

RESEARCH ARTICLE

Assessment of prescription quality in patients with chronic respiratory disorders at a tertiary care teaching hospital using the prescription quality index tool

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ABSTRACT

Background: Prescription quality is an important major concern worldwide. Many prescription quality-measuring indicators have been developed to assess the prescription quality and to evaluate whether the right medicines are prescribed to the right patients. **Aims and Objective:** This study was carried out to analyze the prescription quality in patients with chronic respiratory disorders (CRDs) at a tertiary care teaching hospital with the use of prescription quality index (PQI) tool and to measure the reliability of this prescription quality-measuring tool. **Materials and Methods:** This was a cross-sectional prospective study conducted at the medicine department of a tertiary care teaching hospital. All patients diagnosed with CRDs attending the outpatient department of medicine were included in the study. All prescription details including medical history were recorded. Total PQI scores and criteria wise PQI scores were derived for each prescription. Prescriptions were categorized as high, medium, and poor quality based on the total PQI score. The PQI internal consistency was assessed with the use of item-total correlation. The Cronbach's α was used to measure the reliability of PQI. **Results:** A total of 120 patients with CRDs who received 120 prescriptions were included in the study. The mean age of patients was 50.2 ± 13.6 years. The mean total PQI score was 32.0 with a standard deviation of 6.2. Out of 22 criteria, PQI total scores showed a strong correlation with drug indication, dosage, and duration of therapy ($P < 0.01$). The value of Cronbach's for the entire 22 criteria was 0.73. Out of 120 prescriptions, 64 (53%) were of high-quality prescriptions with PQI score ≥ 34 . **Conclusion:** Prescription quality in patients with CRDs was medium to high at a tertiary care teaching hospital. The PQI is a unique, valid, and reliable tool to analyze the quality of prescription in chronic conditions.

KEY WORDS: Chronic Respiratory Disorders; Prescription Quality; Prescription Quality Index Tool

INTRODUCTION

Once a patient with a clinical problem has been evaluated and diagnosed, the medical practitioner can select from

a variety of therapeutic approaches such as medication, surgery, physical therapy, counseling, or no therapy. From these, drug therapy is by far the most commonly chosen. In most cases, this requires the writing of a prescription which is the most common form of therapeutic intervention in medical practice. Prescription is a lawful written instruction from a licensed physician or another medical practitioner to a licensed pharmacist regarding the compounding or dispensing and administration of drug/s or other medical services to the patient.^[1] A complete prescription composed of four parts: Superscription which includes physician's details, date, patient's details, and the symbol Rx; inscription

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which specifies the ingredients and their quantities, dosage form, strength, and route of administration; subscription which includes the instruction to the pharmacist regarding dispensing of the drug, and transcription which includes the instruction to the patient regarding the use of medicines and finally signature of the prescriber.^[2,3] The quality of prescription is a foundation stone for high-quality patient health care. An ideal prescription should provide a medicine to the patients appropriate to their clinical needs in doses which meet their own individual requirements for an adequate time period and at the lowest costs to them and to their community. Good prescribing is not just the selection of a correct drug for a disease or mere matching of drugs with diseases but also the appropriateness of the whole therapeutic setting along with follow-up of the health outcome. While prescribing without an appropriate indication, correct drug, dose, route of administration, duration of therapy, unsafe use of drugs, and polypharmacy without regard to drug interactions or adverse reactions are all forms of irrational prescribing and lead to poor prescribing quality. Poor prescribing quality can affect the quality of life of patients in possibly due to inappropriate therapeutic efficacy, adverse reactions, drug–drug interactions, poor compliance, or prolongation of hospitalization.

