# Journal of
# Community Medicine & Health Education

# Knowledge, Attitude and Practice of Community Pharmacists' Towards Generic Medicines in Bahir Dar City, North West of Ethiopia

**Tena Mekonnen[1], Belaynew Adugna[2] and Zewdu Yilma[1]\***

[1]*Department of Pharmacy, School of Health Science, College of Medicine and Health Science, Bahir Dar University, Bahir Dar, Ethiopia*
[2]*Department of Physiotherapy, School of Medicine, College of Medicine and Health Science, Bahir Dar University, Bahir Dar, Ethiopia*

## Abstract

**Background:** Because of its affordability, the use of generic drugs and generic substitution is highly encouraged in most developing countries. However, the safety, quality and efficacy issues of generic products are of top concerns for health professionals.

**Objective:** This study aimed to investigate community pharmacists' knowledge, attitudes and practices toward generic medicines in Bahir Dar city.

**Methods:** The study was conducted in all community retail outlets in Bahir Dar city from May 25, 2019 - June 25, 2019. Facility based cross-sectional study was used and the data collection tool were self-administered questionnaire.

**Results:** A total of 102 questionnaires were distributed to community pharmacists of whom 92 were returned. The mean total score for knowledge on generic medicines was 22.9 ± 4.9. More than half of the respondents, 53(57.6%), were above the mean score. While only 40(43.5%) of respondents for attitudes towards generic medicine and 41(44.6%) of respondents for the practice of dispensing generic medicine, were above the mean score. Years of practice, institution of graduation and average monthly salary showed significant differences (P<0.05) in their response to knowledge questions. While for their response for practice of dispensing generic medicines, only institution indicated significant differences. On the other hand, educational status, age and membership for professional association found significant differences in their response to attitude questions.

**Conclusions:** More than half of the study participants' knowledge on generic medicine was above the mean score, while majority of pharmacists' attitude and practice of dispensing generic medicines were below the mean score.

## Introduction

Medicines play a pivotal role in the process of human development as their rational use which can decrease morbidity and mortality as well as improve quality of life [1]. Despite this awareness, there seems to be inequitable access to medicines globally. World health Organization (WHO) estimates that one-third of the world's population lacks access to essential medicines and more than 50% of the population of developing countries in Asia and Africa lack access to basic essential medicines [2]. Access to medicines is characterized by many factors such as affordable prices, rational utilization, sustainable financing and reliable supply system, but the most crucial element which restricts access to medicines is drug pricing [3,4]. Thus, to increase access to medicines, affordable price is one of the measures to counteract the global medicine gap. The issue of access and affordability is thus addressed by using generic medicines as a cost containment strategy globally [4,5].

A generic drug is defined as "a pharmaceutical product which has the same characteristics as the reference medicinal product (innovators product) regarding the quality and composition of the active ingredients and pharmaceutical form, and also whose bioequivalence with the reference product has been demonstrated by appropriate bioavailability studies" [2,6,7].

Generic versions of drug are very interesting component of the pharmaceutical market. They can only be produced after a patent expire of the branded drug [1-3]. According to the United States Food and Drug Administration (FDA), generic drug is defined as a drug that has the same characteristics as a branded drug in active ingredient, strength, route of administration, safety, dosage form, performance, quality and intended use. Generic drugs need to be bioequivalent to the branded drug to be licensed for marketing [6]. Although, bio-similar products are generic versions of biologics, significant differences exist between bio-similar and typical generic drugs. Chemical methods are generally used to produce generic drugs whereas biologicals are synthesized usually by cells or living organisms. This difference in origin leads to differences in structure, composition, manufacturing methods and equipment, intellectual property, formulation, handling, dosing, regulation, and marketing aspects [7].

Interchangeable pharmaceutical products are considered as therapeutically equivalent of an innovator product [7]. In order to be approved, a generic medicine should be bioequivalent to the originator product, and must be the same in terms of strength, safety and quality [3,6]. They must be able to demonstrate bioequivalence to the originator medicine in terms of bioavailability and the rate of absorption. However, the name of the medicine, its appearance (such as color or shape), its packaging, size and excipients can be different from those of the reference medicine. Pre-clinical and clinical testing did not have to be repeated again for generics. The deliberate result of this legislation was to guarantee that generic medicines would be cheaper than the

**\*Corresponding author:** Zewdu Yilma, Department of Pharmacy, School of Health Science, College of Medicine and Health Science, Bahir Dar University, Bahir Dar, Ethiopia, Tel: 251910059272; E-mail: ziedo21@gmail.com

equivalent originator medicine because it was not expected for generic medicine manufacturers to repeat again innovation, pre-clinical and clinical studies [2,8].

