


Perceptions and Attitudes about the Voluntary/Charitable Pharmaceutical Care Services in Saudi Arabia

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ABSTRACT

Objectives: To illustrate the pharmacist perception of voluntary or charitable pharmacies in Saudi Arabia. **Materials and Methods:** It analyzes a cross-sectional survey that discussed Pharmacist perception of voluntary or charitable pharmacies in Saudi Arabia. The survey consisted of respondents' demographic information about pharmacists, The Perception of voluntary or charitable pharmacies, and barriers, which factors may Discourage you from implementing voluntary or charitable pharmacy. The 5-point Likert response scale system was used with closed-ended questions. The survey was validated through the revision of expert reviewers and pilot testing. Besides, various tests of reliability, McDonald's ω , Cronbach alpha, Gutmann's λ_2 , and Gutmann's λ_6 been done with the study. The data analysis of the pharmacist knowledge of charity pharmacies is done through the survey monkey system. Besides, the statistical package of social sciences (SPSS), Jeffery's Amazing Statistics Program (JASP), and Microsoft Excel sheet version 16. **Results:** A total number of 578 pharmacists responded to the questionnaire. Of them, one-third responded from the Central region (180 (31.14%)), and one Quarter responded from the western region (140 (24.22%)), with statistically significant differences between the provinces ($p=0.000$). Males responded more than females (373 (64.53%)) versus 205 (35.47%), with statistically significant differences among gender ($p=0.001$). Most of the responders were in the age group of 35-44 years (155 (26.82%)), age group 25-34 years (144 (24.91%)), age group 45-54 years (126 (21.80%)), and with statistically significant differences between all age groups ($p=0.000$). The average score of perception of pharmacists about the Charity pharmacy was (3.69). The element "I am willing to implementation of the charity pharmacy" obtained the highest score (3.90). The aspect "I am getting the clinical outcome for the patient from charity pharmacy" (3.78). The average score of perception of pharmacists about factors that may (Discourage) you from participating in the charity pharmacy was (3.46). The element "the charity pharmacy Should not be mandatory" obtained the highest score (3.57). The aspect "There is not periodic training of medical staff about charity pharmacy" (3.52).

Keywords: Perceptions, Attitudes, Voluntary, Charitable, Pharmaceutical Care, Services, Saudi Arabia.

INTRODUCTION

The pharmaceutical care concept was founded in the early 1990s by exploring the new role of the pharmacist and the new pharmacy practice era.¹ The procedures for implementing pharmaceutical care were also established.² Various pharmacy practice areas were established locally or internationally after the pharmaceutical care concept. Thus, the pharmacist provides services through multiple sectors, MOH or non-MOH government hospital facilities and community pharmacies as private services.³ Recently, after implementing Saudi vision 2030 and the new pharmacy practice model, the voluntary or charitable healthcare practice emphasized pharmacy-related activities become a critical area for practice.⁴⁻⁷ The voluntary or charitable pharmacy is well-established overseas.⁸⁻¹⁶ However, the concept of voluntary or charitable pharmacy is not well established locally. There are might several reasons behind that. For instance, the pharmacist might be unaware of the voluntary or charitable pharmacy, or there are no benefits of voluntary or charitable pharmacy. Besides, negative attitudes or perceptions of voluntary or charitable pharmaceutical care services.⁸⁻¹⁶ Few studies have been conducted about voluntary

or charitable pharmaceutical care services internationally. Furthermore, the authors are unaware of any investigation internationally or locally to explore the pharmacy staff's perception of voluntary or charitable pharmaceutical care services or the barriers to participating in the field. The current cross-sectional research aims to demonstrate the pharmacist's attitude toward voluntary or charitable pharmaceutical care services and related barriers to participation in the area in Saudi Arabia.

MATERIALS AND METHODS

It analyzes a cross-sectional survey that discussed Pharmacist perception of voluntary or charitable pharmacies in Saudi Arabia. It self-reported an electronic survey of the pharmacist, including pharmacists from internship to consultant, pharmacist specialties, and Saudi Arabia. All non-pharmacist or students, non-completed, non-qualified surveys will be excluded from the study. The survey consisted of respondents' demographic information about pharmacists, The Perception of voluntary or charitable pharmacies, and barriers, which factors may Discourage you from implementing voluntary or

