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Spatial clustering of HIV/AIDS mortality events in rural South Africa population between 2000-2006

Namosha, Elias E

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DECLARATION

I, Elias Namosha declare that this report is my work. It is being re-submitted for the degree of Master of Science in Medicine (Population-Based Field Epidemiology) at the University of the Witwatersrand, Johannesburg, South Africa. The award of the degree is subject to minor corrections to be made to the satisfaction of the Head of Department.

A handwritten signature in dark ink, appearing to read 'Elias Namosha', is written over a horizontal dotted line.

The 24th day of August, 2009

In memory of my late mother
Esiong Namosha (1982),
You will always be remembered.

I also would like dedicate this work to my father, Namosha W. Gigia,
late Yamoia Gigia (uncle), late Dawanan Zumptus (brother) and late Tomda Batayapun
(brother in law) and all immediate family members.

ABSTRACT

Background: Cluster detection analysis could be an appropriate approach to identify critical AIDS mortality locations for public health intervention.

Methods: GIS and Kulldorff's spatial scan statistic was used to investigate statistically significant AIDS mortality clusters ($p \leq 0.05$). SaTScan was used to perform the spatial analysis scanning while MapInfo was used as a visualizing tool. Mortality data between 2000-2006 were analyzed.

Results: AIDS exhibit strong spatial clustering tendencies as measured by the Kulldorff's spatial scan statistic method.

Conclusion: Further work is needed to understand the underlying mechanisms responsible for the spatial clustering.

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TABLE OF CONTENT

CHAPTER 1.0: INTRODUCTION	1
1.1 BACKGROUND.....	1
1.2 OBJECTIVES	3
1.3 LITERATURE REVIEW	4
1.3.1 THE HIV/AIDS BURDEN IN SOUTH AFRICA	6
1.3.2 HIV/AIDS and children	7
1.3.3 HIV/AIDS in KwaZulu- Natal (KZN)	8
1.3.4 HIV/AIDS in the Africa Centre HDSS	9
1.3.5 THE POTENTIAL FOR USING GIS.....	10
1.3.6 APPLICATIONS OF GIS.....	11
1.3.6.1 Spatial Analysis (Clustering)	13
1.3.6.2 GIS applications in South Africa	14
1.3.7 Limitations regarding GIS use	16
1.3.7.1 Factors limiting the potential of GIS in South Africa.....	17
CHAPTER 2.0: METHODOLOGY	19
2.1) STUDY AREA AND POPULATION SIZE	19
2.2) STUDY DESIGN AND DATABASE.....	20
2.3 GEOGRAPHIC AND STATISTICAL ANALYSIS	23
2.3.1 Mortality rates for the ACDIS data.....	23
2.3.2 Kulldorff's spatial scan statistic (cluster detection method).....	24
2.3.3 GIS and Cartographic display of mortality clusters.....	26
CHAPTER 3.0: RESULTS	28
3.1 AFRICA CENTRE HDSS POPULATION PROFILE.....	28
3.2 SPATIAL CLUSTERING OF ALL-CAUSE MORTALITY	30
3.3 SPATIAL CLUSTERING OF AIDS MORTALITY	31
3.4 ALL-CAUSE AND AIDS MORTALITY RATES	33
3.5 SPATIAL CLUSTERING OF OTHER CAUSE OF DEATHS CATEGORIES.....	37
CHAPTER 4.0: DISCUSSION.....	40
4.1 AFRICA CENTRE HDSS POPULATION.....	40
4.2 AIDS MORTALITY CLUSTERING	42
4.3 EMPIRICAL MAPPING APPROACH	44
4.4 LIMITATIONS.....	47
4.5 RECOMMENDATIONS	48
CHAPTER 5.0: CONCLUSION	49
6.0 REFERENCES	50
ANNEXURE	
Copy of the Ethics Clearance Certificate.....	55

LIST OF FIGURES

Figure 1. Global estimation of persons living with HIV/AIDS in 2005	1
Figure 2. Location of the study area in South Africa	19
Figure 3. Cause of deaths by year and sex.....	28
Figure 4. Crude death rate for males and females, 2000-2006	29
Figure 5. Age specific death rates (AIDS).....	29
Figure 6. All-cause mortality cluster	30
Figure 7. AIDS mortality clusters	31
Figure 8. Crude and standardized all-cause mortality rates, 2000-2003.....	33
Figure 9. Crude and standardized all-cause mortality rates, 2004-2006.....	33
Figure 10. Crude and standardized AIDS mortality rates, 2000-2003	34
Figure 11. Crude and standardized AIDS mortality rates, 2004-2006	35
Figure 12. Standardized maps (AIDS) across the two time periods	36
Figure 13. Injury mortality cluster.....	37
Figure 14. Unknown and all-cause childhood mortality cluster.....	38

LIST OF TABLES

Table 1. Mortality variable list.....	22
Table 2. Other communicable and non-communicable mortality cluster.....	39