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平成 22 年度専門課程

国際保健分野 1

Course Name : Post Graduate Public Health in International Health

Equity access focus on health-seeking behavior, nutrition, safe water, and sanitation in Laos PDR

Soulivanh PHOLSENA

Keywords: health inequality, water and sanitation, nutrition, social determinants of health, Laos

Thesis Advisors: Takuma SUGAHARA, Toshiro KUMAKAWA

Abstract

Objectives: The Lao economy has developed overall at a steady and rapid pace during the past decade, but the improvement is not uniformly distributed over different sub-populations or regions. The aim of this research was to focus on the ongoing issue of health inequity with three objectives: (1) to assess the situation of poverty, nutrition, housing, water and sanitation, and health conditions from 2003 to 2008; (2) to assess the level of inequality in health; and (3) to determine the relationship between people's health condition and social determinants/predictors.

Methods: We conducted a study by comparing two national cross-sectional surveys: the Lao Economic and Household Consumption Surveys (LECS) from FY 2002-03 (LECS III) and FY 2007-08 (LECS IV). The LECS covered the whole country. The sample size consisted of about 8,000 households (~50,000 respondents) selected randomly from population registers and the village list as a sampling frame. The LECS III was conducted over 12 months, starting March 1, 2002 and ending February 28, 2003, and the LECS IV was conducted between March 1, 2007 and ending February 28, 2008.

Results: The prevalence of poverty continued to decline from 31.4% to 26.3% between 2003 and 2008. However, the poverty situation was very different in urban and rural areas. It was found that the urban poverty rate was only 11.9%, but the poverty rate in rural areas with road connection was 33.2%. It was even higher in the rural areas without roads, at 54.9%. In terms of the nutrition situation, the food consumption differed very little between 2003 and 2008. For example, the daily rice consumption per capita increased from 574.9g to 577.2g. In addition, the disparity in food consumption by income was also very small. When comparing the highest income quintile, the lowest income earners significantly consumed more rice and vegetables, 53.3g/cap/day and 45.4g/cap/day respectively. However, they significantly consumed less meat, fish, and fruit, 21.1g/cap/day, 32.2g/cap/day, and 46.3g/cap/day respectively ($p < 0.001$). In terms of the water and sanitation situation, access to safe water rapidly increased from 28.1% to 56.1% and access to latrines also increased from 46.7% to 60.3%. However, it was found that 82.5% of the highest income quintile had access to latrines, but only 18.9% of the lowest quintile did. Furthermore, 45.7% of these highest earners had access to safe drinking water, but only 8.4% of the lowest income quintile did.

In terms of the health situation, people's health conditions improved between 2003 and 2008. For example, the respondents who felt their health to be very good increased from 8.8% to 12.3%. However, like income, it was found that poor health conditions were highest among the lowest income quintile, at 6.6%, while only 4.5% of highest income earners had poor health. In terms of the healthcare utilization, it was found that 19.7% of people in the highest income quintile got medical treatment for their health complaints. This was more than two times of the rate of people in the lowest income quintile, which was 9.0%.

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The lowest income quintile would need to spend about 4.72 hours (95% CI: 4.60 – 4.82 hours) to travel to the nearest hospital and about 3.17 hours (95% CI: 3.08 – 3.26 hours) to travel to the nearest health center. The transportation cost to the hospital per trip among the lowest quintile was equivalent to 1.79 times (95% CI: 0.65 - 2.9) that of the monthly household income, but it was only 0.14 times (95% CI: 0.09 – 0.18) for the highest quintile. The hospitalization cost per stay for the lowest income quintile was equivalent to 15.53 times (95% CI: 4.13 – 26.92) of monthly household income, but it was equivalent to 2.71 times (95% CI: 1.92 - 3.50) for the second lowest quintile, and only 0.78 times (95% CI: 0.58 - 0.97) for the highest quintile. By comparing the ratio of extremes, the disparities between hospitalization and transportation costs were 19.9 times and 12.8 times respectively. In addition, the lowest income quintile spent about 5.6 times more time than the highest quintile to travel to the nearest hospital.

