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EMPIRICAL RESEARCH ARTICLE

Do Patients Really Communicate with Healthcare Professionals?

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ABSTRACT

Pharma plays an important role in our daily lives. In the present year, people has evolved from Ayurveda to modernised treatment and medication but still some lack the importance of medicines and the knowledge about them. People are lacking in taking medications as prescribed. They fail to follow the medications regularly and properly. They are not aware of the side effects and the mechanism of the medicine that they adhere. Patients lack communication with the doctors or nurse, or pharmacist which is very important to discuss and get clarified with their doubts. Patients are not bothered about the dosage knowledge, the problem with substitution medication. Some patients are even hesitated to ask the health care professionals even though they have some issues or doubts. In some cases, instead of patients, they are allowing their family members to purchase the medicine, sometimes even without prescription. Patients are more often to pharmacy than hospital. In this paper, the author did empirical research and tested a hypothesis and analysed using statistical analysis that includes both qualitative and quantitative analyses and answered those hypotheses.

Keywords: Ayurveda, modernized treatment, miscommunication, Statistical analysis, Doctor, Patients.

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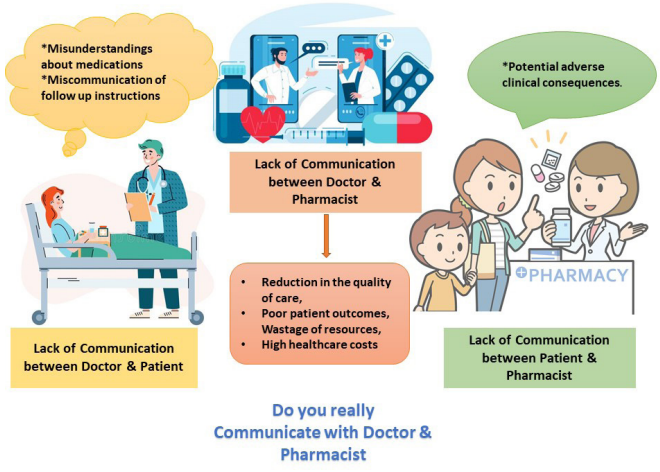

Graphical Abstract

INTRODUCTION

The law of nature dictates that if a human being is born in this world, death is inevitable. Death can manifest in various forms, including accidents, natural calamities such as tsunamis, earthquakes, and floods, suicide (a psychological death), and diseases like heart disease, tumours, cancer, plague, cholera, COVID, etc. There remain many incurables, unknown diseases in the world, and people continue to experience them in their daily lives. Archaeological evidence shows that Stone Age humans were afflicted with diseases such as arthritis, tuberculosis, inflammations, dental problems, leprosy, bone tumours, scurvy, spinal tuberculosis, cleft spines, osteomyelitis, sinusitis, various congenital abnormalities, and injuries. These diseases are visible in human fossils, and with more complete skeletal bones, a much broader range of diseases would likely be visible. As humans dislike pain, death, and suffering, there was a clear need to seek cures for diseases and injuries. The explanation of the disease's origin was often used in the treatment and prevention of diseases. In the absence of knowledge of germs, bacteria, viruses, human anatomy, and physiology, Stone Age humans attributed illnesses, accidents, and death to supernatural forces, much like they attributed winds, earthquakes, and volcanic eruptions to supernatural forces.[1] Herbs, leaves, roots were used by these people to try to help those suffering from illnesses and diseases, thus marking the beginning of medical action.

In the early periods of human civilization, communication was likely limited and less sophisticated compared to modern times. At that time, non-verbal forms of communication, such as gestures, facial expressions, and body language, were likely used by people to convey their health-related issues to healthcare professionals. Additionally, communal living and close-knit societies might have facilitated a shared understanding of remedies and treatments for various illnesses and injuries.

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The ability to be communicated with effectively by healthcare professionals was crucial for proper medication and treatment. Despite the absence of a formal language, the exchange of knowledge about herbal remedies, healing practices, and experiences with different illnesses allowed ancient communities to develop a rudimentary understanding of healthcare.

From the following table 1, we can clearly understand the evolution of medicine and the treatment carried out for emerged diseases and illness.

Why it is Important to know about the Medication

Medication has been consumed on a daily or regular basis by people. A crucial role in the health and wellbeing of consumers is played by medication. Even for a usual headache, body pain, tiredness, etc., people have been consuming medication. Side effects have been accompanying them, though medicine is updated each decade. Not only because of the medicine, but also by incorrect dosage consumption, not taking at the correct time, and not taking the right medicine for the right problem, side effects are caused. It is not enough to be known that a blue capsule and a yellow tablet are taken twice a day. The names of prescriptions need to be known, and the important details about how they work need to be understood. For example, certain foods, other medications, or even food supplements may interact badly with some medicines and can make you very ill. So, hence it is mandated to know the required and essential details of the medicine.

