

SHORT COMMUNICATION

Self-care for Public Health Concept with Coronavirus Crisis in Thailand

Chonticha Kaewanuchit^{1*} and Nayan Deep S. Kanwal²

¹Faculty of Medicine, Vajira Hospital, Navamindradhiraj University, Bangkok, Thailand 10300

²International Research Institute, Mont Kiara, Kuala Lumpur, Malaysia 50480

ARTICLE INFO

Article history

RECEIVED: 24-Apr-20

REVISED: 13-May-20

ACCEPTED: 28-May-20

PUBLISHED: 15-Jun-20

*Corresponding Author

Chonticha Kaewanuchit

E-mail: sim356@yahoo.com

Co-Author(s)

Author 2: nayan.kanwal@gmail.com

ABSTRACT

The World Health Organization announced on January 20th, 2020 that the COVID-19 epidemic is a Public Health Emergency of International Concern (PHEIC). After that the Thai government announced an emergency situation in all areas of the Kingdom of Thailand, from March 26th–June 15th 2020 and curfew later. COVID-19 crisis is one of the biggest crises of global health and the greatest challenge with the world. A public health concept reported that self-care plays an important role both in individual and public health systems including health promotion, prevention, and control disease, providing health care to persons, and seeking health care systems. The aim of this study is to study and describe about self-care for public health concept during coronavirus crisis in Thailand. It is based on social determinants of health (i.e., social distancing). Documentary research was used. Data collection was done by collecting data of CCSA, and Ministry of Public Health, Thailand during April 13th–23th, 2020. Data description, number of total infectious cases, the number of novel COVID-19 cases, death, remedied, and hospitalized cases with COVID-19 disease were analyzed. The results found that number of new COVID-19 patients decreased continuously and gradually and increment of number of remedied COVID-19 cases. The guideline of self-care recommendations from public health perspective with COVID-19 outbreak in Thailand from the Ministry of Public health has 14 guidelines. It was notified that it is based on some social determinants of health such as social distancing. Report of the department of mental health, Ministry of Public Health, Thailand on April 22nd, 2020, outlines that level of stress and anxiety increased when COVID-19 pandemic crisis occurred on March, 2020. It indicated that the trend of corona virus crisis in Thailand will be controlled and normal public health will return by following the “Stay home, Stop the disease, for the nation” motto of the Thai government.

Keywords: COVID-19; coronavirus crisis; pandemic, public health concept, self-care, Thailand.

Introduction

The World Health Organization announced that the COVID-19 epidemic is a Public Health Emergency of International Concern (PHEIC) but WHO has not made any announcements on travel restrictions on January 20th, 2020. In Thailand, Thai government and Ministry

of Public health listed coronavirus disease 2019 as the 14th dangerous communicable disease under the Communicable Diseases Act on 29 February 29th, 2020. Then, on March 5th, 2020 made an announcement that coronavirus disease infected zones are people’s Republic of China, including special territories Macau and Hong Kong, the Republic of Korea, the Italian Republic and the

Islamic Republic of Iran. Self-protection for tourists has been implemented by surveillance, screening, and prevention and control measures. Therefore, self-care for public health perspective is important and necessary with COVID-19 in Thailand because it promotes health, prevents disease and maintains health in public health concept (World Health Organization, 2016). In the context of a coronavirus outbreak in Thailand, self-care to health promotion and prevention in public health perspective can help to stop infection in the pandemic coronavirus outbreak. Thai government announces the motto of the Thai government statement about staying at home “Stay home, Stop the disease, for the nation” to be the symbolic approach and indicated that Thai people can help public health officers and government with self-care and staying home to stop the coronavirus outbreak in Thailand. If Thai people can self-care by following the public health guideline it will be able to stop the coronavirus outbreak crisis in Thailand.

Literature Review

Self-care for public health concept

The definition of self-care from The World Health Organization (WHO) is “the ability of individuals, families and communities to promote health, prevent disease, maintain health, and to cope with illness and disability with or without the support of a health-care provider” (World Health Organization, 2016).

