Research Article

Assessment of Knowledge of Chikungunya in First Treating Physicians of Lahore

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Abstract

Background: It is always crucial to assess and analyze how public health professional recognize diseases of community like Chikungunya. It is also important to know about their knowledge about Chikungunya virus its vaccination, symptoms, transmission cycle and the importance of its prevention strategies.

Objective: The main objective of this study was to assess the knowledge of chikungunya in first treating physicians of Lahore.

Methods: This cross-sectional analytical study was done at University Institute of Public Health, The University of Lahore. The study was completed in 6 months. [May 23, 2019 till Nov 22, 2019]. All data was collected using simple random sampling. A total of 121 participants were taken meeting selection criteria after taking informed consent. Chi-square test and independent sample t-test was applied taking p-value ≤ 0.05 as significant.

Results: The mean knowledge score (%) among all subjects was 66.84 ± 18.43 $(28 - 100)$. There were only 20(16.53%) subjects who had good knowledge, 66(54.55%) subjects had satisfactory knowledge and 35(28.93%) subjects had poor knowledge of Chikungunya. Moreover the good, satisfactory and poor knowledge of Chikungunya was also statistically same in all age groups, gender p-value > 0.05, but physicians with higher duration of job have higher frequency of poor knowledge, p-value < 0.05.

Conclusion: Through the findings of this study it is concluded that the good knowledge of Chikungunya virus was found in fewer no of first treating physicians i.e. 16.53%. KEYWORDS: Mosquito born disease, chikungunya, epidemic, public health professionals, knowledge

Introduction

Chikungunya typically consists of sudden illness and can further cause headache, fever, myalgia, rash and acute and persistent arthralgia.[1] In some of the cases hemorrhagic manifestations and severe neurological conditions can occur. The disease in long run can cause rheumatoid arthritis.[2,3] Chikun-gunya virus (CHIKV) is transmitted by aedes mosquitoes having arthropod borne disease and is responsible for divesting and upsetting outbreaks.[2,4] CHIKV is found mostly in tropical areas and it is geographically restricted and its outbreaks are not much common. It is only occasionally and usually found in military personnel and travelers.[5]

Though CHIKV is an endemic to tropical regions, but Aedesalbopictus spreads into Americas and European regions.[6,7] Since in early 2004, CHIKV has been increasing in Indian Ocean islands, Africa and Asian regions. The epidemic of CHIKV began on the Kenyan coast, and then reached Comoros at the end of year 2004 before its spread to South-western Indian Ocean islands in 2005 and 2006.[8] After this the epidemic of CHIKV was spread to Asia where epidemic can be found even in recent times. Indigenous transmission was reported in temperate zone countries like it was found in 2007 in Italy and in 2010 in France.[8] Pakistan like other Asian countries is under substantial climate changes[9] and affected persons with CHIKV may exhibit alike clinical signs to Zika and dengue that can be misdiagnosed being dengue and Zika as common conditions. The intervention measures for CHIKV primarily concentrates on controlling its vectors like mosquitoes and preventing mosquito bites in human.[10] In a study 13% participants had good knowledge, 45% had moderate knowledge, 42% people had poor knowledge regarding Chikungunya virus while another research reported 8.9% participants had correct knowledge, 5.2% had knowledge about its transmission while only 38.1% participants knew the exactly.[11]

Since CHIKV is an emergent infection in Pakistan so poor knowledge regarding CHIKV may delay the diagnosis and treatment.[6] Different factors influence the success rate of these measures including the knowledge of the public health administration.

Therefore, it is always crucial to assess and analyze how public health professional recognize common diseases, epidemics and endemics. It is also important to know about their knowledge about Chikungunya virus its vaccination, symptoms, transmission cycle and the importance of its prevention strategies. So, the current study was designed to assess the knowledge of chikungunya in first treating physicians of Lahore. We further aimed to compare knowledge of chikungunya in first treating physicians in relation to their age, gender and duration of job/experience.

Methods

This Cross-sectional analytical study was done at University Institute of Public Health, The University of Lahore. The study was done in 6 months after approval of synopsis [May 23, 2019 till Nov 22, 2020] using simple random sampling. A total of 121 first treating physicians were taken in this study, the sample size is estimated using percentage of good knowledge as 13%[12], taking 6% margin of error and 95% confidence level. First treating physicians aged 25-60 years of either gender working in primary health care or practicing as general physician were. The cases were excluded if any of the family members of participant have Chikungunya, if participants have ever suffered for Chikungunya and all person who have recently attended course or seminar on Chikungunya.

