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Research Article

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Diseases Awareness Survey Among the Microbiology Students

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ABSTRACT

The recent decades have witnessed a radical change in the diseases, types, and their outbreak in the community, from infecting diseases to chronic ones. Disease awareness is the utmost important aspect in the community for the prevention and control of diseases. Awareness of Disease and symptoms is essential for screening and early detection. If members of the public are aware of a disease and its symptoms, they are more likely to take action to prevent it from happening to them or go to healthcare providers for check-ups. Hence, considering this, the present survey aims to acquire facts about the most common diseases viz. AIDS, Dengue fever, Measles, Rubella, and Sickle cell anaemia among the 100 Microbiology students of undergraduate and post graduate sections. The findings suggest that the awareness about queried diseases is high in postgraduate students of the Microbiology department as compared to undergraduate students which indicates that Microbiology education helps in improving the health awareness in students. Health education campaigns regarding common infectious diseases should be scheduled in schools, colleges, and other sectors of society.

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INTRODUCTION

A disease is an abnormal condition that negatively affects the structure or function of part or all of an organism, and that is not due to any external injury. Infectious Diseases are disorders that are caused by microorganisms viz. bacteria,

viruses, fungi, or parasites that are passed, directly or indirectly, from one person to another. Some Diseases are caused by genetic disorders.

The recent decades have witnessed a radical change in the diseases, types, and their outbreak in the community, from infecting diseases to chronic ones. Disease awareness is the utmost important aspect in the community for the prevention and control of diseases. Preventive medicine is concerned with reducing the incidence of disease by modifying environmental or behavioral factors that are related to illness. The general health practitioners and family physicians must work in close collaboration with the community. It is mandatory to mobilize the community to resolve their health issues and to assess their knowledge about infectious diseases. To adopt a healthier lifestyle, increasing the awareness of the community is an important preventive strategy.

The lack of awareness among the people is one of the key aspects responsible for the transformation of endemic diseases into pandemics. Lack of awareness is due to the absence, inaccessibility, or inaccuracy of information, which is sometimes made harder by cultural taboos, myths, and fear, which can stop people from taking preventative action or seeing doctors. As a result of a lack of awareness, people often come to healthcare facilities when their disease has worsened or reached a late stage, resulting in a lower chance of effective treatment. Lack of awareness is not only dangerous in terms of worsening health outcomes; it can also be divisive in society and can affect the quality of life.

Awareness of Disease and symptoms is essential for screening and early detection. If members of the public are aware of a disease and its symptoms, they are more likely to take action to prevent it from happening to them or go to healthcare providers for check-ups. If people are not aware of diseases and healthcare options it keeps them from taking preventative action or from visiting their doctor and accessing care. Taking this into consideration, the present survey aims to acquire facts about disease awareness among college students.

MATERIALS AND METHOD
Survey Instrumentation
The instrument used for this study was a structured questionnaire containing multiple-choice questions. The questionnaire consisted of 10 questions each on AIDS, Dengue, Sickle Cell Anaemia, measles, and rubella. The questions were based on the general information regarding the particular disease which involves socio-demographic characteristics, knowledge of the various diseases, their features, transmission and complications, and methods of prevention.

Participants
Participants in this study were undergraduate and postgraduate college students attending a Microbiology education at R.A. College, Washim. A total of 100 students participated in this survey. 20 students (10 males and 10 females) from each class viz. B.Sc (I, II, III) and

M.Sc (I, II) were selected for the present survey. The participants belong to the age group of 18 to 25 years. The Participants were not placed in physical, emotional, or academic harm at any time during the course of the study.

Procedure

The Diseases questionnaire was administered to all the participants in September 2023. Before the questionnaires were distributed, a consent form was read and distributed to all students for their review. After the consent form was read and distributed, students had approximately 30 minutes to complete their questionnaire in the classroom under keen supervision. To maintain the confidentiality of all participants, names, and signatures were not retrieved from the questionnaires.

RESULTS AND DISCUSSION

The questionnaire was processed and the following results were obtained. Table 1 and Figure 1 represent the responses of participants about AIDS. From the table, it is observed that the maximum correct response was given by M. Sc-II year students followed by M. Sc-I. The mean of the correct response was calculated to be 9.2 for both males and females of M. Sc-II year. In the case of M. Sc-I, female students have given more correct responses (mean value- 8) regarding AIDS as compared to males (mean value- 6.6). Among B.Sc-III students, males have given more correct responses (mean value- 6.2) as compared to females (mean value- 4.8).The calculated mean value of correct response among B.Sc-II was 4.8 and 4 respectively for males and females.

In the case of B. Sc-I students, the mean value for correct response was calculated to be 2.2 and 2.8 respectively for males and females.

Figure 2 represents the findings on the frequency of correct responses regarding the specified disease. Out of the five different criteria considered viz. Basic information regarding AIDS, transmission, symptoms, treatment, and prevention for the survey, maximum students has given correct responses regarding the basic information (65) of AIDS followed by symptoms (61), treatment (57), transmission (56), and prevention (50).

