

Research Article

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A Survey Based Study on Effect of Covid-19 on Indian Pharmacists using Chi-Square Approaches

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ABSTRACT

Pharmacist is the health professionals which deal with dispensing of drugs, counseling of patients. Covid pandemic has effected in a drastic manner on the professional and personal aspects of pharmacist's life. In this study, Chi-square method is used to evaluate the effect of covid on pharmacists. It was observed that in spreading awareness and false perception regarding corona virus, the chi square value is $\chi^2(1,52) = 59.49$, $p < 0.001$. Yes category dominated and difference between the two is 76%. In comparing, whether the knowledge and study of pharmacy students get affected in this pandemic difference between both the values is 64% while the chi square value is $\chi^2(1,52) = 42.18$, $P < 0.0001$. Yes category dominated and difference between the two is 64%. In comparing, whether the job prospective and importance of Pharmacist have been increased after this pandemic in health care sector difference between both the values is 28% while the chi square value is $\chi^2(1,52) = 8.07$, $P = 0.0045$. Yes category dominated and difference between the two is 28%.

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Pearson's chi-squared test and variants thereof [16-18].

Introduction

Impact of COVID-19 pandemic is huge around the globe on social, economical and health aspects of life of every individual. Pharmacist has worked still doing frontline work during COVID-19 pandemic that includes providing clear perception related to covid-19, educate and inform people and provide health services to the patients at large [1]. To provide user-based query results meta search engines are important tool in survey based study.

In this pandemic pharmacists has worked with great zest having huge responsibilities on their shoulders and it might have affected psychological and physical exhaustion due to their hectic working schedules [2-5].

During this pandemic, several people lost their jobs due to economic crises and many of pharmacists who were working in industries also lost their jobs. While dealing with patients infected from corona virus, pharmacists are also on the verge of serious probabilities of getting infected and because of it, pharmacist lost their lives too [6-9].

The present survey is an attempt to evaluate and calculate the impact of covid-19 pandemic on pharmacist. An online survey was conducted by showing at the online platform google form link to community pharmacists [10-15].

A chi-squared test, which is also called X² test, is a statistical hypothesis test that is valid to perform when the test statistic is chi-squared distributed under the null hypothesis, specifically

Procedure

A questionnaire was made containing questions related to impact of COVID-19 pandemic on social and health related aspects of the pharmacist. The survey was conducted on the online platform using "Google form" and "Google docs". A survey form was filled by 50 pharmacists; therefore, we have fifty recorded data which was analyzed to study the post pandemic scenario. Results are mentioned below.

Data Analysis

The data analysis was done using Chi-Square method.

Results

The results of the analyzing and evaluation the data are given in tables 1 to 20.

Table 1: Comparison of did you spread awareness and correct false perception regarding corona virus in this pandemic?

Percentage of yes & No	88% & 12%
Difference	76%
95%	59.69% to 84.91%
Chi-Squared	59.49
DF	1
Significance Level	P<0.001

Above table gives comparison of both values that is yes and no on first question above table gives percentage difference

between both the values that is 76% while the chi square value is $\chi^2(1,52)=59.49$, $p<0.001$. Yes category dominated and difference between the two is 76%.

Table 2: Comparison of how did you volunteer in any kind of survives regarding corona pandemic in this pandemic lockdown?

Percentage of yes & No	64.7% & 35.3 %
Difference	29.4%
95%	10.18%to 45.75%
Chi-Squared	8.90
DF	1
Significance Level	P=0.0028

Above table gives comparison of both values that is yes and no on second question above table gives percentage difference between both the values is 76% while the chi square value is $\chi^2(1,52)=8.90$, $p=0.028$. Yes category dominated and difference between the two is 29.4 although yes category dominated but not with too much difference.

Table 3: Comparison of how did you worked in health services during lockdown?

Percentage of yes & No	58% & 41.2%
Difference	17.6%
95%	-1.53 to 35.02
Chi-Squared	3.19
DF	1
Significance Level	P=0.0741

Above table gives comparison of both values that is yes and no on third question above table gives percentage difference between both the values is 17.6% while the chi square value is $\chi^2(1,52)=3.19$, $p=0.074$. Yes category dominated and difference between the two is 29.4 although yes category dominated but not with too much difference.

Table 4: Comparison of how did you feel unsafe towards your known ones because of your working profession?

Percentage of yes & No	39.2% & 60.8%
Difference	2.0
95%	-16.32 to 20.13
Chi-Squared	0.043
DF	1
Significance Level	P=0.83

Above table gives comparison of both values that is yes and no on fourth question above table gives percentage difference between both the values is 2.0% while the chi square value is $\chi^2(1,52)=0.043$, $p=0.83$. Yes category dominated and difference between the two is 2.0% although yes category dominated but not with too much difference.