charitable pharmacy.⁸⁻¹⁶ The 5-point Likert response scale system was used with closed-ended questions. According to the previous literature with an unlimited population size, the sample was calculated as a cross-sectional study, with a confidence level of 95% with a z score of 1.96 and a margin of error of 5%, a population percentage of 50%, and drop-out rate 10%. As a result, the sample size will equal 380-420 with a power of study of 80%.¹⁷⁻¹⁹ The response rate required for the calculated sample size is at least 60-70% and above.^{19,20} The survey was distributed through social media of what's applications and telegram groups of pharmacists. The reminder message had been sent every 1-2 weeks. The survey was validated through the revision of expert reviewers and pilot testing. Besides, various tests of reliability, McDonald's ω , Cronbach alpha, Gutmann's λ_2 , and Gutmann's λ_6 been done with the study. The data analysis of the Pharmacist perception of charity pharmacies is done through the survey monkey system. Besides, the Statistical Package of Social Sciences (SPSS), Jeffery's Amazing Statistics Program (JASP), and Microsoft Excel sheet version 16. It included a description and frequency analysis, good of fitness analysis, and correlation analysis. Besides, inferential analysis of factors affecting pharmacists' Perceptions of charity pharmacy and barriers, which factors may Discourage you from implementing charity pharmacy with linear regression. The STROBE (Strengthening the reporting of observational studies in epidemiology statement: guidelines for reporting observational studies) guided the reporting of the current study.^{21,22}

RESULTS

A total number of 578 pharmacists responded to the questionnaire. Of them, one-third responded from the Central region (180 (31.14%)), and one Quarter responded from the western region (140 (24.22%)), with statistically significant differences between the provinces ($p=0.000$). Most of the responders were from MOH Government Hospital (184 (32.11%)), General Medical Directorate in Region (93 (16.23%)), and Community pharmacy (89 (15.53%)), with a statistically significant difference between working sites ($p=0.000$). Most responders were Saudi 446 (77.16%), with a statistically significant difference with non-Saudi ($p=0.000$). Males responded more than females (373 (64.53%)) versus 205 (35.47%), with statistically significant differences among gender ($p=0.001$). Most of the responders were in the age group of 35-44 years (155 (26.82%)), age group 25-34 years (144 (24.91%)), age group 45-54 years (126 (21.80%)), and with statistically significant differences between all age groups ($p=0.000$). Most of the responders held a Bachelor (134 (23.34%)), Doctor of Philosophy (130 (22.65%)), and Master (110 (19.16%)), with statistically significant differences between all levels ($p=0.000$). Most of the pharmacists were staff pharmacists (235 (40.66%)) and General Managers (125 (21.63%)), with statistically significant differences between all levels ($p=0.000$). Most pharmacists had a work experience of 6-10 years (225 (39.34%)) and <3 years (114 (19.93%)), with a statistically significant difference between years of experience ($p=0.000$). There was a strong positive correlation between age (years) and years of experience based on Kendall's tau_b (0.720) and Spearman's rho (0.804) correlation coefficients, with a statistically significant difference between the two factors ($p<0.000$). There was a medium positive correlation between the site of work and last academic qualifications based on Kendall's tau_b (0.448) and Spearman's rho (0.536), with a statistically significant difference between the two factors ($p<0.000$). There was a medium positive correlation between gender and Nationality based on Kendall's tau_b (0.467) and Spearman's rho (0.467) correlation coefficients, with a statistically significant difference between the two factors ($p<0.000$). (Tables 1 and 2).

The average score of perception of pharmacists about the Charity pharmacy was (3.69). The element "I am willing to implementation of the charity pharmacy" obtained the highest score (3.90). The aspect "I

Table 1: Demographic, social information.

Nationality	Response Count	Response Percent	p-value (X2)
Central area	180	31.14%	0.000
North area	62	10.73%	
South area	104	17.99%	
East area	92	15.92%	
West area	140	24.22%	
Answered question	578		
Skipped question	0		
Site of work	Response Count	Response Percent	p-value (X2)
Ministry of Health	72	12.57%	0.000
General Medical Directorate in Region	93	16.23%	
MOH government Hospital	184	32.11%	
Non-MOH government sectors (including Hospital)	48	8.38%	
MOH-Primary Care Center	7	1.22%	
Private Hospital	34	5.93%	
Private Primary Care Center	15	2.62%	
Community pharmacy	89	15.53%	
University	17	2.97%	
Unemployment	6	1.05%	
Pharmaceutical companies	6	1.05%	
students	2	0.35%	
Answered question	573		
Skipped question	5		
Nationality			
Saudi	446	77.16%	0.000
Non-Saudi	132	22.84%	
Answered question	578		
Skipped question	0		
Gender	Response Count	Response Percent	
Male	373	64.53%	0.000
Female	205	35.47%	
Answered question	578		
Skipped question	0		
Age	Response Count	Response Percent	
18 - 24	95	16.44%	0.000
25 - 34	144	24.91%	
35 - 44	155	26.82%	
45 - 54	126	21.80%	
55 - 64	54	9.34%	
65 - 74	4	0.69%	
75 or older	0	0.00%	
Answered question	578		
Skipped question	0		

Table 2: Demographic, social information.