Table 2 and Figure 3 represent the responses of participants about Dengue fever. From the table, it is observed that the maximum correct response was given by M. Sc-II-year students followed by M. Sc-I. The mean of the correct response was calculated to be 9.4 and 9 for male and female respectively. In the case of M. Sc-I, male students have given more correct responses (mean value- 8.8) regarding Dengue fever as compared to females (mean value- 8.6). Among B.Sc-III students, females have given more correct responses (mean value- 5.8) as compared to males (mean value- 5.2).The calculated mean value of correct response among B.Sc-II was 5.8 and 4.2 respectively for males and females. In the case of B. Sc-I students, the mean value for the correct response was calculated to be 4 and 3.6 respectively for males and females. The above results were compared with Kalra, et.al., ((2014) & Lennon JL.

Figure 4 represents the findings on frequency of correct response regarding the specified disease. Out of the five different criteria considered viz. Basic information regarding Dengue fever, transmission, symptoms, treatment and prevention for survey, maximum students has given correct response regarding the symptoms (90) of Dengue fever followed by basic information (66), transmission (62), prevention (53) and treatment (51).

Table 3 and figure 5 represents the response of participants about Measles disease. From the table, it is observed that the maximum correct response was given by M. Sc-II year students followed by M. Sc-I. The mean of the correct response was calculated to be more in females (9.6) as compared to males (9.2). In the case of M. Sc-I, male students have given more correct responses (mean value- 8.6) regarding Measles disease as compared to females (mean value- 8.2). Among B.Sc-III students, males have given more correct responses (mean value- 4.8) as compared to females (mean value- 4.4).The calculated mean value of correct response among B.Sc-II was 3.8 and 1.4 respectively for males and females. In the case of B. Sc-I students, the mean value for correct response was calculated to be 1.4 and 2 respectively for males and females. The following results were compared with Odega, et.al.,(2010).

Figure 6 represents the findings on the frequency of correct responses regarding the specified disease. Out of the five different criteria considered viz. Basic information regarding

Measles disease, transmission, symptoms, treatment, and prevention for the survey, maximum students has given correct responses regarding the basic information (61) of Measles disease followed by treatment (56), symptoms (54), transmission (50), and prevention (46). The following results were compared with Weldegebriel, et.al., (2011).

Table 4 and Figure 7 represent the responses of participants about Rubella disease. From the table, it is observed that the maximum correct response was given by M. Sc-II year students followed by M. Sc-I. The mean of the correct response was calculated to be more in females (9.4) as compared to males (9.2). In the case of M. Sc-I, female students have given more correct responses (mean value- 6.8) regarding Rubella disease as compared to males (mean value- 6.6). Among B.Sc-III students, females have given more correct responses (mean value- 3.8) as compared to males (mean value- 3).The calculated mean value of correct response among B.Sc-II was 4.4 and 3 respectively for males and females. In the case of B. Sc-I students, the mean value for the correct response was calculated to be 2.6 and 1.8 respectively for males and females. The following results were compared with Dewan, P., & Gupta, P. (2012).

Figure 8 represents the findings on the frequency of correct responses regarding the specified disease. Out of the five different criteria considered viz. Basic information regarding Rubella disease, transmission, symptoms, treatment, and prevention for the survey, the

maximum number of students has given correct response (53) regarding the transmission and symptoms of Rubella disease. The results were at par with each other. The correct response regarding treatment was found to be 51 followed by prevention (49) and basic information (47).

Table 5 and figure 9 represents the response of participants about Sickle cell anemia. From the table, it is observed that maximum correct response was given by M. Sc-II year students followed by M. Sc-I. The mean of the correct response was calculated to be more in females (6.6) as compared to males (5.6). In case of M. Sc-I, male students has given more correct responses (mean value- 6.2) regarding Sickle cell anemia as compared to females (mean value- 5). Among B.Sc-III students, both males and females have given correct response at par (mean value- 3).The calculated mean value of correct response among B.Sc-II was 2 and 3 respectively for males and females. In the case of B. Sc-I students, the mean value for correct response was calculated to be 1.4 and 1.2 respectively for males and females. The following results were compared with Lee et.al.,(1995), Kate, S. L., & Lingojwar, D. P. (2002), and Adewuyi, J. O. (2000).

Figure 10 represents the findings on the frequency of correct responses regarding the specified disease. Out of the five different criteria considered viz. Basic information regarding Sickle cell anemia, transmission, symptoms, treatment, and prevention for the survey, the maximum number of students has given correct response regarding the basic information (49) of Sickle cell anemia followed by treatment (40), transmission(37), symptoms (32) and prevention (27). The following result were compared with Olakunle et.al.,(2013), Odunvbun, et.al.,(2008), Ameade, et.al.,(2015).