Many prescription quality-measuring tools have been developed to assess the prescription quality. The World Health Organization (WHO) has developed the WHO core drug use indicators to measure the prescribing and patient care performance in health-care facilities and serve as a strong tool for supervision and monitoring of drug use practices at facility, regional, and country levels.^[4] The medication chart or drug chart review which identifies the drug-related problems involves the systematic review of each drug order on the patients' medication chart.^[5] The medication appropriateness index derived by Fitzgerald *et al.* to assess the appropriateness of medication use in individual patients and has been found to be valid and reliable in many clinical therapeutic settings. It has been worded in the question form, measuring basic appropriateness of drug treatment, cost, and interaction potential.^[6,7] However, there is a lack of a single tool that evaluate all facets of prescription quality and which can be used to measure the quality of prescription in chronic diseases.

Prescription quality index (PQI) tool developed by Hassan *et al.*,^[8] based on published literature, peer reviews, and expert consensus, contains 22 criteria in the form of questions. PQI tool is a quantifiable element intended for health-care professionals such as clinicians to assess the quality of prescription in chronic conditions. It is derived to quantify whether the right medicines are prescribed to the right patients. For the use of PQI, drug prescription and basic patient information are required at a minimum. However, to obtain more valid and reliable assessments, patients' social, clinical, and laboratory information are required. The PQI has

been claimed to be an ideal tool applicable to a broad variety of medications and clinical situations with usable in different health-care settings and with limited availability data.

This study was carried out to analyze the prescription quality in patients with chronic respiratory disorders (CRDs) attending the medicine outpatient department (OPD) at a tertiary care teaching hospital using the PQI tool^[8] and to measure the reliability of this tool.

MATERIALS AND METHODS

This was a prospective cross-sectional study conducted over a period of 1 year from December 2012 to November 2013 at the Medicine OPD of Sheth VS General Hospital, a tertiary care teaching hospital. The study began after obtaining the approval of the study and the required documents from the Institutional Review Board. After obtaining informed consent from each patient, the data were collected in a case record form.

Inclusion Criteria

All patients diagnosed with CRDs with or without comorbid conditions attending the medicine OPD who had given consent for participation in the study were included in the study.

Data Collection

Data were collected for a period of 4 months. Demographic details, medical history, and complete prescription details were noted in a case record form.

Calculating PQI scores using the PQI Tool

The prescription quality was examined using the PQI tool consisting of 22 criteria-indication, dosage, effectiveness, evidence base, drug administration, drug–drug interaction, drug–disease interaction, adverse drug effect, unnecessary duplication, duration of treatment, cost minimization, use of generic name, selection from hospital drug list, compliance, medication name, legibility, prescriber information, patient information, diagnosis, requirement for drug therapy, and patient's improvement. Compliance of patients was assessed using physician notes written in a patient's case record. If more than one drug present in a prescription, each drug was rated individually.

Each PQI criterion has a maximum score depending on its importance. The PQI score range varied from 0 to 4 for very important criteria, 0–2 for important criteria, and 0–1 for the least important criteria. If a drug was prescribed without indication, criterion 1 was scored as "0". Subsequently, criterion 2 (dosage), criterion 11 (duration), and criterion 12 (cost minimization) were scored as "0." When it was not possible to obtain certain information, score of "0" was given and criterion was rated as having no information. The total PQI score was obtained by summing up all the minimum

scores of 22 criteria for all drugs present in a prescription. The possible maximum score of the PQI was “43.” As per this tool, prescription with the PQI total score of ≤ 31 was interpreted as poor quality, 32–33 as medium quality, and 34–43 as high quality.^[8]

For the assessment of different criteria in the PQI questionnaire, standard references or publications were used. PQI manual, pharmacological texts, or online websites were used as the primary references. Examples are A to Z Drug Facts,^[9] articles of Medline or PubMed, current index of medical specialties,^[10] Indian drug review,^[11] WHO essential drug list 2013,^[12] National list of Essential Medicines of India 2011, National Formulary of India 2011,^[13] and British National Formulary 2012.^[14]