Finally, by using linear regression analysis, a relationship was found between health condition and various social determinants, including gender, age, number of persons in the household, ethnicity, education level, rural residence, access to road connection, long-term illness and disability, rice, meat, living area, access to safe water, distance to water, time to health center, and income ($R^2 = 0.112$ and $p < 0.001$).

Conclusions: This research paper was one of the first studies focusing on the inequity underlying the rapid economic progress in Laos by analyzing the national survey data. According to the results, there were some improvements between 2003 and 2008 in a number of social indicators, including poverty rate and health status. However, most of the social indicators, including education, safe water, and sanitation were very low. Moreover, they were not uniformly distributed over different sub-population or regions. The income was also poorly distributed among the population and it drove a very wide gap in health conditions among the different levels of income. The lower income earners were more vulnerable, and therefore, it was very important to address these inequalities in order to achieve sustainable social development in the future.

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国際保健分野 2

Course Name : Post Graduate Public Health in International Health

Towards *Schistosomiasis* control and elimination: comprehensive interventions involving chemotherapy, health education, and environmental modification covering Japan, China, and Iraq: a literature review

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Keywords: *Schistosomiasis*, *schistosomiasis* control in Japan, *schistosomiasis* control in China, *schistosomiasis* control in Iraq, transmission control, morbidity control

Thesis Advisors: Fumihiro SATA, Etsuji OKAMOTO

Abstract

Background: *Schistosomes* have infected man for over four millennia. Papyrus of Kuhn (2000 BC) hieroglyphics were believed to refer to haematuria, a clinical sign of urinary *schistosomiasis*, and the Ebers Papyrus was said to give remedies for its cure, but this interpretation is questionable. However, epidemiological studies began in the middle of the 19th century both in Egypt and in Japan. Approximately 207 million people were estimated to be infected with the disease. Seven hundred-million people are estimated to be at risk in 74 endemic countries. More than 90% are in African regions. The global burden of the disease is 4.5 million disability-adjusted life years.

Objectives: A short history of the World Health Organization scenarios related to *schistosomiasis* control, with a detailed historical review of the disease, and its control strategies in three different countries (Japan, China, and Iraq) which have different epidemiological situations.

Study Design and Methods: Computer-based details search for English journal articles through PubMed using the keywords below in relation to each country. Then, each country's control strategies were discussed in detail in a way that is consistent with WHO strategies (morbidity control, transmission interruption and elimination) to combat the disease and eliminate it, to decrease the global burden of *schistosomiasis*. In addition, unpublished data from the CDC Center/Iraq was used.

Results: The control of *schistosomiasis* is one of the most difficult tasks facing public health services in affected countries because no single method can control it. In addition, the control measures for *schistosomiasis* using a combined approach are very expensive and have to be maintained over the mid-to-long term to be effective. The WHO shifted control measures from snail control in 1980, to morbidity control in 1984, and then to transmission control in 1993, if resources were available in addition to the chemotherapy. In 2000, an elimination strategy was proposed for areas of low transmission.

Japan was one of the few countries that succeeded in eliminating the disease, in 1977, even without using effective drugs or vaccines. The Japanese scientists contributed greatly to the discovery of the parasite (they were the first to name

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S. japonicum as a new species), its mode of transmission, and its snail intermediate host. Snail control by molluscicides and environmental modification, especially cementing water canals and ditches as well as land reclamation, were the prominent approaches in the control of the disease. In addition, many other factors contributed to the success of the control measures. These included: the devoted Japanese personality, a government willing to allocate a good budget for control measures, good planning, hard work, the great cooperation of universities in continuous research that improved social hygiene and sanitation, community (especially farmers) participation, and the rapid socio-economic development of Japan.

Compared to Japan, in China, the problem was of a great magnitude due to a large land area with more complexity. Two distinct periods were obvious in the long march to combat the disease. Before the 1980s China mainly focused on snail control, and after the 1980s it was mainly concerned with morbidity control using chemotherapy, health education, and selective molluscicides. Further reduction was made after launching the 10-year World Bank Loan Project (1992-2001). There was different intersectoral collaboration especially between health and water conservancy, agriculture, forestry, and educational sectors. In addition, there were special measures for high-risk people, such as good school-based health education. Chinese scientists also contributed largely to the *schistosomiasis* control, especially to the development of new serological diagnostic tests and vaccines.

