Globalization 3: Analyses of Tropically Neglected Disease Long-Term Effects Such As Zika Virus

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ABSTRACT : *The study investigated the correlations between globalization (Global Village Mentality) and the spread of neglected tropical disease in particularly Zika Virus infections from **Critical Community Areas (CCA)** to previously assumed safer areas. It also analyzed the motivating factors associated with such outcomes. The CCA clustery data concentrated on **2703 Zika Virus** cases combined from **US States** and **US Territories;** but excluded **Brazil** from the study due to its possible data inaccuracies and inconsistencies. By definition, correlation was classified into five major categories which were **locally acquired, Travel-associated, Laboratory acquired, sexually transmitted, and Guillain-Barre syndrome** reported cases. **Ordinal** scale was used as the scale of analyses in this study and Sig. was set at **.05 or > 95%**. The study found that travel acquired cases profoundly accounted for more Zika Virus infections in the **US States** than those acquired locally. Furthermore, the study found that locally acquired Zika Virus infections profoundly outweighed travel acquired cases in **US Territories**. The implications of this study was to assist **public health policies decision makers** to use the study's findings **as a yardstick, threshold, or possibly benchmark in developing immediate intervention methodologies when dealing with the spread of Zika Virus infections, which could bring some positive social changes for US States CCA, US Territories CCA, Brazil CCA, and possibly beyond.***

KEYWORDS: Zika Virus, Globalization, Travel-Acquired, Locally-Acquired, Sexually-Transmitted

I.   INTRODUCTION

The purpose of this study was to analyze the long-term implications associated with tropically neglected disease such as Zika Virus and to underscore the roles globalization played in the spread of Zika Virus. According to Atatah and Kisavi-Atatah (2015; 2016), "normally developing countries are the ones which are affected by neglected tropical diseases because of various underlying factors like malnutrition, internal wars, poverty, poor sanitary conditions, plus economic factors as well as changes in climate conditions" (p. 46). Additionally, Atatah and Kisavi-Atatah previously stressed that;

> *But, globalization has changed all these authors have tried to analyze the changes in the pattern taking two common infectious diseases, measles and malaria. Globalization serves as assistance to infected measles carrier (person) from one region to another; but, it assists malaria required insect vectors such as mosquito to accomplish the same goal as well. Additionally, those who were infected prior to traveling to other regions often seek treatments and recorded in these regions.* (p. 46)

Once again, this study revisited the relationships between globalization "global village mentality" and the spread of originally tropically neglected diseases such as Zika Virus in the Americas as well as the associative long-term implications. In possibly mid-2015 and early 2016, Zika Virus came to the surface in Brazil with some unknown side effects which were obviously noticeable with newborn babies which appeared isolated to many Americans. However, as the nightmare grew, Americans especially Centers for Diseases Control and Prevention (CDC) (2016) took notes on the devastating implications of Zika Virus on newborn and stillborn babies. But, as of date the foundations associated with these implications remain unknown to many public health practitioners. Therefore, the focus of the public health study was to investigation two major hypotheses about the transformation of Zika Virus. First, the roles globalization played in the spread of Zika Virus, secondly, its

associative motivating factors that spread Zika Virus. Zika Virus has a long history in a remote African forest according to literature. In fact, the history of this tropically neglected disease such as Zika Virus has been overlooked for approximately 70 years; to be specific since 1947. However, it resurfaces appeared to be stronger than ever and the world is beginning to pay some undivided unequivocal attention to this phenomenon of the "old but new normal" when dealing with the fundamental misunderstanding of tropically neglected diseases such as Zika Virus. Therefore, the focus of this study was to investigate the roles globalization (Global Village Mentality) plays in the spread of Zika Virus infections and the analyses of its motivating factors of this emerging phenomenon.

II.   Literature Review and History of Zika Virus

As health care practitioners, we can no longer practice medicine, view health, or continue to use the same modalities or methodologies to address public health concerns (Atatah & Kisavi-Atatah, 2015; 2016). They stressed that public health practitioners to date should be concerned on how various diseases or infections can easily be imported from one region to another. As such, the mentality held by many public health personalities of ignoring certain infections found in many remote parts of the world is one that needs to be abandoned. This mentality fell under social construction of reality theory. For example, Zasshi (1968) warned that public health officials should not and cannot ignore the dangers of importation of infectious diseases such as Zika Virus. Interestingly, that was in 1968; which was almost 48 years ago. Surprisingly, neglecting tropical diseases such Zika Virus among others to mention a few is still the matter of today as it threatens unimaginable boundaries such Zika Virus resurfacing Brazil and threatens the Americas and even the United States of America.

Additionally, failing to address any new health threats in any part of the world can eventually impact the health of many areas including those in the western world. For example, recently the health care world has been shaken beyond imaginary measures with infections such as Ebola, Chikungunya virus, and most recently Zika virus. Furthermore, it has been argued that the paradigm with these assumptions that tropical diseases such as Zika Virus, Ebola, Dengue Fever, and Chikungunya virus cannot be realized in Western World has been proven to be a faulty, default, or thinking error (see Atatah & Atatah 2015;2016). A faulty, default, or thinking error fell under the Atatah and Kisavi-Atatah (2016) assumption about "the paradigm of life" as we look into infectious diseases which we have been intentionally neglected for tens or possibly hundreds of years. In 2016 for example, Atatah and Kisavi-Atatah while investigating Ebola's globalization relationship to the paradigm of life, they stress that;

> *The paradigm of life is the internalization of the factorized intrinsic of the presences; while the past is the externalization of the factorized extrinsic of the occurrences. However, the fundamental measurements or the factorizations of the actual futures are always ruled by mildness, moderateness, or severances of the unknowns, undefined, and unmarked rulers; who are always accompanied with or by humanistic skepticisms" (para. 1). And, that is the "Paradigm of Life" when dealing with EBOLA in 2014 and 2015; yet, its future still remains a humanistic skepticisms' quagmire. (p. 10)*

This is yet the case with Zika Virus as the investigations associated with it progress; but it appears that we have forgotten about Ebola which decimated West Africa in 2014 and 2015 and threatened the Western World alike.

