

Consumer's Satisfaction with Community Pharmacies in Sindh, Pakistan

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INTRODUCTION

Increasing the role of pharmacists in public health would entail improvements in both the pharmacists and the general public.^[1] Pharmacists in the community can provide an insight into the integration and management of chronic disease programs and health promotion.^[2] Quality services and consumer satisfaction play vital roles in behavior intention.^[3] Consumer satisfaction is likely to affect the image of the pharmacist and the pharmacy profession.^[4] Nitadpakorn *et al.*^[5] determined that the customers' perceptions of pharmacists play an indirect role in pharmacy customer devotion through pharmacy engagement. The National Prescribing Service (NPS) was introduced in 1997,

which supports pharmaceutical education and provides interactive services between health professionals and consumers. Its role is to develop comprehensive consumer education about medicine.^[6]

Several cross-sectional studies have identified the prevalence of patient satisfaction from pharmaceutical services (PS) in different countries, such as Brazil,^[7] Slovakia,^[8] Lebanon,^[9] Nigeria,^[10] Malaysia,^[11] Ethiopia,^[12] Saudi Arabia,^[13] and Qatar.^[14] Limited literature is available on consumer satisfaction of

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ABSTRACT

Objective: The present research is the first comprehensive cross-sectional study of consumer satisfaction with community pharmacies in Sindh, Pakistan. Moreover, the study has also designed a nonorder theoretical model for consumer satisfaction with community pharmacies. **Methods:** This is a cross-sectional descriptive study from a general population of Sindh, Pakistan, with a total of four hundred and fifteen ($n = 415$) participants. A confirmatory factor analysis was used to verify the factor structure between Pharmaceutical services (PS), the Skill of Pharmacists, Non-pharmaceutical services (NPS), and pricing (P). Pearson correlation analysis, Kendall's tau correlation analysis, and Spearman's rho correlation analysis were used to identify the correlation between different factors, such as PS, SKP, NPS, and P. **Findings:** The 23-item scale that consisted of four elements have shown an acceptable root mean squared error of approximation (0.076), Cronbach's alpha (0.787), and Chi-square value (3.381) ($P < 0.001$). Of the respondents, 56.4% rated their satisfaction on pharmacist attitude, whereas 67.2%, 41.4%, and 51.8% were satisfied with other services, such as receipt provided on medication they take, prescription drug service and availability of pharmacies on the weekend and public holidays, respectively. **Conclusion:** This cross-sectional study confirms that there are relationships among PS, SPK, NPS, and P. Moreover, there is a lack of facilities in community pharmacies in Sindh, such as the unavailability of a consultation room, immunization services, information on routine health matters, and medication record.

KEYWORDS: *Community pharmacy, confirmatory factor analysis, consumer satisfaction, Pakistan, Sindh*

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community pharmacies in Sindh, Pakistan. A qualitative study on patient anticipation for pharmacies in a rural community was performed in Southern Punjab.^[15] A cross-sectional study was conducted on patient satisfaction with community pharmacy services in Punjab.^[16] The above-cited literature works published internationally or locally lack knowledge of the theoretical foundation and factors that determine consumer satisfaction with community pharmacies. The researcher had constructed a four-factor model (PS, Skill of Pharmacist (SKP), non PS (NPS) and Pricing (P), adapted from 23 items from the literature.^[4] The number of items inside PS, SKP, NPS, and P consisted of 9, 7, 6, and 1, respectively. Moreover, the current study's objective also identified the prevalence of consumer satisfaction with community pharmacies in Sindh, Pakistan.

METHODS

An online cross-selection survey was conducted from January 21, 2020 to April 27, 2020 on a general population in Sindh, Pakistan. The authors followed the (Strengthening the Reporting of Observational Studies in Epidemiology) guidelines for observational studies to report this cross-sectional study.^[17] The individuals were sent an online questionnaire using Google Forms through a convenience sampling method.^[18] There was a total of 486 ($n = 486$) responses from the general population. Seventy-one responses ($n = 71$) had been excluded as they did not fall under the eligibility criteria, such as location or in-complete submission. Only four hundred and fifteen ($n = 415$) responses were considered for this study. The current population of Sindh is 47.88 million.^[19] The sample size was calculated according to Taherdoost, 2017 (5% margin of error and a 95% confidence level).^[20] All the questionnaires were translated into English and the local language (Urdu) for the population's convenience. The questionnaires were randomly shuffled using google shuffle questions to minimize the response bias.