Pharmacist Qualifications	Response Count	Response Percent	p-value (X2)
Diploma	73	12.72%	
Bachelor	134	23.34%	
Master	110	19.16%	
Ph.D	130	22.65%	
Residency	69	12.02%	
Fellowship	0	0.00%	
Pharm D	58	10.10%	
Internship	0	0.00%	
Answered question	574		
Skipped question	4		
Position Held	Response Count	Response Percent	p-value (X2)
General Manager	125	21.63%	0.000
Manager	66	11.42%	
Director	64	11.07%	
Supervisor	79	13.67%	
Staff	235	40.66%	
Deputy Director of Pharmacy	0	0.00%	
Internship	2	0.35%	
Unemployment	7	1.21%	
Answered question	578		
Skipped question	0		
Years of experience in a pharmacy career	Response Count	Response Percent	p-value (X2)
<3	114	19.93%	0.000
3-5	78	13.64%	
6-10	225	39.34%	
11-15	90	15.73%	
> 15	65	11.36%	
Answered question	572		
Skipped question	6		

am getting the clinical outcome for the patient from charity pharmacy” (3.78). In contrast, the lowest score was obtained for the element “I am getting economic benefits from charity pharmacy” (3.55). The score of the component “There will be a conflict of interest with charity pharmacy acting with healthcare professionals” was (3.56), with a statistically significant difference between the responses ($p < 0.000$). All aspects of the perception of pharmacists about the Charity pharmacy were statistically significant between responses ($p < 0.000$) (Table 3). The average score of perception of pharmacists about factors that may (Discourage) you from participating in the charity pharmacy was (3.46). The element “the charity pharmacy Should not be mandatory” obtained the highest score (3.57). The aspect “There is not periodic training of medical staff about charity pharmacy” (3.52). In contrast, the lowest score was obtained for the element “Fear of legal liability” (3.38). The score for the component “Difficult to participate” was (3.41) and The score for the element “Lack of financial reimbursement” (was 3.41), with a statistically significant difference between the responses ($p < 0.000$). All aspects of the perception of pharmacists about the Charity pharmacy were statistically significant between responses ($p < 0.000$) (Table 4). The score for single-test reliability analysis of McDonald’s ω was 0.959, Cronbach’s α was 0.956, Gutmann’s was λ_2 , 0.961, Gutmann’s λ_6 was 0.981, and Greater Lower Bound was 0.990 with statistically significant ($p < 0.05$).

Factors affecting the pharmacist’s perception about charity pharmaceutical care services

Factors affecting the perception were analyzed. We adjusted the significant values using the independent samples Kruskal–Wallis test and the Bonferroni correction for multiple tests. *The pharmacist’s perception of charity pharmaceutical care services* includes Location, Site of work, Nationality, Pharmacist gender, Age (years), Academic qualifications, Years of experience in a pharmacy career, Position Held, knowledge of pharmacy volunteering activities, knowledge of Charity Pharmacy at inside work, knowledge of Charity Pharmacy at outside work, Work as charity pharmacist, and Frequency of Practice as charity pharmacist. The eastern region showed the lowest scores (3.0377), with statistically significant differences between regions ($p = 0.000$). Fourteen worksites affected *the pharmacist’s perception of charity pharmaceutical care services*. Non-MOH governmental sector (including hospitals) obtained the lowest scores (2.6708) with a statistically significant difference between working sites ($p = 0.000$). Nationality did not affect *the pharmacist’s perception of charity pharmaceutical care services*, with non-significant differences between

Table 3: Charity pharmacy perception.

No	Item	Strongly agree		Agree		Uncertain		Disagree		Strongly disagree		Total	Weighted Average	p-value (X2)
1	I am willing to implement the charity pharmacy	21.79%	124	54.13%	308	17.75%	101	5.10%	29	1.23%	7	569	3.9	0.000
2	I am getting the clinical outcome for the patient from a charity pharmacy	15.37%	87	56.71%	321	20.49%	116	5.12%	29	2.30%	13	566	3.78	0.000
3	I am getting economic benefits from a charity pharmacy	12.37%	70	49.82%	282	24.73%	140	7.07%	40	6.01%	34	566	3.55	0.000
4	There will be a conflict of interest with charity pharmacy acting with healthcare professionals	11.99%	68	50.97%	289	22.05%	125	10.58%	60	4.41%	25	567	3.56	0.000
5	Charity pharmaceutical care will increase the quality of care	17.25%	98	54.58%	310	16.55%	94	5.11%	29	6.51%	37	568	3.71	0.000
6	I am getting appreciation from charity pharmacy	14.51%	82	52.92%	299	20.71%	117	10.09%	57	1.77%	10	565	3.68	0.000
7	I am participating in the charity pharmacy for Self-enjoyment	13.96%	79	54.06%	306	23.32%	132	5.83%	33	2.83%	16	566	3.7	0.000
	Answered											569		
	Skipped											9		

Table 4: The perception of factors that discouraged participation in the charity pharmacy practice.