For Example, Ebola infection to date continues to impact the health of many in Africa (CDC, 2016). United States, a country otherwise considered to safe from Ebola left many public health officials caught off guard when Ebola was imported to the United States in 2014 (Centers of Disease Control and Prevention CDC, 2014). Medical personalities were forced to act quickly by creating intervention measures which included training as well as learning how to use prepared equipment in order to stop Ebola in its tracts before becoming a public health nightmare in the United States (Higginbotham, 2014). The health care implications of the Zika virus to future generations are also one that cannot be overlooked. Fetus affected by the Zika virus suffers devastating long term health implications (McKenna, 2016). As such, the purpose of this scientific research study was to address the roles as well as the responsibilities of public health works at any capacity in effectively addressing public health concerns from onset prior to becoming an out of control public health catastrophe. Additionally, this research will also address the financial health implications associated with failure to address discovered health concerns in remote countries before reaching a serious health challenge to the rest of the world.

Zika virus was initially discovered in Uganda in 1947 by scientists who were interested in researching yellow fever. However, since few concerns could be confirmed in Africa and Southeast Asia over the years which posed limited health problems to many, no major health intervention was initiated (Zika Virus Net.Com, 2016). Ebola was initially discovered in Congo as well in Africa (Centers for Disease Control and Prevention CDC,

2016). Similarly, public health personalities abandoned Ebola as it was viewed as an infection that did not pose any significant health problems to any, as such, it was not important enough for any efforts to be initiated to address any additional intervention measures to tackle Ebola. According to Centers for Disease Control and Prevention CDC (2016), unfortunately no vaccine exits to treat or control the Zika virus or Ebola. While public health officials all over the world continue to be tasked in addressing Ebola infection, the Zika virus has now posed new health challenges that pose additional challenges to health care practitioner worldwide. Unfortunately to date Ebola and Zika virus have and they continue to pose great challenges to public health domestically as well as possibly internationally. The objectives of this study are to understand the roles importation "globalization" of the Zika virus plays and its impact on public health policies.

Generally, Zika Virus has been systematically eliminated in many Tropical countries and defined as simple fever like infection that had little effects on human. However recently, the Foundation News reports has drawn attention to the spread of Zika in Latin America and the Caribbean Foundation Thomson Reuters "FACTBOX" (2016). The countries and territories that have been identified by the **Pan American Health Organization (PAHO)** as having experienced "local Zika virus transmission" are Barbados, Bolivia, Brazil, Colombia, the Dominican Republic, Ecuador, El Salvador, French Guiana, Guatemala, Guadeloupe, Guyana, Haiti, Honduras, Martinique, Mexico, Panama, Paraguay, Puerto Rico, Saint Martin, Suriname, and Venezuela just to mention a few (Mitchell, 2016; 2016). The outbreak of Zika Virus 2015 and 2016 is unknown ever and the solutions for this outbreak is still far away. As complicated as it maybe, history has it that the recent identification of human transmission of Zika Virus was in 2009.

According to Foy el. (2011), in 2009 Brian Foy, a biologist from the Arthropod-borne and Infectious Diseases Laboratory at Colorado State University, sexually transmitted Zika virus infection to his wife. He visited Senegal to study mosquitoes and was bitten on a number of occasions. A few days after returning to the United States, he fell ill with Zika, but not before having had unprotected intercourse with his wife. She subsequently showed symptoms of Zika infection with extreme sensitivity to light. Foy is the first person known to have passed on an insect-borne virus to another human by sexual contact. (Foy et al., 2011; Enserink, 2011) The unknowns associated with Zika Virus unfolded for the first time since 1947. Additionally, complications continued because in 2015, Zika virus RNA was detected in the amniotic fluid of two fetuses, indicating that it had crossed the placenta and could cause fetal infection. Vogel (2015), on 20 January 2016, scientists from the state of Paraná, Brazil, detected genetic material of Zika virus in the placenta of a woman who had undergone an abortion due to the fetus's microcephaly, which confirmed that the virus is able to pass the placenta. (see Globo.com, 2016; BBC, 2016; CDC, 2016; Oliveira Melo et al., 2016). Thereafter, Brazil was considered as the **Critical Community Area (CCA)** when dealing with tropically neglected diseases such **Zika Virus,** Measles, Malaria, and Ebola just to mention a few (see Atatah & Kisavi-Atatah, 2015; 2016). The question of globalization now becomes an issue in understanding the correlation between easy accessible transportation to the CCA and the importation of Zika Virus to previously presume safer areas outside CCA and that was the focus of this study.

There is no doubt that Zika Virus surfacing time was and it is as bad as it can be. For example, Plans were announced by the authorities in Rio de Janeiro, Brazil, to try to prevent the spread of the Zika virus during the 2016 Summer Olympic Games in that city (BBC, 2016). It is a fact that Zika Virus making it to the Olympic venues, even before the World Classed Athletes, looks like a fundamental misfortune for the Brazilian Olympic Committee members, most especially for all Brazilians, and the Americans. In fact, it is mind bugging to go to Brazil to showcase one's athletic skills, only worry about mosquitoes' Zika Virus infections and transmissions in the back of your mind as you prepare for the world classed competitions. How back can it get? This is a lingering question in the minds of the "Brazil 2016" Olympiads, their countries, and most significantly, in the minds of their families. As a matter of fact, countries are symmetrically thinking about withdrawing of the "Brazil 2016 Olympic"; all because of Zika Virus.

Finally, according to the CDC (2016), Brazilian health authorities reported more than 3,500 microcephaly cases between October 2015 and January 2016. Some of the affected infants have had a severe type of microcephaly and some have died. The full spectrum of outcomes that might be associated with infection during pregnancy and the factors that might increase risk to the fetus are not yet fully understood. More studies are planned to learn more about the risks of Zika virus infection during pregnancy. In the worst affected region of Brazil approximately 1% of newborns are suspected of microcephaly (Nina, 2016; ECDC, 2016; CDC, 2016). These were infantry data because in June 2016, the total numbers remained unknown; but the growth is obviously expected because Zika Virus is not just an epidemic, it is a disturbing phenomenon with no answers. To start understanding it, this study looked into two major hypotheses. These hypotheses were (1) Does globalization (Global Village Mentality) has any correlation with Zika Virus infection? (2) What are the motivating factors behind the correlation between globalization and Zika Virus infections? These were the two hypotheses investigated in this study.