Statistical Analysis

Data were entered in Microsoft Excel 2007 and analyzed by the Statistical Package for the Social Sciences 20.0. Descriptive statistics were applied to describe the samples. To describe continuous variables, mean and standard deviation (SD) were used, and frequency (%) was used for categorical variables. Normality of data was checked by Kolmogorov–Smirnov test. Due to the skewed distribution of the data, non-parametric tests were applied. Spearman’s r correlations were used to measure the correlations between variables. Categories for the correlation were as follows: strong correlation >0.80 , moderate correlation $0.50–0.80$, and weak correlation <0.50 . Correlation of criteria should be between 0.2 and 0.8. The PQI internal consistency (reliability) was assessed with the use of item-total correlation and Cronbach’s α . These two properties show the extent to which items correlate with the total score and how well items measure the same construct.^[8] Cronbach’s alpha was commonly used as an estimate of the reliability of a psychometric test for a sample of examinees. It normally ranges between 0 and 1. The closer the Cronbach’s alpha to 1, the greater the internal consistency of the items in the scale.^[15] Floor effects (percentage of prescriptions with minimum possible score) and ceiling effects (percentage of prescriptions with maximum possible score) were measured. Factor analysis was performed to find the common dimensions between the PQI criteria. Most of the factor analyses use more than one criterion. Hence, Kaiser’s criteria (eigenvalue >1 rule) and scree test were applied to measure the construct validity of the tool.^[16] $P < 0.05$ was considered statistically significant.

RESULTS

Patients’ Characteristics with CRDs

A total of 120 patients with CRDs who received 120 prescriptions were enrolled in the study. Out of 120 patients, 68 (57%) were male and 52 (43%) were female. Male:female ratio is 1.3:1. The mean age of patients was 50.2 ± 13.6 years. [Table 1] The most common medical conditions were chronic obstructive pulmonary

disease (COPD; 66, 55%), bronchial asthma (49, 41%), and chronic bronchitis (5, 4%), and other associated illnesses were 22 (18%) such as hypertension, ischemic heart disease, diabetes mellitus, and right ventricular failure. A total of 591 drugs were prescribed in 120 patients, ranged from 2 to 8 per prescription with a mean value of 4.9 ± 1.20 [Figure 1].

Psychometric Properties of the PQI in Patients with CRDs

The mean total score of PQI was 32 ± 6.2 in CRDs. It was 32.1 ± 6.3 in COPD and 31.5 ± 6.2 in bronchial asthma. While the total PQI score can range from minimum “0” to maximum “43,” there was only one (0.8%) prescription with a minimum score of “13,” whereas 1.7% prescriptions with a maximum score of “40.” However, no prescription scored 0 or 43, indicating the absence of floor or ceiling effects, respectively. The distribution of the total PQI scores was not normal. None of the 22 criteria were normally distributed. The criteria were verified with the use of Kolmogorov–Smirnov test (for all $P < 0.001$), and they showed a skewed distribution. Table 2 shows the mean PQI scores $\pm$ SDs for each PQI criterion [Table 2].

The exploratory principal component analysis of the total PQI scores showed a five-factor solution using the minimum eigenvalue criteria of ≥ 1 . A total of 74.9% variance was explained by these five factors. Scree plot was plotted for five values of components [Figure 2]. Cronbach’s α value for CRDs for the entire 22 criteria was 0.73. The value of Cronbach’s α for COPD and for bronchial asthma was 0.71 and 0.76, respectively.

Table 1: Demographic details of patients included in the study ($n=120$)

Age (years)	Male	Female	Total (%)
≤ 30	4	4	8 (6.67)
31–50	32	32	64 (53.33)
51–70	26	14	40 (33.33)
>71	6	2	8 (6.67)
Total	68	52	120 (100)

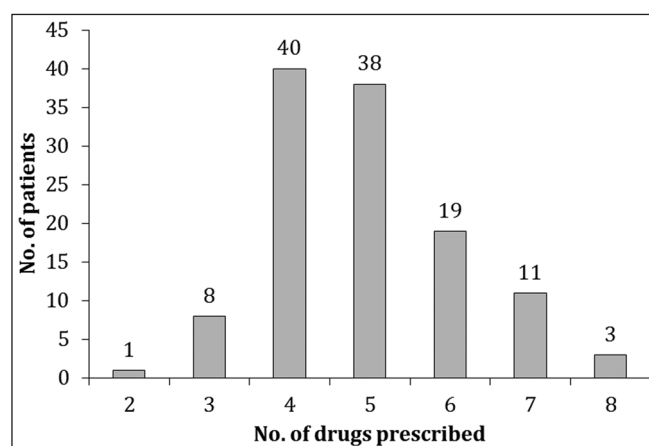


Figure 1: Number of drugs prescribed ($n = 120$)

