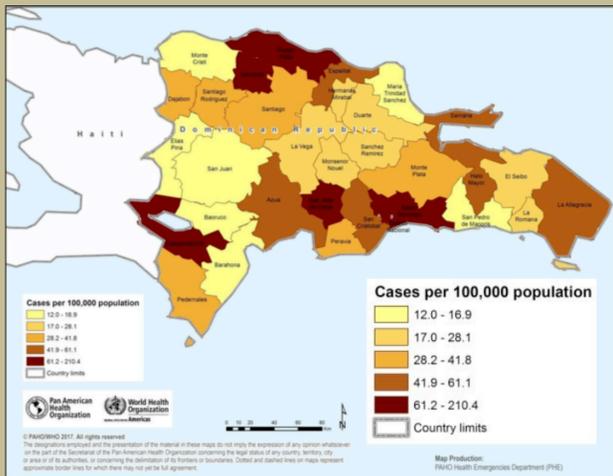


Introduction

The Zika virus is an emerging threat to many tropical regions of the world and has been associated with flu-like symptoms, GBS and microcephaly in newborns. In 2017, there were 966 suspected cases of Zika in pregnant women in the Dominican Republic alone. Every year the Latino Medical Student Association (LMSA) travels to Jarabacoa in the Dominican Republic to provide medical care and health education. Because this virus is the only known infectious disease that is both sexually transmitted as well as vector-borne, the survey attempted to ascertain how knowledge of the virus relates to sexual practices and pregnancy prevention. In addition, the survey helped determine the general knowledge the public has about the Zika virus, what they are currently doing to protect themselves from spread, whether or not the public perception of the virus is accurate and what information is being provided to the general public.



Methods

LMSA conducted a cross sectional survey in the rural communities of Jarabacoa over two 3-day periods at the beginning of October in 2016 and 2017. 138 individuals (N=123 or 89.13% female and N=15 or 10.86% male) completed a 14-point survey evaluating: level of concern towards Zika (1=no concern, 3=neutral, 5=extremely concerned), knowledge level of the disease, use of personal protection against the virus, how people initially heard about the disease and contraception use. Surveys were administered in a triage area prior to entry into clinic. Data analyzed with SPSS 22.

Results

Overall, women were more concerned than men about contracting the virus ($p < .001$, CI -2.510, -0.826). Of 73 respondents 66% learned about Zika from the TV/news and 24.6% from their medical provider. 81% knew that it is contracted from mosquitoes, 5% from blood and 2% from pregnancy, and only 17% of respondents knew that it is contracted through sex. For protection, 63% eliminated standing water, 53% use mosquito nets, 41% prayed to God and only 8% used condoms. Of the three women trying to get pregnant, the average level of concern was 4.67/5, only one was using mosquito nets as protection and none knew Zika could be transmitted through sex or learned about virus protection from their medical provider.

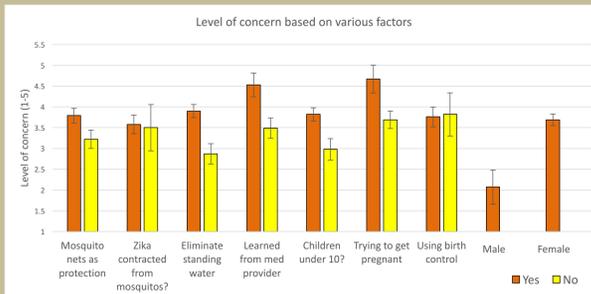


Figure 1: Level of concern based on various factors. LOC toward contracting Zika was significantly higher in people who use mosquito nets as protection ($p=.047$), people who eliminate standing water ($p=.001$), people who learned about Zika from a medical provider ($p=.016$), and those with children under the age of ten ($p=.007$) (figure 1). No differences in LOC were found in those that know Zika is contracted from mosquitoes, those who are trying to become pregnant, or those using birth control. Women were more concerned than men ($p=.002$).

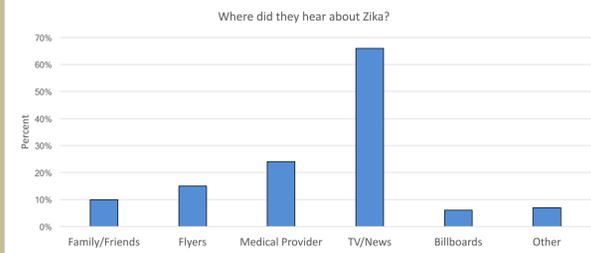


Figure 2: Percent of respondents who have learned about the Zika virus from various sources. 66% learned about it from TV/news, 24% from a medical provider, 15% from flyers, 10% from family/friends, 6% from billboards and 7% other.

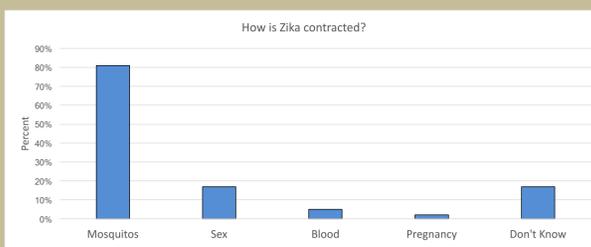


Figure 3: Percent of respondents who know the various ways Zika can be transmitted. 81% know it is transmitted through mosquitoes, 17% through sex, 5% through blood, 2% through pregnancy and 17% do not know how it is transmitted.