III. Theoretical Framework

This study used **Social Construction of the Ideology of Reality Theory** as a lens of analyses which stipulated that error thinking, faulty errors, default errors, gossips, false perceptions, assumptions, and presumptions lead to the creation of ineffective, inefficient, and in proficient public social policies (Berger & Luckmann, 1966). It is factual that since 1947, Zika Virus has been neglected as a tropical disease and a tropical problem by the Western World collectively. As sad as it may be, the "**internal intervals statistical inconsistencies' differences**" in-between and even in-within Tropical leaders for generations, overwhelmingly compounded an already "SAD" situation such as Zika Virus. However, the 2015 and 2016 recent effects of Zika Virus implications have reemphasized and revisited the actual definition of social policies' defaults behind Zika Virus as a social construction or even a reconstruction of the ideology of reality theory. The question now becomes does the ideology behind the overwhelming generational neglect of Zika Virus for almost 70 years falls under the practical definition of **social construction of the ideology of reality theory?** Hence this theory was singularly selected for this study.

IV. Methodology

This study investigated Zika Virus globalization "Global Village Mentality" roles using Non-Experimental Descriptive design measurements concentrating on Zika Virus active secondary data extracted from CDC (2016) records. The extracted data comprises of data from **January 2016 to June 30, 2016.** These measurements concentrated on general descriptive statistics, percentile values, central tendencies, dispersions, and distribution of data, along with one-way sample statistics test, and a confidence interval differences test. Ordinal scale was used as the scale of measurement in this study. As stipulated previously, Non-Experimental Descriptive study relies on the statistical analyses of existing secondary data, through comprehensive measurements of the above mentioned measurements' perimeters (see Creswell, 2009; Miller, 1981; Morrow, 2011; Frankfort-Nachmias & Nachmias, 2000; 2008; Atatah & Kisavi Atatah, 2015; 2016). These data analyses examined the overall status of Zika Virus cases in these 2 major classifications which were the United States of America (US) States and the United States of America (US) Territories (see below for classification of data) according to CDC 2016 data.

V. Data Collection and Classification

Collected data for this study were classified by CDC into two major areas excluding the number one active country which was and still Brazil in this study. Brazil was and is classified as an active Critical Community Area (CCA) because it was almost impossible to collect and analyze accurate data in CCA hence Brazil was excluded from this study. The classified two major areas in this study were **US States** which comprises of the 50 states ranging from **Alabama to Wisconsin** and **US Territories** which comprised of **American Samoa, Puerto Rico, and the US Virgin Islands** (see CDC, 2016).

1.1. Classifications were divided into five major Zika Virus infection cases and these cases were;

A. Locally acquired mosquito-borne cases reported
B. Travel-associated cases reported
C. Laboratory acquired cases reported
D. Sexually transmitted cases reported; and
E. Guillain-Barre syndrome

These cases were applicable for the **US States** and the **US Territories** in this study which collectively accounted for **2703 Zika Virus** cases combined. In fact, since all needed secondary data were available from January to June 2016, **Atatah et al. (2013), Statistical Significant Differences Multiplier (SSDM)** was not necessary for future data projections or estimations in this study. Above all, the definition of the classified data was as statistically simplified as it gets.

1.2. Hypotheses

This study hypothesized two major hypotheses which were;

1. Does globalization (Global Village Mentality) has any correlation with Zika Virus infections?
2. What are the motivating factors behind the correlation between globalization and Zika Virus infections?

VI. Data Analyses of the Study

As previously stated above, the fundamental history and resurface of Zika Virus became known to the public possibly worldwide in January 2016 and its humanistic metamorphoses remain unknown. However, this study

simply physically identified the mosquitoes responsible for the spread of many diseases such as Dengue Fever, Chikungunma, and in particularly Zika Virus.

Sample 1. Aedes Mosquitoes

Aedes mosquitoes transmit Chikungunya virus to people. These types of mosquitoes are found throughout most of the world even in the US States and US Territories. However, as slightly different they may look, there are practically responsible for the transmission of diseases such as Dengue Fever, Chikungunya Virus, and as well as Zika Virus. As shown above, both mosquitoes looked like **micro cousins** (see Atatah & Kisavi-Atatah, 2015) and (see Sample I as shown above).

Table 1. Descriptive Statistics

Statistics

		US State Zika Virus Infection	US Territory Zika Virus Infection
N	Valid	5	5
	Missing	0	0
Mean		167.0	373.6
Std. Error of Mean		163.01	370.10
Median		4.0000[a]	6.0000[a]
Mode		.00[b]	.00[b]
Std. Deviation		364.5	827.58
Variance		132863.5	684879.3
Skewness		2.235	2.236
Std. Error of Skewness		.913	.913
Range		819.00	1854.00
Minimum		.00	.00
Maximum		819.00	1854.00
Sum		835.00	1868.00

a. Calculated from grouped data.

b. Multiple modes exist. The smallest value is shown

Table 1. Showed no missing data in US States and in US territories 10 or 100% of data were valid data. It showed a **mean** of 167 in the States and 373 in the Territories; with a **STD** of 365 and 828 respectively. It showed combined .00 and .00 **minimum** and 819 and 1854 cases respectively in **maximum** (see Table 1 above).

Table 2. Correlations

Correlations

		US State Zika Infection	US Territory Zika Infection
US State Zika Infection	Pearson Correlation	1	-.254
	Sig. (2-tailed)		.680
	N	5	5
US Territory Zika Infection	Pearson Correlation	-.254	1
	Sig. (2-tailed)	.680	
	N	5	5

Table 2. Showed a 1 or 100% **Pearson Correlation** US States while US Territories showed -.254 or -254% **Pearson Correlation** and the Sig (2. Tailed) were .680 and .680 respectively which were significantly > 0.05 or < .95% which showed a **profound statistical significant differences** between the data in **2-tailed set sig** (see Table 2 above).