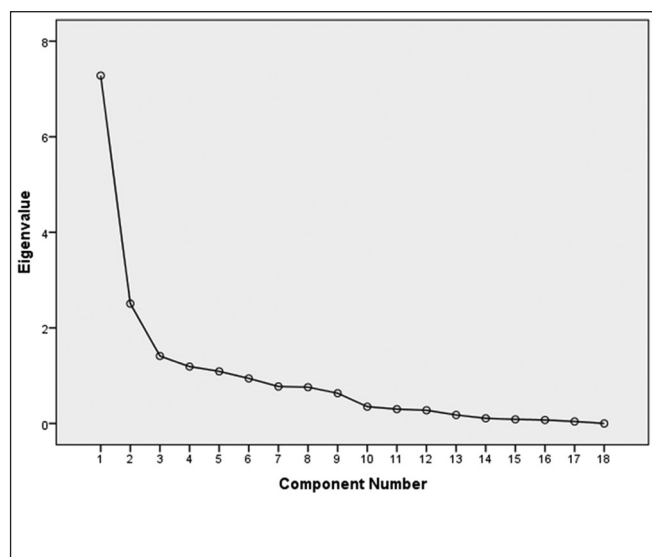


Figure 2: Scree plot showing the components of the prescription quality index total score against eigenvalues in patients with chronic respiratory disorders

As shown in Table 3, PQI total score was significantly and positively correlated with number of chronic condition per prescription (correlation coefficient $r = 0.302$, $P = 0.001$). There was significant and negative correlation observed with PQI total score and number of drugs in the prescriptions (correlation coefficient $r = -0.256$, $P = 0.005$) and also negative correlation with age of the patient (correlation coefficient $r = -0.148$, $P = 0.107$) [Table 3].

As shown in Table 4, PQI total scores showed a strong correlation with drug indication, dosage, and duration of therapy criteria. The other criteria such as drug effectiveness, evidence base, correct directions, practical directions, prescriber's information, patient's information, and patient's improvement reflected moderate correlation. The criteria, namely drug-drug interactions, drug-disease interactions, cost, and generic prescribing, showed no correlation with PQI total scores. There was a weak correlation observed with the PQI total scores and remaining criteria [Table 4].

Table 5 shows the total PQI score and prescription quality. Out of total 120 prescriptions, 64 (53%) were of high quality, 47 (39%) were of poor quality, and 9 (8%) were of medium quality. In case of COPD, out of 66 prescriptions, 38 (58%) were of high quality and 28 (42%) were of poor quality. In case of bronchial asthma, out of 49 prescriptions, 22 (45%) were of high quality, 18 (37%) were of poor quality, and 9 (18%) were of medium quality. In case of bronchitis, out of 5 prescriptions, 4 (80%) were of high quality and 1 (20%) was of poor quality prescription [Table 5].

DISCUSSION

This study was conducted to analyze the prescription quality in patients with CRDs attending the medicine OPD at a tertiary care teaching hospital with the use of PQI tool

developed by Hassan *et al.* in 2010.^[8] The PQI tool has been already claimed to be valid and reliable, and therefore, it was selected for analysis of prescription quality in CRDs.

A total of 120 patients received 120 prescriptions with 591 drugs. The mean age of patients was 50.15 ± 13.62 years in this study which is lower as compared to the previous studies reporting 55.9 ± 9.6 years^[8] and 56.0 ± 15.1 years.^[17] In this study, male:female ratio was 1.3:1 which is higher as compared to the previous studies reporting 1.1:1^[8] and 1.07:1.^[17] This difference might be related to the geographical variations in health-care-seeking behavior of population.

