Original Research Article

Perceptions regarding Occupational Health and Safety Attitudes of Hospital Pharmacists in Ambulatory Care in Pakistan

Abstract

Background: Standards for assessing and monitoring occupational health risks and safety measures for hospital pharmacists have been given prime importance in developed countries. However, occupational health and safety has often been neglected in developing countries. Lack of knowledge, poor training practices and insufficient resources are few of the reasons behind poor occupational health standards. **Objective:** The objective of the study was to assess perceptions regarding occupational health and safety attitudes of hospital pharmacists in ambulatory care in Pakistan. **Methodology:** A descriptive cross-sectional study design was used. The study respondents included hospital pharmacists working in Islamabad and Rawalpindi. Sample size was calculated to be 382 to achieve 95% confidence level with 5% margin of error. Convenient sampling technique was used to select respondents. A pre-validated tool Safety Attitudes Questionnaire-Ambulatory Version was used. Data was coded and analyzed using SPSS 21 after collection. Descriptive statistics comprising of frequency and percentages were calculated. Mann-Whitney and Kruskal-Wallis ($p \geq 0.05$) tests were applied according to different demographic variables. **Results:** Significant difference ($p<0.05$) was observed in perceptions of occupational health and safety attitudes in ambulatory care among respondents of different genders, cities, education level, age groups, experience, setting and salary. Females had poor safety attitudes in ambulatory care as compared to male respondents. Respondents having experience between 1-5 years had poor safety attitude as compared to other respondents. Respondents working in private sector had poor occupational health and safety attitudes as compared to those working in public sector. **Conclusion:** The present study concluded that hospital pharmacists working in ambulatory care had satisfactory occupational health and safety attitudes. Respondents agreed that they had made errors due to workplace pressures and workload. Trainings should be conducted to improve the occupational health and safety attitudes of hospital pharmacists in ambulatory care.

Keywords: Ambulatory Care, Safety Attitudes, Hospital Pharmacists, Pakistan

Introduction

Ambulatory care is defined as the care provided by health care professionals in outpatient settings. Such settings can include clinics, ambulatory surgery centers, outpatient department of hospitals and dialysis centres [1]. It has been estimated that throughout the globe, 1.2 billion visits are made annually to physician clinics and outpatient departments which makes four visits by an individual each year [2]. The ambulatory environment of a hospital is more prone to adverse events and medical errors due to a variety of factors including increased workload, high

patient load, poor safety practices, chances of acquiring infections and less staff [3]. In the last decade, occupational health has gained much importance as an intervention to improve the status of healthcare professionals to avoid serious errors and promote a culture of patient safety in healthcare settings [4]. It includes interventions for protecting and promoting health of workers and employees by introduction of methods of prevention and control for occupational conditions that can have a deleterious effect on employees [5]. Various hazards are addressed in the context of occupational health including chemical, physical, biological, stress related and ergonomics hazards [6].

The risk of exposure to infections is high among healthcare professionals working in hospital settings especially in ambulatory care [7]. It is projected that nearly one-third of the total cases of absenteeism among healthcare professionals are associated with occupational hazards [8]. Lack of awareness, poor knowledge regarding occupational hazards and lack of training are few of the factors promoting occupational health hazards among healthcare professionals [9]. A study conducted in Pakistan reported that only 14.2% of healthcare professionals had formal training on post exposure prophylaxis [10]. Another study showed that poor knowledge and attitudes regarding safety can lead to low infection control practices, poor control of disease and delay in diagnosis [11]. Another study conducted in USA showed that less utilization of PPE, increased working hours, workload pressure and working in different settings were few of the reasons leading to development of occupational hazards among healthcare professionals [12].