Table 3. US States Zika Virus Infections Cumulative Frequencies

US States Zika Virus Infections

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	locally Acquired	1	20.0	20.0	20.0
	Lab Acquired	1	20.0	20.0	40.0
	Guillain-Barre Syndrome	1	20.0	20.0	60.0
	Sexually Acquired	1	20.0	20.0	80.0
	Travel Acquired	1	20.0	20.0	100.0
	Total	5	100.0	100.0	

Table 3. Showed 100% **cumulative percent frequencies** which indicated 100% validity in data in US States with no missing data (see Table 3 above).

Figure 4. US Territories Zika Virus Infections Cumulative Frequencies

US Territories Zika Virus Infections

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	sexually Acquired	1	20.0	20.0	20.0
	Sexually Acquired	1	20.0	20.0	40.0
	Gullain-Barre Syndrome	1	20.0	20.0	60.0
	Gullain-Barre Syndrome	1	20.0	20.0	80.0
	Locally Acquired	1	20.0	20.0	100.0
	Total	5	100.0	100.0	

Table 4. Also showed 100% **cumulative percent frequencies** which indicated 100% validity in data in US Territories with no missing data (see Table 4 above).

Figure 5. One-Sample Statistics

One-Sample Statistics

|	N	Mean	Std. Deviation	Std. Error Mean
US State Zika Virus Infection	5	167.00	364.50	163.01
US Territory Zika Virus Infection	5	373.60	827.57	370.10

Table 5. Showed **mean** of 167 and 373.6 respectively and **STD** of 364.5 and 827.6 respectively (see Table 5 above).

Figure 6. One-Sample Test

One-Sample Test

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
US State Zika Virus Infection	1.024	4	.364	167.00	-285.59	619.59
US Territory Zika Virus Infection	1.009	4	.370	373.60	-653.97	1401.17

Table 6. Showed a (**df) Degree of Freedom** was 4 respectively; **Sig (2. Tailed)** .364 and .370 respectively, and **lower Confidence Interval of the Difference** was -.286 versus -.654 (see Table 6 above).

"Fig." 1. US States Zika Virus Infections
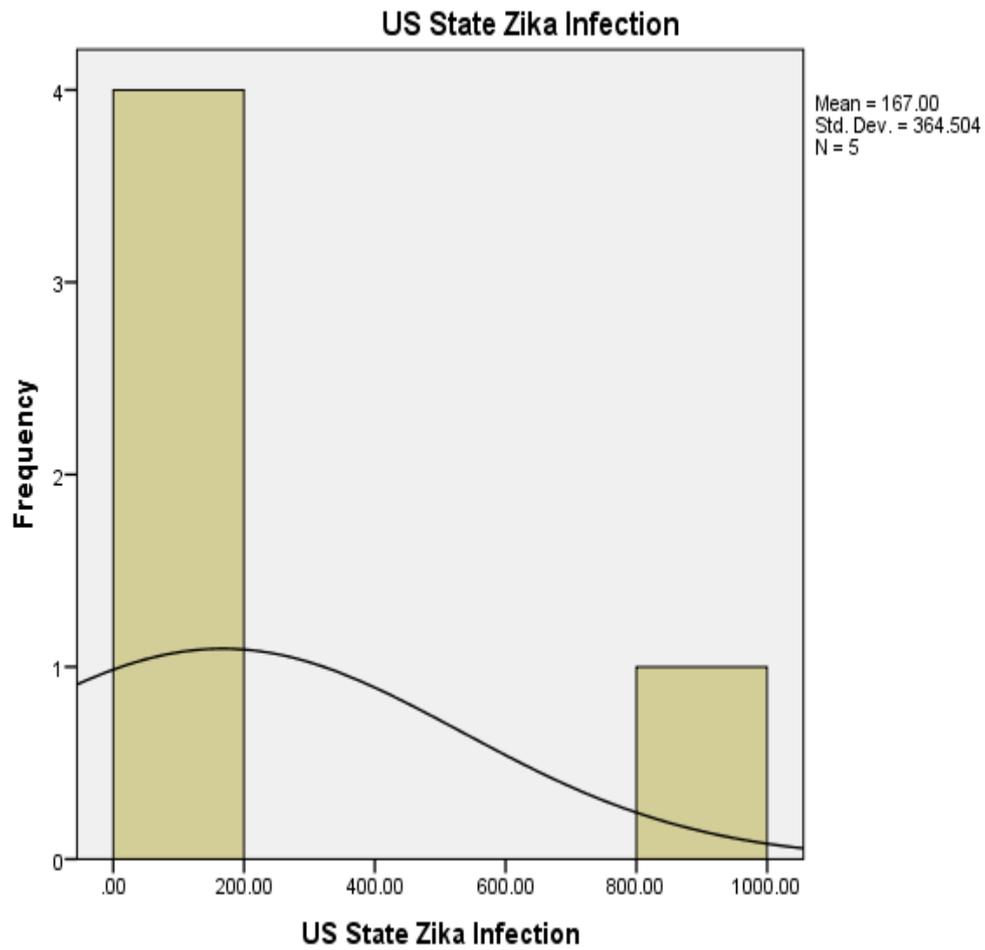
"Fig." 1 indicated a **mean** of 167.00, the **SD** of 364.51, and **N**=5 no missing number but there was a **significant statistical gap** between 0 to 200 and 800 to 1000 in travel and locally reported cases in US States **data distribution** (see "Fig." 1).