The mean number of drugs prescribed per patient was 4.92 ± 1.2 in this study which is higher compared to the previous study reporting 3.6 ± 1.81 .^[8] Hence, polypharmacy was evident in this study. The previous study by Kumari *et al.* reported that polypharmacy (>2 drugs) was evident in most of the prescriptions, at almost all the public health-care setups in India.^[18] Factors such as larger turnover of the patients, more complicated illnesses, and availability of the more number of doctors as well as drugs may lead to polypharmacy at a tertiary health-care facility.

The mean PQI total score was 32.02 ± 6.16 for CRDs in this study which is comparable with the previous studies reporting 31.0 ± 5.2 ^[8] and 32.1 ± 5.1 .^[17] for chronic disorders. The total PQI score and individual criterion were not normally distributed in this study which is in contrast from a study by Hassan *et al.*^[8] who reported that two criteria (generic prescribing and diagnosis) were normally distributed, while the other criteria showed skewed distribution. There were only one (0.8%) patient with a minimum score of "13" and two (1.7%) patients with a maximal score of "40," indicating the absence of floor effects and ceiling effects, respectively, in this study which is in consistent with the previous studies.^[8,17,19]

The exploratory principal component analysis of the total PQI scores reflected a five-factor solution with the use of minimum eigenvalue criteria of ≥ 1 in our study. A total of 74.9% variance was explained by these five factors which are similar to the previous study.^[20] Hassan *et al.*^[8] reported an eight-factor solution and that eight factors accounted for 66% of the total variance, and Reddy *et al.*^[19] reported a six-factor solution and that six factors accounted for 58.2% of the total variance. The exploratory principal component analysis of the PQI score showed multiple factors affecting to prescription quality. The Cronbach's α value for CRDs for the entire 22 criteria was 0.73, and for COPD and for bronchial asthma, it was 0.71 and 0.76, respectively, in our study, while the value of Cronbach's α for the entire 22 criteria was reported as 0.60^[8] and 0.71^[17,20] in the previous studies which indicate that the PQI is reliable tool for use in our setup also. Cronbach's alpha is used to provide the measure of the internal consistency of a test or scale. A low value of alpha might be due to a low number of questions,

Table 2: Criteria wise mean PQI scores (*n*=120)

Criterion	Maximum score for each criterion	Obtained score for COPD (<i>n</i> =66) (Mean±SD)	Obtained score for asthma (<i>n</i> =49) (Mean±SD)	Obtained score for CRDs (<i>n</i> =120) (Mean±SD)
Is there an indication for the drug?	4	2.30±1.99	2.04±1.76	2.23±1.89
Is the dosage correct?	4	2.30±1.99	2.04±1.76	2.23±1.89
Is the medication effective for the condition?	2	1.85±0.44	1.86±0.46	1.86±0.44
Is the usage of the drug for the indication supported by evidence?	2	1.83±0.45	1.88±0.44	1.86±0.44
Are the directions for administration correct?	2	1.83±0.51	1.84±0.51	1.84±0.50
Are the directions for administration practical?	2	1.82±0.52	1.88±0.44	1.85±0.48
Are there clinically significant drug–drug interactions?	2	2.00±0.00	2.00±0.00	2.00±0.00
Are there clinically significant drug–disease/condition interactions?	2	2.00±0.00	2.00±0.00	2.00±0.00
Does the patient experience any adverse drug reaction (s)?	2	1.65±0.48	1.41±0.50	1.57±0.50
Is there unnecessary duplication with other drug (s)?	1	0.71±0.46	0.82±0.39	0.76±0.43
Is the duration of therapy acceptable?	2	1.21±0.99	1.12±0.88	1.19±0.94
Is this drug the cheapest compared to other alternatives for the same indication?	1	0.00±0.00	0.00±0.00	0.00±0.00
Is the medication being prescribed by generic name?	1	0.00±0.00	0.00±0.00	0.00±0.00
Is the medication available in the formulary or essential drug list?	1	0.06±0.24	0.04±0.20	0.06±0.24
Does the patient comply with the drug treatment?	2	1.85±0.53	1.88±0.48	1.87±0.50
Is the medication's name on the prescription clearly written?	2	1.05±0.71	0.86±0.65	0.98±0.68
Is the prescriber's writing on the prescription legible?	2	2.00±0.00	1.98±0.14	1.99±0.09
Is the prescriber's information on the prescription adequate?	2	1.86±0.43	1.88±0.39	1.88±0.40
Is the patient's information on the prescription adequate?	2	1.88±0.37	1.86±0.46	1.88±0.40
Is the diagnosis on the prescription clearly written?	2	1.08±0.99	1.31±0.94	1.14±0.98
Does the prescription fulfill the patient's requirement for drug therapy?	1	0.98±0.12	1.00±0.00	0.99±0.09
Has the patient's condition (s) improved with treatment?	2	1.85±0.47	1.84±0.51	1.85±0.48
Total score	43	32.12±6.28	31.51±6.16	32.02±6.16