First treating physicians were considered as physician if they were providing both the first contact for a person with an undiagnosed health concern as well as continuing care of varied medical conditions, not limited by cause, organ system, or diagnosis having more than 16 years of education with at least MBBS. All demographic information (name, age, address) and their clinical experience were taken. A self-made structured Performa based on 25 questions was distributed to all participants and their knowledge was assessed. The reliability of proforma was assessed using Cronbach's Alpha that was 79.6%. Knowledge was assessed through a self-made validated questionnaire (attached) and scoring grades were attributed to overall knowledge adopted from the Original Bloom's cut-off grade, scores of 80-100% correct response as good, 60-79% as satisfactory and score <60% as poor.[12,13] Computerized version i.e. SPSS 24 was used for data entry and analysis. Mean ± S.D was calculated for quantitative data like age (years), duration of experience etc. Frequency and percentage was calculated for qualitative data like gender, and knowledge of Chikungunya. Independent sample t-test was used to compare mean knowledge score in both gender and duration of job (<10 and ≥ 10). Analysis of variance (ANOVA) was used to compare mean of knowledge score in different age groups (25-30, 30-40, 40-50, 50-65 years). Chi-square test was applied to compare knowledge of Chikungunya with respect to age groups (25-30, 30-40, 40-50, 50-65 years), gender and duration of experience (< 10 years or ≥ 10 years). P-value ≤ 0.05 was considered as significant.

Results

The mean age of participants was 36.28 ± 8.26 years

with minimum and maximum age as 25 and 60 years. There were 31(25.62%) subjects who were 25-30 years of age, 59(48.76%) subjects were 30-40 years old, 23(19.01%) were 40-50 years old and 8(19.01%) subjects were 50-60 years old. There were 60(49.59 %) male and 61(50.41%) female subjects. There were 79(65.29%) married and 42(34.71%) un-married. The mean duration of job was 9.02 ± 8.17 years with minimum and maximum duration as 1 and 40 years. There were 75(61.98%) subjects who had < 10 years of experience and 46(38.02%) subjects had duration of experience as ≥ 10 years.

There were 112(92.6%) subjects who had correct knowledge about CHIKV that is spread by Aedes aegypti mosquitoe and CHIKV does not occur in cold temperature, 104(86.0%) subjects had correct knowledge about CHIKV cannot be transmitted from mother to child, 71(58.7%) subjects had correct knowledge about CHIKV can be transmitted from blood transfusion, 91(75.2%) subjects had correct knowledge about people having CHIKV develop symptoms after 3-7 days, 108(89.3%) and 60(49.6%) subjects had correct knowledge about symptoms of CHIKV are same as with dengue and Zika fever. A total of 75(62.0%) subjects had correct knowledge about symptoms of CHIKV can cause death, 77(63.6 %) subjects had correct knowledge about once a person is infected, it can be protected in future, 94(77.7%) subjects had correct knowledge about CHIKV can recover from joint problem in a few days, 84(69.4%) subjects had correct knowledge about CHIKV can be prevented by vaccination, 93(76.9%) subjects had correct knowledge about CHIKV can be controlled by water-filled container and 78(64.5%) subjects had correct knowledge about specific antiviral treatment for chikungunya. A total of 84(69.4%) subjects had correct knowledge about treatment for CHIKV can relieve symptoms only, 85(70.2%) subjects had correct knowledge about effective management of CHIKV, 47(38.8%) subjects had correct knowledge about use of ginger can be effective and 61(50.4%) subjects had correct knowledge about use of turmeric can be effective. A total of 95(78.5%) subjects had correct knowledge about Chikungunya virus infection is considered to be contagious, 64(52.9%) subjects had correct knowledge about cause of CHIKV, 73(60.3%) subjects had correct knowledge about diagnosis of CHIKV, 45(37.2%) subjects had correct knowledge about

vector types of CHIKV, 85(70.2%) subjects had correct knowledge about possible human transmission of CHIKV, 79(65.3%) subjects had correct knowledge about vaccine of CHIKV, 91(75.2%) subjects had correct knowledge about adequate climate for the virus and 54(44.6%) subjects had correct knowledge about preventive management.