"Fig." 2 US Territories Zika Virus Infections
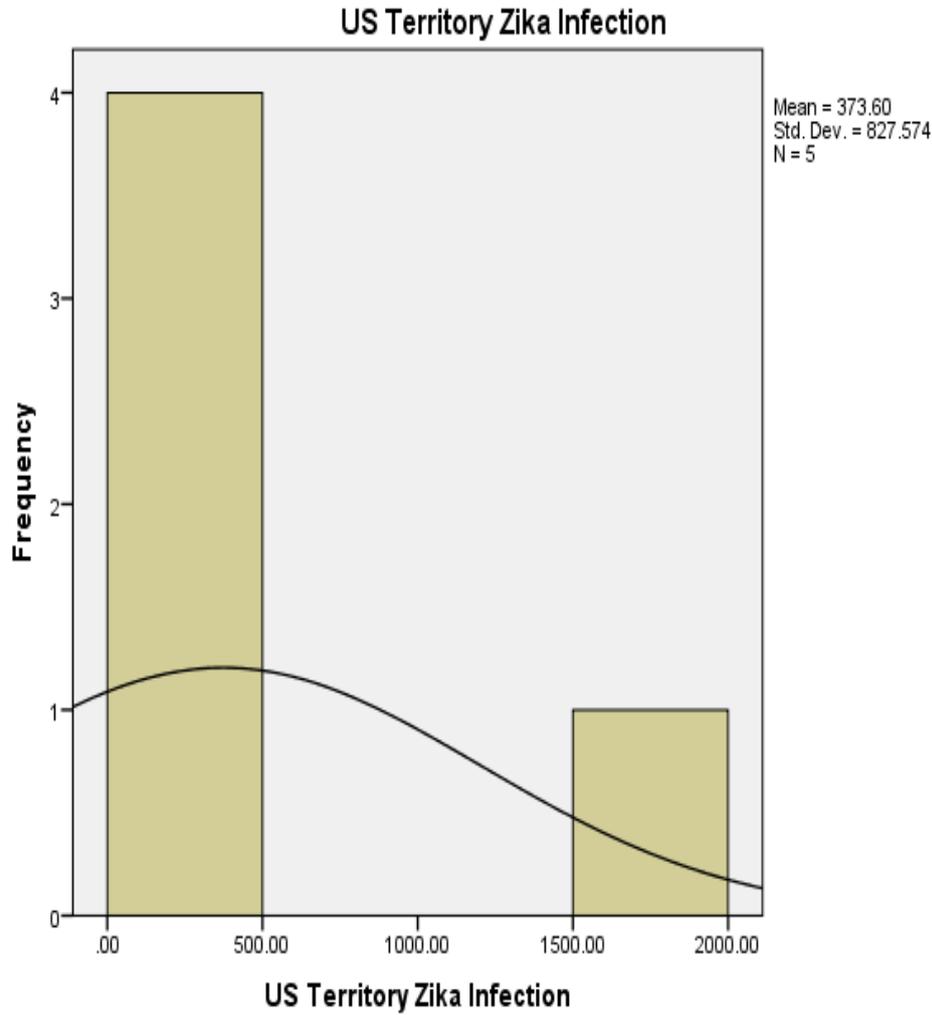
"Fig." 2 indicated a **mean** of 373.60.00, the **SD** of 827.57, and **N**=5 no missing number but there was a **significant statistical gap** between 0 to 500 and 1500 to 2000 in travel and locally reported cases in US Territories data distribution (see "Fig." 2).

"Fig." 3 US States Zika Virus Infections Color Coded Representations
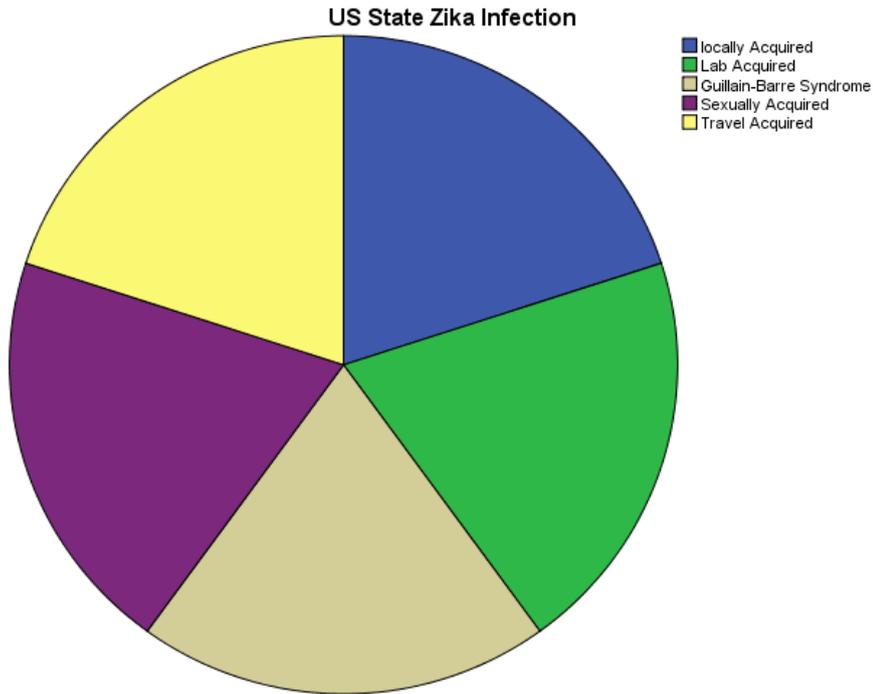
"Fig." 3 indicated a distributed color coded data in the **US States** Zika Virus infections (see "Fig." 3)

"Fig." 4. US Territories Zika Virus Infections Color Coded Representations
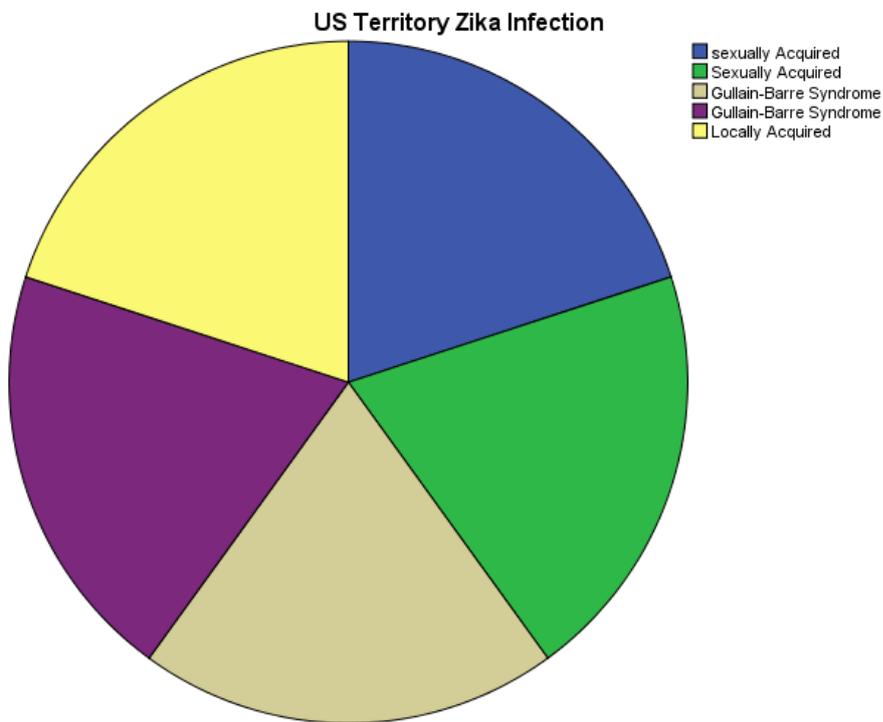
"Fig." 4 indicated a distributed color coded data in the **US Territories** Zika Virus infections (see "Fig." 4)

