



## "THE KNOWLEDGE OF PHYSICIANS AND NURSING IN HEALTH CENTERS CENTERS OF AL RIYADH HEALTH AMONG PATIENTS INFECTED WITH DENGUE FEVER AMONG PATIENTS INFECTED WITH DENGUE FEVER".

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### **Abstract**

Dengue cases are often underreported in most hospitals and health centres, and are often not diagnosed as dengue, because their symptoms overlap with many other diseases. This study aimed to determine the knowledge of Physicians in health centers of Riyadh, the study is a cross-sectional descriptive study conducted on a group of Physicians and workers in health centers in the city of Riyadh, who provide medical consultations and health care in health centers. They number (253) individuals, including Physicians and practitioners in infectious diseases and internal medicine, and a number of nurses and midwives. The results showed that dengue fever is not well known among many health care workers, whether Physicians or nurses.

**Keywords:** Knowledge, Physicians, Health Centers, Patients, Dengue Fever.

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## **1. Introduction :**

Arboviruses are zoonoses that are typically transmitted from vertebrate to vertebrate via blood-borne arthropods, which are often mosquitoes or ticks [Diallo, et al, 2017]. Modeling estimates indicate that millions of dengue virus infections occur annually in various countries around the world, but only a small percentage of them are diagnosed clinically through a high fever, and most infections occur in urban areas in tropical and subtropical regions. Cases of imported dengue have been reported in non-tropical areas in other regions of the world, and in Africa in particular. However, the incidence of dengue is largely unknown due to poor knowledge and surveillance and failure to report cases and epidemics to the World Health Organization [Gubler, et al, 2007].

In the Kingdom of Saudi Arabia, the Ministry of Health has been informed of many cases of fever among foreign travelers after their stay in Saudi Arabia, especially among pilgrims, due to the diversity of their nationalities and countries, and given that Saudi Arabia is witnessing congestion with the number of pilgrims and travelers, and that there are many cases of fever. Dengue was diagnosed as influenza, and from this perspective, the researchers decided to conduct this study to find out the extent of health center Physicians knowledge of dengue fever, its symptoms, and methods of diagnosing and treating it.

## **2. General Knowledge about Dengue:**

Dengue is a mosquito-borne viral infection causing a severe flu-like illness and, sometimes causing a potentially lethal complication called severe dengue. The incidence of dengue has increased 30-fold over the last 50 years. Up to 50-100 million infections are now estimated to occur annually in over 100 endemic countries, putting almost half of the world's population at risk [Faye, et al, 2014].

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Dengue is a vector-borne disease transmitted by the bite of an infected mosquito. There are 4 serotypes of the virus that causes dengue. These are known as DEN-1, DEN-2, DEN-3, DEN-4. Severe dengue is a potentially lethal

complication which can develop from dengue infections.

Dengue is mainly transmitted by a mosquito (*Aedes aegypti*) and is distributed across all tropical countries. *Ae. aegypti* and other species such as *Ae. albopictus* are highly adaptive and their combined distribution can spread dengue higher up north across Europe or North America during summer. (Note: Travellers already infected with the virus also spread the disease when they get bitten by the local *Aedes* mosquito population). Dengue outbreaks can occur anytime, as long as the mosquitoes are still active. However, in general, high humidity and temperature are conditions that favour mosquito survival, increasing the likelihood of transmission [Ministère, et al, 2017].

## **3. Dengue fever:**

Dengue causes flu-like symptoms and lasts for 2-7 days. Dengue fever usually occurs after an incubation period of 4-10 days after the bite of the infected mosquito.

High Fever (40°C/ 104°F) is usually accompanied by at least two of the following symptoms:

- Headaches
- Pain behind eyes
- Nausea, vomiting
- Swollen glands
- Joint, bone or muscle pains
- Rash

### **Severe dengue**

When developing into severe dengue, the critical phase takes place around 3-7 days after the first sign of illness. Temperature will decrease; this does NOT mean the person is necessarily recovering. On the other hand, special attention needs to be given to these warning signs as it could lead to severe dengue:

- Severe abdominal pain
- Persistent vomiting
- Bleeding gums
- Vomiting blood
- Rapid breathing
- Fatigue/ restlessness

When severe dengue is suspected, the person should be rushed to the emergency room or to the closest health care provider as it causes:

- Plasma leaking that may lead to shock and/or fluid accumulation with/without respiratory distress;
- Severe bleeding;

Patients should seek medical advice, rest and drink plenty of fluids. Paracetamol can be taken to

bring down fever and reduce joint pains. However, aspirin or ibuprofen should not be taken since they can increase the risk of bleeding. Patients who are already infected with the dengue virus can transmit the infection via Aedes mosquitoes after the first symptoms appear (during 4-5 days; maximum as a precautionary approach, patients can adopt measures to reduce transmission by sleeping under a treated net especially during the period of illness with fever. Infection with one strain will provide life-time protection only against that particular strain. However, it is still possible to become infected by other strains and develop into severe dengue. When warning signs of severe dengue are present (listed above), it is imperative to consult a Physicians and seek hospitalization to manage the disease, with proper medical care and early recognition, case-fatality rates are below 1%. However, the overall experience remains very discomforting and unpleasant [Kajeguka, et al, 2017].

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of dengue worldwide each year and 3 billion people living in dengue endemic countries [Salou, et al, 2021].

#### **4. Where does the disease occur?**

Dengue is mainly transmitted by a mosquito (*Aedes aegypti*) and is distributed across all tropical countries. *Ae. aegypti* and other species such as *Ae. albopictus* are highly adaptive and their combined distribution can spread dengue higher up north across Europe or North America during summer. (Note: Travellers already infected with the virus also spread the disease when they get bitten by the local Aedes mosquito population). Dengue outbreaks can occur anytime, as long as the mosquitoes are still active. However, in general, high humidity and temperature are conditions that favour mosquito survival, increasing the likelihood of transmission [Watéba, et al, 2018].

#### **5. Material and Methods:**

This study is a cross-sectional descriptive study conducted on a group of Physicians and workers in health centers in the city of Riyadh, who provide medical consultations and health care in health centers. They number (253) individuals, including Physicians and practitioners in infectious diseases and internal medicine, and a number of nurses and midwives. Participation in the study required verbal consent from participants, and did not require any compensation as the voluntary nature of the study was emphasized.

Data were collected through a questionnaire that included a number of open-ended questions presented to the study participants, and were filled out immediately after explaining the objectives of the study. The questionnaire included questions related to the factors causing dengue fever, methods of transmission, diagnosis, and treatment, and some clinical tests. To verify the stability and validity of the questionnaire, a pre-test was conducted on a small sample of health care workers in a health facility outside the study area. The level of knowledge of Physicians and healthcare workers was judged as good, average or poor. Knowledge was good when the proportion of correct answers obtained was Knowledge was moderate when the percentage of correct answers was between 50% and 79%, and weak when the percentage was less than 50%.

#### **6. Results:**

The knowledge of Physicians and health center workers about the existence of dengue fever, the

factor that causes it, and the means of its transmission, as dengue fever is known to the majority of health care workers, whether Physicians or nurses, and the participants indicated that their knowledge and information about dengue fever was the result of training and study at the college, medicine, and field work in hospitals and health centres. All participants knew that dengue fever is caused by a virus, and that the means of transmission is through the bite of a mosquito. There was a great difference in knowledge of the existence of dengue fever, the factor that causes it, and the method of transmission between different professional groups, and the Physicians were Nurses and other healthcare workers are more aware of the existence of dengue fever. And the Knowledge of the clinical signs was most evident through the patient's severe headache, fever, joint and muscle pain, and hemorrhagic manifestations.

Distribution of workers in health centers, including Physicians and nurses of Riyadh, according to their knowledge of the presence of dengue fever, causative factor, and the method of its transmission.

Knowledge of confirmatory biological tests Over the 280 healthcare workers, 205 (73.21%) were aware that the confirmatory diagnosis of dengue is provided by RT-PCR and serology with higher rates among medical staff (Physicians and medical assistants,  $n = 164$ ) or 90.24% ( $n = 148$ ). There was a significant difference in knowledge of confirmatory biological tests ( $p < 0.001$ ).

Knowledge about dengue treatment:

Medical staff knew that treatment of dengue is symptomatic in the majority of cases. There was a significant difference in knowledge about the type of treatment. Analgesics (71.43%), antipyretics (65%) and bed rest (48.21%) were the most cited means of symptomatic treatment with a significant difference in knowledge of analgesics and antipyretics ( $p < 0.05$ ). The existence of a vaccine against dengue was known by only 16.79% of the healthcare workers. Other means of dengue prevention were well known in the majority of cases with a significant difference ( $p < 0.05$ ): sleeping under a mosquito net (77.86%); destruction of larval breeding sites (73.21%); use of repellent cream (57.50%).