Occupational health of healthcare professionals has remained the most neglected issue in Pakistan. A study conducted in Karachi highlighted that 58% of healthcare professionals were suffering from occupational health hazards and stress related to workplace [13]. As the healthcare delivery systems have evolved, demands on healthcare settings have increased due to increased number of patients as well as increased prevalence of communicable and non-communicable diseases. Healthcare workers are continuously at a potential risk of harm from exposure to numerous hazardous agents encountered in their workplace [14]. Furthermore, poor working conditions and lack of support contribute towards workforce shortage and makes healthcare professionals vulnerable to stress and burnout. Hospital Pharmacists working in ambulatory care settings are front line workers playing a vital role in medication management with a unique role in the healthcare system [15]. Working long hours, excessive workload,

increased administrative tasks and inadequate support can increase the risk of occupational health and safety hazards among hospital pharmacists [16]. Till date, no research has assessed occupational health and safety attitudes of hospital pharmacists working in ambulatory settings in Pakistan. Therefore, the present study has been designed to assess occupational health and safety attitudes of hospital pharmacists in ambulatory care in Pakistan.

Methodology

A descriptive cross sectional study design was used to assess attitude occupational health and safety attitudes of hospital pharmacists in ambulatory care in Pakistan. Ethical approval was obtained for the study from the Ethical Committee of Hamdard University (BASR-89-5.2). For the collection of data, approval was taken from MS of hospitals. Informed and verbal consent for participation was taken from the respondents. The study setting included public and private outpatient department hospital pharmacies located in twin cities (Islamabad and Rawalpindi) of Pakistan. The study respondents included hospital pharmacists. Sample size was 382 calculated using Raosoft calculator at 95% confidence interval with 5% margin of error. Non- probability sampling technique i.e. convenient sampling was adopted for selecting respondents for the study. A prevalidated tool Safety Attitudes Questionnaire-Ambulatory Version [17] was used. The tool comprises of 10 questions assessing the performance of employees under stress and hostile conditions. The questions assess teamwork, workplace safety climate, satisfaction with job, management perceptions, conditions of working and recognition of stress. A 5 point likert scale has been used to assess responses where 1 is strongly disagree and 5 is strongly agree. After data collection, data was cleaned, coded and entered in SPSS version 21 and was analyzed statistically.

Results

The results of the study showed that 69.1% (n=264) were males whereas 30.9% (n=118) were females. Out of 382 respondents, 45.5% (n=174) were Pharm. D whereas 34.03% (n=130) were MPhil. The results of the present study showed that 18.8% (n=72) were working at public healthcare facilities whereas 81.2% (n=310) were working at private healthcare facilities. A detailed description is given (Table 1).

Table 1 Demographic Characteristics of Respondents

Indicators		n (%)
Gender	Male	264 (69.1)
	Female	118 (30.9)
Age	<25 years	85 (22.2)
	26-35 years	110 (28.7)
	36-45 years	100 (26.1)
	46-55 years	49 (12.8)
	>55 years	38 (9.9)
City	Rawalpindi	180 (47.1)
	Islamabad	82 (21.5)
Education	Pharm D	174 (45.5)
	MPhil	130 (34.03)
	PhD	70 (18.32)
	Others	8 (2.09)
Sector	Public	72 (18.8)
	Private	310 (81.2)
Professional Experience	Less than 1 year	179 (46.9)
	1-5 years	160 (41.9)
	6-10 years	39 (10.20)
	>10 years	4 (1.04)
Salary	Rs. 20-30000	45 (11.7)
	Rs. 31-40000	110 (28.7)
	Rs. 41-50000	129 (33.7)
	>Rs. 50000	98 (25.6)

The results of the study showed that the majority of the respondents (18.1%, n=69) agreed that their office constructively deals with problems of employees. Thirty three percent (n=127) of the respondents moderately agreed that due to excessive workload, their performance was impaired. Almost half of the respondents (47.4%, n=181) somewhat disagreed that they were more likely to make errors in tense situations. The results of the current study showed that respondents (35.1%, n=134) moderately disagreed that fatigue impaired their performance during emergency situations. Almost half of the respondents (46.1%, n=176) moderately disagreed that stress from personal problems adversely affected their performance. A detailed description is given (Table 2).

