

Current Knowledge, Practices and Attitudes of Miami-Dade Residents About West Nile Virus Disease and its Prevention

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West Nile virus (WNV) is an arbovirus that affects many animal species, including humans. In most areas, WNV has a mosquito-bird cycle. Migrating birds are believed to play an important role in transferring the virus over long distances. WNV activity has been identified in 42 states and the District of Columbia, with more than 3000 human cases reported during 2002. Miami-Dade County has a diverse population characterized by a high influx of immigrants from Latin America and the Caribbean, as well as other areas of the world who may not share the same level of knowledge, attitudes, and practices related to the prevention of WNV and other arboviral infections. There are no previous studies describing the level of knowledge, attitudes, and practices related to the prevention of WNV and other arboviral infections among Miami-Dade residents.

Methods

In the month of March 2003, Miami-Dade County Health Department conducted a survey among 451 Miami-Dade County residents aged 18 years and older.

The survey was conducted by computer-assisted telephone interviewing using Computers for Marketing Corporation's computer-assisted telephone interviewing software package.

Households were selected randomly from all telephone-equipped dwelling units in Miami-Dade County. One eligible respondent was selected at random from each household included in the survey.

A survey instrument with versions in both English and Spanish was used to collect data for this project. The survey collected data on knowledge, attitudes and practices related to West Nile virus and other arboviruses.

Results

Seventy-seven percent of respondents reported having heard about WNV in the past, 40% identified fever as a symptom related to WNV, 21% reported not knowing what the symptoms of WNV are. Mosquitoes were identified as a WNV vector by 77% of respondents; 20% also associated mosquitoes with HIV transmission.

Fifty-three percent of respondents keep mosquito repellents at home. Fifty-seven percent of those respondents with history of recent travel reported using mosquito repellents during the trip.

Fifty-one percent of respondents identified the television as their source of WNV and mosquito-related information. Only 2.7% mentioned health department's documents as their source of information.

Compliance with personal protection against mosquito bites was as follows: 47% of respondents reported use of repellents while outdoors, 8% reported use of screens in doors and windows, 14% use of long-sleeves shirts and long pants while outdoors, and 18% avoidance of outdoor activities after dusk or before dawn. Twenty-two percent of respondents did not think that there was a serious risk of WNV infection in the community, but 37% thought it was as extremely serious. Infants (37%) and persons 50 years of age and older (41%) were identified as those with the highest risk of developing a severe illness due to WNV.

Conclusion

Miami-Dade County Health Department should implement an educational intervention among its residents to encourage the use of personal protective measures against mosquito bites.

The development of partnerships with local media, especially Miami area TV stations will be of paramount importance to the dissemination of educational information about WNV and other arboviral diseases among Miami-Dade residents.

Miami-Dade County Health Department should identify specific educational needs related to arboviral diseases among communities with a higher risk of exposure to mosquito bites due to travel or cultural issues.

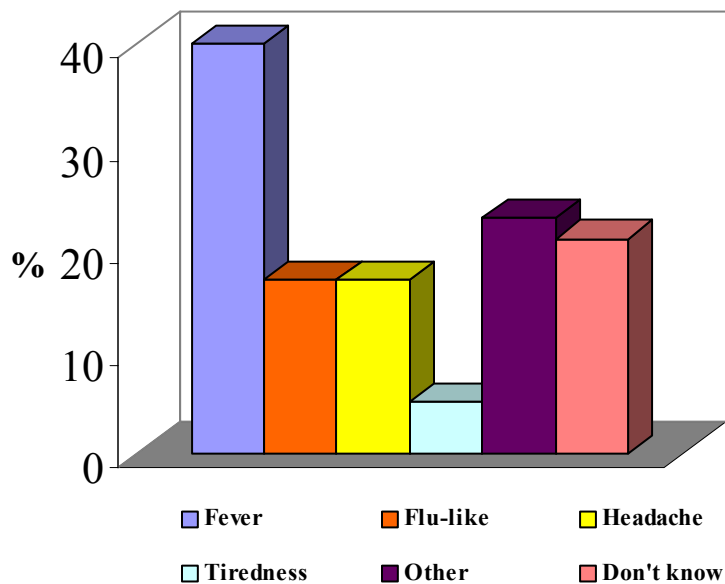
Acknowledgments

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**Table 1. Demographic characteristics of participants.
Miami-Dade County residents, 2003**