Regarding Iraq, there was a great contribution made by British troops during and after World War I. Thereafter, a control program was started with technical assistance from the WHO. A combined approach was the prominent feature of the overall program, which was integrated within the primary healthcare (PHC) activities. The first pilot program was implemented in a highly endemic area south of Baghdad, and then the project expanded to include all the endemic areas. In addition, there was successful school-based health education from 1970 to 1990 because there was nearly 100% enrollment in primary school. Moreover, the desertification through the large-scale draining and drying of marchland areas in the southern region of Iraq by the governmental initiative, combined with all of these factors, also contributed to the further reduction in the prevalence of the disease. Field research was conducted thoroughly between the 1960s - 1980s. Thereafter, there was scant published research or data due to economic sanctions (1990-2003).

Discussion and Conclusion: None of the methods was capable on its own of accomplishing effective control of the disease. It is a focal distributed disease, so control strategies should be adapted to the epidemiological situation in each area. The snail intermediate host seems to be the weakest point in the life cycle, but it is the most difficult one to control. Achievement and sustainability of these measures depends on: the existent infrastructure, resources and long-term access to these resources, community awareness, and participation supported by the government's commitment and willingness.

Continuous surveillance systems should be used in areas that have eliminated the disease. Problems raised in a country like Japan would be related to the decline in the people knowledgeable of the disease, and the possibility of a re-emergence, especially through parasite exchange with other countries. With the advances in diagnostic techniques, like polymerase chain reactions and other new techniques, it will be possible to trace the infection in areas where the transmission has occurred.

In China, the disease control program still faces problems due to floods, animal reservoirs, the amphibious nature of snails, poor compliance with medication, climate change, the construction of the Three Gorges Dam (TGD), population movements, and health sector reform.

Iraq, even with the low transmission, still needs to strengthen different aspects in the control program due to previous years of wars and economic sanctions. Challenges will be raised due to the re-emergence of the marshes in the southern parts of Iraq, the huge population movements related to pilgrimages to the two holy provinces of Karbala and Najaf, and the expected social and economic development, especially in the agricultural and water resource projects. Further concern should be directed towards the effect of the disease on children and childbearing women (due to the long duration of economic sanctions), the possibility of animal reservoirs, following up with patients with the possibility of developing bladder cancer, the use of GIS, and new diagnostic tests for both human and snail infection. There is a need to strengthening the surveillance system as well as training and international exchange of experience.

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平成 22 年度専門課程

国際保健分野 3

Course Name: Post Graduate Public Health in International Health

Earthquake and health disaster-relief management for large scale earthquake in Japan and China

Zhanqiu MAO

Keywords: disaster, Hyogo Framework for Action 2005-2015, resilience, health emergence management, wide-area transportation, DAMT, emergency medical information system, Japan, China.

Thesis Advisors: Yasuhiro KANATANI

Abstract

Background:

As a natural disaster, Earthquakes have been occurring from the beginning of recorded human history. Recently, the Great Hanshin Earthquake and the Wenchuan Earthquake have occurred in Japan and China respectively, and caused catastrophic disruption and eliciting utmost sympathy and support were called for. In 2005, 168 Member States include Japan and China committed to implement the “Hyogo Framework for Action 2005-2015: Building the resilience of nations and communities to disasters”

Study Objectives:

To formulate common and specific policy recommendations on reducing vulnerability, optimizing adaptation and strengthening health emergency management systems for disaster relief at the acute phase of the large scale earthquake at national level in Japan and China.

Specific Objectives:

1. To assess the general people vulnerability to earthquake in Japan and China.
2. To summarize and compare the current health emergency management mechanisms for disaster relief within the first 48 hour of the large scale earthquake at national level in Japan and China.
3. To summarize the current health emergency management measures for earthquake resilience in Japan, with focus on Wide-area Medical Transport System (WAMT), Disaster Medical Assistance Team (DMAT) and Emergency Medical Information System (EMIS).
4. To identify the underlying gaps in the resilience of the disaster response within the first 48 hour based on the evidence of Wenchuan earthquake health relief experiences in China.

