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Estimation of knowledge, attitude and practices towards measles and its risk factors among pharmacy students

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***Abstract*---**The aim of this study is to estimate the knowledge and understanding the students have towards measles, and their attitude and practice towards the disease with respect to their knowledge. The study was carried out among the Pharmacy students in Vels University, Pallavaram, Chennai. It is a Cross-Sectional Study Design, with a Sample Size of 206. The duration period of the study was for 6 Months. The data was collected by using questionnaires as the study instrument. It is a self-administered, 28 itemed questionnaires comprising of three sections use for data collection. Respondents are asked to answer in multiple choice formats. The student's characteristics and responds were expressed in percentage and frequencies. The 206 participants gave their opinionated responds to the questions provided and showed that the students have an accurate knowledge about measles and its risk factors and have different attitude and practice towards measles. About 99.51% of the students responded to the questions provided and distributed to them through Google Form. The result of the study has showed that students have high perspective, positive attitude and good practice towards measles. The study was concluded with the proportion that the students in the Pharmacy Department have an accurate understanding about the Disease, and also have different views when it comes to practices.

***Keywords*---**Measles, Risk Factors, Pharmacy Students.

Introduction

Measles is likewise called rubeola or purple measles, it's also regarded via way of means of the call of German measles or Standard measles. It is an extraordinarily contagious breathing contamination as a result of an endemic which reasons rashes everywhere in the body. The virus lives withinside the mucus of the nostril and throat of human beings with this contamination. Physical contact, coughing and sneezing can unfold the contamination. In addition, inflamed droplets of mucus can stay energetic and contagious for round hours. This method that the virus can stay out of doors the body - for example, on surfaces and door handles [1,2,3].

Measles is classed as an acute, communicable ailment. Communicable method that the ailment is infectious. Acute method that the period of the ailment is much less than three months and the height of the signs happens and subsides at some stage in this time period. The ailment starts off evolved with a fever, runny nostril, cough, purple eyes, and sore throat, and is observed via way of means of a rash that spreads everywhere in the body. Roughly three out of 10 folks who get measles will increase one or extra headaches together with pneumonia, ear infections, or diarrhea. Complications are extra not unusual place in adults and younger children. Measles is as a result of a measles virus that is a spherical, nonsegmented, single-stranded RNA virus belonging to the Morbillivirus family, it's far intently associated with the rinderpest and dog distemper viruses [4,5,6]

Approximately 30 million measles instances are stated annually. Most stated instances are from Africa. According to the WHO ultra-modern Measles surveillance data, India is the fourth maximum quantity of Measles Cases withinside the world. Signs and Symptoms of Measles are the following: - Symptoms will display inside 10-14 days after contamination or incubation period. Person is contagious 4 days earlier than the onset of the rash and as much as five days after onset. High fever 1030 F – 1050F, Runny nostril, Troublesome cough, enlarged lymph nodes, Conjunctivitis, Aversion to light, Malaise, Rash fades and peels, however cough might also additionally stay up to 2 to 3 weeks later. A purple blotchy rash typically develops approximately 3 to 4 days after the primary signs. It generally begins off evolved on the top and neck, and spreads down the body. It takes 2-three days to cowl maximum of the body. The rash regularly will become a brownish color and step by step fades over some days. And Koplik's spots (rash on mucous membranes). It is a Small white spot which generally increase withinside the mouth an afternoon or 24-forty-eight hr. earlier than rash appears. This can persist for numerous days. It specially happens withinside the Buccal mucosa, contrary the decrease second molars and boom inside 1day and unfold however fade quickly after rash onset [7,8]

Risk Factors of Measles

A young, unvaccinated infant is the most important hazard aspect for contracting the measles virus and for growing headaches. If uncovered to the measles virus and one have now no longer been vaccinated, the threat of having its miles ninety percentage, regardless of the age of an individual. Other not unusual place hazard