No	Item	Strongly agree		Agree		Uncertain		Disagree		Strongly disagree		Total	Weighted Average	p-value (X2)
		%	n	%	n	%	n	%	n	%	n			
1	Should not be mandatory	22.59%	129	34.33%	196	25.74%	147	12.43%	71	4.90%	28	571	3.57	0.000
2	Should not be paid	19.40%	110	35.45%	201	26.28%	149	13.40%	76	5.47%	31	567	3.5	0.000
3	Difficult to participating	16.81%	95	33.81%	191	29.73%	168	12.92%	73	6.73%	38	565	3.41	0.000
4	Not enough information about charity pharmacy	19.89%	113	35.04%	199	26.06%	148	14.44%	82	4.58%	26	568	3.51	0.000
5	I did not know how to participate.	19.16%	109	34.45%	196	27.42%	156	12.83%	73	6.15%	35	569	3.48	0.000
6	Lack of time to participate in the charity pharmacy	18.63%	106	34.27%	195	27.77%	158	14.24%	81	5.10%	29	569	3.47	0.000
7	Unaware of the existence of a charity pharmacy system	17.05%	97	35.68%	203	27.77%	158	14.06%	80	5.45%	31	569	3.45	0.000
8	Fear of legal liability.	15.87%	90	33.33%	189	29.63%	168	14.81%	84	6.35%	36	567	3.38	0.000
9	Unaware of the need to participate in the charity pharmacy.	17.57%	100	34.62%	197	28.47%	162	13.36%	76	5.98%	34	569	3.44	0.000
10	Lack of financial reimbursement	16.55%	94	33.27%	189	30.63%	174	13.73%	78	5.81%	33	568	3.41	0.000
11	There is no periodic training of medical staff about charity pharmacy	19.72%	112	34.68%	197	28.17%	160	12.68%	72	4.75%	27	568	3.52	0.000
	Answered											571		
	Skipped											7		

1.371, 1.566, 1.839, 1.285, and 1.688.

them ($p=0.961$). The gender was non-statistically significant and affected *the pharmacist's perception of charity pharmaceutical care services* ($p=0.336$). The age of the responders affected *the pharmacist's perception of charity pharmaceutical care services*. Pharmacists aged 18-24 scored the highest (4.1335), with a statistically significant difference between all age groups ($p=0.000$). The academic qualifications of the responders affected *the pharmacist's perception of charity pharmaceutical care services*. Pharmacists with Ph. D holders showed the lowest score (3.1300), with a statistically significant difference between all age groups ($p=0.000$). Five levels of work experience affected *the pharmacist's perception of charity pharmaceutical care services*. The lowest score was (2.9844), and (3.2366) which were obtained for those with work experience of (11-15) and (>15) year, respectively. It was a statistically significant difference between all levels ($p=0.000$). Six levels of the position affected the perception of pharmacists, with the lowest score (3.0997) obtained for the supervisor, with a statistically significant difference between all levels ($p=0.000$). The knowledge of pharmacy volunteering activities affected *the pharmacist's perception of charity pharmaceutical care services*. The non-existing knowledge scored the highest (3.8248) with a statistically significant difference ($p=0.004$). The knowledge of Charity Pharmacy inside work affected *the pharmacist's perception of charity pharmaceutical care services*. The existing and non-existing knowledge had the highest score (3.8062) and (3.8813), respectively, with a statistically significant difference between all answers ($p=0.000$). The knowledge of Charity Pharmacy at outside work affected *the pharmacist's perception of charity pharmaceutical care services*. The existing and non-existing knowledge had the highest score (3.8629) and (3.8277), respectively, with a statistically significant difference ($p=0.000$). Working as a charity pharmacist affected *the pharmacist's perception of charity pharmaceutical care services*. Non-

practice as charity pharmacists obtained the lowest score (3.0549) with a statistically significant difference ($p=0.000$). The frequency of practice as a charity pharmacist affected *the pharmacist's perception of charity pharmaceutical care services*. The answer of never practicing as a charity pharmacist obtained the lowest score (3.0094) with a statistically significant difference ($p=0.000$). (Table 6).