A concept of public health found that self-care plays an important role. It is both for individuals and for public health systems. At individual level, self-care relates to the capacity and ability to make informed decisions and make use of public health resources as a key contributor to the successful arrangement of health condition (World Health Organization, 2019). In public health system, self-care includes health promotion; prevention and control of disease; providing health care to persons; seeking health care system which related to specialist care if it is necessary; and rehabilitation. Moreover, it also adds palliative care (Narasimhan & Kapila, 2020).

Self-care is consisted of actions within an individual’s control to manage health, non-communicable and dangerous communicable diseases such as coronavirus disease (COVID-19). The contribution of self-care may also help avoid social stigma, bring improved mental well-being, which is a part of social determinants of health. A role of social determinants of health links health promotion and health equity in the social world (Artiga & Hinton, 2018).

It can be noticed that it can applied to COVID-19 by self-care from a social distancing guideline of public health concept until it becomes Thai dictionary word “A new normal” after COVID-19 pandemic crisis.

In Thailand, self-care is an important public health concept because from the Community Health Professions Act, B.E. 2556 from Rama IX, king of Thailand, concluded that public health related to human and environment in area of health promotion, prevention, control disease, primary curative disease, and rehabilitation of the individual, family, and community by holistic health care (Gazette, 2020). In the past, studies found that public health officers of Thailand had experience about infectious diseases such as Avian influenza, Influenza A(H1N1) (Puttawattana, 2020) including studies about Influenza activity in Thailand and its occurrence in different climates to be applied in public health management (Prachayangprecha et al., 2015). In general, a public health concept using self-care instruction (i.e. hand cleaning with 70% alcohol gel, self-isolation, no joining gatherings of large groups of people in various areas, etc) is of critical importance to decelerate virus progression and a part of health promotion including disease prevention. Moreover, it is applied to resolve these infectious diseases by following the public health fundamental based on health promotion and disease prevention, especially, self-care including the World Health Organization recommendation about the COVID-19 pandemic crisis worldwide. These infectious diseases in the past situation of Thailand were not an important crisis. Public health officers could control that situation with public health guideline that focused on self-care issue. Therefore, self-care is important from these reasons to decrease the number of COVID-19 patients in Thailand.

Normally, people should follow self-care strategies until the risk of virus transmission is decreased. In this present period there is still very little scientific data regarding COVID 19 and there is no clarity about its transmission. Previous studies found that COVID-19 disease infected the aging people and adult. Average age of patients was between 30–70 years (87%) (Wu & McGoogan, 2020). In China, a report found epidemiology and transmission of COVID-19 in 391 cases and 1286 of their close contacts in Shenzhen, China. Patients were older than the general population (mean age 45 years). Household contacts and those travelling with a COVID-19 patient were at higher risk of infection. In addition, children were at a similar risk of infection to the general population in this study (Qifang et al., 2020). Due to this reason, public health concept that focused on disease prevention and management using self-care actions based on general

recommendation for other infectious viruses (i.e. MERS) can be a useful solution to stop COVID-19 pandemic in the context of virus spread (CDC, 2020; Wu & McGoogan, 2020). In addition, appropriate self-care actions can be seen as applicable approaches to slow down the COVID-19 pandemic including the improvement of the quality of life i.e., self-isolation, alcohol gel washing etc. (Riegel et al., 2019). Therefore, it can be seen that self-care issue is an important and necessary strategy of public health perspective based on social determinants of health to decrease social discrimination and health promotion including health equity in Thai society following the self-care guideline from WHO recommendations to decelerate COVID-19 pandemic in Thailand and the other countries.

Situation of the coronavirus COVID-19 outbreak worldwide to Thailand

COVID-19, commonly known as coronavirus disease 2019, is a large family of virus and a new strain causing many illnesses leading to a crisis of infectious disease in public health (World Health Organization, 2020). Common symptoms of COVID-19 comprised of cough, fever, sore throat, dyspnea, and tachypnea (World Health Organization, 2020). Normally, it looks like common cold. People ignore their symptoms and do not follow the self-care instructions given in public health perspective.