elements for measles consist of the following: Unvaccinated infants due to the fact they're too young: The measles vaccine does now no longer paintings for toddlers due to the fact their immune structures have now no longer advanced sufficient to create the wanted protecting immunologic reaction to the vaccine. Unvaccinated human beings because of scientific reasons: Some human beings are not able to get the MMR vaccine due to scientific troubles which include being immunocompromised or the truth that they're taking positive drugs, like most cancers' chemotherapy or excessive doses of steroids. Incomplete vaccination: Those who've now no longer acquired a 2nd booster dose of MMR do now no longer have complete immunity to measles. Most children who've now no longer acquire their booster shot till a long time four to six years. The first vaccine is round ninety-three percentage effective, however the 2nd one is ninety-seven percentage effective. Not growing immunity after vaccination: This occurs in about three percentage of vaccinated human beings. Immunocompromised human beings: This is genuine despite the fact that that they'd formerly acquired the MMR vaccine. Vitamin A deficiency: This difficulty makes the frame much more likely to agreement measles and for the infection to be extra severe. Pregnant Women with Measles: Pregnant girls with measles can sometimes result in death, miscarriage, untimely beginning, and coffee beginning weight. Human ordinary immunoglobin (HNIG) is thought to lessen headaches of the ailment. Travelling Internationally: An unvaccinated individual who've shrivelled measles from different vicinity can transmit and unfold the ailment to others, whilst touring internationally [10,11,12].

Measles Vaccination

Measles Vaccine is called the MMR Vaccine which gives protection against three diseases measles, mumps and rubella. The first dose of MMR is given at the age of 12 – 15 months, and the second one at 4 – 6 years of age. Adults and teenagers can also take MMR vaccinations as required. It is equally effective in the single or combined form. The combination proved to be effective and safe. The measles vaccine (in use for 40 years) is safe, effective and inexpensive.

- The Vaccines are Live attenuated containing Edmonston B or Schwartz strains which will give seroconversion rate of 90%.
- The immunity produce may be lifelong.

The study was done among the 206 Pharmacy students in Vels University, Chennai. Through this study we will see the knowledge, attitude and practice the students have about Measles and its risk factors.

Method

The study was carried out among the Pharmacy students in Vels University, Pallavaram, Chennai. It is a Cross-Sectional Study Design, with a Sample Size of 206. The duration period of the study was for 8 Months (September 2021 – April 2022). Students belonging only to the Pharmacy Department are considered for the study and are above the age of 18 years. The data was collected by using questionnaires as the study instrument. It is a self-administered, 28 itemed questionnaires comprising of two sections use for data collection. Respondents are asked to answer in multiple choice formats. The primary version of the questionnaire is developed through an extensive literature review in English

language. The study protocol is to be explain to all the subjects in English language only since the subjects are students. Each of the questions in the survey chart is explain so, that the person must be made clear with each and every point. The survey consists of three sections: In the first section includes questions about the demographic characteristics of the students. The second section includes questions about the students understanding and information about Measles and its certain risk factors. The third section includes questions about the student's thoughts about Measles with respect to their understanding. From the responses, the participants provide, we will get to know whether the students understand or do not understand about the disease and the it's risk factors, these responses will be expressed in frequencies and percentages. After studying the responses of the participants, we get to see the percentage and number of students who have vast knowledge about the disease, and those who have an average or no information at all about the disease. All the responses to the questionnaire are collected and are analysed. The student's characteristics and responds were expressed in percentage and frequencies.

Results

Demographic Characteristics

Out of the 206 participants student only 205 pharmacy students have responded to the questionnaires distributed with the response rate of 99.51% as shown in Table 1. In Figure 1, the distribution between the male and female gender is shown, with 47.8% made up the response by the male student and 52.2% by female students.

According to the courses, the students took there is also a distribution between their courses i.e., students belonging to Pharmacy department. About 62% responded from B. Pharmacy, 49% from M. Pharm, 83% from Pharm. D and only 5.4% from Ph. D. Table 1 shows the distribution between the different courses the students are taking.

Table 1. Students and their Courses Characteristics

Age	**n= 205**	**Percentage (%)**
18-20	20	9.8%
21-23	64	31.2%
24-26	121	59%
Course		
B. Pharm	62	30.2%
M. Pharm	49	23.9%
Pharm. D	83	40.5%
Ph. D	11	5.4%