Table 1: Evolution of Vaccination and Medication [1]

History of Vaccine	
1879	First vaccine developed for cholera
1881	First vaccine developed for anthrax by Louis Pasteur
1882	First vaccine for developed for rabies by Louis Pasteur & Koch discovers the TB bacillus
1890	Emil von Behring discovers antitoxins and develops tetanus and diphtheria vaccines
1895	Wilhelm Conrad Roentgen discovers X-rays
1896	First vaccine developed for typhoid fever
1897	First vaccine developed for Bubonic plague
1899	Felix Hoffman develops aspirin
1922	Insulin first used to treat diabetes
1923	First vaccine developed for diphtheria
1926	First vaccine developed for whooping cough
1927	First vaccine developed for tuberculosis and tetanus
1928	Sir Alexander Fleming discovers penicillin
1935	First vaccine developed for yellow fever
1937	First vaccine developed for typhus
1945	First vaccine developed for influenza
1955	Jonas Salk develops the first polio vaccine
1964	First vaccine developed for measles
1967	First vaccine developed for mumps
1970	First vaccine developed for rubella
1974	First vaccine developed for chicken pox
1977	First vaccine developed for pneumonia
1978	First test-tube baby is born and First vaccine developed for meningitis
1980	Smallpox is eradicated
1981	First vaccine developed for hepatitis B
1992	First vaccine developed for hepatitis A
1996	Dolly the sheep becomes the first clone
2006	First vaccine to target a cause of cancer

When medication is taken, it is not uncommon for side effects to occur. While some side effects may be minor and of little concern, others can be severe and may require immediate medical attention.

Although many side effects are minor and not harmful, it is important to let your doctor know, as the side effect may be a sign of danger or that the medication is not working properly. A different medication may be decided by your doctor to be tried or the dose of your current one may be altered to eliminate or reduce the side effect you are experiencing.

What side effects may accompany your medications and what you should do if you experience these side effects is important to know. Side effects are one of the main reasons people stop taking medications.

What You should know about Your Medications

When a new medication is prescribed, it is important for patients to be informed about the drug's intended treatment purpose. This understanding ensures that the medicines are taken appropriately and aids in identifying whether the medication is yielding the desired effects or potential side effects. The patient should be aware of the expected side effects of the medication. Intervention may be required if any undesired side effects are observed by the patient. Properly following the instructions given in the prescriptions is a must for patients; failure to do so may lead to the risk of experiencing under- or over-dosing effects. Patients should ensure that they are aware of restrictions while taking the medication, which may include refraining from activities like drinking alcohol or driving. Familiarity with the common side effects associated with the medication is crucial for the patients. In case of experiencing any side effects, patients should be aware of what actions to take and avoid, such as discontinuing the medication or using other medications. If patients are uncertain about how to respond to a side effect, they must know the appropriate steps to seek guidance, which may involve reaching out to you or another clinician or visiting the emergency room.

Is it Essential for the Patients to Discuss Clearly with the Doctor or Pharmacist before Consuming?

Our physician or your pharmacist can help answer these questions — don't hesitate to ask!

What is the name of the medicine?

Why do I need to take it?

When and how should I take it? With water? With food? On an empty stomach?

How much should I take? What should I do if I miss a dose?

What side effects could be caused by the medication?

Which ones should I call the doctor about?

Are there any foods or medicines I should avoid while taking this medicine?

Will this medication change how my other medicines work? What is the name of this medication? What is it supposed to do?

Why is this the right medication for my condition, age, and gender?

Are there things besides medications that can help my condition or symptoms?

Are there other medications that can be used to treat my condition? If yes, how do these medications compare in safety, effectiveness, and price?

What effects will I get from this, and when will they occur? What are the side effects?

Will this medication work safely with all my other medications?

How do I take this medication? When do I start and stop taking it?

What should I do if I forget or miss a dose? As many as 60 percent of people admit they forget to take their medications regularly

Should I avoid certain foods, alcohol, dietary supplements, over-the-counter medications, or driving while taking this medication?

Education of patients about prescribed drugs has been increasingly emphasized as an important aspect of public healthcare systems worldwide. In countries like India, where qualified physicians are outnumbered by quacks, patients have suffered due to their lack of knowledge about prescribed drugs. There has often been a discrepancy between the advice given to the patient and their compliance with the provided instructions.[2] Non-compliance is frequently caused by the failure of communication between the healthcare provider and the patient.[3] Medicines have always played a significant role in people's lives, offering protection and cure from various diseases and injuries.[4] However, in recent times, the use of medicines has witnessed a shift towards misuse.[5] People tend to purchase medicines without consulting doctors, leading to potential side-effects from pharmaceuticals.[6-8] Consumer behaviour while buying medicines, whether they are over the counter, ayurvedic, or herbal, and the various factors (such as age, brand trust, price sensitivity) that influence the purchase of different medicines have been studied.[9]

In this article, researchers are doing empirical research, testing the hypotheses, and analyse the results using statistical analysis.

Review of Literature

The author,[10] explains that there is a potential impact of verbal and non-verbal communication between patients and healthcare workers upon workplace violence from the patients' perspectives. The authors also added that due some major factors that includes age, gender and level of education plays a crucial role as a significant indicator of the type of patients who were more likely to respond with violence. The author conducted a questionnaire for 505 participants in their study and analysed using SPSS and concluded that verbal and nonverbal communication skills of healthcare workers should be developed well enough to overcome the effect of miscommunication provoking violent acts from patients and their relatives as well.