Since innovator drugs are no longer protected by patents and since generic drug manufacturers do not have to spend extra money for drug discovery, pre-clinical and clinical trials, as well as for some other reasons; generics are generally cheaper than brands. In all countries, the use of generic drugs has increased significantly in recent years. Since generics are available at a lower cost, they provide an opportunity for savings in drug expenditure without reducing the quality [2,9]. Because of these, generic substitution is considered as a major cost minimizing strategy meant to contain pharmaceutical expenditure without compromising healthcare [9].

The practice of generic medicines prescribing, dispensing and substitution in developing countries has been controversial among healthcare professionals, particularly due to issues on quality, safety and efficacy. These controversies are as a result of inter-country differences in policies and laws as well as individualized knowledge and attitudes of health professionals pertaining to generic medicines [10,11]. Community pharmacists have an important role in the medication use process and have a professional responsibility to help patients in the selection of quality, safe, effective, and affordable drug products. Having sound knowledge, positive attitudes and practices towards generic medicines could influence the selection of pharmaceutical products and promote access to medicines [11].

Therefore, the aim of this study is to assess the knowledge, attitude and practice of community pharmacy professionals towards generic medicines. This will have a significant input in changing the trend of using costly brand medications as long as they are as effective as generics. Moreover, this study will also be a baseline for other similar researchers to further investigate on it.

## Methods

### Study area and period

The study was conducted in all medicine retail outlets in Bahir Dar city. Bahir Dar is the capital city of Amhara regional state, around 565 km away from Addis Ababa the capital city of Ethiopia. In Bahir Dar, there are 2 comprehensive specialized hospitals, 5 general hospitals, 95 community pharmacies (47 pharmacies and 50 drug stores). This study was conducted from May 25, 2019-June 25, 2019.

### Study design

Facility based cross-sectional survey was used to assess Knowledge, Attitude and Practice of Pharmacy Professionals towards generic medicines at Bahir Dar city, North-West Ethiopia.

### Source and Study population

The source population was all pharmacy professionals working in community pharmacies. The study population was community pharmacists working in community pharmacies and available during data collection period.

## Inclusion and Exclusion Criteria

### Inclusion criteria

Those pharmacy professionals working in private retail outlets, available during data collection period and willingness to participate.

### Exclusion criteria

Those pharmacy professionals who are not available in the data collection period and not willing to participate in the study.

### Study variables

### Independent variables

Socio-demographic characteristics of professionals (Gender, Age, Qualification, Institution of graduation, Membership to Ethiopian Pharmaceutical Association (EPA), Years of experience and Monthly salary).

### Dependent variables

Knowledge, attitude and practice of community pharmacist's on generic medicine.

### Data collection and management

A structured pre tested self-administered questionnaires has been developed through an extensive review of available literature on knowledge, attitudes and practices of pharmacists regarding generic medicines. The questionnaire was developed in English and contained four parts. In the first section, questions on socio-demographic and professional characteristics were requested. The second part contains 7 questions about pharmacists' knowledge on generic medicines. In the third section, pharmacists' attitude towards generic medicine was studied using 7- item statement. The fourth section contains 6 questions regarding pharmacists' practice towards generic medicine. Except for the first session, participants had to respond on a 5- point Likert scale (from strongly agree to strongly disagree). Data collection was conducted from May 25, 2019 - June 25, 2019 by six data collectors. Training focused on data abstraction was provided for the data collectors by principal investigators. Questionnaires were distributed and collected after a week.

### Data processing, analysis and interpretation

The collected data was entered and analyzed using Statistical Package for Social Sciences (SPSS) version 23.0. To analyze data both descriptive and analytic statistics were applied. For descriptive analysis, frequencies and percentages of responses were generated. The Mann-Whitney U test and the Kruskal-Wallis test were used to assess inter group differences in knowledge score, attitude score and practice score. These two non-parametric testing methods were used because the data in this survey is not normal distribution. P-values of less than 0.05 were considered statistically significant.