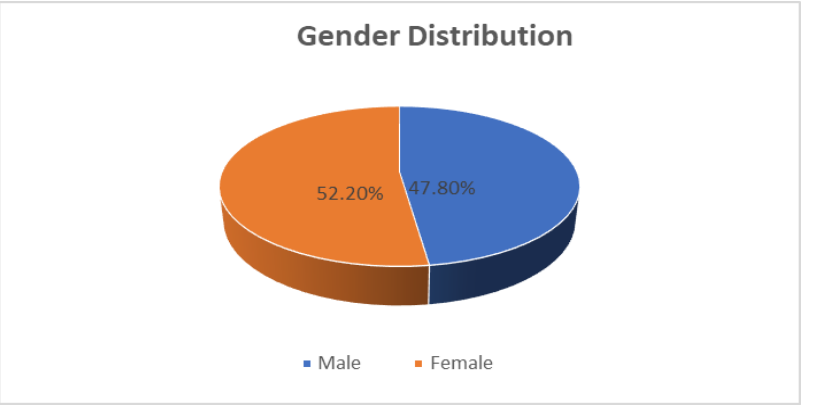

Figure 1. Gender Distribution

Estimating the Understanding of the students about Measles

According to the distributed questions provided to the students through Google Form format, response from them have been collected accordingly, and it was seen that about 99.51% of the students have an accurate knowledge about Measles disease. Though few students prefer to not answer to some questions. Around 84.4% responded that the disease is an Air-Borne disease, 5.9% for Water-Borne disease, 3.4% for Food-Borne disease and 6.3% gave an opinion that none of the mentioned diseases causes Measles. Table 2 shows the estimated knowledge the students have about Measles.

In Table 2, it shows that majority of the students answered that Measles is mainly caused by Virus (78.4%), while some of them responded that the disease is caused by Bacteria (7.8%), both virus and bacteria (8.3%) and the other 5.4% answered that neither bacteria nor virus caused the disease. As other diseases, Measles also have different types which can infect both the children and adults. With the knowledge that the students have about the disease, about 65.9% of them have interpreted that there are three types of measles, namely red measles, German measles and Standard measles. However, 20.5% of the students have replied that there is red measles, 8.3% and 5.4% have replied that there is German measles and standard measles respectively. The distribution between the types of Measles is shown in Table 2.

Table 2: Measles and its types

Type of Disease	**Frequency (%)**
What type of disease is Measles?	
Food-Borne Disease	7 (3.4%)
Air-Borne Disease	173 (84.4%)
Water-Borne Disease	12 (5.9%)
None of the above	13 (6.3%)
Which of the following caused Measles?	
Bacteria	16 (7.8%)
Virus	161 (78.4%)
Both of the above	17 (8.3%)

None of the above	11 (5.4%)
What are the different types of Measles?	
Red Measles	42 (20.5%)
German Measles	17 (8.3%)
Standard Measles	11 (5.4%)
All of the above	135 (65.9%)

The disease can infect both adults and children in many ways. About 59.5% of the students responded that it infects both the adults and children, and the other 36.6% and 3.9% infect children and adults respectively. Based from their understanding about the disease, 20% responded that the symptoms of measles appear within 5 days, 69.3% answered that its symptoms appear within 10-14 days and the other 10.7% replied that the symptoms of the disease appear right after infection. In Table 3, it shows the signs and symptoms of the disease and the people it infects.

Table 3: Signs and Symptoms of Measles

Symptoms of Measles	**Frequency (%)**
Does Measles infect?	
Children	73 (36.6%)
Adults	8 (3.9%)
Both of the above	122 (59.5%)
When do the signs and symptoms of Measles appear?	
Within 5 days	41 (20%)
Within 10-14 days	142 (69.3%)
Right after infection	22 (10.7%)
The following are the symptoms of Measles, except?	
Dysentery	166 (81.4%)
Koplik's spot	18 (8.8%)
Fever	10 (4.9%)
Skin rashes	10 (4.9%)

Measles as many other diseases in the world, it can also have certain risk factors which affect the lives of many whether an adult or a child. Few risk factors have been seen where the disease can affect our day to day lives when infected, or when one comes into contact with the infected one. Among the respondents, about 75.6% have responded that deficiency of vitamin A and an unvaccinated child are the main risk factors of Measles; while the other 10.7%, 8.3% have responded respectively that deficiency of vitamin A, an unvaccinated child are the main risk factors of the disease and 5.4% have replied that none of the mentioned factors are the main risk factors of the disease (Table 4).

About 74.6% of the students responded that an incomplete vaccination is a type of risk factor for measles, while the other 20.5% and 3.9% are not sure whether an incomplete vaccination is a type of risk factor (Figure 2). It was found that 83.8% of the students replied that pregnant women are at risk of getting measles; when 10.3% and 4.4% are not really sure about the risk of pregnant women to get the disease.