Methods:

Cause-effect problem and SWOT analysis was conducted using a literature review by obtaining documents from the following sources:

1. Databases: Pubmed, Ovid, ProQuest Direct, SourceOECD, Google.com, On-line journals, Journal of Urban Health Archives, American Journal of Epidemiology etc.
2. Key words: Earthquake, health emergency management, Hanshin-Awaji (both in English and Japanese), Wenchuan (In Chinese) , disaster prevention plan (In Japanese, English and Chinese), disaster medicine, health organization, patient triage, information and communication system, DMAT, wide-area medical transportation (In Japanese and Chinese), etc.
3. Study eligibility: the following criteria were used for selecting the publications: Japanese, English and Chinese academic articles, program/project guidelines and reports, documents, video records, Bibliographic references of full text articles. Earthquake medical response information was selected, the information of Japan was covered from 1995 to 2010, and the information of China was covered from 2008 to 2010.

4. Analyze the evidence gathered from the selecting documents using as a qualitative framework from the “Hyogo Framework for Action 2005-2015: building the resilience of nations and communities to disasters”.

Results:

1. Both Japan and China have large population affected by earthquake and high frequency of earthquake. Death ratio has remarkably decreased in the two countries.
2. Differences in the health emergency management mechanisms for large-scale earthquake were found between Japan and China. In Japan, the affected prefectures directly took responsibility to respond to a large scale disaster. It was characterized by strong commitment of the local and central government. In China, the Central government leads the response to a large scale earthquake, and provided close supervision and direction for the local government efforts.

Problems in the two health emergency managements are:

- 2.1. Policy made not directly by the disaster medicine specialist in Japan and China
 - 2.2. In Japan, the health relief personnel come from both public and private health organizations, so it takes considerable time for them to coordinate and work cooperatively.
 - 2.3. In China, The involvement of nongovernment resources was insufficient. Unclear chain of command, inefficient of integrated different agencies or organizations
3. Bases on the lessons from the Great Hanshin earthquake, Japan has significantly strengthened its health emergency response systems, refined its strategy regarding its on logistics support system, disaster medical assistance team (DMAT) and emergency medical information system (EMIS).
 - a) A high-efficiency wide-area medical transport system was established for patient transportation and relief support from outside of disaster-stricken area is also included. Life-support material, medicines and medical personnel can also be quickly sent into the disaster area in a timely manner. The patients can be stabilized and then promptly transported to safety and to hospitals.
 - b) Disaster medical assistance team (DMAT) was designed to administer emergency medical treatment in cooperation with emergency rescue teams. For example: 2609 members of 442 teams in 305 facilities have been cultivated as of August 2010. 172 facilities were provided with essential equipment and materials.
 - c) Characteristics of EMIS are: multiple failsafe mechanisms; DMAT control menu was added; list of target medical institutions was expanded from listing only the basic hospitals for disasters to cover all hospitals; emergency warning was added; a function to make emergency call to the Ministry of Health, Labor and Welfare, etc. was added; disaster input items were sorted out into emergency input and detailed input; expansion of information about medical institutions: and number of patients that can be accepted were also added among other elements and parameters.
 4. The underlying gaps in the resilience of the health emergency management preparedness and response system in China
 - Absence of sound disaster medical assistance mechanism,
 - Lack of a operational legal frameworks,
 - Unclear role of the stakeholders,
 - Lack of planning and drills to maintain operational readiness and competence,
 - Lack of a high priority government policy
 - Low awareness of local and national policymakers about disasters and their consequences
 - Lack of ongoing research on disaster preparedness and management.

Conclusions:

1. Both Japan and China have high vulnerability to earthquake. The health education programmes and disaster risk reduction training should be conducted in all schools and communities
2. To make the disaster preparedness and response management mechanisms more effective, a clear chain of command should be established, and should integrate different agencies or organizations. It is necessary to clarify the role of each stakeholder. The policy decision-maker should fully understand the disaster risk and its consequences.
3. Japan has an effective and mature emergency health system, which specifically includes wide-area medical transport System (WAMTS), disaster medical assistance team (DMAT) and emergency medical information system (EMIS). To maintain their functions, it is essential to get the sustained financial support.
4. To reduce the health consequences of earthquake and minimize the social and economic impact, It is possible and urgent for China to establish the wide-area medical transport system (WAMTS), disaster medical assistance teams (DMAT) and an efficient and effective emergency medical information system (EMIS).