Table 6 and Figure 11 represent the Frequency of correct responses about diseases in male and female participants. From the table, it is observed that male participants as compared to females gave the maximum correct response. Male participants have given a total of 670 correct responses and females have given 646 correct responses about the queried diseases. Among the queried diseases, the maximum correct response was found about Dengue fever (322) followed by AIDS (289), Measles (267), Rubella (253), and Sickle cell anaemia (185).

Table 7 and Figure 12 represent the frequency of correct responses about disease criteria of queried diseases. It is observed that the maximum participants are aware of the symptoms of the queried diseases (290) followed by the basic information (288), disease transmission (258), treatment of the diseases (255), and prevention (225) of the queried diseases.

CONCLUSION
Maximum participants in the present survey were aware of the symptoms of the queried diseases (290) followed by the basic information (288), disease transmission (258), treatment of the diseases (255), and prevention (225) of the queried diseases. Among the queried diseases, maximum awareness was found about Dengue

fever followed by AIDS, Measles, Rubella, and Sickle cell anaemia. The maximum correct response was given by male participants as compared to females about queried diseases. Male participants have given total 670 correct response and females has given 646 correct responses about the queried diseases. The awareness about queried diseases is high in post graduate students of Microbiology department as compared to under graduate students which indicates that Microbiology education helps in improving the health awareness in students. Public health intervention program are suggested to be initiated including education of the community and also the health workers.

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TABLE AND FIGURES

Table 1: Response of participants about AIDS

| | BSc I | | | | BSc II | | | | BSc III | | | | MSc I | | | | MSc II | | | | Total of CR |
| | Male | | Female | | Male | | Female | | Male | | Female | | Male | | Female | | Male | | Female | | |
	CR	IR	CR	IR	CR	IR	CR	IR	CR	IR	CR	IR	CR	IR	CR	IR	CR	IR	CR	IR	
Basic information	05	05	04	06	06	04	04	06	07	03	06	04	07	03	08	02	08	02	10	00	65
Transmission	02	08	03	07	05	05	02	08	06	04	05	05	08	02	07	03	09	01	09	01	56
Symptoms	03	07	04	06	04	06	06	04	05	05	06	04	03	07	10	00	10	00	10	00	61
Treatment	01	09	02	08	06	04	04	06	07	03	03	07	08	02	08	02	10	00	08	02	57
Prevention	00	10	01	09	03	07	04	06	06	04	04	06	07	03	07	03	09	01	09	01	50
TOTAL	11	39	14	36	24	26	20	30	31	19	24	26	33	17	40	10	46	4	46	4	
MEAN	**2.2**	**7.8**	**2.8**	**5.4**	**4.8**	**5.2**	**4**	**6**	**6.2**	**3.8**	**4.8**	**5.2**	**6.6**	**3.4**	**8**	**2**	**9.2**	**0.8**	**9.2**	**0.8**	

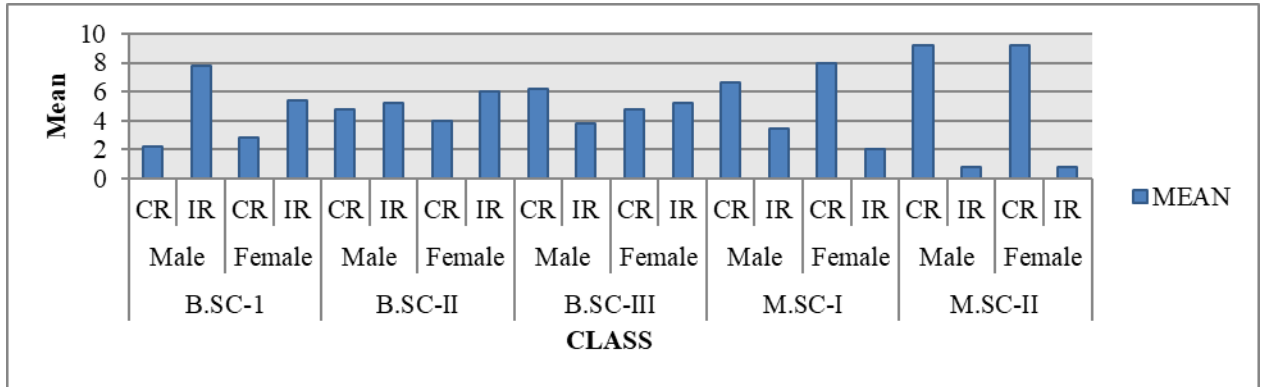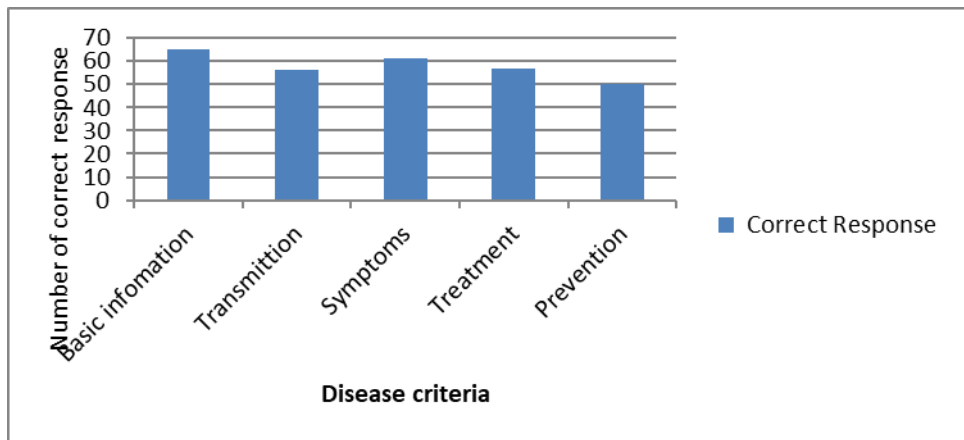CR- Correct response, IR- Incorrect response