According to the authors.[11] their study is to identify, describe, assess, and assign riskpriority levels to potential failures following substitution of antimicrobial treatment due toshortages among hospitals. They conducted a Health-care failure mode and effect analysis (HFMEA) and 74 failure modes were identified, with 53 of these scoring 8 or above on the basis of assigned severity and probability for a failure. The author believes that there is a lack of structure in addressing risks associated with antibioticsubstitution following shortages. Furthermore, lack of communication, data scarcity on availability of antibiotics, non-supportive information technology (IT) systems, and lack ofinternal substitution protocols hinder quick assessment of alternatives addressing patientneeds. Nevertheless, the study shows that health-care professionals manage to secureoptimal antimicrobial treatment for patients using available IT and human resources.

The author,[12] on their research with miscommunication in doctor-patient communication reveals that repair is an important mechanism for building shared understanding in doctor–patient communication and contributes to bettertherapeutic relationships and treatment adherence. The conversation analytic account of repair iscurrently the most sophisticated empirical model for analysing how people construct shared. meaning and understanding. Repair appears to reflect greater commitment to and engagement incommunication and improve both the quality and outcomes of communication. Given that misunderstanding and miscommunication are

particularly problematic in psychosis, this is critical for improving the longer-term outcomes of treatment for these patients who often have poor relationships with psychiatrists and health care services more widely.

On their investigation the author,[13] defines a framework to assess the impact of misuse and diversion. They explain that treatment for opioiddependence is essential and must be supported, it is vital toreduce misuse and diversion while ensuring the best possible care. Understanding the impact of OST (Opioid Substitution Treatment) misuse and diversion is key to defining strategies to address these issues. The authors conducted a systematic review of published studies of misuse and diversion of OST medicines was completed; this evidence was paired with expert real-world experience to better understand the impact of misuse and diversion on the individual and on society.

Prior to various research, these authors[14] report two cases which highlight the fact how poor communication leads to dangerously poor health outcome. One case is a 50-year-old woman recently diagnosed with rheumatoid arthritis and another is a 40-year-old man with ileo-caecal tuberculosis, due to poor communication by health care professionals lead to life threatening complications. The author concluded that these were events that could have been easily prevented with proper communication skills. Improvement of communication between doctors and patients is paramount so that life-threatening events like thesecould be avoided.

METHODOLOGY

Research Objective

- To determine whether the patients and people have the awareness on the medication they are taking and their importance.
- To understand the patient's perception on substituted medicine and unknown medication.
- To estimate that there is any communication gap between patient and doctor and doctor and pharmacist.

Research Question

- How the communication gap and unawareness of medication impacting the patient health condition?
- Do patients understand the important of prescription and expiry date of the medicine?
- What are the patients view on substituted medicine and medicines dosage effect?
- How do they react to the substituted medicine?
- Whether the patient consider it is responsible to enquire about the medicine to either doctor or pharmacist?

Research Hypotheses

- **Null (H01):** Patients and the people have the awareness on the medication they are taking and their importance.
- **Alternative (H11):** Patients and people do not have the awareness on the medication they are taking and their importance.
- **Null (H02):** There is no communication gap between patient and doctor and doctor and pharmacist.
- **Alternative (H12):** There is a communication gap between patient and doctor and doctor and pharmacist.
- **Null (H03):** Patients consider it is important to have knowledge on substituted medicine and unknown medication.
- **Alternative (H13):** Patients consider it is not important to have knowledge on substituted medicine and unknown medication.
- **Null (H04):** There is no impact of communication gap in wrong medication and side effects.
- **Alternative (H14):** There is an impact of communication gap in wrong medication and side effects.

DATA COLLECTION

The information was gathered using questionnaires, which generated quantitative data in the form of numerical data or data that could be classified (e.g., "yes," "no" replies). The questionnaire was utilized because it was a reasonably affordable, easy, and effective instrument for acquiring huge volumes of data from a big number of people. Several statistical analyses were carried out with the aid of the public survey to identify the need for quick action against social media misuse and the requirement of penal law for the violation activities.

Spss - Analysis of Categorical Data

The data from the questionnaire was entered as categorical data into SPSS software to evaluate and test the hypothesis. Several tests were performed to examine the hypothesis and interpret the results based on whether the test rejected the null hypothesis and accepted the alternative hypothesis or conversely. It was suggested how important the communication was between doctor and patient, between doctor and pharmacist, and whether people should be aware of the medicines they were consuming.