VII.   Results of the Study

This study found several issues associated with globalization and Zika Virus infections in January to June 30, 2016 in the two identified cluster areas. These areas were **US States and US territories** with an exception to the **CCA areas of Brazil.** The study found that of the 835 cases reported in the US States, 0 out 835 or 0% were reported as locally acquired mosquito-borne cases and 819 out of 835 or 98.1% were reported as travel-associated cases. Also, 1 out of 835 or 0.0012% was reported as laboratory acquired cases. Additionally, 11 out of 835 or 0.0132% was reported as sexually transmitted cases and 4 out of 835 or 0.0048% was reported as Gullain-Barre syndrome cases (see Tables 1 to 4; & "Fig." 1 to 4).

Contrarily, in the **US Territories,** 1854 out of 1868 or 99.3% were reported as locally acquired Zika Virus infections. At the same time, 6 out of 1868 or 0.0032% were reported as travel-associated cases and 1 out of 1868 or 0.0005% was reported as sexually transmitted case. Additionally, in the US Territories, 0 out of 1868 or 0% was reported as laboratory acquired case and 7 out of 1868 or 0.0037% were reported as Guillain-Barre syndrome (see Tables 1 to 4; & "Fig." 1 to 4 above).

Finally, in a One-Sample statistically test conducted, the study found a **profound statistical significant differences between US States and US Territories when dealing with 2016 Zika Virus infections.** The statistical variances were fundamentally significant as well; and the **Sig (2-tailed) test** showed .364 and .370 which **were overwhelmingly > .05 or 95% mean differences were 167.00 and 373.60 respectively.** Most significantly, the study found a 95% Confidence Interval of the Difference at -285.00 and -634 respectively at the lower level end and 619.6 and 1401.2 at the upper level end (see Table 5 & 6). In summary, the study found **a 1 or 100% positive correlation between globalization and Zika Virus infections** in the **US States** and a **negative correction between globalization and Zika Virus at -.254 in the US Territories** (see Table 2 above).

VIII. Statistical Analyses of the Study's Findings

As pinpointed above, this study hypothesized two major hypotheses which were;

1.   Does globalization (Global Village Mentality) has any correlation with Zika Virus infection?
2.   What are the motivating factors behind the correlation between globalization and Zika Virus infection?

The study found that majority of the reported Zika Virus infections in the **US States** were **Travel-associated from the Critical Community Areas (CCA), precisely 819 out of 835 or 98% cases.** During the same time, the study found that majority of the reported Zika Virus infections in the **US Territories were locally acquired cases.** This means that there was a positive association/relationship correlation between globalization and Zika Virus infection because those who travelled from the US States to or close to the investigated CCA were infected with Zika Virus **(verification of hypothesis 1).** Also, those in the **US Territories** who were relatively closer to the investigated CCA were **locally infected** with Zika Virus at the rate of 1854 or of 1868 or 99%. **To simply sum, travel "importation and transportation", localization, and sexually transmitted infections were the motivating factors between the correction between globalization and Zika Virus (verification of hypothesis 2).** Therefore, the study found that there was a strong relationship/association correlation between globalization and Zika Virus infections as travelling and sexually transmitted implications were the primary motivating factors between globalization and Zika Virus infections. Due to these confirmations, the study rejected the **Null Hypothesis *H*01:** that there was no correlation between globalization (Global Village Mentality) and Zika Virus infections and the study accepted the **Alternative Hypothesis *H*11:** that there was a direct correlation between globalization (Global Village Mentality) and Zika Virus infections (see Tables 1 to 6 & "Fig." 1 to 4) for the confirmations verification.

During the completion of this study's statistical data analyses, we found that 162 out of 820 or 20% of the Zika Virus infections was reported in Florida State attributed to Travel-associated cases. At the same time and the same associated reason, New York State reported 198 out of 820 or 24% while the state of Texas reported 42 out of 820 or 5% of the cases. California reported 52 out of 820 or 6% of the travel acquitted cases. At the same time, 0 out of 820 or 0% was reported in all US States associated with locally acquired Zika Virus infections cases. However, Florida, New York, California, and the state of Texas collectively combined reported **454 of 820 or 55.4% of all travel acquired Zika Virus infections in US States.** These findings indicated that the states of New York, Florida, California, and Texas are negatively positioned perfectly to become the **future US**

States Critical Community Areas (CCA) that public health and public policy administrators need to be concerned about in the **US States.**

At the same time in **US Territories**, American Samoa reported 0 out of 6 or 0%, Puerto Rico reported 5 out of 6 or 83%, and US Virgin Islands reported 1 out of 6 or 17% of travel acquired Zika Virus Infections. However at the same time in the US Territories Puerto Rico reported 1804 out of 1854 or 97% of all locally acquired Zika Virus infection cases. American Samoa and US Virgin Islands accounted for the remaining 3% cases. These findings indicated that in the **US Territories, Puerto Rico is negatively positioned perfectly to become the new US Territories Critical Community Area (CCA) to be concerned about in the future to come. Overall, the study found an overwhelming statistical significant differences between those who acquired Zika Virus due to travelling to or closer to CCA in US States and those who acquired it locally at home in US Territories.** In summation, the states of **New York, Florida, California, and Texas were well positioned to be the next US States CCA; while the Territory of Puerto Rico was perfectly positioned to become the US Territories CCA in the future to come.**