Situation of the coronavirus COVID-19 pandemic is an important crisis of global health and the greatest challenge for the world. The point of its emergence was Asia (especially, China) in 2019 before it occurred as a pandemic crisis becoming a global health problem (Rhee, 2020). This coronavirus COVID-19 has spread around the world with health effects such as mental health, stress, physical health, and psychosocial health in society. In Thailand, coronavirus COVID-19 outbreak had been ongoing since January 13th, 2020 (Wikipedia, 2020). Its first outbreak was at Wuhan, Hubei, China. On January 12th, 2020, World Health Organization (WHO) reported that a novel coronavirus was the cause of a respiratory illness which it found in a cluster of people in Wuhan City, Hubei Province, China. First case of Thailand which was announced by the Ministry of Public Health, reported a 61-year-old Chinese woman. She is a resident of Wuhan. She had not gone to the Huanan Seafood Wholesale Market, China. Symptoms of this first case comprised a sore throat, fever, chills and a headache on January 5th, 2020. She flew directly with her family and a tour group from Wuhan to Suvarnabhumi Airport, Thailand on January 8th, 2020. After that, laboratory examination

found positive coronavirus four days later (Wikipedia, 2020). Later, in Thailand, it became a novel COVID-19 outbreak from increasing gradually to rapidly increasing. The place of origin of COVID-19 outbreak within Thailand was Lumpinee Boxing Stadium, Bangkok where many Thai people assembled to see Thai boxing on March 6th, 2020. Then, the Thai government announced the cancellation of Thai new year festival, known as Songkran festival, (from April 13th-16th, 2020) on March 17th, 2020. On March 22nd, 2020, Thai government commanded to close all department stores and risk areas in Bangkok. The Thai government announced an Emergency Decree with the approval of the Council of Ministers in its meeting on March 24th, 2020 and in accordance with suggestions of the medical and public health administrators and technical personnel, by virtue of Section 5 of the Emergency Decree on Public Administration in Emergency Situations in 2005, regarding an emergency situation in all areas of the Kingdom of Thailand, from March 26th to April 30th 2020 (Department of Disease Control, Ministry of Public Health, Thailand, 2020). Finally, the Thai government announced a curfew on April 3rd, 2020 in all areas of the kingdom of Thailand. Regulation of those laws control all the people who stay in Thailand area such as prohibition from entering or leaving certain areas of Thailand, prohibitions or limitations from entering or departing from the Kingdom of Thailand and the movement of large numbers of people across various areas, control of the use of all vehicles, transportation routes and the control of goods and medical supplies. Moreover, motto of Thai government statement about staying at home "Stay home, Stop the disease, for the nation" was for everybody. Bangkok, the capital of Thailand, has the most of COVID-19 contacted cases.

The objective research is to study about and describe self-care for public health concept regarding the coronavirus crisis in Thailand. Its conceptual framework used public health concept in term of self-care based on social determinants of health (i.e., social distancing, self-quarantine, not joining gatherings of large groups of people in various areas).

Methodology

Methodology in this original article used documentary research from secondary data at CCSA and Department of Disease Control, Ministry of Public Health, Thailand. Period of data collection to show the number of total cases, new infectious cases, remedied cases, hospitalized cases, and death is during April 13th-23th, 2020 with COVID-19 infectious disease. Because on April 13th

there is a Thai New Year festival for which Thai people travelled across provinces or the other countries every year. By contradiction, this Thai New Year festival, 2020 is different from the last year because Thai government commanded people in Thailand to stop traveling, stay at home, self-care following the public health concept of World Health Organization, and Ministry of Public Health, Thailand. The trend for this period of the number of novel COVID-19 cases, death, remedied, and hospitalized cases was recorded by CCSA, and Department of Disease Control, Ministry of Public Health, Thailand. Data analysis represented number of total cases, new infectious cases, remedied cases, hospitalized cases, and death, and description of public health management in Thailand with the novel COVID-19 outbreak used data from Department of Disease Control, Ministry of Public Health, and Department of Mental Health, Thailand, 2020.

