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Diversification of research methodological approach during model enhancements in health information system research

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Background:

The past Ebola virus disease (EVD) episodes in the Democratic Republic of Congo (DRC) and West Africa and the current Corona virus disease (COVID)-19 pandemic have demonstrated that infectious disease pandemics may and will continue to be a global health challenge. The health system has received its fair share of the impact of the pandemic. There are reports from the first wave of COVID-19 that describes how the rate new infections rapidly exceeded the health system's capacity to provide care. Health workers experienced the double burden of being overworked and also being exposed to COVID-19 due to depleted medical supplies. These experiences could lead to accurate deductions that the human race may experience more devastating effects if systems to detect and respond to infectious disease threats are not strengthen in due course. This is particularly important for developing countries where several human index indices and health outcomes continue to show dismal results.

Furthermore, studies demonstrate that strengthening the health information systems (HIS), the information generating engine of the health system with theory based empirical evidence, yields profitable prospects in infectious disease pandemic detection and response. However, despite the importance of the HIS in a pandemic scenario, there is mounting evidence to demonstrate that the information system theoretical models appears to be better fitted to developed countries with advanced HIS rather than in developing countries that still rely on the traditional paper based model in their HIS functions. This is further exacerbated by the fact that the research process to enhance theoretical models in developing countries may be too expensive and time consuming. Therefore, studies that focus on enhancing current information system models to better fit developing countries contextual reality with research methods that

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do not compromise the research integrity of the process, has significant benefits for current and future HIS research in developing countries.

Research Methodological Approach:

This paper will present preliminary findings of how the application of diverse research methods during the enhancement of the information system model approach can provide the much-needed empirical evidence to strengthen the HIS without compromising the methodological integrity of the research process. This study will combine a systematic review to complement the mixed method study design. The systematic review's focus on identifying possible contextual factors peculiar to a developing country's HIS that affect the performance of the HIS during an infectious disease pandemic could effectively substitute the exploratory mixed method design. The systematic review focused on an extensive search of the literature to identify contextual factors that affected the HIS's ability to provide information during the 2013-2016 EVD in the West African countries of Liberia, Sierra Leone and Guinea. While the mixed method approach focused on collection data from primary and secondary decision makers in two developing countries to determine the extent to which the identified contextual factors affected the performance of their HIS.

Conclusion:

This alternative approach has potentials to accrue benefits to conducting HIS research where time and cost constraints might compromise the quality of the research process.