Table 2 Assessment of Occupational Health and Safety Attitudes of Hospital Pharmacists in Ambulatory Care in Pakistan

Indicators	Strongly Agree n (%)	Moderately Agree n (%)	Somewhat Disagree n (%)	Somewhat Agree n (%)	Moderately Disagree n (%)	Strongly Disagree n (%)
This office constructively deals with problems of physicians and employees.	69 (18.1)	275 (72)	35 (9.2)	3 (0.8)	0	0
When my workload become excessive , performance is impaired.	106 (27.7)	127 (33.2)	84 (22)	65 (17)	0	0

I am more likely to make errors in tense or hostile situation.	40 (10.5)	91 (23.8)	181 (47.4)	70 (18.3)	40	91
Fatigue impair my performance during emergency situation (e.g code or cardiac arrest).	45 (11.8)	134 (35.1)	117 (30.6)	85 (22.3)	1 (0.3)	0
I am less effective at work when I am fatigued.	30 (7.9)	212 (55.5)	57 (14.9)	81 (21.2)	2 (0.5)	0
Stress from personal problems adversely affect my performance.	59 (15.4)	176 (46.1)	84 (22)	59 (15.4)	3 (1.04)	0
Very high levels of workload stimulate and improve my performance.	67 (17.5)	175 (45.8)	62 (16.2)	74 (19.4)	4 (1.04)	0
Truly professional personnel can leave personal problems behind when working.	131 (34.3)	166 (43.5)	53 (13.9)	23 (6)	9 (2.3)	0
I have seen others make errors that had the potential to harm patients.	49 (12.8)	139 (36.4)	54 (14.1)	134 (35.1)	5 (1.5)	0
I have made errors that had the potential to harm patients	25 (6.5)	59 (15.4)	41 (10.7)	227 (59.4)	30 (7.8)	0

Significant difference ($p<0.05$) was observed in perceptions of occupational health and safety attitudes in ambulatory care among respondents of different genders, cities, education level, age groups, experience, setting and salary status. Female hospital pharmacists had poor safety attitudes in ambulatory care as compared to male respondents. Respondents residing in Islamabad had poor safety attitudes as compared to respondents living in Rawalpindi. Respondents having MPhil as their educational qualification had poor safety attitudes as compared to other respondents. Respondents having age between 26-35 years had poor occupational health and safety attitudes as compared to other age groups. Respondents having experience between 1-5 years had poor safety attitude as compared to other respondents. Respondents working in private sector had poor occupational health and safety attitudes as compared to those working in public sector. Respondents having income more than Rs. 50000 had poor safety attitudes as compared to other respondents (Table 3).

Table 3 Assessment of Occupational Health and Safety Attitudes in Comparison with Demographic Variables

Demographics		Mean Rank	Test Statistics	p-Value
Gender	Male	173.81	15011.000[a]	**0.004**
	Female	205.92		
City	Islamabad	209.34	14806.000[a]	**0.004**
	Rawalpindi	176.69		
Education	Pharm D	182.91	9.935[b]	**0.019**
	MPhil	209.07		
	PhD	41.75		
	Others	68.00		
Age	Less than 25years	218.18	73.752[b]	**0.001**
	26years-35years	220.5		
	36years-45years	105.6		
	46years-55years	106.2		

	More than 55years	103.1		
Experience	Less than 5years	181.55	56.804[b]	**0.001**
	1 – 5years	218.31		
	6 – 10years	42.67		
	More than 10 years	55.50		
Setting	Private	205.59	5799.000[a]	**0.001**
	Public	121.36		
Salary	20K-30K	208.01	23.940[b]	**0.001**
	31K-40K	152.63		
	41K-50K	201.43		
	More than 50K	226.74		

Mann-Whitney[a], Kruskal Wallis[b]