The relationship between the *pharmacist's perception of charity pharmaceutical care services* and factors such as Location, Site of work, Nationality, Pharmacist gender, Age (years), Academic qualifications, Years of experience in a pharmacy career, Position Held, knowledge of pharmacy volunteering activities, knowledge of Charity Pharmacy at inside work, knowledge of Charity Pharmacy at outside work, work as charity pharmacist, and Frequency of Practice as charity pharmacist. The multiple regression analysis considered perception as the dependent variable and factors affecting it as an explanatory variable. There was a medium relationship ($R=0.657$ with $p=0.000$) between the *pharmacist's perception of charity pharmaceutical care services* and its factors. Six out of thirteen (nationality, age, academic qualifications, positions, knowledge of Charity Pharmacy at inside work, Frequency of Practice as a charity pharmacist) were non-significant differences ($p>0.05$). However, multiple regression analysis confirmed that six factors (i.e., location, worksite, gender, years of experience, knowledge of pharmacy volunteering activities, and work as a charity pharmacist) explained 12.6%, 23.8%, 18.2%, 37.5%, 20.9, and 26.3%, respectively of the negative relationship to the variation in perception, with a statistically significant difference ($p=0.001$), ($p=0.000$), ($p=0.000$), ($p=0.000$), ($p=0.000$), ($p=0.000$), respectively. The bootstrap model was also confirmed. Furthermore, the relationship was verified by the non-existence of multicollinearity with the location, worksite, gender, knowledge of pharmacy volunteering activities, knowledge of Charity Pharmacy at

Table 5: Multiple regression of Factors with the Perception of charity pharmaceutical care services.

Model	R	R Square	F	Sig.	Unstandardized Coefficients		t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
					B	Std. Error			Lower Bound	Upper Bound	Tolerance	VIF
1	.657 ^b	.432	31.442	.000 ^b	5.428	.166	32.642	.000	5.101	5.755		
					-.063	.019	-3.306	.001	-.101	-.026	.730	1.371
					-.072	.012	-5.842	.000	-.096	-.048	.638	1.566
					.107	.088	1.224	.222	-.065	.279	.479	2.087
					-.303	.073	-4.141	.000	-.446	-.159	.544	1.839
					.007	.039	.170	.865	-.071	.084	.279	3.585
					-.024	.018	-1.336	.182	-.060	.011	.685	1.459
					-.241	.038	-6.263	.000	-.316	-.165	.295	3.390
					-.013	.018	-.028	.474	-.049	.023	.679	1.473
					.334	.064	5.186	.000	.207	.460	.649	1.541
					-.032	.039	-.818	.414	-.108	.044	.495	2.022
					-.104	.046	-2.242	.025	-.195	-.013	.358	2.794
					-.189	.041	-4.593	.000	-.270	-.108	.323	3.100
					-.010	.041	-.239	.811	-.091	.071	.322	3.104

a. Dependent Variable: Perception of charity pharmaceutical care services, Predictors: (Constant), Location, Age (years), Pharmacist gender, Position Held, and Years of experience at pharmacy career, knowledge of pharmacy volunteering activities, knowledge of Charity Pharmacy at inside work, work as charity pharmacist, and Frequency of Practice as charity pharmacist.

Bootstrap for Coefficients

Model	B	Bias	Std. Error	Sig. (2-tailed)	95% Confidence Interval	
					Lower	Upper
1	5.428	.006	.128	.001	5.186	5.695
	-.063	.000	.025	.011	-.114	-.016
	-.072	-.001	.018	.001	-.110	-.038
	.107	-.001	.107	.314	-.116	.321
	-.303	-.003	.101	.005	-.514	-.105
	.007	-.001	.045	.880	-.081	.093
	-.024	.000	.023	.300	-.069	.019
	-.241	.001	.051	.001	-.333	-.134
	-.013	.001	.023	.560	-.056	.036
	.334	.003	.085	.001	.172	.497
	-.032	-.001	.051	.531	-.129	.070
	-.104	-.002	.067	.119	-.240	.022
	-.189	-.001	.047	.001	-.283	-.096
	-.010	.002	.052	.832	-.111	.093

a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples.

outside work, and work as a charity pharmacist) factors with a Variance Inflation Factor (VIF) of 1.282, 1.360, 1.525, 1.285, 1.541, and 2.794 respectively, less than three or five as an adequate number of VIF. Except for the experiences factor, experiences and work as a charity pharmacist had 3.390, 3.100, which showed the existence of multicollinearity.²³⁻²⁵ (Table 5).