In this study, IBM SPSS version (USA) 26^[21] was used to analyze the descriptive statistics and frequency distribution for all the items. Pearson correlation, Kendall's tau_b, and Spearman's rho were used to identify the correlations among the SKP, price (P), NPS, and PS. IBM SPSS AMOS version 26 was used to evaluate the hypothetical model's fitness index.^[22] All missing data were checked using Microsoft Excel and cross-checked using the SPSS software version 26 before analysis.

A hypothetical model [Figure 1] was developed from items that were identified from the literature

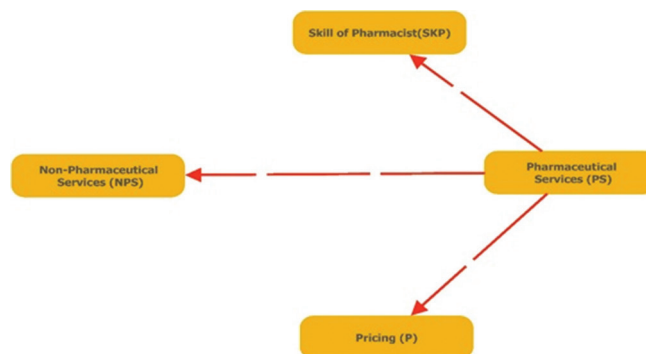


Figure 1: A proposed model for consumer satisfaction

published around the world in different countries, such as Brazil,^[7] Slovakia,^[8] Lebanon,^[9] Nigeria,^[10] Malaysia,^[11] Ethiopia,^[12] Saudi Arabia,^[13] and Qatar.^[14] The respondents were asked to respond using a 5-point Likert scale (Strongly disagree, disagree, neutral, agree, and strongly agree).^[23] The electronic survey form was developed using Google form.^[24]

RESULTS

The overall response rate was 85% (85.39%).^[25] The Cronbach's alpha test of reliability was calculated as 0.787. Most of the respondents were graduates (52%) and aged between 18 and 14 years (79.4%). 67.7% of the population were residents in Karachi city. 61.4% of them were males and 81.2% of the population had never been married. As most of the population were graduates, 38.3% were not employed and were looking for work. The demographic profile is expressed in Table 1. Figure 1 portrays the dimensional structure of our hypothesized nonorder factor model. The researcher used the Comparative Fit Index (CFI) and Root Mean Square Error of Approximation (RMSEA). Fit indices to evaluate the fit of our model: Goodness-of-Fit index (GFI), Parsimony Normed Fit Index (NFI), Chi-square value (P CMIN/DF), and expected cross-validation index (ECVI), were also calculated. The fitness index values for the hypothetical model were P CMIN/DF (3.381), GFI (0.809), NFI (0.609), PCFI (0.622), RMSEA (0.076), FMIN (1.879), and ECVI (2.101). NCP (547.725), as mentioned in Table 2. The ideal value for RMSEA is <0.08, as stated by Bentler.^[26] Different researchers have recommended using ratios as low as two or as high as 5 to indicate a good fit for CMIN/DF.^[27] The CFI, NFI values close to 1 indicate a good fit. The level of acceptance for GFI is Adjusted Goodness of Fit Index (AGFI) >0.90.^[28] Some important information was observed during the analysis of the frequency distribution. 34.9%, 31.6%, 40.7%, and 33.3% were neutral on the pharmacist's technical skills, the pharmacist's role in distributing information about