RESULT INTERPRETATION

Testing the hypothesis

- *Do people have awareness and importance of Medication?*

This independent T test is useful for determining if there is a difference in the mean scores of 2 groups i.e., male and female designated as group 1 and group 2 ,

respectively. The independent sample T test is carried out for 4 questions that are answered by two groups in order to obtain an accurate result to determine the hypothesis. This test provides a detailed description of the mean scores (M) of male and female groups, their counts (n) and standard deviation (SD) in the following Table 2. Here the list of males and females mean score, SD and number of individuals listed below;

- Males (M = 1.278, SD = 0.5978, n = 79)
  Females (M = 1.575, SD = 0.7870, n = 87)
- Males (M = 1.899, SD = 0.8258, n = 79)
  Females (M = 1.655, SD = 0.7899, n = 87)
- Males (M = 1.165, SD = 0.3731, n = 79)
  Females (M = 1.310, 0.4897, n = 87)
- Males (M = 2.089, SD = 0.663, n = 79)
  Females (M = 2.310, SD = 0.5967, n = 87)

The Levene's test helps to determine whether the variance of scores for the two groups is the same, i.e., is there a variation between the males and females.

According to the results obtained from the independent sample T test in the Table 3, the following outcomes are as follows;

- The results of Levene's test, F (164) = 19.446, p = 0.000, p <0.05, indicate that the variance of the two population is not assumed to be equal. Thus, the standard T test results were used. The T test is to determine if there's a significant difference between our two groups. The results of t test were statistically significant, t= (159.16) = -2.745, p = 0.007 <0.05, indicating that there is a significant scores of males (M = 1.278, SD = 0.5978, n = 79) and the scores of females (M = 1.575, SD = 0.7870, n = 87). The 95% confidence interval for the difference between the mean was 0.51 to 0.83. The effect size needs to be calculated, an effect size statistic provides with an indication of the magnitude of the difference between the two groups but an independent sample t test cannot calculate itself, hence the author used the following formula to determine the effect size. In order to calculate the effect size, Cohen's d method is used.

$$\text{Cohen's } d = (M_2 - M_1) / SD_{pooled}$$

Cohen's D formula to calculate the effect size of T test.

Table 2: Group statistics on people's awareness and importance of Medicine

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Are you aware of the medicines you are consuming?	Male	79	1.278	.5978	.0673
	Female	87	1.575	.7870	.0844
Are you sure, you are consuming the same medicine for actual cause?	Male	79	1.899	.8258	.0929
	Female	87	1.655	.7899	.0847
Do you think, its your responsibility to understand what you are taking?	Male	79	1.165	.3731	.0420
	Female	87	1.310	.4897	.0525
Do you think you are getting the medicine you are supposed to?	Male	79	2.089	.6443	.0725
	Female	87	2.310	.5967	.0640

Table 3: Independent sample T test on people's awareness and importance of Medicine

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Are you aware of the medicines you are consuming?	Equal variances assumed	19.446	.000	-2.710	164	.007	-.2962	.1093	-.5121	-.0804
	Equal variances not assumed			-2.745	159.161	.007	-.2962	.1079	-.5093	-.0831
Are you sure, you are consuming the same medicine for actual cause?	Equal variances assumed	.368	.545	2.092	164	.038	.2585	.1236	.0146	.5025
	Equal variances not assumed			2.090	161.532	.038	.2585	.1237	.0142	.5029
Do you think, its your responsibility to understand what you are taking?	Equal variances assumed	19.305	.000	-2.141	164	.034	-.1458	.0681	-.2802	-.0113
	Equal variances not assumed			-2.169	159.326	.032	-.1458	.0672	-.2785	-.0130
Do you think you are getting the medicine you are supposed to?	Equal variances assumed	1.157	.284	-2.302	164	.023	-.2217	.0963	-.4119	-.0315
	Equal variances not assumed			-2.293	159.217	.023	-.2217	.0967	-.4127	-.0308

The obtained effect sizeis 0.425 which indicates that it has a small effect size. According to the result obtained, it clearly shows that it is statistically significant and it rejects null hypothesis and accepts alternate hypothesis.

- An independent t test is conducted to determine if a difference existed between the mean of medicine awareness confidence score of males and females who actually know whether they are taking their medicines for the actual cause. There is a statistically significant difference between the mean of medicine awareness confidence scores of males (M = 1.899, SD = 0.8258, n = 79) and females (M=1.655, SD = 0.7899, n = 87), t(164) = 2.029, p = 0.038 <0.05. The effect size = 0.302 < 0.5, which infers small effect size. The confidence interval is 0.015 to 0.502. Thus, the results reject the null hypothesis and accepts the alternate hypothesis.

Similar to the above results, the following questions (iii) and (iv), infers that there are statistically significant difference between the mean of responsibility of understanding confidence score of males (M = 1.165, SD = 0.3731, n = 79) and females (M = 1.310, 0.4897, n = 87) , t(159.3) =-2.169, p = 0.034<0.05 and mean of knowledge of medicine intaking confidence score of males (M = 2.089, SD = 0.663, n = 79) and females (M = 2.310, SD = 0.5967, n = 87), t(164) =-2.302, p = 0.023<0.05, and the 95%confidence interval were 0.28 to 0.01 and 0.41 to 0.32, respectively. The calculated effect size using Cohen's d method implies that it is 0.33 and 0.35 respectively, i.e., small effect size. Thus, the results show there is a statistically significant difference. And it rejects null hypothesis and accepts alternate hypothesis.