Figure 1: Response of participants about AIDS

Figure 2: Frequency of correct response about AIDS

Table 2: Response of participants about Dengue fever

| | BSc I | | | | BSc II | | | | BSc III | | | | MSc I | | | | MSc II | | | | Total of CR |
| | Male | | Female | | Male | | Female | | Male | | Female | | Male | | Female | | Male | | Female | | |
	CR	IR	CR	IR	CR	IR	CR	IR	CR	IR	CR	IR	CR	IR	CR	IR	CR	IR	CR	IR	
Basic information	02	08	03	07	06	04	04	06	06	04	07	03	09	01	10	00	10	00	09	01	66
Transmission	03	07	02	08	05	05	03	07	05	05	06	04	10	00	08	02	10	00	10	00	62
Symptoms	08	02	07	03	09	01	09	01	08	09	09	01	10	00	10	00	10	00	10	10	90
Treatment	03	07	02	08	04	06	03	07	04	06	04	06	08	02	08	02	08	02	07	03	51
Prevention	04	06	04	06	05	05	02	08	03	07	03	07	07	03	07	03	09	01	09	01	53
TOTAL	20	30	18	32	29	21	21	29	26	31	29	21	44	6	43	7	47	3	45	15	
MEAN	**4**	**6**	**3.6**	**6.4**	**5.8**	**4.2**	**4.2**	**5.8**	**5.2**	**6.2**	**5.8**	**4.2**	**8.8**	**1.2**	**8.6**	**1.4**	**9.4**	**0.6**	**9**	**3**	

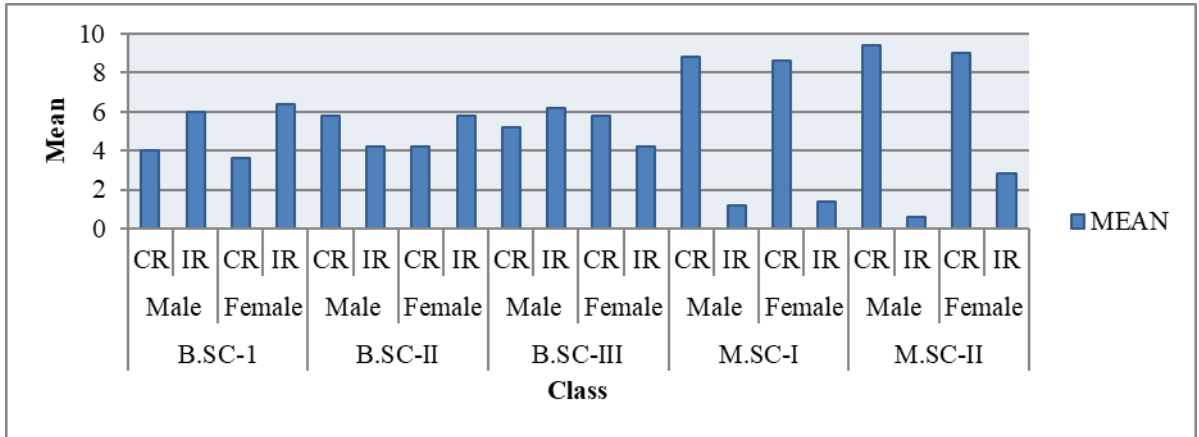CR- Correct response, IR- Incorrect response
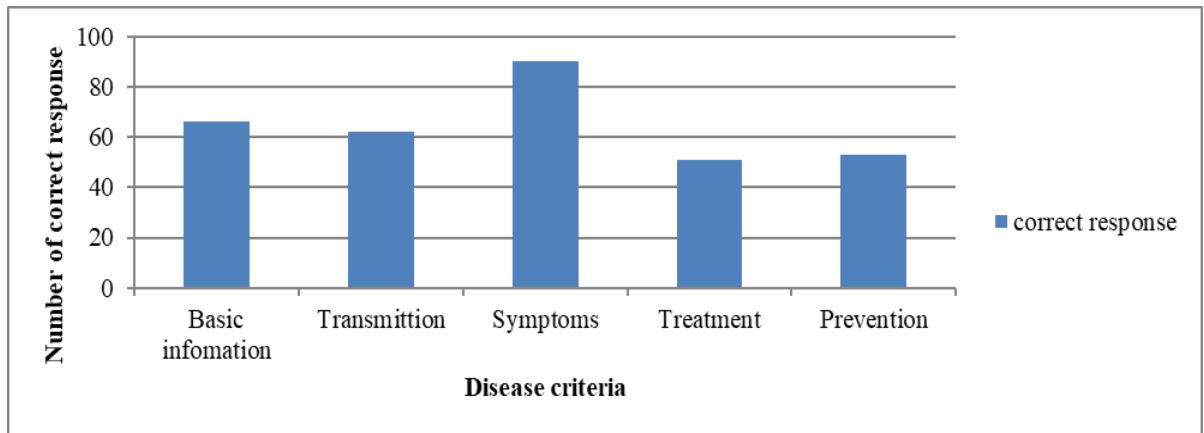
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Figure 3: Response of participants about Dengue fever