The mean knowledge score among all subjects was 66.84 ± 18.43 with minimum and maximum score as 28 and 100. There were only 20(16.53%) subjects

Table 1: *Descriptive Statistics of Age (Years), Duration of Job (Years) and Knowledge Score*

	Age (years)	Duration of Job (years)	Knowledge score
Mean	36.28	9.02	66.84
S.D	8.26	8.17	18.43
Range	35	39	72.00
Minimum	25	1	28.00
Maximum	60	40	100.00

Table 2: *Comparison of Mean Knowledge Score in different Age Group, Gender and Duration of Job*

		Knowledge score (%)			(Test, p-value)
		Mean ± S.D	Min.	Max.	
Age groups (years)	25-30	63.35±17.28	28.00	100.00	(F = 0.674, 0.570)
	30-40	68.14±17.29	36.00	100.00	
	40-50	66.43±20.60	44.00	100.00	
	50-60	72.00±25.12	40.00	100.00	
Gender	Male	66.20±18.81	40.00	100.00	(t= -0.379, 0.705)
	Female	67.48±18.18	28.00	100.00	
Knowledge score (%)	< 10 years	66.77±17.27	28.00	100.00	(t= 0.053, 0.958)
	≥10 years	66.96±20.37	40.00	100.00	

who had good knowledge, 66(54.55%) subjects had satisfactory knowledge and 35(28.93%) subjects had poor knowledge of Chikungunya. The mean knowledge score among subjects, aged < 30yeas was 63.35± 17.28, the mean knowledge of subjects aged 30-40 years was 68.14± 17.29, the mean knowledge of scores among subjects aged 40-50 years was 66.43± 20.60 and the mean knowledge score among subjects aged >50 years was 72.00 ± 25.12 years. The mean knowledge score was statistically same in all age groups, p-value > 0.05. The mean knowledge score among male (66.20 ± 19.81) and female subjects (67.48 ± 18.18) was statistically same in both gender, p-value > 0.05. The mean knowledge score
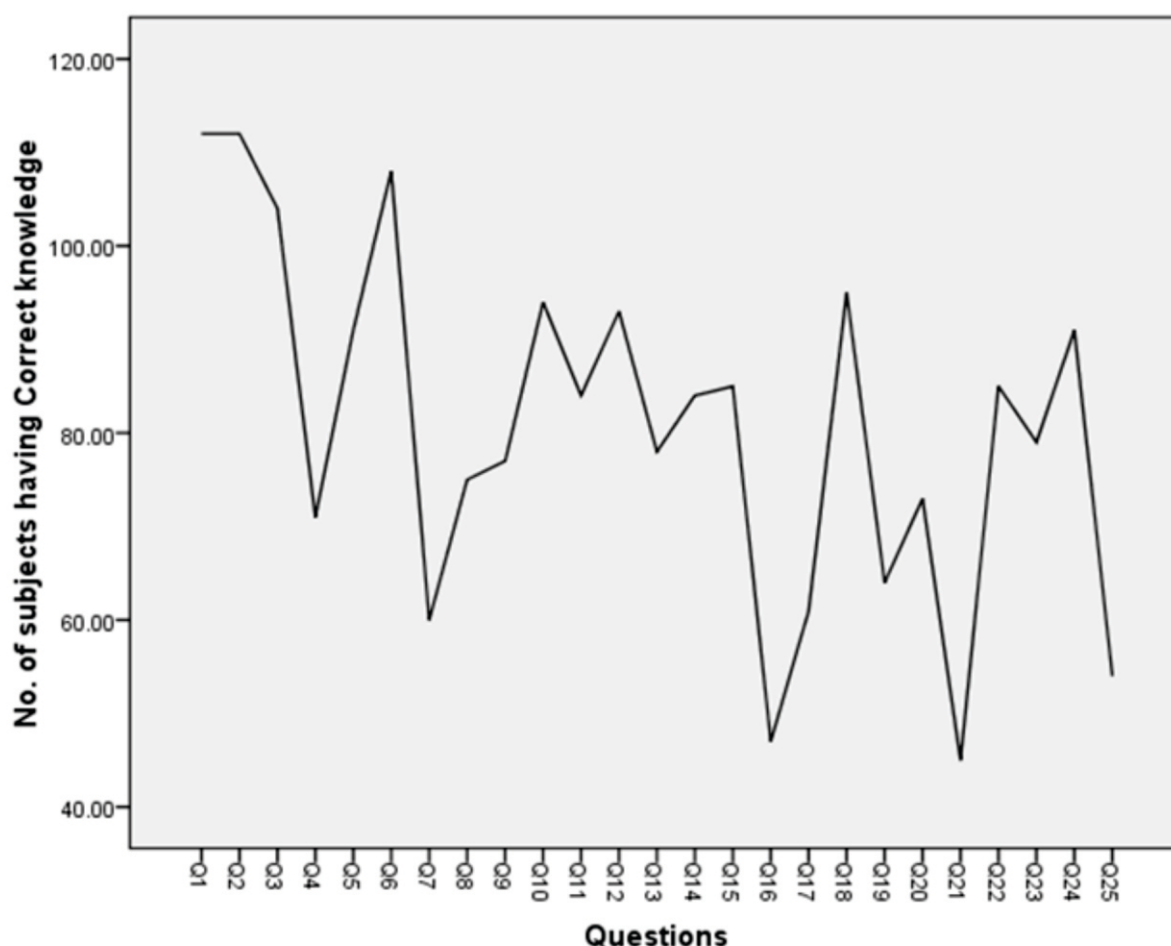
Fig-1: *Responses of Subjects Regarding Knowledge of Chikungunya Virus*

