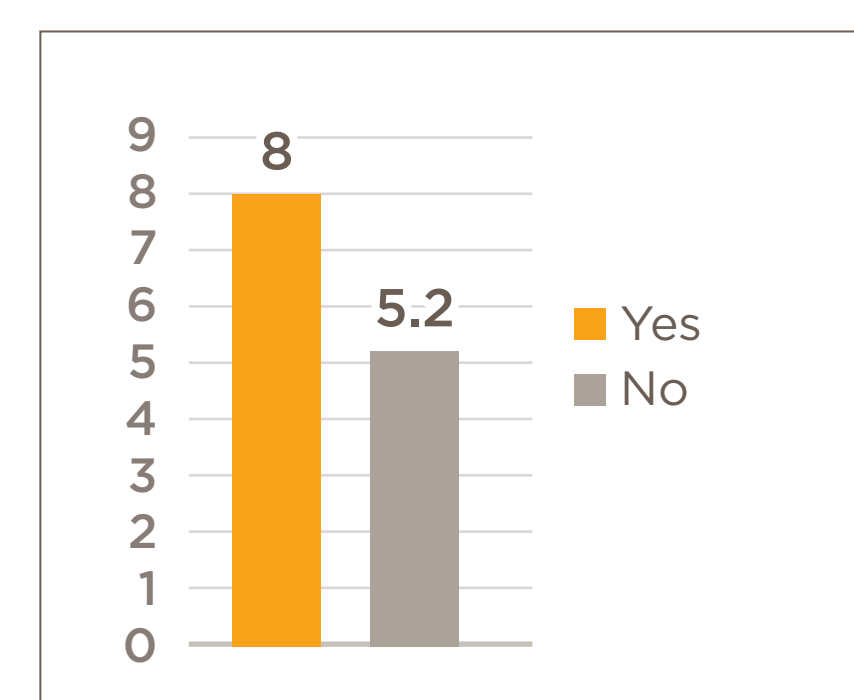


Figure 8: Participation scores in the presence and absence of an AMS programme

Exploring the attitudes and perception of clinical pharmacists on the relevance of pharmacy training on pharmacy practice regarding AMS

Figure 9 displays data derived from participants' perceptions on the relevance of pharmacy training on pharmacy practice regarding AMS.

- Participants indicated that they are most likely to acquire knowledge on AMS at conferences, workshops or other educational activities (often/always n=40; 80%)
- Followed by Master's programmes and short courses (n=36; 73.46%) and (n=36; 72%) respectively
- Participants indicated that they are least likely to acquire this knowledge in undergraduate programmes (often/always n=14; 28%)