Figure4: Frequency of correct response about Dengue fever

Table 3: Response of participants about Measles disease

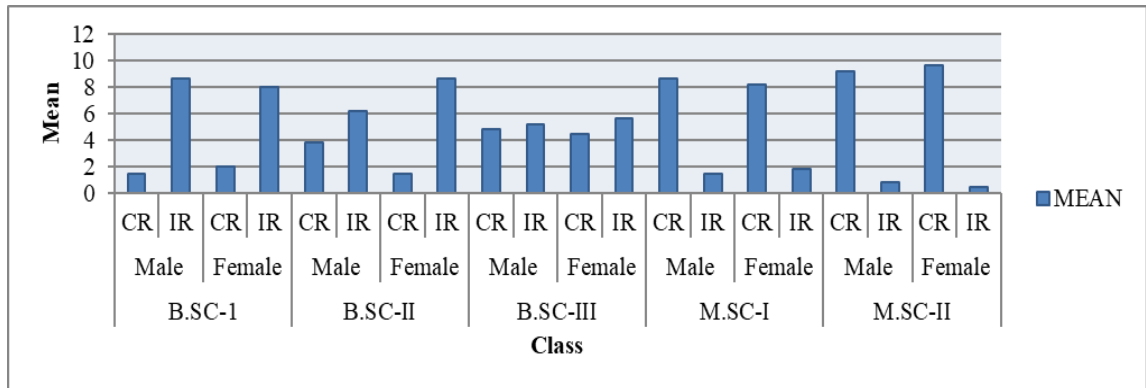| | BSc I | | | | BSc II | | | | BSc III | | | | MSc I | | | | MSc II | | | | Total of CR |
| | Male | | Female | | Male | | Female | | Male | | Female | | Male | | Female | | Male | | Female | | |
	CR	IR	CR	IR	CR	IR	CR	IR	CR	IR	CR	IR	CR	IR	CR	IR	CR	IR	CR	IR	
Basic information	03	07	02	08	05	05	04	06	06	04	07	03	07	03	08	02	09	01	10	00	61
Transmission	02	08	03	07	04	06	01	09	04	06	04	06	08	02	07	03	08	02	09	01	50
Symptoms	01	09	04	06	05	05	02	08	05	05	02	08	09	01	07	03	09	01	10	00	54
Treatment	00	10	01	09	03	07	00	10	06	04	06	04	10	00	10	00	10	00	10	00	56
Prevention	01	09	00	10	02	08	00	10	03	07	03	07	09	01	09	001	10	00	09	01	46
TOTAL	7	43	10	40	19	31	7	43	24	26	22	28	43	7	41	9	46	4	48	2	
MEAN	**1.4**	**8.6**	**2**	**8**	**3.8**	**6.2**	**1.4**	**8.6**	**4.8**	**5.2**	**4.4**	**5.6**	**8.6**	**1.4**	**8.2**	**1.8**	**9.2**	**0.8**	**9.6**	**0.4**	

CR- Correct response, IR- Incorrect response
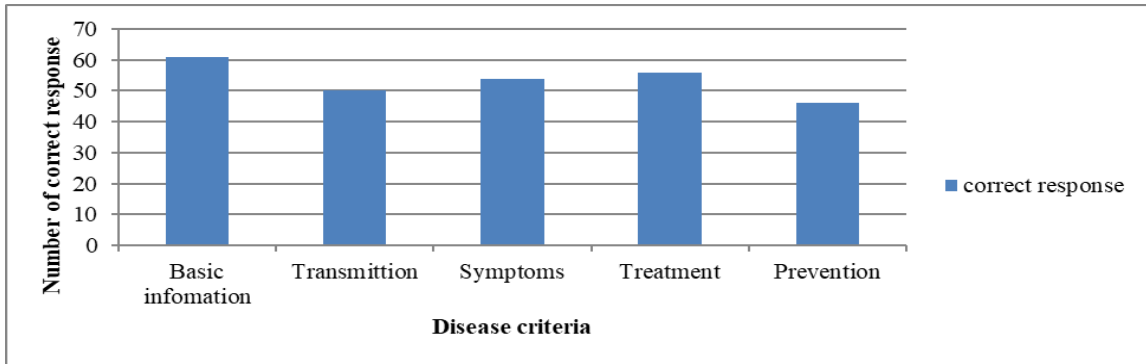
Figure5: Response of participants about Measles disease