## Result

### Demographic characteristics and work profilesof community pharmacists

A total of 108 community pharmacists were asked to participate in the study, however, 92 agreed to fill out the questionnaire with a response rate of 85.2%. From the total respondents, 47 (51.1%) were females. The highest percent of participants 48 (52.2%) were between the ages of (20–29) years-old. The majority of respondents were graduated from private institutions 57 (62%) (Table 1).

### Knowledge of pharmacy professionals on generic medicines

The mean total score of generic medicines knowledge among the respondents was 22.93 (95% CI 21.88-23.93). Two- third of respondents agreed that a generic medicine is bioequivalent to a brand

name medicine (67.4% as strongly agree and agree). More than half 49(53.2%) of respondents confirmed that pharmacists in Ethiopia have the right to perform generic substitution (Table 2).

The effect of community pharmacists' characteristics on their knowledge of generic medicine was further analyzed. Due to the non-normality of the data the Mann–Whitney U and Kruskal–Wallis nonparametric tests were used. Out of the seven characteristics tested, years of practice, institution of graduation and average monthly salary had an effect on the knowledge score ($p < 0.05$).

A Mann-Whitney U test showed that there was a significant difference (U = 1327, p = 0.008) between the knowledge score for those graduated from private institution compared to graduate from public /governmental institution. The median knowledge score was 24 for graduated from public/governmental institution compared to 22 for those graduated from private institution. This implies that those graduated from government/public institution are more knowledgeable.

| Characteristic | N (%) |
|---|---|
| **Age** | |
| 20-29 | 48 (52.2) |
| >30 | 44 (47.8) |
| **Sex** | |
| Male | 45 (48.9) |
| Female | 47(51.1) |
| **Institution of graduation** | |
| Private institution | 57 (62) |
| Government/public institution | 35 (38) |
| **Number of experiences (years)** | |
| <2 | 19 (20.7) |
| 2-5 | 21 (22.8) |
| >5 | 52 (56.5) |
| **Membership to Ethiopian Pharmaceutical Association (EPA)** | |
| Yes | 44 (47.8) |
| No | 48 (52.2) |
| **Qualification** | |
| Diploma | 37 (40.2) |
| Degree | 51 (55.4) |
| MSc | 4 (4.3) |
| **Monthly salary** | |
| <2500 | 21 (26.6) |
| 2501 – 5000 | 31 (39.2) |
| 5001 – 10000 | 17 (21.5) |
| >10000 | 10 (12.7) |

**Table 1:** Socio-demographic profile of community pharmacist in Bahir Darcity, June 2019 (n=92)

Kruskal-Wallis test also showed that significant difference between less than 2 years and 2-5 years of experience (P=0.049). Community pharmacists with more years of practice score higher on the knowledge of generic medicines than less experienced pharmacists. Comparing pharmacists' knowledge based on their monthly salary, significant difference was expected between their monthly salary between 5001-10,000 and 2501-5000 (P=0.039) as mentioned in Table 3.

**Attitude of pharmacy professionals towards generic medicines**

The total mean score community pharmacists' attitudes on generic medicines was found to be 22.08 (95% CI 21.88-23.93). Above three-quarter 70 (76.1%) of the respondents agreed (strongly agree + agree) that promotional activities play an important role in dispensing brand medicines. Regarding the attitudinal statement "I support generic substitution for brand name drugs in all cases where a generic is available", more than half (51.3%) of the respondents agreed (strongly agree + agree) with the statement (Table 4).

Comparative analysis between groups, for educational status, age and member ship for pharmaceutical association, indicated significant differences (P<0.05) in their answer to attitude questions to wards generic medicines.A Mann-Whitney U test showed that there was a significant difference (U = 1392.5, p = 0.008) between the attitude score towards generic medicines in age group between 20-29 and >30. The median attitude score was 24 for age group >30 compared to 21 for those 20-29 years old. This shows that those age groups >30 have positive attitude towards generic medicines. In addition, being a member for Ethiopian Pharmaceutical association have positive attitude for generic medicine than non-members (p=0.028).

The Kruskal-Wallis test also showed that significant difference exist between participants with different educational status. Bachelor degree graduates have positive attitude towards generic medicine than MSc graduates (Table 3).

