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FACTORS AFFECTING HIGH INCIDENCE OF AIDS – RELATED MORTALITY AMONG SOUTHEAST ASIAN COUNTRIES

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ABSTRACT

Background: HIV infection is a burning leading cause of mortality rates worldwide and the prevalence of disease levels varies between different populations and countries. **Objective:** This study was conducted in order to determine the existing factors affecting high incidence of AIDS – related mortality rates among Southeast Asian countries. **Methods:** Descriptive – comparative design was used in this study to make abstract data into similar information's using cluster analysis. Data mining process was used to gather data taken from an UNAIDS online free access website. Data coming from Philippines, Malaysia, Indonesia, Thailand, and Cambodia were included in this study. **Results:** Low accessibility to HIV testing/diagnosis, higher incidence rate of HIV cases, and dramatically poor highly active antiretroviral therapy (HAART) coverage among suspected and diagnosed of HIV infections were among the identified factors affecting high incidence of AIDS – related mortality cases. **Conclusion:** The effective reduction of AIDS – related deaths could be improved and achieved through strengthening of prevention strategies, early diagnosis, and treatment of affected population groups among countries.

INTRODUCTION

Human immunodeficiency virus (HIV) is a retrovirus that targets cells of the immune system to destroy or impair their functioning, and as it progresses, the individual's immune defense becomes weaker, and the person is put more at risk to many infections (WPRO, 2019). The most advanced stages of HIV infection is termed as Acquired immunodeficiency syndrome (AIDS), and is defined as the occurrence of any of more than 20 opportunistic infections or HIV-related cancers (WHO, 2017). UNAIDS (2018) reported that there are approximately 37.9 million population across the globe with HIV/AIDS. This is quite far from an estimated prevalence of 34 million people living with HIV reported in 2010 global statistics (WHO, 2011), and such tremendous increasing cases can put the public at risk for, not only affects the health of individuals, but also impacts households, communities, and the development and economic growth of nations (UNAIDS, 2018).

Further, there were an estimated 5.9 million people who are living with HIV in Asia and the Pacific regions. It is a home to nearly 60% of the world's population and more HIV-positive people than any region outside sub-Saharan Africa (Avert, 2019). In fact, per records from July 2019, there were 1,111 newly confirmed HIV-positive individuals reported to the HIV/AIDS & ART Registry of the Philippines (HARP). This was 29% higher compared with the diagnosed cases (859) in the same period last year. Eighteen percent (199) had clinical manifestations of advanced HIV infection (WHO clinical stage 3 or 4) at the time of diagnosis (Bureau, 2019), and an estimated 770 000 people died from AIDS-related illnesses globally at the end of 2018 (UNAIDS, 2019).

However, despite the availability of a widening array of effective HIV prevention tools, methods and a massive scale-up of HIV treatment in recent years, UNAIDS cautions that the pace of progress in reducing new HIV infections, increasing access to treatment, and ending AIDS- related deaths is slowing down (UNAIDS, 2018). Thus, this study primarily explores the factors affecting the high incidence rates of AIDS – related deaths among Southeast Asian countries using the available online statistical data and key indicators. The findings could have influence on the development of innovative strategies and interventions to assist HIV – AIDS positive individuals to decrease and even prevent the incidence rate of AIDS - related illnesses worldwide.

METHODS

A descriptive – comparative design utilizing quantitative approach was then adopted. The data that was used in this study was taken from an online global HIV – AIDS statistical reports of UNAIDS 2019 using data mining process. Countries such as Philippines, Malaysia, Indonesia, Thailand, and Cambodia were included as sources of data due to its complete availability of their respective statistical reports on HIV – AIDS. The data which were gathered through data mining was then subjected to cluster analysis using SPSS software to formulate its hypothesis and propositions. The findings then become the basis for analysis, interpretation of results, drawing conclusions, implications, and recommendations.

RESULTS AND DISCUSSION

There were seven (7) hypothesis and three (3) propositions derived from the results of cluster analysis which were identified as the factors affecting the high incidence of AIDS – related deaths among Southeast Asian countries. Cluster analysis result is shown in Table 1.

Hypotheses

HO1: Countries with higher number of AIDS related deaths are those countries with higher percentage of late HIV diagnosis. The presence of stigma in society still exist thus preventing at risk individuals to submit themselves voluntarily for possible HIV testing especially with areas having geographic and cultural diversity (Hendriksen et al., 2009) like Southeast Asian countries hence turns into late stage diagnosis. Social stigma towards the disease prevents them from seeking medical attention until their situation makes it inevitable (AIDS & Mobility Europe, 2012). Attitude towards people living with HIV/AIDS and perceived HIV stigma was among the factors identified which were significantly associated with late HIV diagnosis. HIV stigma was marginally significant with multiple logistic regression analysis result. As compared to those who had low perceived HIV stigma, respondents who had high perceived HIV stigma were 1.7 times more likely to be diagnosed [AOR=1.7, 95%CI: 1-2.89] (Aniley, Ayele, Zeleke et al., 2016). A high internalized stigma towards HIV/ AIDS had a high odds of being diagnosed late compared to their counterparts (Beyene & Beyene, 2015).