In Table 4, it was reported that 71.7% of the respondents have answered that Low relative humidity is the major environmental risk factor of measles, 18% responds for Cold temperatures and 10.2% for Hot temperatures. Among the students, 58% of them replied that when travelling internationally it can increase the risk of developing Measles; while the other 33.2% and 4.4% disagree (Figure 2).

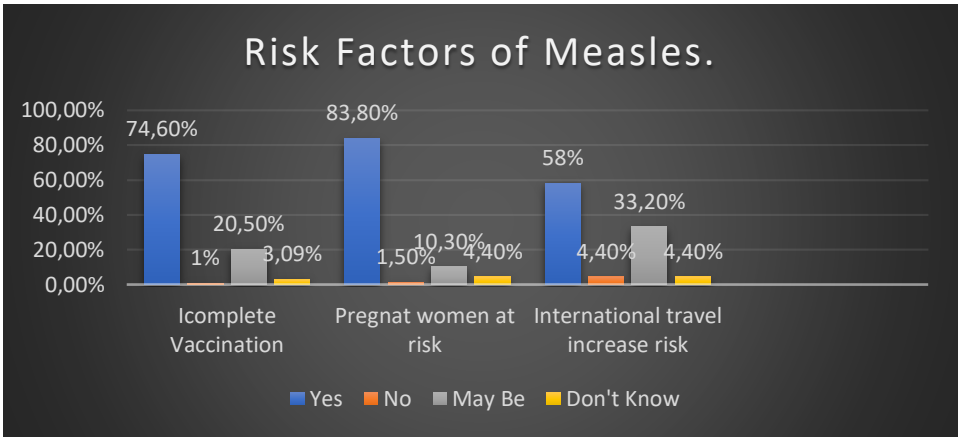

Figure 2: Risk Factors of Measles

Table 4: Risk Factors of Meases

Risk Factors of Measles	**Frequency (%)**
What are the main risk factors of Measles?	
Deficiency of Vitamin A	22 (10.7%)
Unvaccinated Child	17 (8.3%)
None of the above	11 (5.4%)
Both of the above	155 (75.6%)
What is the environmental risk factor of Measles?	
Low relative humidity	147 (71.7%)
Cold temperature	37 (18%)
Hot temperature	21 (10.2%)

Estimating the Attitude of the students towards Measles according to their Understanding

Based on the student's knowledge about the disease and for some of them who have experienced the disease, have given different opinionated views about it. Around 28.6% of the students have answered that they have had the disease; while 71.4% have not had the disease. According to the understanding and experienced the students have about the disease, 64.7% have answered that bathing is not possible while having measles, 5.4% replied that bathing is possible; while 29.9% replied that bathing may be possible while having measles (Figure 3).

From the response collected, 77.3% have responded that chicken pox and measles have no similarity between them, 3.4% replied that the disease are similar and 19.2% responded that there is some similarity between the two

diseases. While antibiotic medications can ease the symptoms of measles, traditional herbs can also work wonders in helping to ease the symptoms of measles such skin rashes and itching (Figure 3). With the questions provided to them, 48.5% responded that traditional herbs can help ease the symptoms, 49.5% may be of help to ease the symptoms of measles and only 2% replied that the traditional herbs cannot help ease the symptoms of the disease (Figure 3).

From Figure 3.1, it was shown that, about 53.9% have responded that by scratching the skin it may leave scars; 20.6%, 25.5% have responded respectively that it will leave scars and will not leave a scar when scratched. Some of the respondents have shared their respective views about measles vaccination, around 58.3% viewed that vaccination can help control the disease, 40.7% viewed that vaccine may help control the disease and only 1% addressed that vaccination alone cannot help control measles. About 83.8% of the respondents have shared that they will encourage their peers and relatives to get vaccinated against the disease; while 15.2% and only 1% shared that they may or will not advised or encourage their relatives to get vaccinated.

As we know that Measles is an Air-Borne Disease, it can spread from one patient to the person who came into contact with them through air droplets or saliva. As reported in Figure 3.1, 55.2% students have expressed that they will not allow any visitor when having the disease, 19.7% and 19.2% have expressed respectively that they may allow or will never allow a visitor; while 5.9% will allow a visitation.