Overall, it should be kept in mind that “people” are the focus of all these efforts and systems. Too much emphasis on modernization of the relief methods and materials and ignoring the human factor, would be attending to trifles and neglect the essentials

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国際保健分野 4

Course name: Post Graduate Public Health in International Health

Pandemic preparedness and response to H1N1 2009 in the Solomon Islands

Alison Ripiapu SIO

Keywords: improving pandemic preparedness, surveillance, AH1N1 2009, drills, table top exercises, communication, training, infection control

Thesis Advisors: Tomoko TACHIBANA, Hiromitsu OGATA

Abstract

Background: The emergence of a novel strain of the influenza virus A (H1N1) in April 2009 focused attention on influenza surveillance capabilities worldwide. In consultations before the 2009 outbreak of influenza subtype H1N1, the World Health Organization had concluded that the world was unprepared to respond to an influenza pandemic, due in part to inadequate global surveillance and response capacities². Several studies described a sentinel surveillance system that could enhance the quality of influenza epidemiologic and laboratory data and strengthen a country's capacity for seasonal, novel, and pandemic influenza detection and prevention³.

General Objective: To assess the Solomon Islands National Influenza Pandemic Preparedness and Response Plan for H1N1 2009 outbreak.

Methodology: A descriptive study aims to look at the influenza pandemic preparedness and response plan for the AH1N1 2009 infection outbreak in the Solomon Islands. The study process focuses on what was planned and what happened during the response effort, identifies key issues and lessons learned, and makes recommendations for improvements.

1. Firstly, to review, compare the SINIPPRP with the WHO recommended essentials and desirable elements a country should consider when creating a pandemic preparedness plan for emergencies and find the differences between the two; make recommendations for improvements. We will use the WHO flu checklist tool to find discrepancies in the current level of the Solomon Islands' plan by using a table to see if the SINIPPRP has included these elements in their plans. We use matching tables and compare them to the WHO table by marking an X under the columns to find the difference. The "X" mark means that an element is present in SINIPPRP; the "no" mark means that it is not included but needs to be recommended for improvement and inclusion in the next review of the plans.
2. Secondly, to identify and make recommendations for improvements from lessons learnt and problems found during the H1N1 outbreak response of the country, mainly in the essential elements such as surveillance, infection control, communication and training, testing the plans, and clinical management of the patients. This will be accomplished by searching all secondary data, and information will come from Ministry of Health Solomon Islands WPRO-SPC, policy papers, publications and reports, the minutes of meetings, international conference papers, journal articles, and the authors' observations and personal experiences, and reports and lessons learned. The main searches in the details of this paper will be surveillance, infection control, communication, and the training and testing of the plans.

Results: There was a Solomon Islands National Influenza Pandemic Preparedness Response Plan developed in response to SARS and avian influenza in 2006 as the threat of a global influenza pandemic became increasingly imminent. Its major goal is to prevent, protect against, control, and provide a national public response to the local and international spread of disease in ways that are commensurate with and restricted to public health risks (IHR 2005 Article 2), avoiding unnecessary interference with international traffic and trade with five main objectives and action plans to be implemented.

The Solomon Islands continues to experience an outbreak of an influenza-like illness. Total clinic consults remain high in all centers since August 2009. This places pressure on human resources at the clinic level with many clinics working overtime. The initial testing of specimen (swabs) is done in the country and for confirmation they are sent to the WHO reference laboratory in Melbourne, Australia for H1N1 testing. Most of the nasal pharyngeal swabs (NPS) indicated Influenza A and B.