By answering all the 4 subdivision, it clearly infers that, people don't show much interest in having awareness against the knowledge of medicine, and knowing the importance of medication and responsibility of understanding. Thus, answers the above question by rejecting null hypothesis and accepting the alternate hypothesis, i.e., Patients and people do not have the awareness on the medication they are taking and their importance.

- *Is there any communication gap between doctor and patient?*

This Independent T test is useful for determining if there is a difference in the mean scores of 2 groups i.e.,

male and female designated as Group 1 and Group 2 respectively. The Independent sample T test is carried out for 3 questions that are answered by two groups in order to obtain an accurate result to determine the hypothesis. This test provides a detailed description of the mean scores (M) of male and female groups, their counts (n) and standard deviation (SD) in the following table 4. Here the list of males and females mean score, SD and number of individuals listed below;

- Males (M = 1.608, SD = 0.6872, n = 79)
  Females (M = 1.391, SD = 0.6167, n = 87)
- Males (M = 1.595, SD = 0.6508, n = 79)
  Females (M = 1.391, SD = 0.6709, n = 87)
- Males (M = 1.684, SD = 0.8993, n = 79)
  Females (M = 1.989, SD = 0.9823, n = 87)

The Levene's test helps to determine whether the variance of scores for the two groups is the same, i.e., is there a variation between the males and females.

According to the results obtained from the independent sample T test in the below table 3, the following outcomes are as follows;

- An independent t test is conducted to determine if a difference existed between the mean of doctor and patient communication insufficiency confidence score of males and females who actually know whether they are taking their medicines for the actual cause. There is a statistically significant difference between the mean of medicine awareness confidence scores of males (M = 1.608, SD = 0.6872, n = 79) and females (M = 1.391, SD = 0.6167, n = 87), t (164) = 2.142, p = 0.032 <0.05. The effect size = 0.33< 0.5, which infers small effect size. The confidence interval is 0.17 to 0.42. Thus, the results reject the null hypothesis and accepts the alternate hypothesis.

Similar to the above results, the following questions (iii) and (iv), infers that there are statistically significant difference between the mean of communication gap confidence score of males (M = 1.595, SD = 0.6508, n = 79) and females (M = 1.391, SD = 0.6709, n = 87) , t (164) = 1.986, p = 0.049<0.05 and mean of responsibility to enquire about the medicine confidence score of males (M=1.684, SD = 0.8993, n = 79) and females (M = 1.989, SD = 0.9823, n = 87), t (163.9) =-2.088, p = 0.038 <0.05, and the 95%confidence interval were 0.01 to 0.41 and 0.59 to 0.15, respectively. The calculated effect size using Cohen's d method implies that it is 0.31 and 0.32, respectively, i.e., small effect size. Thus, the results show there is a statistically significant difference. And it rejects null hypothesis and accepts alternate hypothesis.

Table 4: Group Statistics on determining any communication gap between doctor and patient

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Have you ever felt there is a lack in communication between doctor and pharmacist?	Male	79	1.608	.6872	.0773
	Female	87	1.391	.6167	.0661
Do you think there will be a communication gap if you send some one else to purchase medicines for you?	Male	79	1.595	.6508	.0732
	Female	87	1.391	.6709	.0719
Do you think you are responsible to enquire about the medicines to either doctor/ pharma?	Male	79	1.684	.8993	.1012
	Female	87	1.989	.9823	.1053

All the three subdivision in the above table 5 conveys that people have felt that there is a communication gap between doctor and pharmacist, they also concern that there might be a communication gap if someone else (family/friends to them) go to purchase their medicines and they think it is a responsibility for the patients to enquire the doctor or pharmacist about the medicine. Hence, answering the second hypothesis by accepting the alternate hypothesis.

- *Do patients accept substituted and unknown medicines?*

The aim of the study was to understand how patients accepted the substituted medicines and the medicines of which they were unaware. Even if they were unaware of the unknown medication, were they okay with taking those medicines, and if the medicine prescribed by the doctor was unavailable in the market, did they accept the substituted medicine and buy it.

Frequency analysis procedures produced summary measures for categorical variables in the form of frequency tables, bar charts, or pie charts.

Table 6 and pie chart Figure 1 clearly showed that 50.0% of the patients conveyed that they were confused about taking the right medicine for the cause, and 23.5% answered that they weren't bothered much about this confusion.

Table 7 and the Figure 2 obtained from the frequency analysis inferred that 59% of the patients preferred substituted medicine in case of unavailability, and 12% of patients said they didn't mind using substituted medicine.

Similarly, Table 8 and Figure 3 obtained from the frequency analysis also infwwerred that 61% of the patients bought substituted medicine instead of the prescribed medicine, and 8% of patients said they didn't mind using substituted medicine.