Key for Q's

Q1	CHIKV is spread by Aedes aegypti mosquitoe	Q14	Treatment for CHIKV can relieve symptoms only
Q2	CHIKV does not occur in cold temperature	Q15	Effective Management of CHIKV
Q3	CHIKV cannot be transmitted from mother to child	Q16	Use of ginger can be effective
Q4	CHIKV can be transmitted from blood transfusion	Q17	Use of turmeric can be effective
Q5	People having CHIKV develop symptoms after 3-7 days	Q18	Chikungunya virus infection is considered to be contagious
Q6	Symptoms of CHIKV are same as with dengue fever	Q19	Cause of CHIKV
Q7	Symptoms of CHIKV are same as with Zika fever	Q20	Diagnosis of CHIKV
Q8	Symptoms of CHIKV can cause death	Q21	Vector Types of CHIKV
Q9	Once a person is infected, it can be protected in future	Q22	Possible disability of CHIKV
Q10	CHIKV can recover from joint problem in a few days	Q23	Vaccine of CHIKV
Q11	CHIKV can be prevented by vaccination	Q24	Adequate Climate for the Virus
Q12	CHIKV can be controlled by water-filled container	Q25	Preventive Management
Q13	Specific antiviral treatment for chikungunya		

among subjects with < 10 years of duration of job was 66.70 ± 17.27 and among those who had ≥ 10 years of experience was 66.96 ± 20.37. The mean knowledge was statistically same in both groups of knowledge, p-value > 0.05. The good, satisfactory and poor knowledge of Chikungunya was statistically same in all age groups, p-value > 0.05. The good, satisfactory and poor knowledge of Chikungunya was statistically same in both gender, p-value > 0.05. The poor knowledge was statistically higher in those having more job duration, p-value < 0.05.

Discussion

Chikungunya is disparaged and it is still ordinarily connected with clinical manifestation coinciding with dengue infection, frequent geographical spread and mutations in the viral genetic material. These qualities advance the epidemics and the incapability to regulate transmission of the virus through vector.[5]
In present examination the mean age of the subjects was "36.28 ± 8.26" years with minimum age as "25" and maximum as "60" years. There were "60(49.59

%)" men and "61(50.41%)" women subjects. An examination was done on comparative goals with mean age of the participants was "20 ± 1" years.[14] A study on local population reported that average age as "25.2 ± 5.9" years with women majority (62.5%). In present examination the average age was higher and male cases were relatively higher[15]. The mean score of knowledge was "66.84 ± 18.43" with least and most extreme value as "28" and "100". One more examination announced that the mean score of knowledge was "12.8 ± 4.1" (% information score: 58.2%)[15]. In current examination the mean score of knowledge was increased that might be because of quantity of thing asked and criteria picked to gauge the information.

In present study there were just "20(16.53%)" cases who had good information on Chikungunya, while acceptable information was observed in "66(54.55%)" cases and poor information was observed in "35(28.93 %)" cases. The average score was measurably equal in all age groups, in the two both of occupation duration and in both genders. In addition the great, good and poor information on Chikungunya was likewise measurably similar in all age gatherings, gender and employment duration gatherings, p- value > 0.05.