Factors affecting the perception of factors discouraged participation in the charity pharmacy practice

Factors affecting the perception were analyzed. We adjusted the significant values using the independent samples Kruskal–Wallis test and the Bonferroni correction for multiple tests. **The Factors affecting the factors discouraged participation in the charity pharmacy practice** includes Location, Site of work, Nationality, Pharmacist gender, Age (years), Academic qualifications, Years of experience in a pharmacy career, Position Held, knowledge of pharmacy volunteering activities, knowledge of Charity Pharmacy at inside work, knowledge of Charity Pharmacy at outside work, Work as charity pharmacist, and Frequency of Practice as charity pharmacist. The eastern region showed the lowest scores (2.9001), with statistically significant differences between regions ($p=0.000$). Fourteen worksites affected the **perception that factors discouraged participation in the charity pharmacy practice**. Non-MOH governmental sector (including hospitals) obtained the lowest scores (2.6352) with a statistically significant difference between working sites ($p=0.000$). Nationality did not affect **the perception of factors that discouraged participation in the charity pharmacy practice**, with non-significant differences between them ($p=0.795$). The gender was non-statistically significant and affected the **perception that factors discouraged participation in the charity pharmacy practice** ($p=0.347$). The age of the responders affected the **perception of factors that prevented participation in the charity pharmacy practice**. Pharmacists aged 18-24 scored the highest (3.8756), with a statistically significant difference between all age groups ($p=0.000$). The academic qualifications of the responders affected the **perception of factors that discouraged participation in the charity pharmacy practice**. Pharmacists with Ph. D holders showed the lowest score (3.1099), with a statistically significant difference between all age groups ($p=0.000$). Five levels of work experience affected the **perception that factors discouraged participation in the charity pharmacy practice**. The lowest score was (2.9112), and (3.2885) was obtained for those with work experience of (11-15) and (>15) years, respectively, with a statistically significant difference between all levels ($p=0.000$). Six levels of the position affected the perception of pharmacists, with the lowest score (3.0200) obtained for the supervisor, with a statistically significant difference between all levels ($p=0.000$). The knowledge of pharmacy volunteering activities did affect the **perception of factors that discouraged participation in the charity pharmacy practice** with a non-statistically significant difference ($p=0.173$). The knowledge of Charity Pharmacy inside work affected the **perception that factors discouraged participation in the charity pharmacy practice**. The pharmacist who does not know about Charity Pharmacy inside work had the lowest score (2.9339) with a statistically significant difference between all answers ($p=0.000$). The knowledge of Charity Pharmacy at outside work affected the **perception that factors discouraged participation in the charity pharmacy practice**. The pharmacist who does not know about Charity Pharmacy at outdoor work had the lowest score (2.8313) with a statistically significant difference between all answers ($p=0.000$). Working as a charity pharmacist affected perceptions **of factors discouraging participation in the charity pharmacy practice**. Non-practice as a charity pharmacist obtained the lowest score (3.1066) with a statistically significant difference ($p=0.000$). The frequency of practice as a charity pharmacist affected the **perception of factors discouraging participation in the charity pharmacy practice**.

The answer of never practicing as a charity pharmacist obtained the lowest score (3.0728) with a statistically significant difference ($p=0.000$). (Table 6).

The relationship between the perception of factors discouraging participation in the charity pharmacy and factors such as Location, Site of work, Nationality, Pharmacist gender, Age (years), Academic qualifications, Years of experience in pharmacy career, Position Held, knowledge of pharmacy volunteering activities, knowledge of Charity Pharmacy at inside work, knowledge of Charity Pharmacy at outside work, work as charity pharmacist, an Frequency of Practice as charity pharmacist. The multiple regression analysis considered perception as the dependent variable and factors affecting it as an explanatory variable. There was a medium relationship ($R=0.380$ with $p=0.000$) between the perception of factors discouraging participation in the charity pharmacy and its factors. Eleven out of thirteen (as Site of work, Nationality, Pharmacist gender, Age (years), Position Held, knowledge of pharmacy volunteering activities, knowledge of Charity Pharmacy at inside work, knowledge of Charity Pharmacy at outside work, and the Frequency of Practice as charity pharmacist) were non-significant differences ($p>0.05$). However, multiple regression analysis confirmed that four factors (i.e., location, academic qualification, years of experience, and work as a charity pharmacist) explained 12.6%, 19.3%, 17.1%, and 28.2%, respectively of the negative relationship to the variation in perception, with a statistically significant difference ($p=0.006$), ($p=0.000$), ($p=0.016$), and ($p=0.000$). The bootstrap model was also confirmed. Furthermore, the relationship was verified by the non-existence of multicollinearity with the location and academic qualification factors with a Variance Inflation Factor (VIF) of 1.376 and 1.469, respectively, less than three or five as a sufficient number of VIF. However, years of experience and work as a charity pharmacist showed multicollinearity with a Variance Inflation Factor (VIF) of 3.335 and 3.114, respectively.²³⁻²⁵ (Table 6).