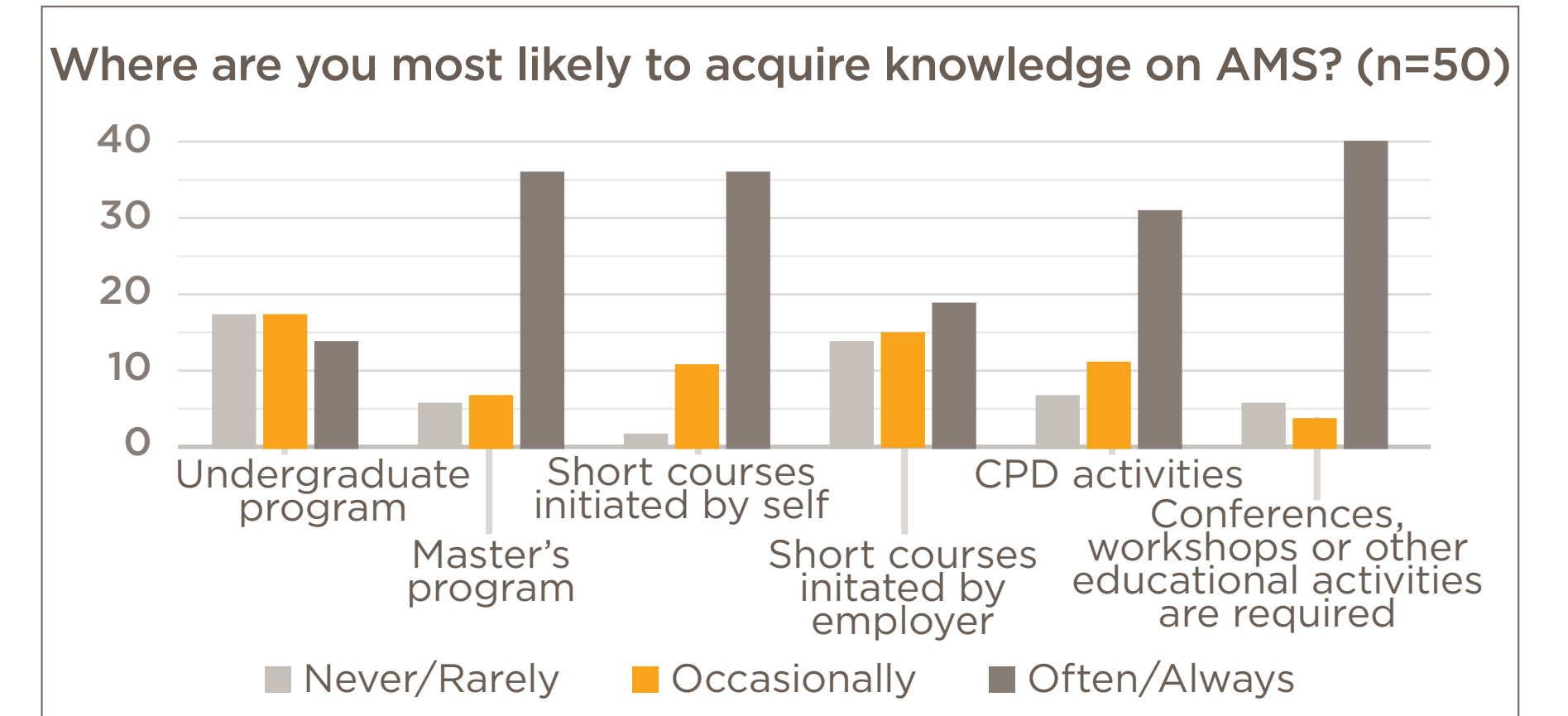


Figure 9: Participants' perceptions on the relevance of pharmacy training on pharmacy practice regarding AMS

Figure 10 displays data where participants rated the extent to which their undergraduate studies and/or postgraduate studies prepared them for their role in AMS.

- Participants indicated that undergraduate studies less than adequately prepared them for their role in AMS (median 4.5)
- Whereas M. Pharm studies adequately prepared them for their role in AMS (median 8)