**Practice of pharmacy professionals towards generic medicines**

The mean total score of generic medicines dispensing practice among the respondents was 21.29 (95% CI 20.58-21.98). When assessing the community pharmacists' generic medicine dispensing behavior, it was found that the majority of respondents 74(80.4%) agreed (agree=38% and strongly agree=42.45%) in "Patient's socio-economic factor will affect their choice of dispensing generic medicines" (Table 5). A Mann-Whitney U test showed that there was a significant difference (U = 750.5, p = 0.046) between institution of graduation where they obtained their degree in their answer to practicing behavior questions. Those graduated from private institution had better dispensing practice for generic medicine compared to the group graduated from public / governmental institution Table 3.

| Variable | Strongly disagree (%) | Disagree (%) | Neutral (%) | Agree (%) | Strongly agree (%) |
|---|---|---|---|---|---|
| A generic medicine contains the same active substance(s) as the innovator medicine, and it is used at the same dose(s) to treat the same disease(s) as the innovator medicine | 8 (8.7) | 14 (15.2) | 6 (6.5) | 41 (44.6) | 23 (25.0) |
| A generic medicine is usually manufactured without a license from the innovator company, but marketed after expiry of patent or other exclusivity rights | 39 (42.4) | 22 (23.9) | 7 (7.6) | 14 (15.2) | 10 (10.9) |
| A generic medicines is bioequivalent to a brand name medicines | 5 (5.4) | 16 (17.4) | 9 (9.8) | 33 (35.9) | 29 (31.5) |
| A generic medicines must be in the same dosage form (e.g., tablet, capsule) as the brand name medicines | 15 (16.3) | 13 (14.1) | 10 (10.9) | 31 (33.7) | 23 (25.0) |
| Generic drug manufacturers need to conduct bioequivalence studies to demonstrate equivalence between the generic medicine and the innovator medicine. | 5 (5.4) | 12 (13.0) | 19 (20.7) | 43 (46.7) | 13 (14.1) |
| Wider use of generic medicines in Ethiopia helps in decreasing the health care expenditure of government | 16 (17.4) | 16 (17.4) | 15 (16.3) | 31 (33.7) | 14 (15.2) |
| Pharmacists in Ethiopia have the right to perform generic substitution | 10 (10.9) | 11 (12.0) | 22 (23.9) | 37 (40.2) | 12 (13.0) |

**Table 2:** Knowledge of community pharmacists on generic medicines in Bahir Dar city, June 2019. (n=92).

| Variables | Knowledge | | Attitude | | Practice | |
|---|---|---|---|---|---|---|
| | Median | P-value | Median | P-value | Median | P-value |
| **Age** | | 0.402 | | **0.008** | | 0.931 |
| 20-29 | 23 | | 21 | | 21 | |
| >30 | 24 | | 24 | | 21 | |
| **Sex** | | 0.486 | | 0.981 | | 0.306 |
| Male | 23 | | 22 | | 21 | |
| Female | 23 | | 22 | | 21 | |
| **Institution of graduation** | | **0.008** | | 0.695 | | **0.046** |
| Private institution | 22 | | 22 | | 22 | |
| Government/public institution | 24 | | 22 | | 21 | |
| **Number of experiences (years)** | | **0.049** | | 0.222 | | 0.973 |
| <2 | 21 | | 22 | | 21 | |
| 2-5 | 24 | | 21 | | 22 | |
| >5 | 24 | | 23 | | 21 | |
| **Membership to Ethiopian Pharmaceutical Association (EPA)** | | 0.420 | | **0.028** | | 0.064 |
| Yes | 23 | | 23 | | 21 | |
| No | 23 | | 21 | | 22 | |
| **Qualification** | | 0.916 | | **0.031** | | 0.968 |
| Diploma | 23 | | 21 | | 21 | |
| Degree | 23 | | 23 | | 21 | |
| MSc | 25 | | 19 | | 22 | |
| **Monthly salary** | | **0.039** | | 0.170 | | 0.768 |
| <2500 | 24 | | 21 | | 21 | |
| 2501 – 5000 | 22 | | 23 | | 22 | |
| 5001 – 10000 | 26 | | 19 | | 20 | |
| >10000 | 24 | | 23 | | 21 | |

p values were calculated using Kruskal–Wallis and Mann–Whitney U tests as appropriate

**Table 3:** Association between socio-demographic characteristics and knowledge, attitude and practice score regarding generic medicine in Bahir Dar city, June 2019(n=92).