From a medical, bio statistics, and environmental standpoint, it has been established that microcephaly is responsible for the immediate side effects of the birth of children with micro or small skull and brain, damaged skull or drain, neurologically damages, stillborn with the defined characteristics, and small body in new born babies. It was also established that early Zika Virus infections of the placenta during the first trimester led to microcephaly or small/brain which later than first trimester's infections led to birth to children with normal skulls but with unusually small bodies known as Micronesia state (see Duffy et al., 2009; ECDC, 2016). Nonetheless, the metamorphosis of Zika Virus on unborn child at second and third trimesters is still under investigation. Also, it has also been established by the medical practitioners that the overall statistical expectation of the condition to be as minimum as possibly. But intriguingly, this Zika Virus outbreak in Brazil was way higher than statistical normalcy; hence the concerns. Usually in a case as such, the public health scholar-practitioners are faced with the task and responsibility of providing critical answers to the **Why, Where, and When (3Ws)**. The answers are as followed. **Why:** This study found that there was a **direct correlation** between Zika Virus and microcephaly which was higher than its normal expectation. **Where:** The study found that Brazil was/is the current CCA, but however, **New York, Florida, Texas, and California** are runner-ups for the **possibly future CCA in US States** and **Puerto Rico** stood alone in **US Territories** as the **undisputed runner-up to be the future CCA.** Those **US States** that accounted 3% to 4% in travel acquired related Zika Virus such as **Georgia, Maryland, Massachusetts, Pennsylvania, and Virginia** are likely to join the forum of the future CCA. Interestingly, **these identified US states posed a higher marginal propensity in becoming the future CCA as compared to others** US states. **When:** This epidemic was initially noticed possibly in early 2015 and internationally showcased itself in January 2016 and possibly beyond.

Generally, these findings fell under the premises of **Social Construction and possibly the Reconstruction of the Ideology of Reality Theory** because for almost 70 years, Zika Virus was neglected by the western world and its recent outbreaks are disturbing (Berger & Luckmann, 1966**).** Possibly, it may be a **complex classical definition of social reengineering**. Therefore, the importance of these statistical findings of this study serve as **a yardstick, threshold, or benchmark** for public health officials, public health policymakers, and public health scholar practitioners to implement immediate and accelerated preventive intervention methodologies as to prevent out of control future quagmires when dealing with Zika Virus infections.

IX. Implications of the Study

Similarly to previous study which also investigated globalization's roles in the spread of contagious diseases such as measles, this quantitative research study shed three major lights as implications for the world to address today and tomorrow to come. First, this research study showed that the days of allowing certain diseases such as tropical diseases like polio, dengue fever, and particularly Ebola to be fully neglected, are over (see Atatah & Kisavi-Atatah, 2015; 2016). This is the case because old but newer phenomenon such as globalizations "Global Village" actually accelerates the spreading of such diseases from regions to regions like wild fires. Secondly, the world should realize that as previously echoed by historic intellectual psychologists and prophets in the past, "We are all tied together as one inescapable network; that whatever touches one directly, touches the rest us indirectly eventually" (Dr. Martin Luther King, Jr. 1963-1968, personal communication) (see Atatah & Kisavi-Atatah, 2015; 2016) because Ebola is closer to you than you imagined. And so is Zika Virus infections. However, Zika Virus came with some unknown long-term humanistic side effects known as microcephaly effects on newly born children.

While microcephaly is not new to medicine; however, it is new to medicine worldwide that today Zika Virus carriers' mosquitoes can now transmit it into the human body system in 2015 and 2016. This is a new quagmire in than hands of public health officials, public policies officials, politicians, WHO, CDC, and all public administrators worldwide to tackle. It is a quagmire because if mosquitoes can carry and transmit Zika Virus infections into humanistic body system which could result to innocent unborn babies to be death or doomed at birth that is nothing but a quagmire. Also, if a man who has been unknowingly came in contact with these mosquitoes but can sexually transmit or infect the Zika Virus to an unborn child, this is yet again a super quagmire. As reported by CDC in 2016, in the worst affected region of Brazil approximately 1% of newborns are suspected of microcephaly. Therefore, the implications of the study findings are overwhelming and the metamorphosis of Zika Virus short-term, midterm, and long-term humanistic born and unborn babies' effects remained unknown due to its infantry stage of investigation. Finally, the implication of the findings of this study should serve as a **yardstick** for public health policies decision makers on the possible effective, efficient, and proficient ways on revisiting originally tropically neglected diseases in particularly Zika Virus.

X. Discussion and Conclusion

In summation as previously emphasized by Atatah and Kisavi-Atatah (2016), "this comprehensive research study made it possible to look into a historic phenomenon of globalization "Global Village" inputs in the spread of tropical neglected diseases from one region to another. This study shows that factors such as exportations and importations of goods and human encourage the spread of tropical neglected diseases particularly Ebola from one region to another expeditiously (p. 9). And so is Zika Virus in 2015 and 2016. It is a fact that Zika Virus has become a matter of debate from region to region. First, in the Americas regions, Zika Virus is still defined as a tropical disease and a tropical problem to address.

In fact, in the US, Zika Virus has been seen as a world epidemic by CDC and WHO and it should be taken seriously. CDC and WHO have dedicated their efforts in stamping out Zika Virus infections worldwide but it is has become politics or business as usual. For example, in the US President Obama requested 2 billion dollars to fight Zika Virus outbreak. Interestingly, US Congress headed by the Republican Party has objected to the President's request. Also, recently CDC has found out that the effects of Zika Virus only occur to pregnant women in their first trimester of pregnancy. However, the conclusiveness of this founding remains unknown due to the possibly unknown incoming metamorphosis of Zika Virus. In summary up, this study emphasized that Zika Virus should and must be taken seriously at its infantry stage before it becomes a **systematic quagmire** that could decimate our future children. As stressed by President Obama in 2016 to simply paraphrase "We have the choice to tackle Zika Virus infections upfront or to address it from rear-end in the future to come" (personal communication). Interestingly, that is the future outlooks of Zika Virus infections in 2016 and possibly beyond worldwide as stipulated by Atatah and Kisavi-Atatah (2016) as "the paradigm of life."