In the Solomon Islands in 2004, ARI was responsible for 41.4% of new cases of diseases in infants younger than one year-old, more than a third (36.1%) in children less than five years-old, and 20.9 % for children older than five. The 2004 infant ARI rate of 223/1000, was more than double that of clinical malaria (41/1000), the next most commonly reported illness for this group. Nationally ARI rates have remained fairly constant since 1997, with intermittent periods of increase. Reduced rates in 2002-2003 may show true decreases in incidence or may also result from decreased service delivery and case reporting in Guadalcanal and Honiara. Severe incidences of ARI account for only a small proportion of notifications, 3% in children under five. The burden of diseases is greatest in infants in whom rates have not fallen below 2000/1000 since HIS data collection commenced. Rates in 2004-2006 were higher than previous years in all the provinces, possibly the result of an outbreak or outbreaks, an increase in the circulation of respiratory pathogens, or more complete HIS reporting data.

The ILI distributions are higher in the younger age group, mainly in females. The second highest ILI distribution is among children under five years-old. There were four AH1N1 2009 confirmed cases in the Solomon Islands, but only two patients were admitted to the hospital. One patient was quarantined at a training ground and was treated by the health team; the other one was admitted to a private hospital, and there was one admitted to a hospital in the province. All the patients were treated and discharged after recovery. They were all experts; only one was an indigenous person from one of the sentinel sites in the provinces. Total clinic consults remained high in all centers from May to October 2009. The highest peak was in September, at 29%. May was at 18%, October at 18%, and June at 15%. Surprisingly, one of the four was an infant with no history of travel, no contact, lived in the remote village had confirmed with H1N1 compared to 3 had met the case definitions.

Discussion: The objective of this study is to identify issues or problems in the Solomon Islands National Influenza Pandemic Preparedness and Response Plan for the AH1N1 2009, and their response to the outbreak. As a pandemic is inevitable and countries don't know when the next arrival of the second wave will come, plans need to be revised and made workable. Pandemic planning should be happening on all levels, including public and private sectors at the national, provincial, and community levels for effectively and efficiently responding to a pandemic crisis. Lessons learned during these outbreaks have been used when preparing for the pandemic response plans for H1N1 2009. Experiences with these outbreaks have shown that there is always room for improvement in pandemic preparedness. It is expected that whatever the pandemic preparedness plans of countries, they will need regular revision. In preparing for the next pandemic, governments face challenges that are beyond their means and over which they have little control. Influenza pandemic preparedness and response to Solomon's mean surveillance, communication and training, infection control and testing of the plans. It is very important to take the lessons learned from SARS, avian influenza and H1N1 2009 to improve the operational management plans of the country in all these areas. The Solomon Islands continue to experience an outbreak of an influenza-like illness. Total clinic consults have remained high in all centers since August 2009. This places pressure on human resources at the hospital and clinic levels with many clinics working overtime.

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国際保健分野 5

Course name: Post Graduate Public Health in International Health

A study on factors associated with treatment interruption among resistered tuberculosis patients in Honiara City Solomon Islands: 2006 – June 2010.

Oliver SOKANA

Keywords: Tuberculosis, treatment interruption, duration of interruption, Honiara City

Thesis Advisors: Nobuyuki HYOI

Abstract

Background: Interruption of TB treatment is a major challenge faced in tuberculosis control programs and is the leading cause of default and multi-drug resistant-tuberculosis. Efforts to avoid the interruption of treatment require knowledge and understanding of the complex socio-economic, cultural and behavioral issues associated with interruption among patients and service providers.

Study objectives: The overall objective of this study is to assess and identify socio-economic and demographic factors and how they influence the decision of patients registered and treated for TB in Honiara City.

Methods: This study was carried out in Honiara City, in the Solomon Islands. Patients who had a history of interruption for at least one day and were of the age of 15 years and over were selected to participate in the study. Seventy-nine TB patients registered during the period of 2006 to June 2010 were interviewed using structured questions covering socio-economic, cultural, and demographic factors and 77 (97.5%) were accepted for analysis after data cleaning was conducted. Four steps of data analysis were conducted using SPSS software version 18. First, single tabulation analysis to assess the proportions of variables was conducted. Variables that were deemed significant in the single tabulation were analyzed to assess for their associations using the cross-tabulation method of the chi-square test. ANOVA was used to assess the differences among variables that had significant association in the chi-square test, and was followed by a multiple regression analysis for factors found significant in the ANOVA test.

