OPEN ACCESS

Kashf Journal of Multidisciplinary Research
Vol: 02 - Issue 1 (2025)
P-ISSN: 3007-1992 E-ISSN: 3007-200X
https://kjmr.com.pk

THE SPREAD OF CHIKUNGUNYA: A COMPREHENSIVE SURVEY AMONG PEOPLE OF KARACHI, PAKISTAN WITH AWARENESS, IMPACTS AND PREVENTION STRATEGIES

Hira Akhtar
Department of Pharmaceutics, Faculty of Pharmacy and Pharmaceutical. Sciences, University of Karachi, Karachi, Pakistan
Syed Akif Uddin
Department of Pharmacy, Nazeer Hussain University
Syed Zohaib Hussain
Department of Pharmacy, Nazeer Hussain University, Karachi, Pakistan
Bushra AbdulJabbar
Faculty of Business and Management Sciences, Nazeer Hussain University, Karachi, Pakistan
Kinza khan
Students of Department of Pharmacy, Nazeer Hussain University, Karachi, Pakistan
Syeda Himum Batool
Students of Department of Pharmacy, Nazeer Hussain University, Karachi, Pakistan
Amna Pervaiz
Students of Department of Pharmacy, Nazeer Hussain University, Karachi, Pakistan
Afreen Naz
Students of Department of Pharmacy, Nazeer Hussain University, Karachi, Pakistan

****Corresponding author: Hira Akhtar (dr.hiraakhtar@gmail.com)***

DOI: https://doi.org/10.71146/kjmr178

Article Info

Abstract

Objective: *The basic aim of the study to evaluate and create awareness of people of Karachi regarding the spread of Chikungunya among people of Karachi, Pakistan.*

Methodology: *Inoder to conduct this survey based study Google form were generated and several questions were asked to the people link of the Google form was shared through different social media platforms.*

Results: *Study was conducted from August to October 2024. Total 101 people were respondent of the study. Data were collected and analyzed through SPSS software. It was found that out of 101 people 82 people had knowledge that it's a mosquito borne alpha virus causes Chikungunya and it can't be spread through casual contact 38 people out of 101 participants physician diagnosed their Chikungunya. Majority of the respondent suffered from all symptoms such as fever, headache, joint pain and skin rashes which last within 5 days.*

Conclusion: *This study basic aim is to provide awareness to the people that Chikungunya is not spread through casual contact as it spread through mosquito bite alpha virus, diagnosis through proper lab result is important to start treatment as well as cleaning and maintaining the sanitary and surrounding clean will help in preventing the spread of Chikungunya. .*

Keywords: *Chikungunya, mosquito, fever, joint pain.*

Introduction

Chikungunya virus (CHIKV) is a mosquito-borne alphavirus. In 1952, amid a widespread outbreak of a crippling arthritic disease in Tanzania, the virus was initially isolated from the serum of an afflicted patient. "Disease that bends up the joints" is how the Makonde people of Tanzania refer to the illness, which is why the locals call it "chikungunya." After being isolated for the first 50 years, CHIKV only sometimes triggered epidemics in Africa and Asia. Over the past 20 years, chikungunya has moved from Asia and Africa to Europe and the Americas, from the tropics and subtropics to temperate zones, with the one exception of Antarctica, from every continent where cases have been reported(Mourad O, 2022).

In late 2013, the first documented cases of locally transmitted chikungunya in the Western Hemisphere occurred in the Caribbean Island of St. Martin. The disease then spread rapidly throughout the Caribbean and Central and South America. As of late 2020, outbreaks of chikungunya in America had resulted in an estimated 3 million cases.

In Asia, the first CHIKV case was reported in 1961 in Cambodia, probably caused by the Asian genotype that was circulating in the region at that time. In 2011, three chikungunya cases were reported during the dengue virus outbreak in Lahore, Pakistan. In Karachi, a significant upsurge in CHIKV infection was documented in November 2016, leading to over 30,000 suspected chikungunya cases, 4000 of which were laboratory-confirmed (Khongwichit, 2021).

The female Aedes aegypti and Aedes albopictus mosquitoes, which also spread dengue and the Zika virus, are the main carriers of the chikungunya virus. These mosquitoes usually bite during the daytime. In residential places, they primarily breed from the water in little containers.

In the early 1990s, worn tires imported from the southeastern United States were found to be infested with mosquito eggs in a tire retreading company's storage, indicating the existence of Aedes albopictus in Italy (de Lima Cavalcanti TYV, 2022).