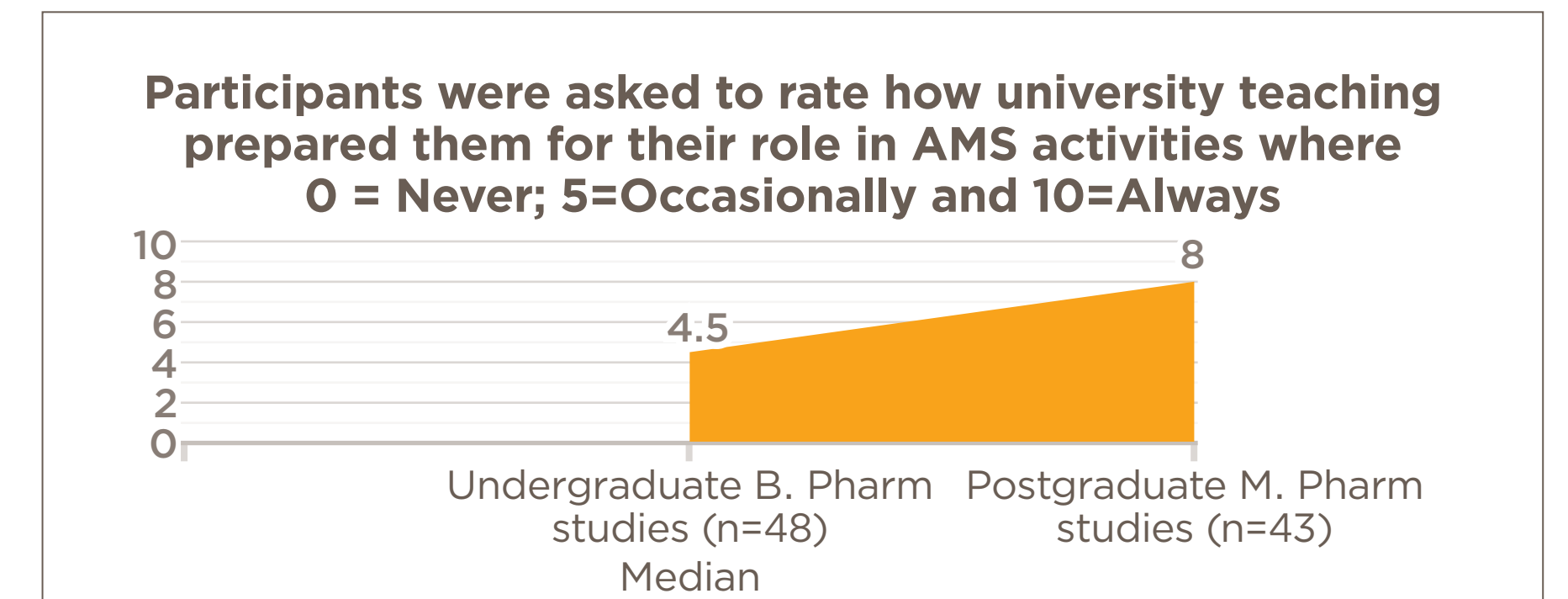


Figure 10: How did your studies during university prepare you for this role?

Participants unanimously agreed that a comprehensive course in AMS and infectious disease would be most beneficial in undergraduate programmes (agree/strongly agree n=48; 100%).

Variable	Responses				
	SD (%)	D (%)	N (%)	A (%)	SA (%)
Undergraduate program (n=48)	0 (0.00)	0 (0.00)	0 (0.00)	25 (52.08)	23 (47.92)
Master's program (n=48)	2 (4.17)	1 (2.08)	1 (2.08)	15 (31.25)	29 (60.42)
CPDs (n=48)	0 (0.00)	2 (4.17)	2 (4.17)	28 (58.33)	16 (33.33)
Short courses (n=48)	0 (0.00)	1 (2.08)	2 (4.17)	22 (52.08)	23 (47.92)

Abbreviations: SD - strongly disagree; D - disagree; N - neutral; A - agree; and SA - strongly agree

CONCLUSION AND RECOMMENDATIONS

This study highlighted that pharmacy schools in South Africa incorporate some form of AMS training. It is recommended that a study be done to determine what pharmacy schools are teaching regarding AMS. The findings from this study support the recommendation to pharmacy schools to implement systematic education and training for pharmacists, starting from instilling basic principles of AMR, AMS, infectious disease and interpersonal skill development in undergraduate programmes to continuous education and development in the form of short courses and CPD. The Department of Health should redirect resources to improve AMS programmes in the public sector. Hospital administrators in the private and public sectors are encouraged to monitor and support AMS programmes within their institutions.

In conclusion, this study found that clinical pharmacists, pharmacists involved in clinical work and AMS in South Africa have good attitudes, knowledge and perceptions towards AMS. Pharmacists of all positions of employment participate in AMS with pharmacists employed as clinical and ward pharmacists showing greater levels of participation. Master's programmes, short courses, CPDs, conferences and workshops are avenues available for pharmacists to acquire AMS knowledge; however, pharmacists are of the view that an undergraduate AMS programme will be most beneficial to bridge the current gap between education and practice.

References

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