Results: Of the 77 respondents, 46 (59.7%) were male and 31 (40.3%) were female. Ages ranged from 15-67 years, with a mean of 31.8 years. Frequency of interruption of treatment ranged from 1-11 times with a mean of 3.8. Duration ranged from 2-64 days with a mean of 22 days. The main factors identified in this study associated with treatment interruption were a lack of family support (91.8%), feeling better (90.0%), not knowing the risks of interruption (87.5%), not knowing one had TB (86.6%), concomitant diseases (85.7%), a lack of understanding of the English instructions used on the treatment label (81.8%), work commitments (79.5%), communication barriers (76.9%), drinking alcohol during the treatment period (67.6%), transportation costs (67.3%), stigma (65.9%), and drug side-effects (54.5%). Eleven (14.3%) of the respondents have reached a duration of interrupted treatment of over 56 days. The duration of treatment is the outcome variable for the study. The study found that age, educational attainment, and marital status were the associated factors for the interruption of treatment, while level of income was seen as an associated factor for transportation costs.

Conclusion: Effective health education programs should be given to groups vulnerable to the interruption of treatment, such as the elderly, people with a lower level of education, and low income earners. TB education needs to pay attention to patient-related factors, such as knowledge of TB, social support from family, and issues related to the stigma.

The establishment of counseling programs for both patients and family members during the intensive phase of treatment is the recommended intervention for improvement. Continuous training for health workers is also essential.

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国際保健分野 6

Course name: Post Graduate Public Health in International Health

The factors influencing HIV prevention and risk behaviors among the young population in Thailand: A review of the literatures (2000-2009)

Yoko KISHI

Keywords: youth, condom use, predicted factors, effective interventions, Thailand

Thesis Advisors: Hiroko MIURA, Tomoko KODAMA

Abstract

Background: Globally, young people contribute to approximately 50% of new HIV infections every year. In Thailand, the epidemic spread to adolescents and young adults in late 1990s. The prevalence of HIV among Thai people aged 22 years or younger had rose from 13% in 2003 to 22% in 2005. The number of new HIV cases and other sexually transmitted infections (STI) among adolescents have also been increasing. At the same time, the diversity of attitudes, beliefs, and lifestyles of the youth has been increasing. To tackle this situation, the government implemented a nationwide television campaign for young people in 2007. However, the campaign was forced to be closed because of strong criticism from the general public.

Objectives: This study aimed to find useful information to improve the understanding how the recent HIV epidemic is gradually penetrating the youth population in Thailand.

Study Design and Methods: A review of literatures was conducted using the Pub-Med database. The searching key words used in this study were: a) Thailand OR Bangkok, and b) adolescents OR young adults. In addition, a combination of the following terms was used: c) HIV, d) condom use, e) sexual behavior, and e) risk behaviors. The study selection was limited to English and Japanese language, and articles published between year of 2000 and 2009. Among 407 articles, 17 articles were selected for this study. Data extraction was based on two strategies as follows: a) assessing associations between predicted factors and HIV prevention and risk-taking behaviors, including attitudes, and b) reviewing the effects of educational interventions for HIV prevention programs conducted in Thailand.

Results: Eleven studies reported the influences of individual attributes as a factor in HIV preventive and risky behaviors among youth. Factors such as age, gender, education, and sexual experiences such as condom use during first sexual encounter had significant associations with future condom use behaviors and other indirect HIV related preventive behaviors. At the same time, factors such as age, gender, predisposition status, knowledge of HIV, rape experiences, and substances use were significantly associated with unprotected sex and other indirect-HIV risk behaviors. Eight studies reported that the influence of socio-psychological factors on HIV prevention and risks. Factors such as a positive attitude toward condoms, condom use self-efficacy, high intention to use condoms, perception of the benefit of condom use, disagreement on barriers to condom use, and beliefs within the peer norms were significantly associated with HIV preventive behaviors. Similarly, factors of low self-efficacy and low communication skills, high perception of HIV risk, and weak relationships with their parents had significant association with high HIV-risk behaviors. Nine studies indicated the needs for improvement in the educational environment for the promotion of HIV prevention for youth in Thailand, and 5 studies

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conducted actual interventions in school settings. Health professional-led comprehensive sex education program and peer-led sex education programs had significant influence on the improvement in young people's HIV prevention knowledge and attitudes.