In symptomatic patients, CHIKV disease onset is typically 4–8 days (range 2–12 days) after the bite of an infected mosquito (Staples JE, 2009). A sudden, intense temperature (> 10 2°F) is accompanied by excruciating discomfort in the muscles and joints. Joint discomfort is symmetrical and bilateral; it typically affects the hands, wrists, ankles, and feet, but it can also affect the knees, elbows, and other joints. Morning stiffness could be quite bad. Additional acute symptoms include conjunctivitis, headache, back discomfort, exhaustion, nausea, joint swelling, and, in around half of cases, an erythematous maculopapular rash. The rash could be small and isolated or it could cover more than 90% of the skin. The majority of chikungunya infections that because symptoms clear up in a week to ten days, after which there may be a three-month post-acute phase. Atypical clinical symptoms of chikungunya, such as cardiovascular and neurological manifestations, can contribute to a significant increase in morbidity, even though chikungunya infections rarely progress to a severe or life-threatening form. A wide range of neurological manifestations associated with chikungunya have been documented, including encephalitis, myelopathy, peripheral neuropathy, myelitis, and meningoencephalitis (Khongwichit, 2021). Although asymptomatic CHIKV infections do happen, they are uncommon and are thought to affect between 3 and 28% of infected people, depending on the epidemic outbreak (de Lima Cavalcanti TYV, 2022).

Even while the death rate from CHIKV is relatively low, the virus causes severe morbidity that adversely affects the quality of life of those who are affected and causes large financial losses, particularly in developing nations (Mourad O, 2022). Despite the prevalence of CHIKV in

many regions, no immediate antiviral treatment currently targets the virus. Treatment of CHIKV-infected patients mainly provides symptom relief through the use of anti-inflammatory drugs, which have been utilized but with limited efficacy (Cai Li, 2023). Research on the role of vaccine or antimicrobial medicines in combating chikungunya fever is still ongoing(Naqvi S, 2017)

METHODOLOGY

Study Design:

A cross-sectional, questionnaire-based survey was designed in google form.

Study Duration:

The study was conducted between August to October 2024.

Sample Selection:

The target population included residents of Karachi. The participants were recruited through probability sampling methods, particularly from various neighborhoods, ensuring representation across different socio-economic backgrounds.

Questionnaire Development:

The questionnaire consisted of the following sections; the demographic information, knowledge about chikungunya, attitudes towards chikungunya, practices related to chikungunya.

Data collection:

The Google forms links was disseminated via social media plat forms like face book and WhatsApp, local community boards and health related forums to maximize reach. Participants completed the survey anonymously, ensuring confidentiality and security of their responses.

Data Analysis:

Responses from the Google forms were automatically collected in a Google Sheets format. Data were then transferred to statistical software SPSS for statistical analysis.

RESULTS

A Google Form-based poll was administered in Karachi from August to October 2024, and 101 responses in all were gathered. A set of questions intended to assess participants' understanding of the illness, their experiences with its symptoms, and their methods for prevention and treatment were provided. The data of respondents is analysed below in different tables.

Table1: Present the Demographic Factor of Participant

AGE						
		18-30	**31-42**	**43-60**	**Below 18**	**TOTAL**
GENDER	**Female**	56	6	1	2	65
	Male	26	6	5	0	36
TOTAL		82	12	6	2	**101**

EMPLOYMENT STATUS						
		FULL TIME EMPLOYED	**UM EMPLOYED**	**PART TIME EMPLOYED**	**OTHERS**	**TOTAL**
GENDER	**FEMALES**	10	33	10	12	65
	MALES	15	10	10	1	36
						101

Table: 2 Awareness and Knowledge of chikungunya

		Have you heard about chikungunya?			**Do you know chikungunya is transmitted by mosquito bites?**		
		NO	**YES**	**TOTAL**	**NO**	**YES**	**TOTAL**
GENDER	**Females**	8	57	65	13	52	**65**
	Males	2	34	36	6	30	**36**
TOTAL		10	91	**101**	19	82	**101**

Table: 3 Incidences and Reporting of Chikungunya Case

		Have you or anyone in your family been diagnosed with Chikungunya?			**How was it diagnosed?**				
		NO	**YES**	**TOTAL**		**LAB TESTS**	**PHYSICIAN DIAGNOSIS**	**SELF DIAGNOSIS**	**TOTAL**
GENDER	**Females**	28	37	**65**	16	12	26	11	**65**
	Males	14	22	**36**	11	4	12	9	**36**
TOTAL		42	59	**101**	27	16	38	29	**101**

Table: 4 Recovered Respondent

Recovered Respondents					
Count					
		Did the affected individual recover completely?			**Total**
			No	**Yes**	
Gender	**Females**	17	23	25	**65**
	Males	10	7	19	**36**
Total		27	30	44	**101**