Table 5: Comparison of how did you feel psychological and physically exhausted during this corona pandemic?

Percentage of yes & No	25.5% & 74.5%
Difference	49%
95%	30.27% to 62.95%
Chi-Squared	24.73
DF	1
Significance Level	P<0.0001

Above table gives comparison of both values that is yes and no on fifth question above table gives percentage difference between both the values is 49% while the chi square value is $\chi^2(1,52)=24.73$, $P<0.0001$. No category dominated and difference between the two is 49% although No category dominated with too much difference.

Table 6: Comparison of how did you worked in Covid ward for treatment of desired peoples?

Percentage of Yes & No	23.5% & 76.5%
Difference	53%
95%	34.8% to 66.35%
Chi-Squared	28.93
DF	1
Significance Level	P<0.0001

Above table gives comparison of both values that is yes and no on sixth question above table gives percentage difference between both the values is 53% while the chi square value is $\chi^2(1,52)=28.93$ $P<0.0001$. No category dominated and difference between the two is 53% although No category dominated with too much difference.

Table 7: Comparison of how did you prefer following government protocols regarding corona virus throughout this pandemic?

Percentage of Yes & No	96.1% & 3.9%
Difference	92.2%
95%	79.24%&96.18%
Chi-Squared	87.55
DF	1
Significance Level	P<0.0001

Above table gives comparison of both values that is yes and no on seventh question above table gives percentage difference between both the values is 92.2% while the chi square value is $\chi^2(1,52)=87.55$ $P<0.0001$. Yes category dominated and difference between the two is 92.2% although yes category dominated with too much difference.

Table 8: Comparison of how did you find around yourself that people got recovered from this disease are not following government rules and security guidelines?

Percentage of Yes & No	81.6% & 18.4%
Difference	63.2%
95%	45.42% to 74.82%
Chi-Squared	41.14
DF	1
Significance Level	P<0.0001

Above table gives comparison of both values that is yes and no on eighth question above table gives percentage difference between both the values is 63.2% while the chi square value is $\chi^2(1,52)=41.14$ $P<0.0001$. Yes category dominated and difference between the two is 63.2% although yes category dominated with too much difference.

Table 9: Comparison of how do your workplace follow all the guidelines regarding this pandemic?

Percentage of Yes & No	90% & 10%
Difference	80%
95%	64.32% to 87.89%
Chi-Squared	65.92
DF	1
Significance Level	$P < 0.0001$

Above table gives comparison of both values that is yes and no on ninth question above table gives percentage difference between both the values is 80% while the chi square value is $\chi^2(1,52)=65.92$ $P<0.0001$. Yes category dominated and difference between the two is 80% although yes category dominated with too much difference.

Table 10: Comparison of do you find patients get uncomfortable when the hospital staff around them because of fear of Covid?

Percentage of Yes & No	61.2% & 38.8
Difference	22.4%
95%	3.20% to 31.41%
Chi-Squared	5.16
DF	1
Significance Level	$P=0.0230$

Above table gives comparison of both values that is yes and no on tenth question above table gives percentage difference between both the values is 22.4% while the chi square value is $\chi^2(1,52)=5.16$ $P=0.0230$ Yes category dominated and difference between the two is 22.4% although yes category dominated with too much difference.

Table 11: Comparison of do you think that the knowledge and study of pharmacy students get affected in this pandemic?

Percentage of Yes & No	61.2% & 38.8
Difference	22.4%
95%	3.20% to 31.41%
Chi-Squared	5.16
DF	1
Significance Level	$P=0.0230$

Above table gives comparison of both values that is yes and no on eleventh question above table gives percentage difference between both the values is 64% while the chi square value is $\chi^2(1,52)=42.18$ $P<0.0001$ Yes category dominated and difference between the two is 64% although yes category dominated with too much difference.

Table 12: Comparison of Do you think that working professional in the health care sector left their job due to corona pandemic?

Percentage of Yes & No	32% to 38%
Difference	36%
95%	16.85% to 51.63%
Chi-Squared	13.34
DF	1
Significance Level	$P=0.0003$

Above table gives comparison of both values that is yes and no on twelfth question above table gives percentage difference between both the values is 36% while the chi square value is $\chi^2(1,52)=13.34$ $P=0.0003$ No category dominated and difference between the two is 36% although No category dominated with too much difference.

Table 13: Comparison of do you think that the job prospective and importance of Pharmacist have been increased after this pandemic in health care sector?