From Table 9 and the Figure 4 of the frequency analysis, based on the rating of the patients' knowledge

Table 5: Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Have you ever felt there is a lack in communication between doctor and pharmacist?	Equal variances assumed	3.246	.073	2.142	164	.034	.2168	.1012	.0170	.4166
	Equal variances not assumed			2.131	157.438	.035	.2168	.1017	.0158	.4177
Do you think there will be a communication gap if you send some one else to purchase medicines for you?	Equal variances assumed	.359	.550	1.986	164	.049	.2041	.1028	.0012	.4071
	Equal variances not assumed			1.989	163.275	.048	.2041	.1026	.0015	.4068
Do you think you are responsible to enquire about the medicines to either doctor/ pharma?	Equal variances assumed	8.444	.004	-2.079	164	.039	-.3050	.1467	-.5946	-.0154
	Equal variances not assumed			-2.088	163.987	.038	-.3050	.1460	-.5933	-.0166

of medication, 19.3% of the consumers knew 75% of the knowledge, 33.7, and 33.1% of the consumers had 50 and 25% of knowledge, respectively, and approximately 9% of the consumers had 0 knowledge about the medication. Therefore, using frequencies, we can easily conclude the consumers' knowledge and awareness of substituted and unknown medicines.

Does medicine go wrong as a result of a mis-communication?

In this research, the dependent variable was "communication gap leading to misplaced tablets and dosage." The independent variables were "rating the communication gap," "number of times faced miscommunication problems," and "undergoing any side effects consuming medicines." These independent variables were utilized to predict whether medicine goes wrong as a result of miscommunication.

From Table 10, the case processing summary clearly explained that 163 cases were included in the analysis. It was implied that there were 163 cases to analyze. The Dependent Variable Encoding indicated how the outcome variable was encoded – '0' for 'no' (doesn't go wrong) and '1' for 'yes' (goes wrong).

The Omnibus Tests of Model Coefficients were used to check that the new model (with explanatory variables included) was an improvement over the baseline model. Chi-square tests were employed to determine if there was a significant difference between the log-likelihoods (specifically the -2LLs) of the baseline model and the new model. If the new model had a significantly reduced -2LL compared to the baseline, it suggested that the new model explained more of the variance in the outcome and was an improvement (Table 11).

In this case, the chi-square was highly significant (Chi-square = 13.283, df = 3, p = 0.004 <0.05). Thus, it indicated that this new model was statistically significant.

The Model summary Table 12 provided the -2 Log Likelihood (-2LL) and pseudo-R2 values for the full model. The -2LL value for this model (100.669) was compared to the -2LL for the previous null model in the 'omnibus test of model coefficients', which explained that there was a significant decrease in the -2LL, i.e., the new model (with explanatory variables) was a significantly better fit than the null model. The R2 values inferred how much variation in the outcome was explained by the model. Therefore, the explained variation in the dependent variable based on the model ranged from

Table 6: Frequency analysis for analysing how many of the patients are confused to take medicine?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	83	50.0	50.0	50.0
	No	44	26.5	26.5	76.5
	Maybe	39	23.5	23.5	100.0
	Total	166	100.0	100.0	

Table 7: Frequency analysis for preferring substituted medicine in case of unavailability of prescribed medicine

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	98	59.0	59.0	59.0
	No	48	28.9	28.9	88.0
	Never Mind	20	12.0	12.0	100.0
	Total	166	100.0	100.0	

Table 8: Frequency analysis for buying substituted medicine

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	102	61.4	61.4	61.4
	No	51	30.7	30.7	92.2
	Never Mind	13	7.8	7.8	100.0
	Total	166	100.0	100.0	

Table 9: Frequency analysis for knowledge about the medication

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	100	8	4.8	4.8	4.8
	75	32	19.3	19.3	24.1
	50	56	33.7	33.7	57.8
	25	55	33.1	33.1	91.0
	0	15	9.0	9.0	100.0
	Total	166	100.0	100.0	

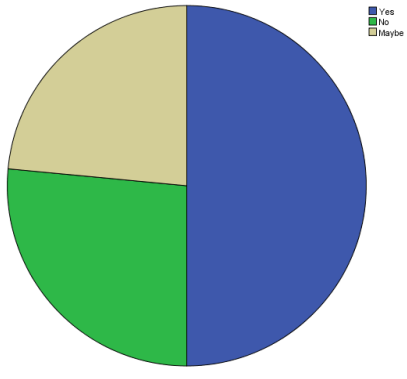

Figure 1: Pie chart representation for analysing how many of the patients are confused to take medicine?