## **7. Discussion:**

The knowledge of dengue fever among most of the participants, including Physicians and nurses in health centers, is that dengue fever is a contagious viral disease and its means of transmission are numerous. However, the

causative agent, which is the virus, and previous studies indicated that dengue fever was not well known among Physicians and nurses. The study of Sondo et al. showed. A high proportion of knowledge about dengue fever was about knowing the causes of dengue fever, and the media may have helped workers increase their knowledge of dengue fever [11]. In fact, dengue fever by mosquito bite may be confusing to some who do not realize that dengue fever is caused by a virus. The level of knowledge is not the same among all Physicians and nurses, the Physicians had a higher level of knowledge compared to the knowledge of the nurses.

The clinical signs of dengue were well known among Physicians, paramedics and nurses who had better knowledge as they were the ones who often provided consultations in health center facilities. A few years ago, a study on the detection of dengue fever in consultations conducted by the National Institute of Health in some health centers in the city of Lomé provided this good knowledge of clinical signs similar to malaria. Dengue hemorrhagic fever is the most common clinical form, which is also explained by the fact that most healthcare professionals know dengue as viral hemorrhagic fever.

Confirmatory tests for dengue, such as molecular biology and serology, are better known to clinicians, who are more familiar with these additional confirmatory tests than other health groups. This result may be attributed to the fact that molecular biology is already a new or difficult term for nurses, especially if they are not introduced to dengue fever during training and medical seminars. In fact, healthcare workers, especially nurses, are trained to provide nursing care and midwives are trained to Monitoring pregnancy, childbirth and postpartum. But they are not trained to diagnose diseases such as dengue fever, and the shortage of Physicians is causing some nurses to replace Physicians in some health centres.

## **8. Knowledge of Dengue Treatment and Prevention**

It is well known among healthcare providers that most viral diseases such as dengue are managed symptomatically, which explains the high use of analgesics/antipyretics (81.3%) in a study in Burkina Faso [Sondo, et al, 2018]. This high level of use is explained by the fact that signs such as fever, headaches, aches and pains and diffuse pain are in the foreground; in addition, analgesics and antipyretics are widely used in the treatment of febrile diseases. In general, anti-inflammatory

drugs were less used and the avoidance of Aspirin and Ibuprofen were mentioned in Guadeloupe [Hélène-Pélage, et al, 2015]. This proves that the majority of caregivers are aware that anti-inflammatory drugs increase the risk of aggravating the inflammatory reaction in viral pathologies and should be avoided as much as possible [CMIT, 2012].

In terms of prevention, the existence of a vaccine against dengue is not well known among healthcare workers, because the vaccine is not widely used and because of its recent development. As the means of transmission of dengue is similar to that of malaria, other means of prevention have been well reported in our series and in Burkina Faso in high proportions [Organisation, et al, 2020].

The limitations of this study are that the administration of the questionnaire was not straightforward because of the workload. This situation required the interviewer to distribute the questionnaire to staff and return on another day to collect the completed questionnaire. This certainly allowed some of the respondents to go and get the answers to the questions. As a result, the actual assessment of knowledge may be biased proportions [World Health Organization, 2020].

## 9. Conclusions

It is accepted among Physicians and nurses that dengue is the most common arbovirus in the world and is considered by the World Health Organization to be an emerging disease in urban areas in tropical and subtropical regions. Its causes, transmission methods, and treatment. Physicians or nurses often diagnose dengue fever as influenza. However, this knowledge is better among Physicians than among nurses from a diagnostic and practical standpoint. Dengue fever is often not diagnosed or assumed, given that dengue fever is relatively rare. Because there is no epidemic in Saudi Arabia. Malaria is often overtreated for fever and classic dengue cases are treated as malaria. However, care must be taken to diagnose severe dengue cases early and identify outbreaks.

At the end of this study, we suggest recommending to the medical and nursing staff in health centers in the city of Riyadh to think about dengue fever during medical consultations or in the case of a febrile seizure, especially requesting a supplementary examination to confirm it.

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