Results and discussion

After curfew in Thailand, COVID-19 patients were still found continuously. It is represented in the update on April 13th–23rd, 2020 with COVID-19 Infected Situation Reports in Thailand because the Thai New Year festival, known as Songkran festival started then. The Thai government cancelled this festival and Thai people came back to hometown. Thai government is careful about this festival (Department of Disease Control, Ministry of Public Health, Thailand, 2020) (Table 1). It was found that the number of new cases had decreased gradually which was a good news in Thailand. However, it is still looking ahead to this challenge of COVID-19 outbreak. Thai people expect that the COVID-19 crisis in Thailand will stop and control will come soon (CCSA, 2020).

Data description

This result described in two parts: First part was data description of public health management in Thailand for the novel COVID-19 outbreak, from Department of Disease Control and Department of Mental Health, Ministry of Public Health, Thailand, 2020. Second part explained about self-care recommendations from public health perspective for the COVID-19 outbreak in Thailand which had document data from CCSA and Department of Disease Control, Ministry of Public Health, Thailand, 2020.

First part: Public health management in Thailand for the novel COVID-19 outbreak

First of all public health management is applied to the novel COVID-19 outbreak in Thailand which is a basic concept of public health. It explains public health management during emergency public health crisis especially it has been implemented in the surveillance, screening, and prevention and control measures. These are as follows: Department of Disease Control, Ministry of Public Health, Thailand, 2020; Department of Mental Health, Ministry of Public Health, Thailand, 2020.

- (1) Quarantine offices screen arrival and departure passengers in Thailand. They consisted of six airports (i.e., Suvarnabhumi, Don Mueang, Chiang Mai, Chiang Rai, Phuket and Krabi airport), six seaports such as Bangkok, LaemChabang, Chiang Saen, Phuket, Samui and Krabi seaport, and thirty-four ground ports. From reports of Center for COVID-19 Situation Administration (CCSA) of Thai royal government (CCSA, 2020). Result from secondary data found that airport officers attempted to screen

Table 1: COVID-19 Infected Situation Reports during on April 13th–23rd, 2020 in Thailand

Date	Total cases	New infectious cases	Remedied	Hospitalized	Death
13 th (Thai new year festival)	2,579	28	1,288	1,251	40
14 th (Thai aging day)	2,613	34	1,405	1,167	41
15 th	2,643	30	1,497	1,103	43
16 th	2,672	29	1,593	1,033	46
17 th	2,700	28	1,689	964	47
18 th	2,733	33	1,787	899	47
19 th	2,765	32	1,928	790	47
20 th	2,792	27	1,999	746	47
21 st	2,811	19	2,108	655	48
22 nd	2,826	15	2,352	425	49
23 rd	2,839	13	2,430	359	50

Source: CCSA and Department of Disease Control, Ministry of Public Health, Thailand, 2020

arrival and departure passengers, especially who arrived in Thailand. It still found a few cases of COVID infectious patients. Moreover, there was a case of a Thai airport officer, who was infected by a traveler. It was notified that self-care of the airport officer was not good enough to prevent the disease. However, it can be observed that the airport officer is not a public health officer who was trained to prevent an infectious disease. Results from this point indicated that the Thai government should add public health officer positions in all risk areas in the future because of lack of public health officers who are specialists in the field of public health.

(2) Hospital screening is done to investigate COVID-19 disease in suspected people, for example, in people who have fever with at least one respiratory symptom, and have risk history, pneumonia patients who were suspected to have infection by SARS-CoV-2 (COVID-19) including people who were among the clusters of respiratory system infections with epidemiological linkage. Results from hospital screening showed new infectious cases, given in Table 1. It reported that new COVID-19 patients decreased gradually from 28–13 new patients during April 13th–23rd, 2020. It implied that COVID 19 crisis in Thailand has a good trend.