In present investigation great information was observed in few cases and it was not related to experience duration and all members had only MBBS degree. In a Malaysian investigation a sum of 636 medical peers were included in the examination and about "68%" was response rate. On the whole, great information score towards Chikungunya was observed in "85" cases (13%), though moderate scores were seen in "283" cases (45%) and poor in "268 (42%)" cases. Amongst the members', the knowledge score indicated better scores in the age gathering of "18-20 (20%)" with women "(15%)", students of pharmacy "(19%)", Chinese "(15%)", and 2nd year students "(25%)" demonstrating better information scores.12 In this study relatively good number of cases had good knowledge such as "16.53%".

According to a cross-sectional examination, Chikungunya was less comprehended and seen as a more awful infection as compared to dengue. Medical students were bunched in 3 distinct gatherings as per their degree of assurance, "high" (28%), "moderate" (42%) and "low" (30%). Female students, those who lived with a parent, those who had a higher educational background, those who lived in their own house, and those who had a better awareness regarding infection showed protective health practices.[16] In a recent report which was meant to assess the knowledge regarding CHIK among HCSW, Just "31%" participants had great information regarding infection whereas "(36.4%)" had reasonable and "(32.6%)" had poor knowledge. It was a cross-sectional examination that was led among HCSW in seven regions of Pakistan from teaching organizations and medical clinics. The authors recommended that there is desperate need of instructive intercessions for HCSW as well as for understudies, regardless of the study discipline.[15] In like manner another cross-sectional investigation was conducted out at the "Jinnah Sindh Medical University" in Karachi, Pakistan. 200 medical students were evaluated on their insight into the Chikungunya infection and fever by means of an organized performa. Average knowledge was seen among "43%" and poor knowledge was seen among "7%" participants. The examination additionally uncovered a solid relationship between year of study and information score (p=0.003) while more knowledge was found in elder students; (p=0.014). Henceforth, the investigation presumed that a low level of medical understudies have adequate information about Chikungunya and its related fever, which is disturbing on the grounds that Pakistan has as of late confronted an extreme pandemic of Chikungunya. Different preparing projects and sermons are important to plan and instruct therapeutic understudies regarding fundamental clinical information on the disease.[14] In this report, there was no difference of knowledge score was seen in age groups.

Moreover another descriptive cross-sectional examination was executed to evaluate the information regarding chikungunya in postgraduate learners, medical residents and private clinicians. The fundamental results of the investigation has demonstrated that "160" out of "282 (56.74%)" specialists had sufficient knowledge, while incomplete knowledge was observed in "68" out of "282 (24.11%)". Knowledge was deficient among "54" out of "282 (19.15%)". There was no distinction in the degree of information among men and women and p-value turned out p > .05. Along these lines, the examination inferred that even though the degree of knowledge has enhanced from last ten years however the outcomes demonstrate that a lot of effort must be accomplished in order to expand the mindfulness, information and appropriate frame of mind. It needs legitimate preparing at the undergrad level, and throughout house to enhance the information of a medical practitioner and strength of the general public.[17] Likewise another examination was performed to evaluate information and preclusion works with respect to chikungunya and dengue among commu-nity individuals, in addition to

information, manage-ment and indicative practices among medicinal services laborers. The outcome has indicated that "15.2%" (n = 19) of community individuals had great information with respect to dengue, while "53.6%", (n = 67) of HCWS did. Better knowledge of dengue was seen in "20.3%" (n = 16) people residing in swamp regions and "6.5% (n = 3)" individuals from good country zones; (v2 = 4.25, P = 0.03). A decent information score for chikungunya was observed in "2.4%" (n = 3) of all members.[18] Another cross section and observational study was done in 2018 which announced that just "85" members (13%) scored great knowledge score towards Chikungunya, while "283(45%)" members scored moderate and "268 (42%)" members scored poor. In this way, the investigation infer that the HCWS understudies had moderate score regarding chikungunya be that as it may, instructive mediation projects can additionally advance their insight in the avoidance and the treatment of these fatal contami-nations.[12]

Conclusion

Through the findings of this study it is concluded that the good knowledge of was found in fewer no of first treating physicians. Hence, it is mandatory to imple-ment education training programs to enhance their knowledge. By enhancing their knowledge, preven-tative strategies, diagnosis and treatment plan can be up to standard.

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