Figure6: Frequency of correct response about Measles disease

Table 4: Response of participants about Rubella disease

	BSc I Male		BSc I Female		BSc II Male		BSc II Female		BSc III Male		BSc III Female		MSc I Male		MSc I Female		MSc II Male		MSc II Female		Total of CR
	CR	IR	CR	IR	CR	IR	CR	IR	CR	IR	CR	IR	CR	IR	CR	IR	CR	IR	CR	IR	
Basic information	01	09	02	08	05	05	02	08	04	06	03	07	07	03	06	04	09	01	08	02	47
Transmission	03	07	03	07	04	06	03	07	03	07	04	06	06	04	07	03	10	00	10	00	53
Symptoms	04	06	01	09	06	04	05	05	05	05	01	09	07	3	04	06	10	00	10	00	53
Treatment	02	08	01	09	04	06	04	06	01	09	06	04	06	04	08	02	09	01	10	00	51
Prevention	03	07	02	08	03	07	01	09	02	08	05	05	07	03	09	01	08	02	09	01	49
TOTAL	13	37	9	41	22	28	15	35	15	35	19	31	33	17	34	16	46	4	47	3	
MEAN	**2.6**	**7.4**	**1.8**	**8.2**	**4.4**	**5.6**	**3**	**7**	**3**	**7**	**3.8**	**6.2**	**6.6**	**3.4**	**6.8**	**3.2**	**9.2**	**0.8**	**9.4**	**0.6**	

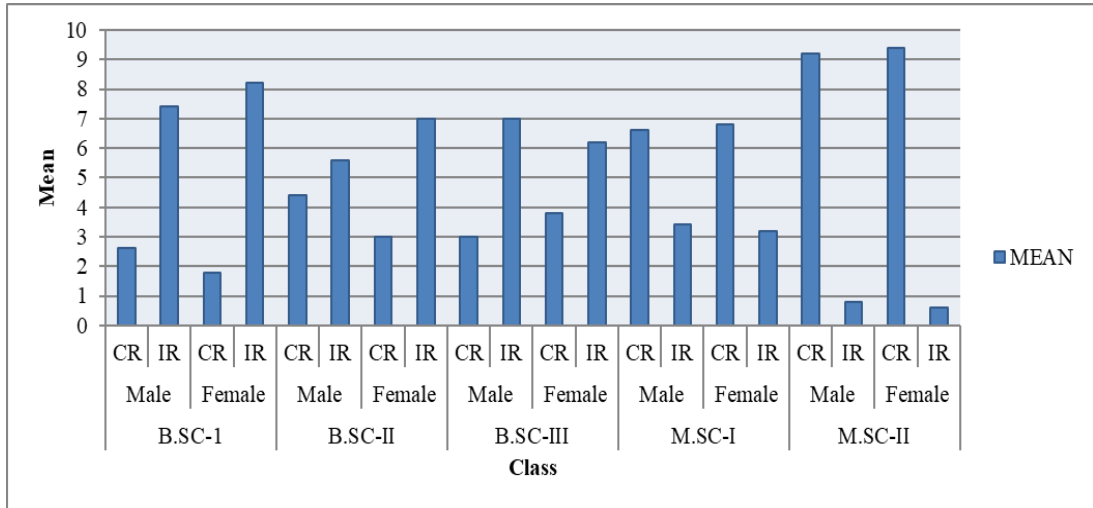CR- Correct response, IR- Incorrect response

Figure 7: Response of participants about Rubella disease
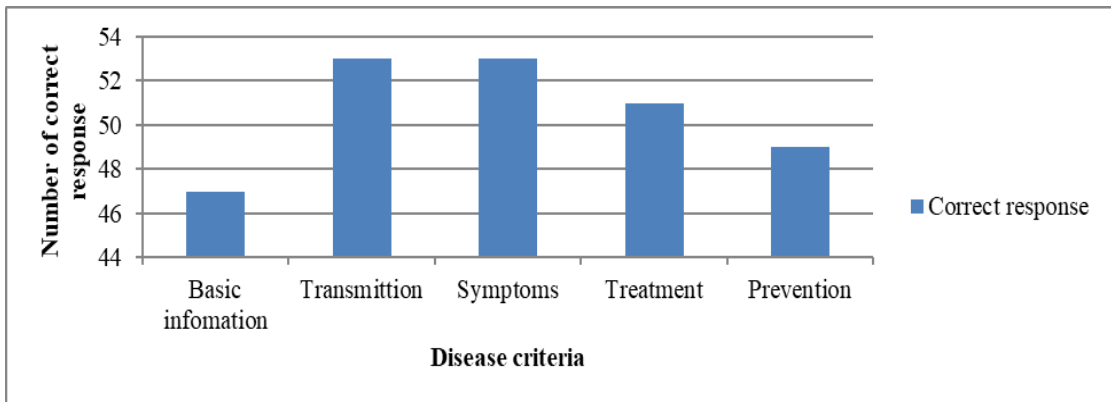CR- Correct response, IR- Incorrect response