a. A public health perspective at community level helps to educate people, for instance, when people are stressed and anxious. They should know how to notify local public health officers or the Department of Disease Control (DDC) hotline 1422 or the Department of Mental Health or hotline 1323, Ministry of Public Health, Thailand, when meeting travelers who have a fever with respiratory symptoms (i.e., cough, sore throat, runny nose or shortness of breath and arriving from the disease infected zones or the risk areas announced by the Provincial Communicable Diseases Committee). Those travelers have to allow the officials or health volunteers to investigate COVID-19 disease, monitoring and describing how to self-quarantine. Those self-care processes also represent responsibility toward society and nation. Results from data of Department of Mental Health or hotline: 1323, Ministry of public health, Thailand found that 51.85 % of Thai people called hotline: 1323 to consult about stress and anxiety on March, 2020. It looked like trends of stress and anxiety in Thai people from COVID-19 pandemic crisis would increase in April, 2020. However,

it was not recorded in April, 2020 (Department of Mental Health, Ministry of public health, Thailand, 2020).

- b. Second part: Self-care recommendations from public health perspective with COVID-19 outbreak in Thailand (Source: CCSA and Department of Disease Control, Ministry of Public Health, Thailand, 2020).
 - I. Not joining gatherings of large groups of people in various areas such as public sphere, department stores, and meeting because it helped to prevent COVID-19 pandemic crisis again.
 - II. Please use incremental preventive measures by yourself. Not only do people display social responsibility but people also show self-care. It is necessary to promote public health by self-care and decrease and stop number of new COVID-19 patients. It is known as a new normal of Thailand after COVID-19 pandemic crisis.
 - III. Surgical masks use is important and necessary for COVID-19 pandemic to be careful of secretion of COVID-19 patients. It is known as a new normal in Thailand after the COVID-19 pandemic crisis.
 - IV. Prepare and use hand sanitizer gels with 70% alcohol gel to decrease quantum of COVID-19 disease. It is known as a new normal Thailand after COVID-19 pandemic crisis.
 - V. Should be washing hands with water and soap for at least 20 seconds in every times when people contact with risk case to decrease quantity of disease.
 - VI. Prohibition from touching eye, mouth, and nose because it risks the secretion of COVID-19 infections.
 - VII. Advice people to avoid travel to COVID-19 disease infected zones to prevent COVID-19 pandemic disease.
 - VIII. Social distancing, at least 200 centimeters, to prevent COVID-19 infectious disease. It is known as a new normal of Thailand after the COVID-19 pandemic crisis. Moreover, social distancing is related to social determinants of health which also uses medical, social, public health dimension applications.
 - IX. Avoid travel to hospital unless it is necessary because it is a risk area.

- X. Should eat clean and fully cooked food; especially, hot food to prevent COVID-19 infectious disease because of death from high temperature.
- XI. Do not share personal handkerchiefs, glasses and towels with other people because of risk of infected secretion.
- XII. Keep your body warm and get enough sleep, at least 6–8 hours per day, which is a health promotion.
- XIII. If people have poor mental health, stress, anxiety, and depression from staying at home, contact the Department of Disease Control (DDC) or hotline: 1422 or the Department of Mental Health or hotline: 1323, Ministry of Public Health, Thailand, Ministry of Public Health, Thailand.
- XIV. Observe symptoms (i.e., cough, sore throat, runny nose and shortness of breath) by self-care after people come back from the other countries to Thailand. People should be in self-quarantine for at least 14 days, as a responsibility to Thai society and health prevention. It is a type of surveillance.

These results contributed some preliminary findings about the growing field of remedied cases, and the decreasing number of new COVID-19 patients and hospitalized cases after self-care guidelines were used to deal with the COVID-19 pandemic crisis of Thailand. The benefit of this article to the readers is the use of the major public health data of Thailand to design and plan the public health policy for disease prevention and health promotion and make decisions about Global Health Security (GHS) with researchers, Thai government and World Health Organization to prevent COVID-19 pandemic re-emerging disease in the future.

Moreover, it can be notified that the number of new COVID-19 patients in Thailand decreased continuously and gradually after using of public health recommendations in the public health concept based on self-care. It is being communicated effectively to the public. This point indicated that public health concept is being communicated effectively to the public via government and private television channels, social media, telephone because Thai people mainly stayed home and self-care guidelines helped to decrease COVID-19 cases. Therefore, self-care in the public health concept is a major advantage practiced in the context of COVID-19 spread in Thailand.