Discussion

The goal of our study was to ascertain the current knowledge, attitudes and practices in regards to the Zika virus in the rural community of Jarabacoa in the Dominican Republic. Our findings showed that 66% of people learned about the Zika virus from the TV/news suggesting that the number one source of public health knowledge for this rural community was TV. Overall, 71% of respondents knew that Zika could be transmitted by mosquito bite. However, only 17% knew it could be sexually transmitted and only 5% were aware it could be spread by blood. This was found to be in agreement with a PAHO/WHO/World Vision study in the Dominican Republic in 2016 which suggested only 4% of the population knew that Zika could be sexually transmitted [3]. This was concerning as there appears to be a large gap in public knowledge when it comes to information about the Zika virus. The study by PAHO/WHO/World Vision in the Dominican Republic in 2016 further showed that around 57% of the population felt that both local and national organizations have not done enough to protect the population from Zika [3]. The lack of proper public health education on the Zika virus becomes even more evident when compared with other Caribbean public health campaigns such as that in Martinique. Delet et al showed that around 44% of the population were aware that Zika was transmitted sexually and 97.3% knew it was transmitted by mosquitoes [2]. This increased knowledge was due to a public health campaign to increasingly educate patients in the OB/GYN setting and through media outlets such as television, newspapers and the internet. Interestingly, women in this study seemed to utilize more protective measures for the vector borne aspect of transmission such as sprays, removal of standing water and wearing long sleeves. However, similar to our study only 7% of respondents used condoms for protection despite the increased knowledge of sexual transmission (44% vs. 17% in our study) [2]. This suggests a similarity in cultural beliefs against the use of condoms. Further research needs to be done on the

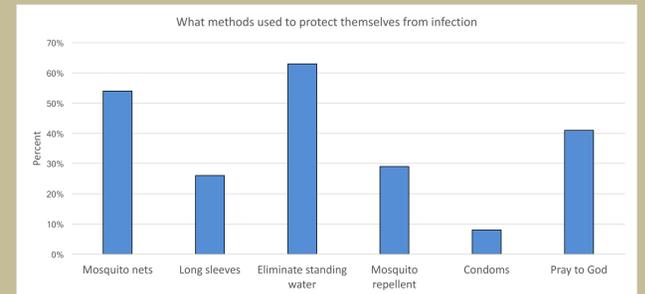


Figure 4: Percent of respondents using various prevention practices. 63% eliminate standing water, 54% use mosquito nets, 29% use mosquito repellent, 26% wear long sleeves, 8% use condoms and 41% pray to God.

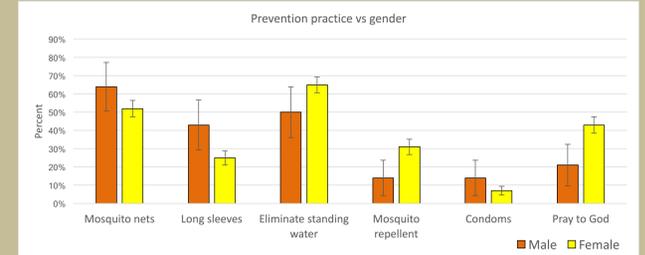


Figure 5: Prevention practice differences between male and female. No significant differences were found between the genders with regards to using mosquito nets, wearing long sleeves, eliminating standing water, using mosquito repellent, using condoms or praying to God.

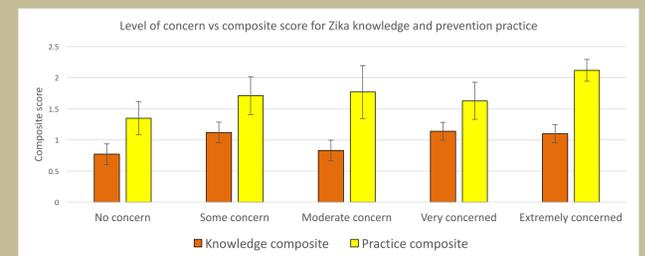


Figure 6: LOC vs. composite scores for Zika knowledge and prevention practice. No differences were found in composite knowledge scores vs. LOC based on one-way ANOVA ($p=.524$). Composite prevention practice was approaching significance based on one-way ANOVA ($p=.161$) with a general trend of increasing composite score with higher LOC.

non-vector transmission of Zika in order to properly drive public education as many avenues of transmission such as breast milk, seminal fluid, saliva, urine, amniotic fluid and blood have yet to be sufficiently studied [4]. In addition, research looking into dissemination of public health information between rural and urban centers would be useful to find any discrepancies in knowledge between these populations. Delet et al showed that about 64% of respondents wished more information was available on the internet and social media [2]. Future research should be done to assess whether the internet would be a viable avenue of public health dissemination in the Dominican Republic.

Conclusion

1. People are learning about Zika mostly from TV/news
2. Level of knowledge about Zika is low
3. People are protecting against vector borne transmission but not non-vector borne transmission
4. Public health education on Zika is lacking

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