Table 1: Demographics of the respondents

Variable	n (%)
Age (years old)	
12-17	1 (0.2)
18-24	292 (79.4)
25-34	101 (24.3)
35-44	19 (4.6)
45-54	2 (0.5)
Cities	
Karachi	281 (67.7)
Hyderabad	60 (14.5)
Bhitshah	15 (3.6)
Mirpurkhas	5 (1.2)
Jamshoro	6 (1.4)
Khairpur	3 (0.7)
Pano Aqil	2 (0.5)
Others	43 (10.3)
Education	
No schooling completed	2 (0.5)
Nursery school to 8 th grade	1 (0.2)
Some high school, no diploma	14 (3.4)
High school graduate, diploma or the equivalent	19 (4.6)
Some college credit, no degree	16 (3.9)
Trade/technical/vocational training	9 (2.2)
Bachelor's degree	216 (52.0)
Master's degree	63 (15.2)
Professional degree	31 (7.5)
Doctorate degree	44 (10.6)
Gender	
Male	255 (61.4)
Female	152 (36.6)
Prefer not to say	8 (1.9)
Marital status	
Married	63 (15.2)
Widowed	2 (0.5)
Divorced	1 (0.2)
Separated	12 (2.9)
Never married	337 (81.2)
Employment	
Employed, working 1-39 (h/week)	61 (14.7)
Employed, working 40 or more (h/week)	98 (23.6)
Not employed, looking for work	159 (38.3)
Not employed, not looking for work	92 (22.2)
Retired	3 (0.7)
Disabled, not able to work	2 (0.5)

routine health matters, prescription drug service, and immunization services, respectively. Unavailability of consultation room (41.9%), medication record (37.3%), health education, and health promotion services (28.7%) were also observed during the analysis. 67.5% of the population agreed that a receipt would be provided when they took their medicine. 56.2% agreed that the pharmacist listened to them. 56.4% also agreed that the pharmacy was available near home. 44.3% agreed that the pharmacy helped in treating common diseases

Table 2: Fitness index for the hypothetical model

Content	Value of hypothetical model
χ^2	777.725
df	230
<i>P</i>	<0.001
<i>P</i> CMIN/DF	3.381
GFI	0.809
AGFI	0.841
PGFI	0.701
NFI	0.609
PNFI	0.554
PCFI	0.622
RMSEA	0.076
FMIN	1.879
ECVI	2.101
NCP	547.725

GFI=Goodness-of-fit index, AGFI=Adjusted GFI, PGFI=Parsimony GFI, NFI=Normed fit index, PNFI=Parsimony NFI, RMSEA=Root mean square error of approximation, FMIN=Minimum function, PCFI=Parsimony comparative fit index, ECVI=Expected cross-validation index, NCP=Noncentrality parameter, *P* CMIN/DF=Chi-square value

and injuries. 51.8% agreed that the pharmacy was open on week ends and public holidays. The frequency distribution (%) of the responses to all the questionnaire items is mentioned in Table 3.

According to the Pearson correlation, positive correlations were observed between SKP and NPS ($r = 0.143$), ($P = 0.004$); SKP and PS ($r = 0.615$), ($P = 0.000$); NPS and PS ($r = 0.182$), ($P = 0.000$) and *P* and PS ($r = 0.288$), ($P = 0.000$). According to Kendall's tau_b, positive correlations were observed between SKP and PS ($r = 0.444$), ($P = 0.000$); NPS and PS ($r = 0.091$), ($P = 0.011$); PS and *P* ($r = 0.242$), ($P = 0.000$) and *P* and PS ($r = 0.242$), ($P = 0.000$). According to Spearman's rho, positive correlations were observed between SKP and PS ($r = 0.581$), ($P = 0.000$); NPS and PS ($r = 0.124$), ($P = 0.011$); PS and SKP ($r = 0.581$), ($P = 0.000$) and *P* and PS ($r = 0.303$), ($P = 0.000$).

DISCUSSION

This study's principal research aim has been to develop a model and analyze the factors of 23-items associated with consumer satisfaction of community pharmacies. The items were adapted from Oparah and Kikanme, 2006,^[4] which consisted of a 32-item rated instrument. The value of CMIN/DF was 3.381, which was below the upper limit of 5.0. The Goodness-of-fit index (GFI) values and Adjusted GFI (AGFI) were 0.809 and 0.841, respectively, which were less than the recommended level of 9. The reason for the below

Table 3: Frequency distribution (percentage) of responses to all questionnaire items