Conclusion: In conclusion, the influence of beliefs and perceptions on young people's HIV prevention and risk behaviors were reported in most of the selected articles covering the predicted factors. In actual interventions, the peer-led sex education programs and the health professional-led comprehensive sex education programs had significant effects on improving knowledge and attitudes. The peer-led education program had further effects on raising youth's self-efficacy and the sustainability of the lessons learned. These outcomes of peer education programs suggested that they might be an essential long-term educational strategy to prevent the spread of HIV in young people.

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国際保健分野 7

Course name: Post Graduate Public Health in International Health

Characteristics of community resilience to water-related natural disasters: A literature review

Keiko KITAJIMA

Keywords: disaster, flood, community, resilience, social capital

Thesis Advisors: Tomofumi SONE, Tomoko KODAMA

Abstract

Objectives: This study aims to make clear the notion of community resilience in disaster management, in order to provide appropriate support systems throughout the disaster management cycle. In order to comprehend community resilience, three main specific objectives were set out: first, to figure out the general understanding on community resilience from the collection of community actions in literature; second, to understand how to measure the level of community resilience; and finally, to understand how the vulnerable groups are in an emergency, in terms of community resilience.

- 1) To identify the characteristics of community resilience in each phase of the disaster management cycle.
- 2) To summarize the current measurements of the community resilience in a disaster.
- 3) To summarize the special consideration given to vulnerable people.

Study Design and Methods: A review of literature was conducted using a few databases with the keywords, “disaster,” “flood,” “water hazard,” “community resilience,” and “community mobilization.” References cited in the literature were also reviewed. After the selection of articles, the concept of community resilience by Norris et al. (social capital, community competence, and information and communication) was adapted to analyze the characteristics of community resilience when faced with floods through a disaster management cycle. Next, measurements of the level of community resilience were also investigated, in terms of its development by indicators and analysis. In addition, considerations found in literature were summarized in terms of the protection of vulnerable populations: chronic disease patients, socioeconomically disadvantaged populations, and women and children.

Results:

- 1) The characteristics in each phase of the disaster management cycle: According to each phase, the characteristics of collective actions were observed. In terms of “social capital” and “community competence,” rescue operations, collective efficacy, and restoring contact between separated families, as well as the development of crisis committees were reported (relief phase). In addition, mutual cooperation in communities, nationwide ethnic community support, community mental support, etc., were found (recovery and rehabilitation phase). Moreover, actions for preparing and mitigating the next disaster, such as gaining a sense of community, enhancing collective efficacy and empowerment, and networking and building political partnerships by learning and practicing the process, were also observed (preparedness, early warning, and mitigation phase). In terms of “information and communication,” emergency information delivery among community members and local knowledge of crises based on experience were reported (relief phase). Oral histories were being utilized in all phases of the disaster management cycle to raise awareness of citizen preparedness. Furthermore,

community participatory preparedness actions, such as developing a hazard map and an early warning system, were also important (in preparedness, early warning, and mitigation phase).

- 2) Measurements of the level of community resilience were developed and found valid by tests, however when implementing these measurements in other cases, the development of another set of indicators according to the socio- and cultural-economic context is still needed.
- 3) Meanwhile, for vulnerable people, the socioeconomic factors in the disaster management context have a greater impact on them, and there is still not enough evidence of support mechanisms for community resilience on this matter.

Conclusion:

- 1) All the factors from the characteristics of community resilience are important, and they are strongly connected and interact with each other. Among all the factors, organizing collective efforts becomes the core of the community resilience to water hazards. Additionally, it demonstrates the characteristic of forming community cohesion at the first stage and then expanding to the outside community to cooperate together. However it is believed that social capital, which is based on a network and relationship of mutual trust, has become the core of community resilience. Additionally, each factor is strongly connected to the others.
- 2) Measurements of community resilience are developed to some extent (economic development, social capital, and collective efficacy). However they still need to be adjusted to the study area by developing indicators and analyzing the social and cultural context. More accurate measurement requires future research and development.
- 3) Support mechanisms for the vulnerable population are not sufficient at present, thus community-based support mechanisms should be introduced and improved in order not to leave these populations marginalized in a crisis and to involve them in the community-based disaster management cycle.