This article is updated and significant for the current COVID-19 pandemic crisis in Thailand and this is the

strength of the article. However the data is limited and not sufficient to do a deep study. The weakness of this article is that it still does not focus on statistical information in an acceptable level for the public in its effectiveness in the coronavirus crisis in Thailand to reduce the spread because it still is not the final data in this period. It is only a cut-off point of secondary data in this study but it showed the number of new COVID-19 patients in that period. It should be studied the next time because mostly, data came from CCSA, the Department of Disease Control (DDC), and the Department of Mental Health, Ministry of Public health, Thailand which were secondary data. Epidemiological data of COVID-19 patients in Thailand is not the final report because the COVID-19 pandemic crisis is still happening. Since, due to time limitation, it is difficult to present complete information here but preliminary results show that self-care guidelines (i.e., mask using, self-isolation, social distancing, hand washing, avoid travelling etc) for the public health concept for the coronavirus crisis in Thailand are important to reduce the COVID-19 pandemic crisis of Thailand. Also some data suggest that the number of new patients decreased after Thai people followed self-care guidelines in their lifestyle from the end of March, 2020 up to now. Public health officers and the Thai government cooperated for this announcement. Thai people expected that the COVID-19 pandemic crisis will be controlled and normal public health will return.

Conclusion

The Thai government announced an emergency situation in all areas of the Kingdom of Thailand, from March 26th–June 15th 2020, and curfew later for COVID-19 pandemic crisis, which is, in current time, one of the biggest crises of global health and the greatest challenge with the world. Self-care for public health concept for the coronavirus crisis in Thailand comprised of 14 guidelines which is not difficult to process. Moreover, there was a continuous decrease in new COVID19 patients gradually according to secondary data of Ministry of Public Health, Thailand on April 13th–23rd, 2020 after curfew in Thailand. However, limitation of this study is its unclear statistic data of the acceptable level by the public, its effectiveness in each item from secondary data of Thailand that it should be studied in the next time because it is not final information. Epidemiological data of Thailand is not the final report because COVID-19 pandemic crisis is still in appearance up to now. It can be observed that the number of new COVID-19 cases of Thailand reduced after Thai people practiced self-care guidelines in their lifestyle (such as, mask using, self-isolation, social distancing,

hand washing, and avoid travelling). This point indicated that self-care in public health concept for the coronavirus crisis in Thailand is able to reduce coronavirus patients in Thailand with the decreasing of number of new cases after self-care recommendations with the announcement of public health officers and Thai government. The usefulness of this paper to the readers is to apply and create public health policy using the fundamental public health information. In addition, it contributed to make decisions to prevent COVID-19 pandemic from re-emerging as a disease. As per the motto of Thai government, that people need to “stay home, stop the disease, for the nation” to reduce the number of COVID-19 pandemic crisis in Thailand. If people in Thailand follow the social norms, and help each other with self-care in the public health perspective for COVID-19. Life will be expected to return to a normal public health situation soon.

Competing Interest Statement

All authors have read and approved the manuscript and take full responsibility for its contents. The authors have declared that no competing interest exists.

Acknowledgements

The authors wish to thank the reviewers and editors of this manuscript for their constructive comments.

References

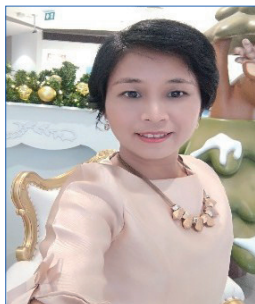
- Artiga, S & Hinton, E. Beyond health care: The role of social determinants in promoting health and health equity. Disparities Policy. Retrieved from <https://www.kff.org/disparities-policy/issue-brief/beyond-health-care-the-role-of-social-determinants-in-promoting-health-and-health-equity/>
- CCSA. Retrieved from <https://www.thaigov.go.th/>.
- CDC. Coronavirus disease 2019 (COVID-19). Retrieved from https://www.cdc.gov/coronavirus/2019-ncov/hcp/clinicalcriteria.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2F2019-ncov%2Fclinical-criteria.html.
- Department of Disease Control, Ministry of Public Health, Thailand. Corona Virus Disease(COVID-19). Retrieved from <https://ddc.moph.go.th/viralpneumonia/eng/index.php>.