| Variable | Strongly disagree (%) | Disagree (%) | Neutral (%) | Agree (%) | Strongly agree (%) |
|---|---|---|---|---|---|
| I believe that Generics are not as safe as innovator drugs. | 31 (33.7) | 31 (33.7) | 11 (12.0) | 16 (17.4) | 3 (3.3) |
| I believe that Brand-name drugs are made in modern manufacturing facilities, and generics are often made in substandard facilities. | 22 (23.9) | 26 (28.3) | 8 (8.7) | 26 (28.3) | 10 (10.9) |
| I believe Therapeutic failure is a serious problem with most generic products. | 20 (21.7) | 26 (28.3) | 18 (19.6) | 20 (21.7) | 8 (8.7) |
| I believe Generic drugs cost less because they are inferior to brand-name drugs | 24 (26.1) | 20 (21.7) | 10 (10.9) | 29 (31.1) | 9(10.2) |
| I support substitution in all cases where generic is available. | 11 (12.0) | 20 (21.7) | 14 (15.2) | 38 (41.3) | 9 (9.8) |
| Can you believe Generics take longer to act in the body? | 20 (21.7) | 22 (23.9) | 23 (25.0) | 21 (22.8) | 6 (6.5) |
| Can you believe The intensity of promotional activities by promoters plays an important role in dispensing brand medicines? | 12 (13.0) | 6 (6.5) | 4 (4.3) | 49 (53.3) | 21 (22.8) |

**Table 4:** Attitude of community pharmacy professionals towards generic medicines in Bahir Dar city, June 2019 (n=92).

| Variable | Strongly disagree (%) | Disagree (%) | Neutral (%) | Agree (%) | Strongly agree (%) |
|---|---|---|---|---|---|
| Standard guideline need on brand substitution process? | 13 (14.1) | 26 (28.3) | 12 (13) | 28 (30.4) | 13 (14.1) |
| Quality use of brand Medicine achieved pharmacy and physician work together? | 6 (6.5) | 18 (19.6) | 12 (13) | 42 (45.7) | 14 (15.2) |
| If brand is not available do you try to convince the patient that generic has the same effect? | 6 (6.5) | 9 (9.8) | 12 (13) | 43 (46.7) | 22 (23.9) |
| If patients are satisfied with generic drugs more than brands do I try to change their minds to take brands? | 30 (32.6) | 30 (32.6) | 11 (12) | 13 (14.1) | 8 (8.7) |
| If patient come complaining from generic drug do you shift him to brand without referring him to his doctors? | 25 (27.2) | 29 (31.5) | 8 (8.7) | 23 (25) | 7 (7.6) |
| Patient's socio-economic factor will affect my choice of Medicines? | 7 (7.6) | 6 (6.5) | 5 (5.4) | 36 (39.1) | 38 (41.3) |

**Table 5:** Practice of community pharmacy professionals for dispensing of generic medicines in Bahir Dar city, June 2019(n=92).

decades. Generic drugs provide the opportunity for major savings in healthcare expenditure. Therefore, requesting pharmacists to dispense generic drugs and generic substitution are frequently suggested means for lowering health care costs. Pharmacists' knowledge, attitude and practice (KAP) towards generic medicine could influence the selection and use of pharmaceutical products [10]. There are only a few studies concerning the KAP of pharmacists towards generic drug use. This study attempted to assess knowledge, attitude and practice of private community pharmacists toward generic medicines.

In the current study, more than half of the respondents 67.4%

(agree=35.9%, 31.5% strongly agree) claimed that they have had knowledge on the concept of "generic medicine is bioequivalent to brand medicine" which is much higher than the study reported from Mekelle (52.9%) [10], Kuwait (46.1%) [9] and Qatar (38%) [11]. But this result is lower than the studies conducted in palatine (94.7%) [9], New Zealand (70%) [10]. This difference might be the result of difference in educational status of the participants. From the total participants, 58.7% of them claimed that "generic medicine must be in the same dosage form as the brand medicine" which is lower as compared with the report of Mekelle that revealed 64.3% of the respondents claimed this truth [10].

This study also revealed that, years of practice, institution of graduation and average monthly salary had an effect on the knowledge score and it showed those graduated from government/public institution are more knowledgeable than from private institution (U = 1327, p = 0.008). Community pharmacists with more years of practice scored higher on the knowledge of generic medicines than the younger and less experienced pharmacists. While similar study in Quatar showed that only gender had an effect on the knowledge score (p = 0.035), and male community pharmacists had significantly higher knowledge scores compared to their female counterparts [11]. On the other hand, there were no statistically significant differences in knowledge score observed in Palestinian community Pharmacists [9].