Characteristics	Number(%)
Age (years)	
18 – 49	54 (58.4)
50 – 64	15 (26.4)
≥ 65	66 (15.2)
Mean age 46.4 years (range 18 to 87)	
Gender	
Female	284 (63.0)
Male	167 (37.0)
Race/Ethnicity	
Non-Hispanic White	137 (30.9)
Non-Hispanic Black	67 (15.1)
Hispanic	222 (50.0)
Other	18 (4.0)
Predominant language spoken at home	
English	254 (56.7)
Spanish	164 (36.6)
Creole	7 (1.6)
French	7 (1.6)
Other	16 (3.5)

**Figure 1. Identification of symptoms associated with WNV.
Miami-Dade County residents, 2003**



**Table 2. Knowledge and Attitudes about West Nile Virus and Other Arboviral Diseases.
Miami-Dade County Residents, 2003**

	Number (%)
Ever heard of WNV	348 (77.2)
Ever heard of dengue	274 (60.8)
Ever heard of Saint Louis encephalitis	217 (48.1)
Believes that mosquitoes can transmit WNV	346 (76.7)
Believes that mosquitoes can transmit dengue	249 (55.2)
Believes that mosquitoes can transmit SLE	200 (44.3)
Believes that mosquitoes can transmit malaria	350 (77.6)
Believes that mosquitoes can transmit HIV/AIDS	89 (19.7)
Believes that mosquitoes can transmit hepatitis	100 (22.2)
Believes that WNV infection could be transmitted by	
Birds	171 (37.9)
Dogs	80 (17.7)
Cats	84 (18.6)
Horses	94 (20.8)

**Table 3. Exposure and Protective Measures Against Mosquitoes.
Miami-Dade County Residents, 2003**

	Number (%)
Exposed to mosquitoes abroad (during last 12 months)	40 (8.9)
Used repellents during trip [N=40]	23 (57.5)
Have repellents at home	239 (53.0)
Exposed to mosquitoes in workplace [N=380]	38 (10.0)
Employer applies protection against mosquitoes [N=38]	14 (36.8)
Spends = 2 hours outdoors daily [N=411]	165 (40.1)
Number of mosquito bites last week [N=444]	
None	332(74.8)
1 – 5	89 (20.0)
6 – 10	16 (3.6)
> 10	7 (1.6)

**Table 4. Perception and attitudes about WNV.
Miami-Dade County residents, 2003**

	Number (%)
Seriousness of WNV risk of infection in the community [N=332]	
Limited or not serious	4 (22.3)
Serious	135 (40.7)
Extremely serious	123 (37.0)
Concern about WNV risk of infection in household members [N=337]	
Limited concern	137 (40.6)
Concerned	97 (28.8)
Extremely concerned	103 (30.6)
Highest risk of becoming severely ill with WNV* [N=422]	
Infants	156 (37.0)
Young children	121 (28.7)
Young adults	57 (13.5)
Persons ≥ 50 years	172 (40.8)
Other	41 (09.7)

* Some responders chose more than one answer to this question

**Table 5. Perception and Attitudes about WNV and other Arboviral Diseases.
Miami-Dade County Residents, 2003**

Actions if a family member becomes ill with WNV*	N=324
Go to the emergency department	157 (48.5)
Go to a medical office	107 (33.0)
Call a physician	53 (16.4)
Call local health department	18 (5.6)
Call 911	12 (3.7)
Other	9 (2.8)
Probability that somebody may die due to WNV	N=306
Very likely	86 (28.1)
Somewhat likely	171 (55.9)
Not at all likely	49 (16.0)
Personal actions to prevent WNV infection*	N=352
Use repellents if outdoors	167 (47.4)
Use screens in doors and windows	29 (8.2)
Wear long-sleeve shirts, long pants if outdoors	49 (13.9)
Avoid outdoors activities after dusk or before dawn	62 (17.6)
Other actions	114 (32.4)
Do nothing	13 (3.7)
Don't know what to do	46 (13.1)
Use products to protect family and self from mosquitoes	159 (35.3)
Empties standing water at least once a week [N=298]	164 (55.0)

* Some responders chose more than one answer to this question