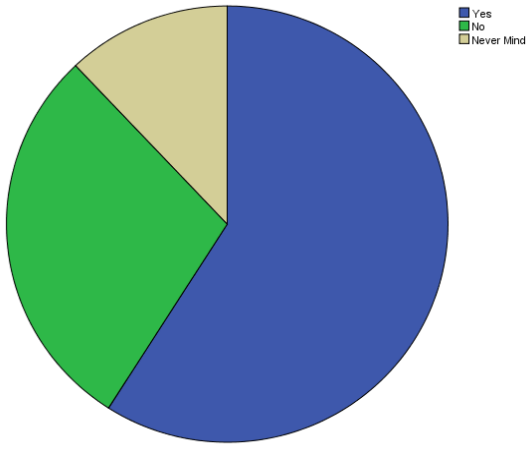

Figure 2: Pie chart representation for preferring substituted medicine

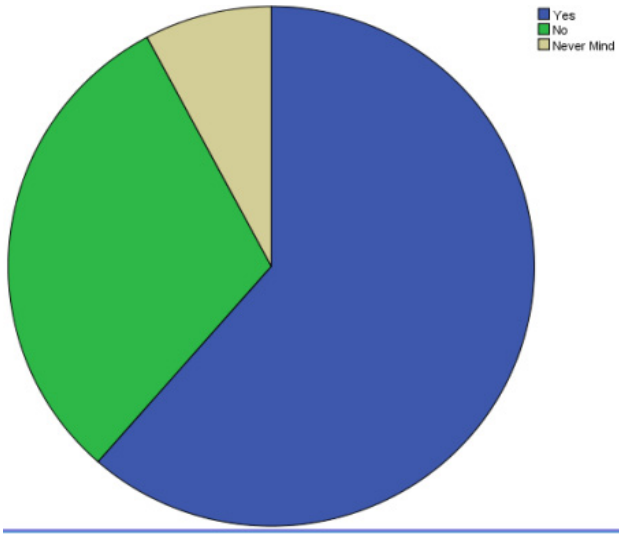

Figure 3: Pie chart representation for buying substituted medicine

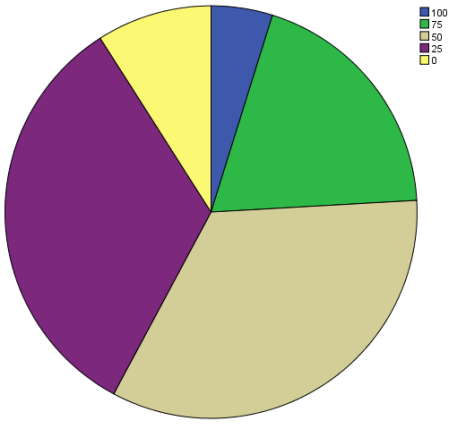

Figure 4: Pie chart representation for knowledge about the medication

33.5 to 78.0%, depending on either the Cox & Snell R2 or Nagelkerke R2 methods, respectively.

Table 13 presented a classification table that explained how many users or people experienced miscommunication, leading to the misplacement of tablets and dosage. According to the Table, 147 of the people accepted that they had experienced miscommunication resulting in misplacement, while 16 had not experienced it. Thus, the overall percentage of the model's predictions was 89.8%.

The Box-Tidwell method was used to determine whether the continuous independent variable was linearly related to the logit of the dependent variable.

When interpreting the differences, the "exp(β)» column, which represents the odds ratio for the individual variable, was observed. For instance, in Table 14, it was implied that individuals who reported experiencing any side effects after consuming medicines were nearly 3.474 times more likely to encounter issues with medication after miscommunication. Next to this explanatory variable column, the 95% confidence intervals were

Table 10: Case processing and variable Encoding for model

Case Processing Summary

Unweighted Cases[a]		N	Percent
Selected Cases	Included in Analysis	166	100.0
	Missing Cases	0	.0
	Total	166	100.0
Unselected Cases		0	.0
Total		166	100.0

a. If weight is in effect, see classification table for the total number of cases.

Dependent Variable Encoding

Original Value	Internal Value
Yes	0
No	1

Table 11: Omnibus tests of model coefficients

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	13.283	3	.004
	Block	13.283	3	.004
	Model	13.283	3	.004

Table 12: Model summary of block -1 entry

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	100.669[a]	.335	.780

a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

Table 13: Classification table for block 1

Classification Table[a]

Observed			Predicted		
			Communicationgapleadstomisplacedtabletsordosage		Percentage Correct
			Yes	No	
Step 1	Communicationgapleadstomisplacedtabletsordosage	Yes	147	1	99.3
		No	16	2	11.1
	Overall Percentage				89.8

a. The cut value is .500

Table 14: Variable in the equation block -1 entry

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	Ratethecommunicationgap	.459	.227	4.076	1	.043	1.583	1.013	2.471
	Approxhowmanytimesdidyoufacedmiscoummicationproblems	.178	.083	4.653	1	.031	1.195	1.016	1.405
	Didyouundergoneanysideeffectsafterconsumingmedicines	1.245	.618	4.067	1	.044	3.474	1.036	11.655
	Constant	-5.855	1.210	23.400	1	.000	.003		

a. Variable(s) entered on step 1: Ratethecommunicationgap, Approxhowmanytimesdidyoufacedmiscoummicationproblems, Didyouundergoneanysideeffectsafterconsumingmedicines.

provided, with the lower and upper limits being 1 time the lower level and 11 times the upper level.

The Wald test ("Wald" column) was used to determine the statistical significance for each of the independent variables. The statistical significance of the test was found in the "Sig." column. From these results, it was clearly explained that the rate of the communication gap (p = .043), the number of times miscommunication problems

were faced (p = .031), and whether any side effects were experienced after consuming medicines (p = .044) added significantly to the model/prediction.

Thus, the following table concludes that all three categories are statistically significantly different and thus rejects the null hypothesis and accepts the alternate hypothesis. In other terms, there is an impact of communication gap in wrong medication and side effects.