DISCUSSION

The foundation of charitable healthcare services, including pharmacy activities, needs various things. What's included administration of non-profit organizations skills, Human Resources for philanthropic organizations, governances of policy and procedures, financial regulation, and accreditation from related agencies.^{5,26} All those elements originated from the national center of Non-profit Organizations.⁵ Any healthcare providers emphasizing pharmacists should adhere to previous practices, standards, and regulations.⁵ Thus, before begging charitable foundations in pharmacy practice, the perception of pharmacy staff is very critical. Besides, any factors might discourage to start or establish any charitable pharmaceutical care services. The current cross-sectional study aimed to determine the pharmacist and pharmacy technician attitudes and related perceptions of charitable pharmacy practice and the barriers preventing the establishment of charitable activities. The study had various types of pharmacists from different geographic locations, working sites, and multiple practice areas, in addition to different ages, experiences, and positions jobs. That's reflected in the reach of pharmacy society, similar to the previous study.⁹ The survey had various validation procedures and high-reliability test results. There was no reported association among study variables

The findings showed the average score of the pharmacist's perception was acceptable. In addition, the pharmacist highly agreed. That's a promising sign for pharmacy staff interested in working in charitable pharmacy activities and establishing new project management strategies. In contrast, pharmacy professionals do not agree to get economic benefits from philanthropic activities. That's an excellent sign to work as a volunteer. Moreover, the pharmacy profession did not agree to enter into a conflict of interest with healthcare providers who related to charitable activities without interfering with their charitable jobs. There

Table 6: Multiple regression of Factors with the perception of factors that discouraged participation in the charity pharmacy practice.

Model	R	R Square	F	Sig.	Unstandardized Coefficients		t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
					B	Std. Error			Lower Bound	Upper Bound	Tolerance	VIF
1	.442 b	.196	10.085	.000b	5.237	.247	21.186	.000	4.752	5.723		
					-.080	.029	-2.782	.006	-1.136	-.023	.727	1.376
					-.005	.018	-.256	.798	-.041	.031	.636	1.572
					.038	.130	.289	.773	-.218	.293	.482	2.073
					-.103	.109	-.950	.342	-.317	.110	.544	1.837
					-.098	.058	-1.670	.095	-.212	.017	.283	3.537
					-.113	.027	-4.116	.000	-.166	-.059	.681	1.469
					-.138	.057	-2.427	.016	-.249	-.026	.300	3.335
					-.039	.027	-1.440	.151	-.093	.014	.678	1.476
					.121	.096	1.268	.205	-.067	.309	.653	1.531
					.002	.058	.035	.972	-.111	.115	.490	2.041
					-.069	.069	-1.005	.315	-.204	.066	.358	2.795
					-.254	.061	-4.138	.000	-.374	-.133	.321	3.114
					.113	.061	1.849	.065	-.007	.234	.320	3.123

a. Dependent Variable: *perception of factors that discouraged participation in the charity pharmacy practice*. Predictors: (Constant), Location, Age (years), Pharmacist gender, Position Held, and Years of experience at pharmacy career, knowledge of pharmacy volunteering activities, knowledge of Charity Pharmacy at inside work, knowledge of Charity Pharmacy at outside work, work as charity pharmacist, and Frequency of Practice as charity pharmacist.

Model	B	Bias	Std. Error	Sig. (2-tailed)	Bootstrap ^a 95% Confidence Interval	
					Lower	Upper
1	(Constant)	.013	.202	.001	4.827	5.623
	Location	-.001	.028	.007	-.136	-.027
	Site of work	.000	.019	.817	-.040	.030
	Nationality	-.010	.132	.771	-.225	.286
	Pharmacist gender	.001	.113	.356	-.326	.115
	Age (years)	.000	.057	.087	-.207	.016
	Academic qualifications	-.001	.028	.001	-.166	-.057
	Years of experience in a pharmacy career	.001	.053	.011	-.240	-.037
	Position Held	.001	.029	.154	-.099	.018
	knowledge of pharmacy volunteering activities	.003	.098	.216	-.072	.318
	knowledge of Charity Pharmacy at inside work	-.003	.056	.975	-.108	.109
	knowledge of Charity Pharmacy at outside work	.003	.069	.325	-.204	.065
	Work as a charity pharmacist	-.001	.059	.001	-.375	-.133
	Frequency of Practice as a charity pharmacist	.000	.065	.089	-.016	.246

a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples.

was no reported association among study variables.