Discussion

One of the important aspects for effective patient care and delivery of health services is maintenance of a culture that ensures safety of patients. Despite this fact, hospitals report a number of deaths and adverse events annually throughout the world. One of the prime factor affecting quality of care at hospitals is occupational health and safety attitudes of healthcare professionals. The results of the present study showed that occupational health and safety attitudes were satisfactory among hospital pharmacists. The majority of the respondents were unhappy with the way their office dealt with problems. This might be due to the fact that their supervisors did not solve their issues and there were no policies to assist employees. Similar results were observed in a study conducted in Saudi Arabia where primary healthcare professionals were unsatisfied with their workplace [18]. Respondents were of the view that the high workload did not have any major impact on their performance. This might be due to the fact that employees were accustomed to the daily routine in the ambulatory care department. The majority of the respondents were of the view that they were more likely to make errors in tense situations. A study conducted in Netherlands concluded that stress recognition was an important factor towards maintaining positive attitude for safety culture [19].

In order to achieve the goal of patient safety and reduce chances of adverse events, it is necessary that healthcare professionals possess positive attitudes about safety and occupational health. The results of the present study showed that respondents were of the view that fatigue did not impair their performance at work and did not make them less effective. Similar results were observed in a study conducted in Greece where physicians and nurses had positive attitudes about occupational health and agreed that routine workload had no negative impact on their performance [20]. The majority of the respondents were of the view that personal stress did not affect their performance at workplace. Similar results were observed in a study conducted in Kuwait which concluded that high workloads increased the chances of errors made by physicians, pharmacists and nurses in hospital settings [21].

The results of the present study showed that females respondents had poor safety attitudes in ambulatory care as compared to male respondents. This might be due to the fact that female pharmacists had to juggle between work and family leading to chances of error during worktime. Respondents residing in Islamabad had poor safety attitudes as compared to respondents living in Rawalpindi. Respondents having MPhil as their educational qualification had poor safety

attitudes as compared to other respondents. Respondents having age between 26-35 years had poor occupational health and safety attitude as compared to other age groups. Respondents having experience between 1-5 years had poor safety attitude as compared to other respondents. This might be due to the fact that less experienced professionals had difficulty managing their workload and tend to get tense and fatigued easily. Respondents working in private sector had poor occupational health and safety attitudes as compared to those working in public sector. Respondents having income more than Rs. 50000 had poor safety attitudes as compared to other respondents. Similar results were observed in a study conducted in China and Paksitan where females and younger healthcare professionals had higher stress due to poor occupational health [22], [23].

Limitations of Study

Time and financial constraints were few of the limitations that were faced during conduction of study. The research was conducted in twin cities of the Pakistan and may not be generalizable to other parts of the country.

Conclusion & Recommendation

The present study concluded that hospital pharmacists working in ambulatory care had satisfactory occupational health and safety attitudes. Respondents agreed that they had made errors due to workplace pressures and workload. Females had less positive safety attitudes than males. Younger respondents had poor occupational health and safety attitudes. Hospital pharmacists employed in private sector had less positive attitudes regarding occupational health and safety in ambulatory care. Trainings should be conducted to improve the occupational health and safety attitudes of hospital pharmacists in ambulatory care and managerial interventions such as increase in number of shifts, increase in workforce, automated dispensing and clinical softwares should be employed to reduce the workload of hospital pharmacists. Stress recognition interventions should be carried out periodically to assess the hospital pharmacists mental health and burnout level.