In the current study, less than half 40(43.5%) of respondents have an attitude towards generic medicine was above the total mean score and 20.7% them have an attitude towards "generic medicines are less effective and less safe compared to brand name medicines". This value is less than a study from Mekelle (34.4%) [10], which implies that our study found better score. From the current study, 47.8% of them claimed that generic medicines are cheaper because they are inferior than brand name medicines which is lower than the report of Mekelle and Australia that found 73.9% & 91.3%, respectively [10,11]. Study from Malaysia reported 58.4% of the pharmacist's perceived that local generics are as equal in safety and efficacy as the imported products [11] which is less than the result found in the current study (67.4%).

Comparative analysis resulted that educational status (Kruskal-Wallis=6.95, p=0.031), age (U = 1392.5, p = 0.008) and membership for pharmaceutical association (U=776.5, p=0.028) showed significant differences (P<0.05) in their answer to attitude questions towards generic medicines. While result from Mekelle study noted that year of experience is the main associated factor [10].

When branded drugs were not available, most of them (70.6%) tried to convince the patients that generics have the same effect as brands. But, if patients were satisfied with generic drugs, 65.2% of the participants did not try to change their minds to take branded medicines. Also, if patients came to them complaining about generic drugs, (41.3%) of the respondents would shift their medicines to branded ones without referring to their prescribing physicians. A similar study done in Cairo University showed that 88.4% of the respondents tried to change generics if brands not available, 62.2% of participants are not try to change their mind to take brand medicines and 42.2% of respondents would shift their medicines to branded ones without referring to their prescribing physicians [10]. While study from India published that 80% of the respondents did not support generic substitution, even in case of prescribed medicines are not available [11]. The present study revealed that even though community pharmacists graduated from public institution have more knowledge on generic medicine than those from private, graduates from private institution had better dispensing practice as compared to those graduates from public/governmental institution.

## Conclusion

More than half of the study participants' knowledge on generic medicine was above the mean score, while majority of their attitude and practice of dispensing generic medicines were below the mean score. This showed even though most community pharmacists have knowledge on generic medicine, still most of them have negative attitude and poor practice of dispensing generic medicines. Pharmacists need to be continuously informed and reassured about the regulatory authority approval system concerning quality, efficacy and safety of generic products.

### References

1. Cohen-Kohler JC (2007) Themorally uncomfortable global drug gap. Nature 82: 610-614.

2. World Health Organization (2004) WHO medicines strategy: Countries at the core, 2004-2007. Geneva.

3. Godman B, Shrank W, Andersen M, Berg C, Bishop I, etal. (2010) Comparing policies to enhance prescribing efficiency in Europe through increasing generic utilization: Changes seen and global implications. Expert Rev Pharmacoecon Outcomes Res 10: 707-722.

4. Shraim NY, Al Taha TA, Qawasmeh RF, Jarrar HB, Shtaya MAN, et al. (2017) Knowledge, attitudes and practices of community pharmacists on generic medicines in Palestine: A cross-sectional study. BMC Health Serv Res 17: 847.

5. Yard B (2017) Assessment of knowledge, attitude and practice of pharmacy professionals toward generic medicines, Northern Ethiopia, Mekelle: A cross sectional study. J Basic Clin Pharma 8:193-199.

6. Awaisu A, Kheir N, Ibrahim MIM, El-Hajj M, Hazi H, et al. (2014) knowledge, attitudes, and practices of community pharmacists on generic medicines in Qatar. Int J Clin Pharm 36: 394-404.

7. Hassali A, Stewart K, Kong D (2004) Quality use of generic medicines. Austr Prescriber 27: 80-81

8. Hassali MA, Kong D, Stewart K (2007) A comparison between senior medical students' and pharmacy preregistrants' knowledge and perceptions of generic medicines. Med Educ41:703-710.

9. Babar Z-Ud, Awaisu A (2008) Evaluating community pharmacists' perception and practices on generic medicines 2008: A pilot study from Peninsular Malaysia. J Generic Med 5: 315-330.

10. Basak S, Sathyanarayana D (2012) Exploring knowledge and perceptions of generic medicines among drug retailers and community pharmacists. Indian J Pharm Sci74:571-575.

11. Babar ZUD, Grover P, Stewart J, Hogg M, Short L, et al. (2011) Evaluating Pharmacists' knowledge and perception regarding generic medicines in New Zealand 2011. Res Social Adm Pharm 7:294-305.