Factor	Items	Abbreviation	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
Skill of pharmacist	The pharmacist listens to what I have to say	SKP1	2.2	6.3	22.9	56.4	12.3
	The pharmacist provides a thorough explanation of my medicines	SKP2	7.0	21.2	26.7	38.1	7.0
	Pharmacist is polite	SKP3	2.7	6.5	31.8	48.2	10.8
	Have a thorough technical skill of pharmacist	SKP4	6.5	18.6	34.9	34.0	6.0
	Dispense drugs with clear and proper labelled	SKP5	4.3	11.8	24.8	48.0	11.1
	Distributes information leaflets about routine health matters	SKP6	10.6	30.4	31.6	23.1	4.3
	Allows pharmacist to collaborates with your doctor	SKP7	7.0	16.4	27.7	37.3	11.6
Nonpharmaceutical services	Pharmacy is near home	LOP1	3.9	11.3	12.5	56.4	15.9
	Pharmacy is near hospital	LOP2	2.2	5.3	12.5	52.8	27.2
	Pharmacy is near work	LOP3	5.5	18.3	31.6	40.5	4.1
	The pharmacy give you receipt when you take the medicine	NPS1	N/R	32.8	N/R	67.2	N/R
	The pharmacy give you electronic receipt	NPS2	N/R	50.6	N/R	49.9	N/R
Pharmaceutical services	Household consumer items can be purchased	NPS3	8.2	24.3	25.8	38.1	3.6
	Provides consultation room	PS1	17.8	41.9	21.7	14.9	3.6
	Prompt on prescription drug service	PS2	3.6	9.9	40.7	41.4	4.3
	Pharmacy keeps my medication records	PS3	21.4	37.3	18.8	16.4	6.0
	Pharmacy provides immunisation services	PS4	5.5	26.3	33.3	28.9	6.0
	Blood pressure checks are available	PS5	10.6	28.0	21.7	31.8	8.0
	Pharmacy treats common diseases and injuries	PS6	8.0	18.8	20.5	44.3	8.4
	Pregnancy and glucose tests are available	PS7	7.5	21.7	27.2	34.0	9.6
Pharmacy gives health education and health promotion services	PS8	12.0	28.7	26.7	27.2	5.3	
Price	Pharmacy is open at weekends and public holidays	FT1	3.1	9.9	15.7	51.8	19.5
	Pharmacy charges consultation fees for services	P1	14.7	38.1	26.0	17.6	3.6

N/R=Not recorded, SKP=Skill of pharmacists, NPS=Nonpharmaceutical services, PS=Pharmaceutical services, P=Pricing, LOP= Location of Pharmacy; FT=Facilities

acceptable limit was a confidence level of 95%, with a 5% margin of error. However, for these few indices, which indicated a poor fit, the overall model fitness was good. Meesala and Paul worked on consumer satisfaction and found that patient satisfaction is directly related to their loyalty to the hospital.^[29] Our result indicates that pharmaceutical services are directly related to price, NPS, and pharmacists' skills. The value of the Cronbach's alpha (0.787) was also present in an acceptable limit. The Cronbach's alpha test of reliability was computed to be 0.980 in a similar study from where items were adapted in a survey conducted in Nigeria (0.980).^[4] A lower Cronbach's alpha was due to the low number of respondents ($n = 415$). The frequency distribution of several items matched a study conducted in Nigeria.^[4] The consumer satisfaction level in Punjab was compared with our research, and a similar result was in the context of the patients' satisfaction with the dispensing and counseling practices. 36.8% of the Punjab population was not satisfied with the knowledge of counseling persons, whereas our study found 18.6% disagreed and 34.9% were neutral with the pharmacists' technical skill.^[16] The researchers were unable to perform random sampling as there were no public data available of the general population of Sindh, Pakistan. Since the sampling frame was not

known and the sample was not chosen randomly, there was inherent bias in the convenience sampling. The usage of technology in the rural population is limited, and the population was hard to reach as well in Sindh, so the majority of the questionnaires were will from Karachi.

Consumers were moderately satisfied with the community pharmacies in Sindh. They were neutral with the availability of the pharmacists' technical skills and dissatisfied with health-related information on routine matters, consultation rooms, and availability of medication records. The current research also indicates the relationships among the different factors, namely, PS, the SKP, NPS, and P.

AUTHORS' CONTRIBUTION

Yun Jin Kim, Muhammad Shahzad Aslam and Linchao Qian conceived the study idea. All authors contributed to the study design. Syed Muhammad Fahim and Waris Ali Khan performed the data collection. The analysis is performed by Muhammad Shahzad Aslam. All authors critically reviewed the manuscript and approved the final version.

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Conflicts of interest

There are no conflicts of interest.

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