Table 1. Final Cluster Centers.

VARIABLES	Cluster		
	1	2	3
Percentage of people living with HIV who knows their status	81.33	**51.00**	94.00
Percentage of people who knows their status who are on ART	69.00	**33.00**	80.00
Number of people living with HIV	79000.00	**640000.00**	480000.00
Number of new HIV Infections	6533.33	**46000.00**	6400.00
HIV incidence per 1000 population	.22	**.30**	.20
Percentage of Late HIV Diagnosis	26.67	**55.00**	53.00
Number of people newly initiating ART	12572.33	**34559.00**	27359.00
Number of AIDS related deaths	1700.00	**38000.00**	18000.00

HO2: Countries with higher number of AIDS related deaths are those countries with low percentage of people living with HIV who knows their status. HIV blood testing is an essential gateway to HIV prevention, treatment, and care & support services. Approximately 79% of people with HIV globally knew their HIV status in 2018. The remaining 21% (about 8.1 million people) still need access to HIV testing services (UNAIDS, 2018). A high risk of death (76%) was strongly associated using multivariate analysis with being diagnosed late (Croxford et al., 2017). CDC estimates that roughly 1.2 million people in the United States are living with HIV – and nearly one in eight of those are not aware that they are infected (Scope, 2016). The CDC reports, there were 16,350 deaths among people diagnosed with HIV in the United States (Miller, R., 2019).

HO3: Countries with higher number of AIDS related deaths are those countries with higher percentage of HIV incidence per 1000 population. More than 30 years after, almost 77 million people have been infected with HIV and about 39 million have died of AIDS - related causes (UNAIDS, 2014). There were about 1.3 million AIDS deaths in the top 30 countries representing 87% of global AIDS deaths in 2013. Of these, Central African, South Sudan, Côted'Ivoire, and Chad were among the highest countries with AIDS – related death rates per 1000 people living with HIV (Granich, Gupta, Hersh, Williams, & Montaner, 2015). The WHO African region remains most severely affected, with nearly 1 in every 25 adults (3.9%) living with HIV and accounting for more than two-thirds of the people living with HIV worldwide (WHO, 2019).

HO4: Countries with higher number of AIDS related deaths are those countries with higher number of new HIV infections. Globally, an estimated 1.7 million individuals became newly infected with HIV in 2018 (UNAIDS, 2018). About 32 million have died of HIV of the 75 million people who have been infected with this virus since the beginning of the epidemic. There are 37.9 million people worldwide living with HIV at the end of 2018, and an estimated 0.8% of adults aged 15-49 years old worldwide are living with HIV (WHO, 2019). In Asia and Pacific, Thailand has one of the highest HIV prevalence rates accounting for 9% of the region's total population of people living with HIV (Avert, 2019). An estimated number of 480,000 people were living with HIV in 2018 and 18,000 of them died of AIDS – related illnesses (Avert, 2019).

HO5: Countries with higher number of AIDS related deaths are those countries with higher number of people living with HIV. 12 countries (Cambodia, China, India, Indonesia, Malaysia, Myanmar, Nepal, Pakistan, Papua New Guinea, the Philippines, Thailand and Viet Nam) account for more than 90% of people living with HIV and more than 90% of new HIV infections in Asia and Pacific (UNAIDS, 2013), and 32.0 million have died from AIDS – related illnesses since the start of the epidemic (UNAIDS, 2019). Worldwide, 69% of affected individuals are from Africa with an estimated 25.7 million individuals diagnosed with HIV/AIDS, and is the highest among all regions in the world. Consequently, it has also the highest estimated deaths at 660 000 in 2017 (Evangelista, A., 2018).

HO6: Countries with higher number of AIDS related deaths are those countries with low percentage of people who knows status that are on ART. Highly Active Antiretroviral Therapy (HAART) is one of the identified significant factors influencing progression to AIDS after an HIV infection among infected people in China (Luo, Sun, & Du, 2019). In

fact, the use of HAART is one of the leading factors most strongly related to the prevention of AIDS-associated death compared to not having received HAART among AIDS diagnosed patients (Poorolajal, Hooshmand, Mahjub, Esmailnasab, & Jenabi, 2016; Chen et al., 2017). In Nigeria, while ART coverage is increasing slowly and remains below 20% and new infections are declining, the number of AIDS-related deaths is increasing. Four countries (Indonesia, Malaysia, Mozambique and South Sudan) representing 9% of 130,000 global deaths have experienced a 42% increase in AIDS-related deaths between 2005 up to 2013; and 568,968 or 24% of these people living with HIV in 2013 were reported on Antiretroviral Therapy (ART) treatment (Granich, Gupta, Hersh, Williams, & Montaner, 2015).