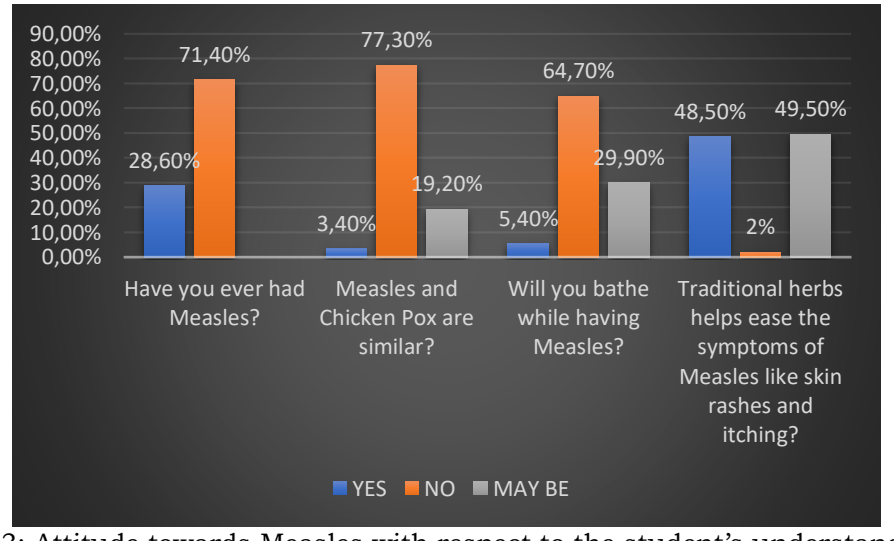

Figure 3: Attitude towards Measles with respect to the student's understanding

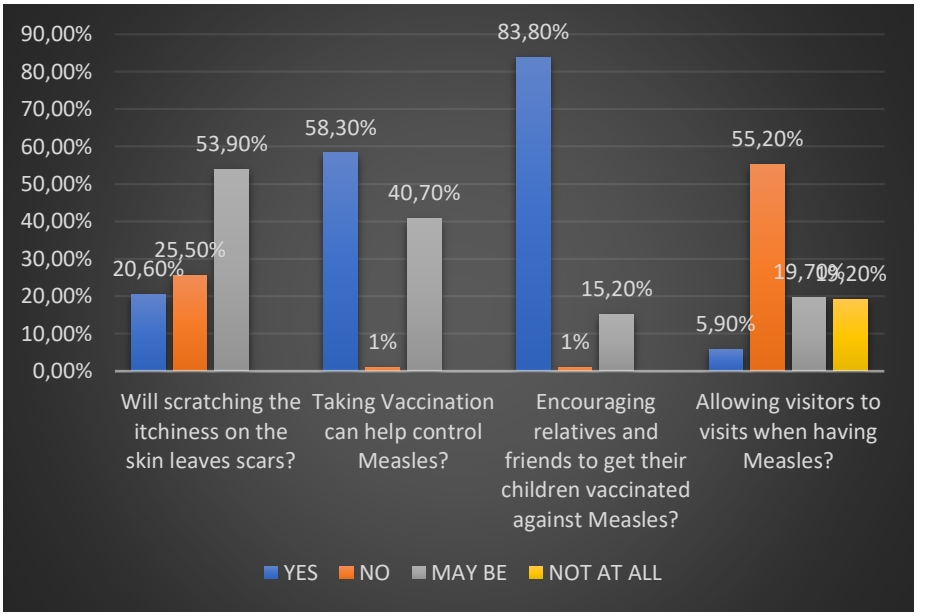

Figure 4: Attitude towards Measles with respect to the student's understanding

Estimating the Practice done toward Measles with respect to the knowledge of the students

Around 94.6% of the students know that an antibiotic drug can help reduce the symptoms of measles, while 4.4% and 1% do not know about antibiotic drugs usefulness in treating the symptoms of measles. Another 67.8% of the students are familiar that OTC medication such as ibuprofen and acetaminophen are given to measles patients to reduce fever, and 19.5%, 11.7% answered that acetaminophen and ibuprofen are given to the patients respectively to reduce fever, these are shown in Table 6.

Table 6 shows that 89.7% of the respondents have objected that alcohol and alcohol containing food product should be avoided especially by an adult while having measles, as it may affect other organs in the body. And 81.8% have suggested and implied that consuming green leafy veggies, taking Vitamin A supplements and having plenty of bed rest while encountering the disease can promote and boost the immune system.

Table 6: Medication treatment and Precautions to reduce symptoms of Measles.