Percentage of Yes & No	64% to 36%
Difference	28%
95%	8.78% to 44.49%
Chi-Squared	8.07
DF	1
Significance Level	$P=0.0045$

Above table gives comparison of both values that is yes and no on thirteenth question above table gives percentage difference between both the values is 28% while the chi square value is $\chi^2(1,52)=8.07$ $P=0.0045$ yes category dominated and difference between the two is 28% although yes category dominated with too much difference but not the significant one.

Table 14: Comparison of do you find improved and more number of job vacancy for Pharmacist in health care sector?

Percentage of Yes & No	65.3% to 34.7%
Difference	30.6%
95%	11.39% to 46.83%
Chi-Squared	9.45
DF	1
Significance Level	$P=0.0019$

Above table gives comparison of both values that is yes and no on fourteenth question above table gives percentage difference between both the values is 30.6% while the chi square value is $\chi^2(1,52)=9.45$ $P=0.0019$ yes category dominated and difference between the two is 30.6% although yes category dominated with too much difference but not the significant one.

Table 15: Comparison of do you find the patient counselling by the pharmacist have been improved due to Covid pandemic?

Percentage of Yes & No	82% & 18%
Difference	64%
95%	46.30% to 75.47%
Chi-Squared	43.18
DF	1
Significance Level	P<0.0001

Above table gives comparison of both values that is yes and no on fifteenth question above table gives percentage difference between both the values is 64% while the chi square value is $\chi^2(1,52)=43.18$ $P<0.0001$ yes category dominated and difference between the two is 64% although yes category dominated with too much difference but not the significant one.

Table 16: Comparison of do you think that pharmacist are more vulnerable to corona virus exposure as compared to other health care professional?

Percentage of Yes & No	74% & 26%
Difference	48%
95%	29.22% to 62.10%
Chi-Squared	23.73
DF	1
Significance Level	P<0.0001

Above table gives comparison of both values that is yes and no on sixteenth question above table gives percentage difference between both the values is 48% while the chi square value is $\chi^2(1,52)=23.73$ $P<0.0001$ yes category dominated and difference between the two is 48% although yes category dominated with too much difference but not the significant one.

Table 17: Comparison of do you think that pharmacist can improve patient compliance and help in psychological treatment of patients affected due to Covid 19?

Percentage of Yes & No	92% & 8%
Difference	84%
95%	69.05% to 90.77%
Chi-Squared	72.67
DF	1
Significance Level	P<0.0001

Above table gives comparison of both values that is yes and no on seventh question above table gives percentage difference between both the values is 84% while the chi square value is $\chi^2(1,52)=72.67$ $P<0.0001$ yes category dominated and difference between the two is 84% although yes category dominated with too much difference but not the significant one.

Table 18: Comparison of how did any of your Pharmaceutics got died due to Covid?

Percentage of Yes & No	14.3% to 85.7%
Difference	71%
95%	54.48% to 81.36%
Chi-Squared	52.50
DF	1
Significance Level	P<0.0001

Above table gives comparison of both values that is yes and no on eighteenth question above table gives percentage difference between both the values is 71% while the chi square value is $\chi^2(1,52)=52.50$ $P<0.0001$ NO category dominated and difference between the two is 71% although NO category dominated with too much difference is significant one.

Table 19: Comparison of how do you think that existing herbal drugs can be a potential major of treatment against this corona virus?

Percentage of Yes & No	82% to 18%
Difference	64%
95%	46.30% to 75.42%
Chi-Squared	42.18
DF	1
Significance Level	P<0.0001

Above table gives comparison of both values that is yes and no on nineteenth question above table gives percentage difference between both the values is 64% while the chi square value is $\chi^2(1,52)=42.18$ $P<0.0001$ YES category dominated and difference between the two is 64% although YES category dominated with too much difference is significant one.

Table 20: Comparison of how did you think that pharmacist lost their job in pharmaceutical industries because of economic loss due to Covid pandemic?

Percentage of Yes & No	40% & 60%
Difference	20%
95%	0.82% to 37.22%
Chi-Squared	4.12
DF	1
Significance Level	P=0.04

Above table gives comparison of both values that is yes and no on twenty question above table gives percentage difference between both the values is 20% while the chi square value is $\chi^2(1,52)=4.12$ $P=0.04$ no category dominated and difference between the two is 20% although no category dominated with too much difference is not significant one.

Conclusion

In this covid pandemic whole humanity faced global crises in every aspect of life. Medical personals faced major effect as working in front line for treating patients. Pharmacist played a major role in health care services. This study was design using Chi-square method and performed to evaluate the effect of this pandemic on the pharmacists life. With the results shown above, it was clear that pharmacists lost their life while working, got mentally and physically sick, lost their job and felt social negligence.

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