Figure8: Frequency of correct response about Rubella disease

Table 5: Frequency of correct response about sickle cell anemia

| | BSc I | | | | BSc II | | | | BSc III | | | | MSc I | | | | MSc II | | | | Total of CR |
| | Male | | Female | | Male | | Female | | Male | | Female | | Male | | Female | | Male | | Female | | |
	CR	IR	CR	IR	CR	IR	CR	IR	CR	IR	CR	IR	CR	IR	CR	IR	CR	IR	CR	IR	
Basic information	01	09	02	08	03	07	03	05	05	05	06	04	06	04	07	03	09	01	07	03	49
Transmission	01	09	03	07	01	09	04	06	04	06	03	07	06	04	05	05	04	06	06	04	37
Symptoms	02	08	01	09	02	08	01	09	01	09	04	06	07	03	03	07	07	03	04	06	32
Treatment	03	07	00	10	03	10	05	08	02	08	02	08	08	02	04	06	06	04	07	03	40
Prevention	00	10	00	10	01	10	02	07	03	07	00	10	04	06	06	04	02	08	09	01	27
TOTAL	7	43	6	44	10	44	15	35	15	35	15	35	31	19	25	25	28	22	33	17	
MEAN	**1.4**	**8.6**	**1.2**	**8.8**	**2**	**8.8**	**3**	**7**	**3**	**7**	**3**	**7**	**6.2**	**3.8**	**5**	**5**	**5.6**	**4.4**	**6.6**	**3.4**	

CR- Correct response, IR- Incorrect response

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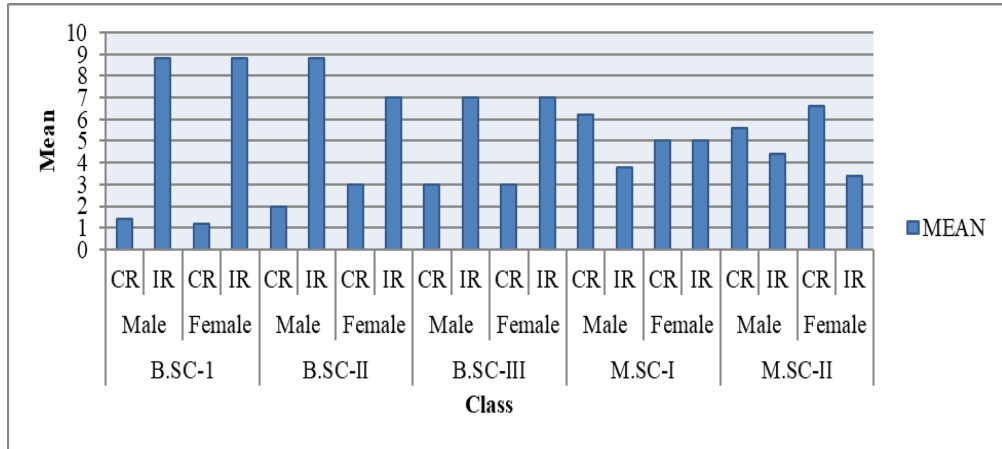
Figure9: Response of participants about Sickle cell anemia
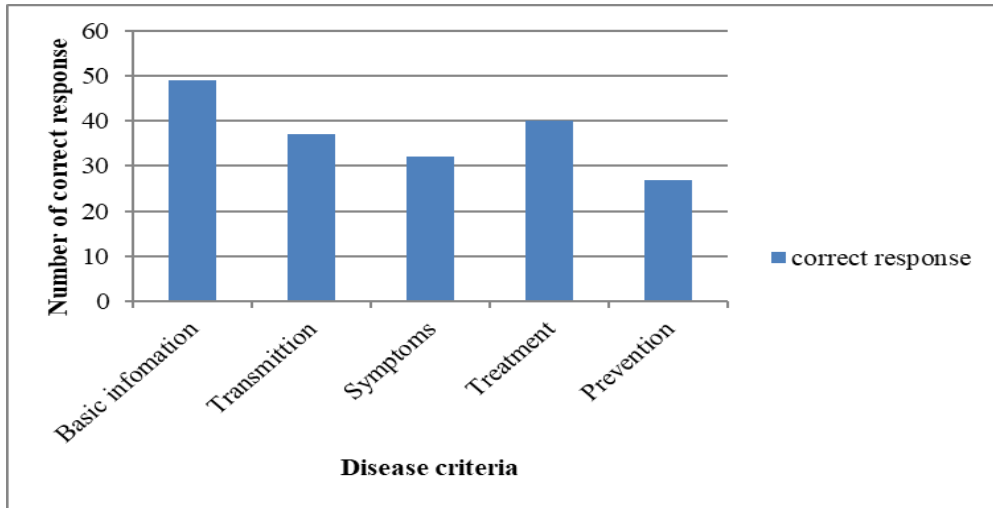CR- Correct response, IR- Incorrect response