Medication & Precaution taken	**Frequency (%)**
Can anti-biotic drugs help ease the symptoms of Measles?	
Yes	194 (94.6%)
No	9 (4.4%)
Not at all	2 (1%)
What type of OTC Medication is given to reduce fever in Measles disease?	
a). Ibuprofen	24 (11.7%)
b). Aceclofenac	2 (1%)

c). Acetaminophen	40 (19.5%)
d). Both a & c	139 (67.8%)
What type of food should be avoided when having Measles?	
Fruit juices	12 (5.9%)
Alcohol	182 (89.7%)
Dairy products	6 (3%)
None of the above	3 (1.5%)
How can a person boost their immune system at home?	
Consuming green leafy vegetables	16 (7.9%)
Plenty of bed rest	6 (3%)
Taking Vitamin-A supplements	15 (7.4%)
All of the above	166 (81.8%)

About 78.3% of the students are aware about vaccination program for prevention of measles, and 20.2% are not aware about it. Around 80% of the students are aware about Measles Vaccine i.e., MMR (Measles, Mumps and Rubella); and the other 10.2%, 3.9% and 5.9% do not know about the vaccine. According to 53.2% of the students are wary about the recommended age for Measles Vaccination; and 45.4% acknowledge that by getting vaccinated can help increase the immunity of a person. This is shown in Table 7 accordingly.

Table 7: Awareness about Measles Vaccination Program

Measles Vaccination	**Frequency (%)**
Are you aware about vaccination program for prevention of Measles?	
Yes	159 (78.3%)
No	41 (20.2%)
Not at all	3 (1.5%)
What vaccine is given to Measles patients?	
MMR	164 (80%)
JEV	12 (5.9%)
CHIK	21 (10.2%)
DENV	8 (3.9%)
What is the recommended age for Measles Vaccination?	
15-18 months of age	21 (10.2%)
9 months of age	43 (21%)
4-6 years of age	32 (15.6%)
All of the above	109 (53.2%)
Does getting vaccinated increases the immunity of a person?	
Yes	93 (45.4%)
May be	104 (50.7%)
No	2 (1%)
Don’t know	6 (2.9%)

Discussion

The study aimed to identify KAP of Pharmacy Students towards Measles and, as they can represent an important role in redefining the disease in children as well as adults, on how it is contracted and spreads from one person to the other.

According to the results responded by the students, it was revealed that they have an accurate KAP towards Measles, and a large percentage of the students have a great perception about the disease.

The main source of material and data was through the questionnaires (Google Form format) and responses of the participants i.e., pharmacy students. The students participating in the study have shown great knowledge and insight about the disease, its risk factors, treatment and the vaccination program carried out to help take a precaution against the disease. However, only few students have expressed that they do not know about the vaccination program carried out to take precautions against the disease.

The knowledge survey from the study have showed that an accurate percentage of the students have shown an impressive comprehension about Measles, its risk factors and symptoms. The results from the response replied by the participants, revealed an exceptional level of understanding they have and their awareness about vaccination program. The acquired results showed that the students have different aspects about the risk factors of measles and how it especially infects the pregnant women and an unvaccinated child.

In accordance with the perception of the responders, their attitude towards measles, is nothing less than that to chicken pox. Some of the students found that the former disease does not show any similarities with latter disease, and have different views about encouraging their friends and relatives to get vaccinated against Measles.

Different opinions and views have been seen in the results for treatment of measles, though most of the students have shown that getting vaccination is the best way to prevent one person from contracting the disease. According to the results acquired, most of the students have voiced out that the medications prescribed during measles illness, were given to ease the symptoms of the disease but it cannot help treat the disease, since it does not have specific treatment.

Therefore, from this study we can see that the students have distinct knowledge, attitude and different views about the practices towards Measles. And by their awareness about MMR vaccination program and its role towards preventing measles.

Several limitations of this study should be acknowledged. During the whole study, no personal information is collected from the respondents, only their demographic details such as age, gender, education level and their courses was asked. Overall, the study was done and the results found were collected from the percentage and frequencies of the data collected i.e., responses received from the questionnaires distributed.

Conclusion

The study was concluded with the proportion that the students in the Pharmacy Department have an accurate and prominent KAP about Measles and its risk factors, and also have different sight when it comes to the precautions taken

against the disease and the medications prescribed to the sick individual to relieve the symptoms.

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