Various Factors might affect the pharmacy profession's perception of charitable pharmacy practice. Such as, a location with an eastern region had the lowest score related to high charitable activities in pharmacy practice and might get overloaded, or there are not many factors that prevent philanthropic activities. Non-Governmental Organizations, the lowest score of perceptithatt's might be related to insufficient charitable pharmacy practice. It was different from MOH hospitals and related institutions. The young pharmacy professionals had a higher perception of charitable practice that's related; they were very enthusiastic about involving in the charitable sector. On the other hand, supervisors with high academic qualifications and more than 15 years of experience had the lowest perception of charitable pharmacy work because they might be busy with administrative issues or not interested in participating in the charitable sector. Absent knowledge of charitable pharmacy activities might encourage the pharmacy profession to join philanthropic organizations to explore the inside and practice of giving health care services. Furthermore, the non-practice of charitable activities might affect the perception because they do not have any experience, and they might fear to involve with philanthropic jobs. Besides, non-charitable activities practice had the lowest perception score because they do not know about charitable activities. The most dependable factor negatively affects pharmacist perception of charitable pharmaceutical care services, such as location, working sites, gender, years of experience, knowledge of pharmacy vulnerabilities, understanding of pharmacy vulnerability inside work, and frequent practice of charitable pharmacy activities, as discussed earlier. There was no reported association among study variables.

The findings showed an adequate perception of factors discouraging the charitable pharmacy practice. First, the pharmacy profession disagreed with charitable pharmacy activities being non-mandatory, similar to the previous report.⁹ That will encourage all the pharmacy societies to participate in charitable works. The pharmacy profession agrees the most significant barrier to implementing charitable works was a lack of education and training in the charitable pharmacy practice. That's expected because there is no undergraduate education and training for charitable pharmacy activities. All pharmacy colleges should revise their curriculum to involve charitable pharmacy practice and conditioning. Besides, there is no education and training after graduation from pharmacy schools. That's encouraging all healthcare organizations to establish education and training for charitable pharmacy programs. Finally, the pharmacy profession disagrees with factors lacking the financial support to prevent charitable activities. That's expected because the non-profit performances are without financial support. There was no reported association among other study variables.

Various factors might affect the perception of factors that discourage charitable pharmacy participation. Such as, the location emphasis in the eastern area had the lowest perception, which might be related to the lack of barriers preventing participation in charitable activities. Non-MOH government organizations had the most inadequate perception of barriers among all healthcare institutions that might be associated with the sufficient involvement of charitable performance or the pharmacy workers unaware of philanthropic contributions. The young pharmacist had a high perception of barriers because they wished to participate but faced various challenges and obstacles. The academic qualifications had the lowest perception of impediments due to inadequate participation of Ph.D. holders in charitable activities, as discussed before, and there are no familiar existing barriers preventing the involvement of charitable activities. The highly expert pharmacist had the lowest perception of obstacles; it might relate to inadequate participation, or they are experts and can solve all barriers. The supervision had the lowest perception of

blocks associated with having enough experience to remove the obstacles or not participating in vulnerable works. Insufficient knowledge of charitable inside or outside work had the lowest perception of barriers related to not awareness of charitable works and activities. Besides, not sharing in the charitable work or low frequency might affect perceptions of obstacles, with the weakest results related to unawareness of the original barriers existing. The most dependable factors that negatively affected perceptions of barriers discouraging the participation of charitable pharmacy services were locations, academic qualifications, experience, and work as a charitable pharmacist, as explained earlier. There was no reported association among study variables.

Limitations

The study had various advantages, such as new features of charitable pharmacy practice, appropriate sampling size, and high-reliability findings. However, it contained multiple limitations such as sampling techniques, was not randomized, and had unequal subjects from each demographic characteristic. Therefore, future research with randomized sampling methodology with appropriate sampling size periodically is highly suggested.

CONCLUSION

The perception of pharmacy professionals about charitable pharmaceutical care services and factors discouraging participation was sufficient. The study was first done locally and in Arabic countries with an appropriate calculated sample size and high-reliability results. The pharmacy provider highly agreed to implement charitable pharmacy activities and get clinical outcome benefits for patient care. Pharmacy professionals are not interested in getting economic benefits from charitable pharmacy services; they wish to provide excellent services to poor people. The pharmacy professional wish to do charitable work in pharmacy practice as mandated for all pharmacy staff. The most significant barrier to implementing charitable activities was a lack of education and training in undergraduate and undergraduate pharmacy fields. Various factors might negatively and positively affect charitable pharmaceutical care services, such as young graduates of a pharmacist, with limited experience. Besides, previous knowledge and practice of charitable pharmacy services. The charitable pharmacy practice should be supported by the college of pharmacy and pharmacy associations to improve charitable activities in the pharmacy community in Saudi Arabia.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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Consent for Publications

Informed consent was obtained from all the participants

Ethical Approval

This research was exempted from research and ethical committee or an Institutional Review Board (IRB) approval.

<https://www.hhs.gov/ohrp/regulations-and-policy/decision-charts-2018/index.html>

ABBREVIATIONS

MOH: Ministry of Health; **KSA:** Kingdom of Saudi Arabia; **SPSS:** Statistical Package of Social Sciences; **JASP:** Jeffery's Amazing Statistics Program; **STROBE:** Strengthening the reporting of observational studies in epidemiology statement; **VIF:** Variance Inflation Factor.

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