PQI: Prescription quality index, SD: Standard deviation, COPD: Chronic obstructive pulmonary disease, CRDS: chronic respiratory disorders

Table 3: The PQI total score correlation with age, number of drugs prescribed, and number of diseases/conditions

Age	Number of drugs prescribed	Number of diseases/conditions
−0.148(<i>P</i> =0.107)	−0.256 (<i>P</i> =0.005)*	0.302 (<i>P</i> =0.001)*

**P* value based on Spearman's *r* correlation, *P* < 0.05 was considered as significant. PQI: Prescription quality index

poor interrelation between items. If alpha is too high, it may suggest that some items are redundant as they are testing the same question but in a different guise.^[21]

In this study, there was a significant and inverse correlation of PQI total score with number of drugs in the prescriptions, which is similar with results of the previous studies^[8,17,19,20,22]

and with another study, which reported that prescription with unnecessary drugs was significantly correlated with polypharmacy. Multiple prescribers and ineffective communication between health-care providers and patients may lead to polypharmacy^[23] and thus lower the prescription quality. The previous studies have reported that the frequency of inappropriate medicine use is higher in patients taking more medicines than those who taking few medicines^[24,25] as polypharmacy is more likely at a tertiary health-care facility which can increase the chances of irrationalities. An inverse correlation of PQI total score with age of the patient observed in our study which is in accordance with the previous studies^[8,17] and with another study, which reported that the prevalence of polypharmacy increases with age, as with older age, patients tend to suffer from more complicated

diseases and so more number of drugs are required.^[26] Most of the patients with CRDs attending the hospital were above the age of 50 years and so complex prescribing led to medium quality of prescribing. There was a significant and positive correlation of PQI total score with number of diseases/conditions in this study which is similar to the previous studies^[19,22] and differs from the findings of a study by Hassan *et al.*,^[8] who reported a negative correlation of PQI total score with number of chronic conditions. The previous study reported that the more diagnoses with comorbidities in the patient, the more drugs were required, and thus, polymorbidity triggers polypharmacy^[23] and so lowers the quality of prescription. The number of comorbid illnesses in this study did not exceed two, which might be the possible reason for positive correlation with associated conditions.

Table 4: PQI total score correlation with 22 criteria

Criterion	Correlation with PQI total score (n=120)	
	Correlation coefficient	P value
Indication	0.902	<0.001*
Dosage	0.902	<0.001*
Effectiveness	0.539	<0.001*
Evidence base	0.532	<0.001*
Correct directions	0.514	<0.001*
Practical directions	0.513	<0.001*
Drug–drug interactions	1	–
Drug–disease/condition interactions	1	–
Adverse drug reaction	–0.086	0.350
Unnecessary duplication	0.244	0.007*
Duration of therapy	0.847	<0.001*
Cost	1	–
Generic prescribing	1	–
Formulary or essential drug list	0.358	<0.001*
Compliance	0.420	<0.001*
Medication's name	–0.148	0.107
Legibility	0.121	0.188
Prescriber's information	0.519	<0.001*
Patient's information	0.520	<0.001*
Diagnosis	–0.269	0.003*
Requirement for drug therapy	0.118	0.198
Patient's improvement	0.520	<0.001*