Figure10: Frequency of correct response about Sickle cell anemia

Table 6: Frequency of correct response about diseases in males and females participants

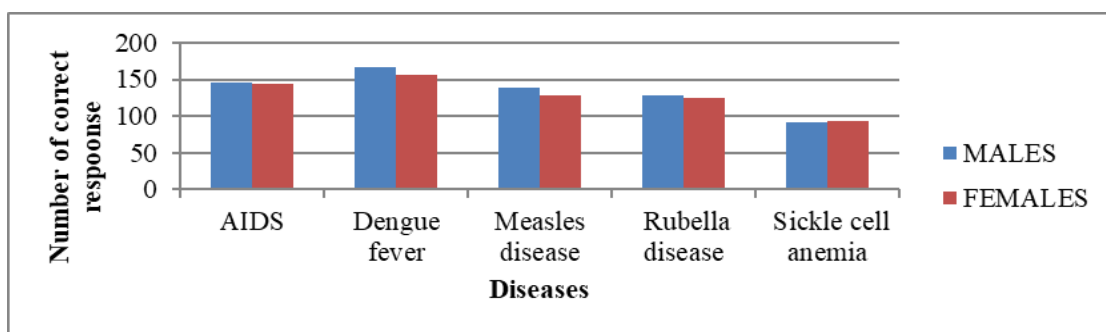| Disease	Correct response		Total
	Males	**Females**	
AIDS	145	144	289
Dengue fever	166	156	322
Measles disease	139	128	267
Rubella disease	129	124	253
Sickle cell anemia	91	94	185
Total	**670**	**646**	**1316**

Figure 11:- Frequency of correct response about diseases in males and females participants

Table 7: Frequency of correct response about disease criteria of queried diseases

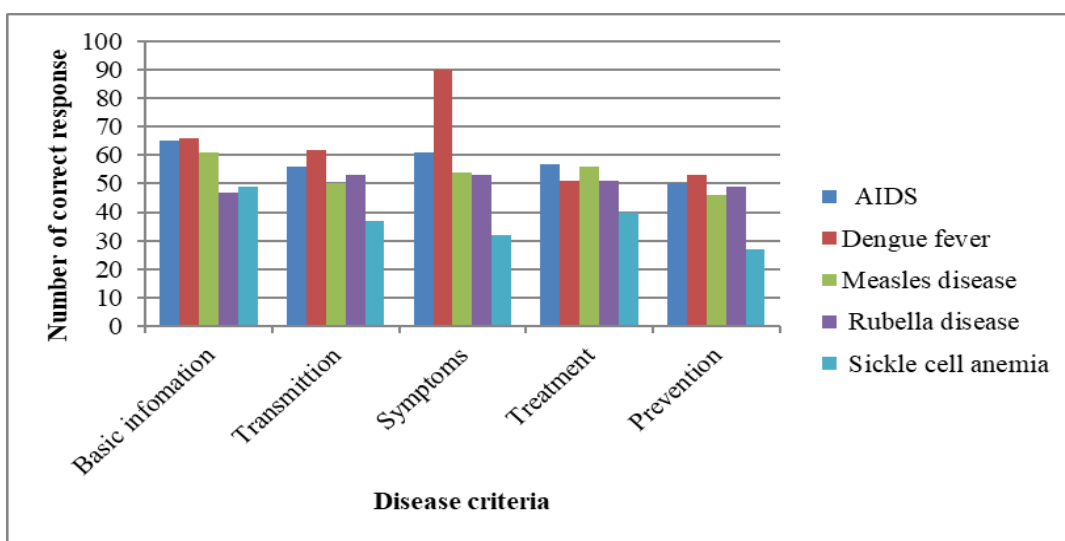| Disease criteria	AIDS	Dengue fever	Measles disease	Rubella disease	Sickle cell anemia	Total
	Number of correct response					
Basic information	65	66	61	47	49	288
Transmission	56	62	50	53	37	258
Symptoms	61	90	54	53	32	290
Treatment	57	51	56	51	40	255
Prevention	50	53	46	49	27	225
Total	289	322	267	253	185	1316

Figure 12:-Frequency of correct response about disease criteria of queried diseases