In the final analysis, this study shed some positive and negative lights for the world to tackle. On a **positive note,** this study underscored the factual truth by pointing out the **possibilities of the improbabilities** that if you travel to the CCA and overly get exposed to certain mosquitoes you may be Zika Virus infected at possibly 100% rate. Essentially, the study suggests that unneeded and unnecessary travels plans or trips to the CCA are not highly recommended at this critical time. However, on a **negative note,** this study shed some lights on the **improbabilities of the possibilities** that the years of neglected metamorphosis of a previously known to be harmless mosquitoes had created symmetrically a **severe threats to our innocent born and unborn babies in US States, US Territories, Brazil, and possibly beyond.** Also, on additional negative notes, the study pinpointed that it is possible to sexually transmit Zika Virus infection to partners; with some decimating lifetime side effects on our unborn and newborn babies. Therefore, **the lessons learned and the insights gained from this study should eventually bring some positive social changes to all the born and unborn children** in US States, US Territories, Critical Community Areas (CCA) of Brazil, and possibly worldwide.

XI. Recommendations of the Study

There is no significant differences between this study's recommendations as previously outlined by Atatah and Kisavi-Atatah (2015 & 2016, pp 10-11) when addressing Measles, Dengue Fever, and Ebola. However, these recommended pinpointed some different fundamental twigs.

Therefore, the recommendations of this study are as followed:

A. Tropical Regions Zika Virus CCA

1. First, it should be noted that tropical neglected diseases such as Zika Virus like others are common in the tropical regions CCA; and, tropical regions public health officials and public policymakers should develop better systematic ways in addressing them repeatedly; instead of waiting until they become epidemics or possibly quagmires.

2. Tropical regions CCA leaderships should be self-sufficient; instead of being repeatedly reliant on the rest of the world to rescue them from tropical diseases they can successfully tackle themselves.

3. Also, tropical regions CCA should find ways to develop and implement resources for the regions; and, they should stay away from "dreadlock corruptions mentalities" that have plagued tropical regions for centuries.

4. Tropical regions in critical community areas (CCA) should and must improve on their overall environmental as to reduce the spread of tropically neglected diseases such as Zika Virus, Measles, and Dengue Fever among others, which are overwhelmingly sustainable by mosquitoes in poor sanitary and unclean environments such as the current CCAs.

5. In relationship Zika Virus among others, Tropical Regions should and must clean up their acts by cleaning the environments that make it possible for all breeds of mosquitoes to flourish as they transmit their deadly viruses.

6. Women within the reproduction age and who are looking forward to having children, please, stay away from outsides, use some mosquitoes' repellants sprays, and exercise at homes or in the gyms if you have to it.

B. Other Regions Western World Zika Virus

1. Other regions especially western world should know that the impacts of globalization (Global Village Mentality) makes tropically neglected diseases such as dengue fever, malaria, and particularly Zika Virus closer to their homes, than they ever anticipated.

2. Secondly, other regions should understand that whatever happens in the tropical regions can easily mushroom tropically; and resurface in other regions symmetrically; instead of systematically and Zika Virus is yet another critical example of such.

3. CDC should continue to develop and implement international public health policies that can eventually bring some positive social changes to the rest of the world prior to becoming epidemics; regardless of their locations. Essentially, CDC should find ways in be more inclusive with foreign experts who are domestically more familiar with tropical diseases such as Zika Virus' metamorphosis instead pf being exclusive.

4. Also, charity organizations should find better ways of financially sponsoring developments and implementations of assistances without allowing such resources to end up in the hands of corrupt tropical leaderships. As such, positive collaboration is a must in achieving success when dealing with Zika Virus

5. Finally, other regions in particularly tropical regions in general should understand that Zika Virus is a mosquito borne disease and it can be sexually transmitted, but it has no effective vaccination. As such unnecessary travels or trips to the current CCA is not recommended at this time.

6. Well it has been suggested that spraying mosquitoes is a must for the western world, the study suggests that environmentally and humanistic friendly chemicals must be used as to minimize for cumulative effects' outcomes.

7. Women within the reproduction age and who are looking forward to having children, please, stay away from outsides, use some mosquitoes' repellants sprays, and exercise at homes or in the gyms if you have to it (same as #6 above Tropical Regions of CCA).

C. **Pharmaceutical Companies**

1. Pharmaceutical companies should understand that Zika Virus was initially discovered in 1947 and since then, no vaccine or medication efforts had been initiated.

2. Pharmaceutical companies should understand that instead of holistically operating on for-profit only singularly, periodic philanthropic approaches other companies have implemented worldwide, which are always effective, efficient, and proficient across the board and pharmaceutical companies should come to the charities' drawing board worldwide. Above all, they could learn some lessons from the endless works of philanthropists such as **The Clinton Foundation** and not to mention **Bill and Melinda Gate Foundation** because the records showed that the more they donate to the needy efforts, the more interpersonally satisfied and sustainable they become.

3. Finally, Pharmaceutical companies should also understand that since EBOLA's outbreaks in 2014 and 2015, endless philanthropists worldwide have donated hundreds of millions of dollars to assist humanistic Ebola's survival sustainability goals; and, the pharmaceutical companies should take advantage of the process at hand financially because Zika Virus of 2015 and 2016 outbreak is yet another public health issue that threatens the world.

4. Recently, **United States President Barrack Obama just allocated approximately 80 million dollars to vaccine development efforts as to control the spread of Zika Virus infections.** However small it may be in terms of profitability, the pharmaceutical companies should know that whichever company has the initial breakthrough; it should systematically financially benefit to all others handsomely, in the near future to come as the donations grow.

XII.   Acknowledgement

XIII. Conflict of Interest

We shared no conflict of interests in this study; because it was collectively, collaboratively, and financially self-supported by the researchers.

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