The statistical analysis obtained using SPSS evidently tested the hypothesis and provided the appropriate results. The results analysed using an independent t-test showed that there was a statistically significant difference between the confidence scores of males and females regarding their knowledge and awareness of the medication they consume and the importance of knowing what they intake. This analysis concluded that the null hypothesis (H0) was rejected, and the alternate hypothesis (H1) was accepted. It means that the awareness of patients and people on the medication they were taking, and its importance was lacking.

The case (ii) was also determined using the independent sample t-test, which revealed that people felt there was a communication gap between the doctor and pharmacist. They were also concerned that there might be a communication gap if someone else (family/ friends) went to purchase their medicines, and they believed it was the patients' responsibility to inquire with the doctor or pharmacist about the medicine. This analysis concluded that the null hypothesis (H02) was rejected, and the alternate hypothesis (H12) was accepted. In other words, a communication gap was observed between the patient and doctor and between the doctor and pharmacist.

In case (iii), which involved frequency analysis, it was found that 50.0% of the patients answered "yes" when asked if they were confused about taking the right medicine for their condition, while 23.5% responded that they weren't bothered much by this confusion. Additionally, 59% of the patients preferred substituted medicine in case of unavailability, with 12% stating they never minded using substituted medicine. Furthermore, 61% of the patients reported buying substituted medicine instead of the prescribed one, whereas 8% said they never minded using substituted medicine. Based on the rating of the patients' knowledge of medication, approximately 19.3% of the consumers had 75% knowledge, while 33.7 and 33.1% had 50 and 25% knowledge, respectively. Approximately 9% of the consumers had no knowledge about the medication.

By using frequencies, it was concluded that consumers' knowledge and awareness of substituted and unknown medicines varied. This analysis supports the alternative hypothesis, indicating that patients do not consider it important to have knowledge about substituted medicine and unknown medication.

The test (iv) was analyzed using binary logistic regression. A logistic regression was performed to ascertain the effects of rating the communication gap, the approximate number of times miscommunication problems were faced, and whether any side effects occurred after consuming medicines on the likelihood that miscommunication leads to misplaced tablets and dosage. The logistic regression model was found to be statistically significant. The model explained 78.0% (Nagelkerke R2) of the variance in miscommunication and misplacement of tablets and dosage and correctly classified 89.8% of patients. The category of people who underwent any side effects after consuming medicines was found to be nearly 3.474 times more likely to experience wrong medication after miscommunication. If people experienced a high percentage of miscommunication, it might lead to misplacement of tablets and dosage, which is applicable to the other two categories as well. Thus, the null hypothesis is rejected, and the alternate hypothesis is accepted, indicating an impact of communication gap on wrong medication and side effects.

DISCUSSION

According to various articles, it has been explained by researchers that there is an impact on miscommunication between doctors and pharmacists and doctors and patients. India being a vast country with trillions of populations, despite having a spectacular medical system, hasn't reached every nook and corner of India. There are some cities where people lack access to a proper medical care system, leading to miscommunication. When a person visits a hospital for a check-up and the doctor prescribes medication after examination, due to small hospitals and limited facilities, pharmacies are not available within the hospital premises. Consequently, if the person takes the prescription to another pharmacy, the pharmacist may not be aware of the exact condition of the patient's body. Out of 100 people, approximately 89.8% do not inquire or raise questions about the medication provided, including whether any substitutes have been given. Research shows that many substituted medicines have the same constituents, while some have different ingredients, resulting in side effects. Statistical analysis carried out by this author indicates that 75% of the people have suffered from side effects due to misplaced medicines and dosage.

It is the people's responsibility to ask the doctor about potential alternatives if the prescribed medicine is unavailable. This helps establish a legitimate connection between doctors and patients. Even if the medication is not available at the hospital's pharmacy, patients should inquire with the pharmacist about the cause

of the alternative medicine and its main ingredients that match the prescribed one. This approach clears misunderstandings between pharmacists and patients. However, if there is a pharmacy within the hospital, both the doctor and pharmacist should ensure the availability of prescribed medicines. Insufficient communication between doctors and pharmacists can potentially cost someone's life, emphasizing the crucial importance of communication between all parties.

Another problem arises when close relatives, family members, or friends of the patients are allowed to purchase medication from nearby pharmacies without a proper prescription. This behavior poses a risk to the health of the loved ones and should not be encouraged by patients and pharmacists. Instead, they should be taken to the hospital for proper examination and well-being. The author obtained survey data from the people and created four hypotheses. Using SPSS, the author answered all four hypotheses through various statistical analyses.

CONCLUSION

In this research, the sample was comprised of 153 participants. An online questionnaire was designed by the author, based on people's understanding and knowledge about the medicine, how to react with substituted and unknown medication, and whether there was any miscommunication between the patient and doctor, as well as the doctor and pharmacist. Various statistical analyses were conducted by the author to determine people's perception towards their knowledge and responsibility to understand the medication. The author also helped to understand how people reacted if substituted medicine was available in the market and whether people really cared to buy substituted or unknown medicine due to the unavailability of the prescribed one. Additionally, the seriousness of miscommunication and the side effects due to the misplacement of tablets and dosage were also addressed by the author.

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