Table: 5 symptoms and Diagnostic Data

		GENDER		**TOTAL**
		Females	**Males**	
		19	12	31
If yes, what were your symptoms?	All of the above	29	12	41
	Fever	3	5	8
	Fever + joint pain + skin rash	0	1	1
	Headache	1	0	1
	Joint pain	9	6	15
	No	1	0	1
	No idea	1	0	1
	Non because no one had it ever	1	0	1
	None	1	0	1
TOTAL		**65**	**36**	**101**
		17	9	26
How long did your symptoms last?	Days	11	6	17
	Months/ a month	16	7	23
	Weeks	21	14	35
TOTAL		**65**	**36**	**101**
		16	7	23
Did you take any home remedies to overcome symptoms?	No	32	14	47
	Yes	17	14	31
TOTAL		**65**	**36**	**101**
		18	9	27
If yes, were they effective?	Never did that	25	10	35
	No	8	6	14
	Yes	14	11	25
TOTAL		**65**	**36**	**101**

Table: 6 Treatment Plans

		GENDER		TOTAL
		FEMALE	**MALE**	
	Unaffected individuals	16	12	28
What medications did you take?	All	1	0	1
	All the above	1	0	1
	Antibiotics	10	5	15
	Antipyretic (e.g. Panadol, Paracetamol)	20	8	28
	Drips	1	0	1
	Muscle relaxant	2	0	2
	No idea	1	0	1
	No medicine not happened ever	1	0	1
	None	1	0	1
	Pain killer, antipyretic, antibiotic	1	0	1
	Pain killers (e.g. Synflex, Brufen)	9	9	18
	Painkillers and antipyretic both	0	1	1
	Pain killers, antibiotics and Panadol	1	0	1
	Sat gilo & ajwain kharasani	0	1	1
TOTAL		**65**	**36**	**101**
		15	11	26
For how long you take the medications?	10 days	19	11	30
	3 days	1	0	1
	5 days	24	12	36
	For a month	2	2	4
	Never had it	1	0	1
	No idea	1	0	1
	No mediation	1	0	1
	None	1	0	1
TOTAL		**65**	**36**	**101**
		18	9	27
Had you taken any supplements to manage symptoms?	No	26	14	40
	Yes	21	13	34
TOTAL		**65**	**36**	**101**

Table 7: Preventive measure and impact on population

		GENDER	
		Females	**Males**
Preventive measures taken against the chikungunya virus	cleaning standing water	3	4
	use of mosquito repellent	12	7
	wearing covered clothes	4	1
	all of the above	46	24
TOTAL		**65**	**36**
		101	
Overall perception of the threat of Chikungunya in the population	High	24	14
	low	11	5
	Moderate	30	17
TOTAL		**65**	**36**

DISCUSSION

As of September 30, 2024, there were about 460 000 cases of chikungunya virus disease (CHIKVD) and 170 deaths linked to the disease worldwide. The majority of the countries with the highest CHIKVD burden are in South and Central America, while outside of the Americas, Asia has seen reports of CHIKVD cases from India (69 439), Pakistan (2 447), Thailand (468), the Maldives (389), and Malaysia (72) (ECDC, 2024).

Global warming, or climate change, has affected many parts of the world in the past ten years, especially South Asian nations including India, Nepal, Sri Lanka, and Pakistan. The terrible effects of global warming have been particularly evident in Pakistan, where millions of people have recently been affected by an upsurge in catastrophic floods, severe droughts, heat waves, and heavy rainfall. Pakistan's largest and most populous city, Karachi, is situated on the Arabian Sea coast and has tropical, humid weather. Significant climate change has resulted in hotter summers and warmer winters. This has created an ideal environment for the growth of arboviral diseases, particularly dengue, malaria, and chikungunya, which frequently cause outbreaks(Rauf M, 2017).Since Karachi's warm, humid climate and unsanitary conditions, such as open sewers, feculent morasses, and a lack of a waste disposal system, provide ideal breeding grounds for mosquitoes that are present throughout the city, the study intends to investigate the range of chikungunya in Karachi(Simon F, 2008).

Since we used a random sampling technique for our survey, our study did not gather data on hospital cases that were reported. Although this method permits a general evaluation of the population, it inevitably restricts our capacity to obtain particular clinical information, like reports of blood samples or comprehensive medical histories from patients who have been diagnosed.