*Correlation significant at 0.05 level (two-tailed) Spearman's correlation. PQI: Prescription quality index

The total PQI scores showed a strong correlation with drug indication, drug dosage, and duration of therapy criteria ($P < 0.01$) in this study which is comparable to findings of the previous studies.^[8,20,22] Seven criteria were moderately correlated and eight criteria showed a weak correlation with total PQI scores. The previous study by Hassan *et al.* reported that there was not any correlation with the PQI total scores and four criteria, namely unnecessary duplication, formulary/essential drug, legibility, and adequate patient information. Still, they were retained in the PQI for validity and legal and clinical significance.^[8] Three of these criteria, namely unnecessary duplication, formulary/essential drug, and adequate patient information, correlated with total PQI score in this study indicating regional variations of prescribing behavior. In this study, drug indication criterion showed a strong correlation with total PQI score which had significantly affect the prescribing quality which is similar to findings of the previous studies.^[8,20,22]

From total of 120 prescriptions, around 53% were of high quality, 39% were of poor quality, and 8% were of medium quality. In case of COPD, 58% were of high quality; in case of bronchial asthma, 45% were of high quality, and in case of bronchitis, 80% were of high-quality prescriptions. These findings are comparable with the previous study by Suthar *et al.*^[17] who reported around 46% were of high quality, 36% were of poor quality, and 18% of medium-quality prescriptions. Both of these studies have been carried out at tertiary health-care hospitals revealing the similar quality of prescribing. The quality of prescription in this study is better than the previous study,^[22] which reported only 28% and 25% prescriptions of high quality at primary and secondary

Table 5: Prescription quality index score and quality of prescription (n=120)

Quality	PQI score	COPD (n=66) (%)	Asthma (n=49) (%)	Bronchitis (n=5) (%)	Total (n=120) (%)
Poor	≤31	28 (42.42)	18 (36.73)	1 (20)	47 (39.17)
Medium	32–33	–	9 (18.37)	–	9 (7.5)
High	34–43	38 (57.58)	22 (44.90)	4 (80)	64 (53.33)

PQI: Prescription quality index, COPD: Chronic obstructive pulmonary disease

health-care facilities, respectively. We have conducted this study at a tertiary care teaching hospital where prescriptions are written by consultants as well as post-graduate resident doctors. Hence, it might be possible to modify the quality of prescribing by discussing our findings with them.

The prescription quality was medium to high at a tertiary care teaching hospital. The criteria, namely correct indication, correct dosage, and evidence base which contribute to score of 10 out of maximum 43 in the PQI tool, exhibited a lower score compared to the previous study.^[8] The other criteria, namely adverse drug reactions, unnecessary duplication, duration of therapy, drug available in essential drug list, and medication's name clearly written, also showed a lower score compared to the previous study.^[8] This might be a reason for medium quality of prescribing at our facility.

As we have collected data prospectively for a limited period of time with the benefits of completeness of data, there is no chance of missing any information regarding prescription quality assessment unlike in retrospective studies. We have selected mainly two chronic illnesses to decrease the disease variation which showed in better internal consistency in the form of higher Cronbach's α value as compared to the previous studies.^[8,19] The findings of our study are relevant for only two conditions and limited to a tertiary health-care facility, so acceptability cannot be assumed for other setups. Hence, further studies with different conditions in different health-care settings can be conducted using the PQI tool for complete overview of prescribing quality at different health-care setups.

CONCLUSION

Prescription quality for CRDs was medium to high at a tertiary health-care facility. The PQI is a unique, valid, and reliable tool to analyze the prescription quality in chronic conditions. PQI can be useful to measure the prescription quality in different clinical situations at different health-care facilities.

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