References

1. Johnston, K.J., et al., *Ambulatory Care Access And Emergency Department Use For Medicare Beneficiaries With And Without Disabilities: Study examines ambulatory care access and emergency department use among beneficiaries with disabilities.* Health Affairs, 2021. **40**(6): p. 910-919.
2. Webster, K.E., *Development of a medication reconciliation policy in outpatient mental health facility.*
3. Jones, M.T., R. Arif, and A. Rai, *Patient experiences with telemedicine in a national health service rheumatology outpatient department during coronavirus disease-19.* Journal of patient experience, 2021. **8**: p. 23743735211034973.
4. Owie, H. and P. Apanga, *Occupational health hazards prevailing among healthcare workers in developing countries.* Journal of AIDS and Clinical Research, 2016. **7**(8).
5. Tawiah, P.A., et al., *Identifying occupational health hazards among healthcare providers and ancillary staff in Ghana: a scoping review protocol.* BMJ open, 2022. **12**(1): p. e058048.
6. Longman, J.M., et al., *Ambulatory care sensitive chronic conditions: what can we learn from patients about the role of primary health care in preventing admissions?* Australian Journal of Primary Health, 2018. **24**(4): p. 304-310.
7. Hetzmann, M.S., et al., *Occupational health and safety measures in German outpatient care services during the COVID-19 pandemic: a qualitative study.* International journal of environmental research and public health, 2021. **18**(6): p. 2987.
8. Alexopoulos, E.C., et al., *Risk factors for sickness absence due to low back pain and prognostic factors for return to work in a cohort of shipyard workers.* European Spine Journal, 2008. **17**: p. 1185-1192.
9. Holster, T., L. Nguyen, and U. Häkkinen, *The role of occupational health care in ambulatory health care in Finland.* Nordic Journal of Health Economics, 2021.
10. Ismail, S., et al., *Occupational exposure to HIV in a developing country: assessing knowledge and attitude of healthcare professional before and after an awareness symposium.* BMC Research Notes, 2018. **11**(1): p. 1-6.
11. Abdel Wahed, W.Y., et al., *Assessment of knowledge, attitudes, and perception of health care workers regarding COVID-19, a cross-sectional study from Egypt.* Journal of community health, 2020. **45**: p. 1242-1251.
12. Ndejjo, R., et al., *Occupational health hazards among healthcare workers in Kampala, Uganda.* Journal of environmental and public health, 2015. **2015**.
13. Tanzil, S., et al., *Frequency and severity of low back pain among healthcare providers and associated factors in a tertiary care, public hospital in Karachi.* Occup Med Health Aff, 2019. **7**(1): p. 1000285.
14. Jones, R.M. and Y. Xia, *Occupational exposures to influenza among healthcare workers in the United States.* Journal of Occupational and Environmental Hygiene, 2016. **13**(3): p. 213-222.
15. Higuchi, Y., et al., *A cross-sectional study of psychological distress, burnout, and the associated risk factors in hospital pharmacists in Japan.* BMC Public Health, 2016. **16**: p. 1-8.
16. Blue, C.L., et al., *Burnout among hospital pharmacists in Canada: a cross-sectional analysis.* Canadian Journal of Hospital Pharmacy, 2022. **75**(4): p. 326-334.
17. Bondevik, G.T., et al., *The safety attitudes questionnaire–ambulatory version: psychometric properties of the Norwegian version for nursing homes.* BMC Health Services Research, 2019. **19**(1): p. 1-14.

18. AlMaani, M.M. and K.F. Salama, *Assessment of Attitude of Primary Care Medical Staff Toward Patient Safety Culture in Primary Health-care Centers——Al-Ahsa, Saudi Arabia.* Journal of Multidisciplinary Healthcare, 2021: p. 2731-2740.
19. Buljac-Samardzic, M., J.D. Van Wijngaarden, and C.M. Dekker–van Doorn, *Safety culture in long-term care: a cross-sectional analysis of the Safety Attitudes Questionnaire in nursing and residential homes in the Netherlands.* BMJ quality & safety, 2016. **25**(6): p. 424-431.
20. Adamopoulos, I.P. and N.F. Syrou, *Workplace safety and occupational health job risks hazards in public health sector in Greece.* European Journal of Environment and Public Health, 2022. **6**(2): p. em0118.
21. Wagner, A., et al., *Healthcare professionals' perspectives on working conditions, leadership, and safety climate: a cross-sectional study.* BMC health services research, 2019. **19**(1): p. 1-14.
22. Lee, J., et al., *Risk perception, unhealthy behavior, and anxiety due to viral epidemic among healthcare workers: the relationships with depressive and insomnia symptoms during COVID-19.* Frontiers in Psychiatry, 2021. **12**: p. 615387.
23. Yaseen, A., et al., *A Survey of Occupational Stress Reactions among Healthcare Workers.* Pakistan Journal of Rehabilitation, 2022. **11**(1): p. 17-26.