HO7: Countries with higher number of AIDS related deaths are those countries with higher number of people newly initiating ART. Knowledge and understanding about Antiretroviral Therapies (ARTs) were seen to be an important factors associated at 0.2 level of significant with late HIV diagnosis. This is supported with a studies in Southwestern China and Ethiopia wherein the low awareness about HIV/AIDS is strongly associated with late diagnosis and advanced HIV disease (Hu et al., 2019; Beyene & Beyene, 2015). Patients who had poor belief about ART were more likely to be diagnosed late as compared to those who had good ART belief (Aniley, Ayele, Zeleke et al., 2016). Globally, the scale-up of ART has been exceptional, especially among eastern and southern sub-Saharan Africa. However, despite improvement, the proportion of people living with HIV and receiving ART is highly variable and remains at very low levels in most countries, Middle – East, North Africa, Eastern Europe, Central Asia and some countries in Southeast Asia (Wang et al., 2016).

Propositions:

Proposition 1: Poor HIV diagnostic and screening programs lead to higher number of AIDS - related mortality. HIV testing is very essential for slowing the spread of HIV infection and often results in earlier treatment with drugs that may delay the progression to AIDS. Supplies and equipment needed by health workers in the prevention, diagnostic, and treatment of HIV – AIDS or suspected clients should always be accessible and adequate in any healthcare facility to provide quality services for these vulnerable individuals (Sadang et al., 2019). However, many people are unaware that they have been infected with HIV, so they may be less likely to take precautions to help prevent spreading the virus to others. People who do not know their HIV status may have a higher risk of death than diagnosed patients (Chen et al., 2017). Regional data and projections show that most people living with HIV in the region do not know their status and only find out when they are already seriously ill, which greatly reduces the efficacy of antiretroviral treatment. The impact of late diagnosis due to the lack of access to HIV testing and counseling is severe: one in four people who start on antiretroviral therapy in low-income countries globally have CD4 cell counts under 100, putting them at high risk of AIDS related illness and death (WHO, 2013). In fact, more than two thirds of men who have sex with men and people who inject drugs and more than half of female sex workers do not know their HIV status (UNAIDS, 2013). Globally, 19 million of the 35 million people living with HIV today do not know that they have the virus (Orbell et al., 2013). Due to gaps in HIV services, 770 000 people died from HIV-related causes in 2018 and 1.7 million people were newly infected (WHO, 2019).

Proposition 2: HIV incidence rate is directly related to number of AIDS related mortality. The global HIV incidence peaked was in 1997 at 3.3 million new infections, and from 2005 to 2015, the global incidence remained relatively stable about 2.5 – 2.6 million per year (Wang et al., 2016). The number of people living with HIV increased by 0.8% every year reaching 38.8 million in 2015, and the global mortality peaked was noted in 2015 at 1.8 million cases of AIDS – related illnesses (Wang et al., 2016). Most of the countries in eastern Europe and central Asia saw a sharp rise in the number of new infections for the past decade, with the highest annualized rate of change seen in Russia at at 13.2% (Frank et al., 2019). New HIV infections have been reduced by 40% since its peak in 1997 and an estimated 16% declined was recorded since 2010 from 2.1 million in 2018 (UNAIDS, 2019). As a result of, more than 56% of AIDS – related deaths have been reduced since its peak in 2004 (UNAIDS, 2019).

Proposition 3: Anti-retroviral therapy decreases the higher number of AIDS related mortality. There is no cure for HIV infection up to date. However, effective and early treatment using antiretroviral drugs (ARVs) can control the virus and even help prevent onward transmission to other people (WHO, 2019). Research shows that in sub-Saharan Africa, 76% of people on ART have achieved viral suppression, whereby they are unlikely to transmit the virus to their sexual partners (Orbell et al., 2013). HAART adherence resulted to decreased AIDS incidence from 6.9 to 1.4 per 100,000 population (80%

decrease, p=0.0330) and HIV-related mortality decreased from 6.5 to 1.3 per 100,000 population (80% decrease, p=0.0115) (Montaner et al., 2014). Between patients who had not initiated HAART, those who had initiated were more likely to have long interval of duration between infection confirmation and AIDS – related deaths (Zheng et al., 2014).

WHO South-East Asia region has made progress to combat the HIV/AIDS epidemic. Access to HIV services along the HIV continuum of care has expanded and, overall, the epidemic in the region has stabilized. However, despite this progress, coverage for prevention, testing and treatment service access to HIV prevention, testing and treatment for key populations, particularly PWID and MSM, remains insufficient (Pendse, Gupta, Yu, & Sarkar, 2016).

CONCLUSION

Findings of this study concluded some significant risk factors strongly associated with higher incidence of AIDS – related mortality among large and demographically diverse population of HIV cases in Southeast Asian countries. Incidence of AIDS – related deaths were higher among countries with low accessibility to HIV testing/diagnosis, higher incidence rate of HIV cases, and dramatically poor highly active antiretroviral therapy (HAART) coverage among suspected and/or HIV positive individuals. In a nutshell, it is very crucial for countries to strengthen their scope of HIV – AIDS prevention, early diagnosis and treatment (HAART) programs to prevent and even save lives among individuals suspected or diagnosed with HIV infections.

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