The purpose of this study was to evaluate the population's knowledge, prevalence, and attitudes on chikungunya in people of Karachi, Pakistan. According to the demographic information gathered for this study 36 Males and 65 Females took part in the survey as shown in Table 1.The findings showed that 91 out of 101respondents had a high knowledge on chikungunya virus and its transmission however the rest 10 of respondent don’t know about it. 91 people

had a misconception that illness might be spread through casual contact as shown in Table 2. According to the diagnostic results of this survey, 59 people had experienced chikungunya while 42 do not experience. 38 people been diagnosed with the CHIKV, which was verified by physician and 16 peoples diagnosed by lab test results while 29 self-diagnose the disease as shown in Table 3. In Silva L.A. and Dermody T.S.'s research study, CHIKV is represented by a fever-rash-arthritia syndrome. The results of our study show that the majority of participants had all symptoms including joint pain, skin rash, discomfort and fever as shown in Table 5. The participants mentioned a range of therapies, including taking supplements, using pharmaceutical treatments and alternative home cures. However, the majority of individuals were also taking various painkillers, antibiotics and antipyretics and their treatment lasted between five and ten days as shown in Table 6. In this survey, the Chikungunya diagnosed individual's recovery percentage was found to be about 33% (i.e. 44/74). In order to stop the spread of chikungunya, respondents reported preventive measures emphasize individual accountability and community awareness. Attempts to clearing stagnant water and participating in community cleanup initiatives were among the things that respondents most commonly highlighted. Insect repellent, long sleeves and bed nets were among the personal protective measures that many participants adopted as shown in Table 7. Education regarding the significance of these measures was essential, and many respondents said that public health initiatives were successful in increasing awareness. The government of Pakistan should also work to promote awareness and to limit the spread of CHIKV among the people to prevent the potential epidemic in Karachi. By implementing surveillance system, vector controlled strategies and improving other healthcare services can significantly mitigate the risk of transmission.

CONCLUSION

The basic aim of the study is to assess the knowledge of people of Karachi Pakistan regarding Chikungunya and this study providing awareness to the people such as cleaning standing water, use of mosquito repellant and wearing covered clothes to keep them self-prevent from this virus and diagnosis of the lab and treatment is very important to reduce symptoms like fever, joint pain and skin

Rash to prevent complications

REFERENCES

1. Mourad, O., Makhani, L., & Chen, L. H. (2022). Chikungunya: An Emerging Public Health Concern. Current infectious disease reports, 24(12), 217–228. https://doi.org/10.1007/s11908-022-00789-y
2. de Lima Cavalcanti, T. Y. V., Pereira, M. R., de Paula, S. O., & Franca, R. F. O. (2022). A Review on Chikungunya Virus Epidemiology, Pathogenesis and Current Vaccine Development. Viruses, 14(5), 969. https://doi.org/10.3390/v14050969
3. Silva, L. A., & Dermody, T. S. (2017). Chikungunya virus: epidemiology, replication, disease mechanisms, and prospective intervention strategies. The Journal of clinical investigation, 127(3), 737–749. https://doi.org/10.1172/JCI84417
4. https://www.who.int/news-room/fact-sheets/detail/chikungunya
5. Naqvi, S., Bashir, S., Rupareliya, C., Shams, A., Giyanwani, P. R., Ali, Z., Qamar, F., Kumar, V., & Talib, V. (2017). Clinical Spectrum of Chikungunya in Pakistan. Cureus, 9(7), e1430. https://doi.org/10.7759/cureus.1430
6. Rauf, M., Fatima-Tuz-Zahra, Manzoor, S., Mehmood, A., & Bhatti, S. (2017). Outbreak of chikungunya in Pakistan. The Lancet. Infectious diseases, 17(3), 258. https://doi.org/10.1016/S1473-3099(17)30074-9
7. Aamir, U. B., Badar, N., Salman, M., Ahmed, M., & Alam, M. M. (2017). Outbreaks of chikungunya in Pakistan. The Lancet. Infectious diseases, 17(5), 483. https://doi.org/10.1016/S1473-3099(17)30191-3
8. Simon, F., Savini, H., & Parola, P. (2008). Chikungunya: a paradigm of emergence and globalization of vector-borne diseases. The Medical clinics of North America, 92(6), 1323–ix. https://doi.org/10.1016/j.mcna.2008.07.008
9. Burt, F. J., Chen, W., Miner, J. J., Lenschow, D. J., Merits, A., Schnettler, E., Kohl, A., Rudd, P. A., Taylor, A., Herrero, L. J., Zaid, A., Ng, L. F. P., & Mahalingam, S. (2017). Chikungunya virus: an update on the biology and pathogenesis of this emerging pathogen. The Lancet. Infectious diseases, 17(4), e107–e117. https://doi.org/10.1016/S1473-3099(16)30385-1
10. Escobar, M., Nieto, A. J., Loaiza-Osorio, S., Barona, J. S., & Rosso, F. (2017). Pregnant Women Hospitalized with Chikungunya Virus Infection, Colombia, 2015. Emerging infectious diseases, 23(11), 1777–1783. https://doi.org/10.3201/eid2311.170480
11. Battisti, V., Urban, E., & Langer, T. (2021). Antivirals against the Chikungunya Virus. Viruses, 13(7), 1307. https://doi.org/10.3390/v13071307

https://www.ecdc.europa.eu/en/chikungunya-monthly