- Department of Mental Health, Ministry of Public Health, Thailand. Retrieved from <https://www.dailynews.co.th/politics/770480>
- Gazette. Retrieved from <http://web.krisdika.go.th/data/law/law2/%C779/%C779-20-2556-a0001.htm>
- Narasimhan, M & Kapila, M. (2019). Implications of self-care for health service provision. *Bulletin of the World Health Organization*, 97, 76-76A. doi:<http://dx.doi.org/10.2471/BLT.18.228890>
- Prachayangprecha, S., Vichaiwattana, P., Korkong, S., Felber, J.A., Poovorawancorresponding, Y. (2015). Influenza activity in Thailand and occurrence in different climates. *Springerplus*, 4, 356.
- Puttawattana, P. Retrieved from <https://www.si.mahidol.ac.th/sidoctor/e-pl/articledetail.asp?id=747>
- Qifang, Bi.,Yongsheng, Wu., Shujiang, Mei., Chenfei, Ye., Xuan, Zou., Zhen, Zhang., et al.(2020). Epidemiology and transmission of COVID-19 in 391 cases and 1286 of their close contacts in Shenzhen, China: a retrospective cohort study. *The Lancet Infectious Disease*. Published: April 27, 2020 DOI:[https://doi.org/10.1016/S1473-3099\(20\)30287-5](https://doi.org/10.1016/S1473-3099(20)30287-5).
- Rhee, C.H. COVID-19 Pandemic and the Asia-Pacific Region: Lowest Growth Since the 1960s. Retrieved from <https://blogs.imf.org/2020/04/15/covid-19-pandemic-and-the-asia-pacific-region-lowest-growth-since-the-1960s/>.
- Riegel, B, Jaarsma T, Lee CS, Stromberg A. (2019). Integrating symptoms into the middle-range theory of self-care of chronic illness. *ANS Advances in Nursing Science*, 42(3), 206–215. doi: 10.1097/ANS.000000000000237. [PubMed: 30475237]. [PubMed Central: PMC6686959].
- Wikipedia. 2020 coronavirus pandemic in Thailand. Retrieved from https://en.wikipedia.org/wiki/2020_coronavirus_pandemic_in_Thailand, Accessed
- World Health Organization. Self-care for health: a handbook for community health workers and volunteers. New Delhi: World Health Organization Regional Office for South-East Asia; 2013. Retrieved from http://apps.searo.who.int/PDS_DOCS/B5084.pdf
- World Health Organization. Self-care can be an effective part of national health systems. Retrieved from <https://www.who.int/reproductivehealth/self-care-national-health-systems/en/>.
- World Health Organization. Coronaviruses. Retrieved from at <https://www.who.int/thailand/health-topics/coronavirus/>.
- Wu, Z & McGoogan, J. M. (2020). Characteristics of and important lessons from the coronavirusdisease 2019 (COVID-19) outbreak in China: Summary of a report of 72314 cases fromthe Chinese Center for Disease Control and Prevention. *JAMA*. 2020. doi: [10.1001/jama.2020.2648](https://doi.org/10.1001/jama.2020.2648). [PubMed: 32091533].

Biographical Statements of Authors

Chonticha Kaewanuchit

received B.Ns, B.PH, M.Sc., degrees, and received a Thai government scholarship to undertake her Ph.D. (Medical and public health social science) in 2008. During the period of her study for Ph.D at Mahidol Univesity, Thailand, she received assistance from Canada and Malaysia to complete her dissertation. After Ph.D., she worked at a government university, Thailand until she was an Associate Professor in the field of public health. She has received the best research publication award for an article that was selected by a SCOPUS journal, *Pertanika Journal of Social Sciences and Humanities*. Her research was highlighted in the *Asia Research News* magazine in 2016.



In addition, she has been awarded the excellent researcher title from 2015 to 2019, at a government university, Thailand. She is also the recipient of many research funds which includes Canada, Thailand, and Malaysia. She is also a peer reviewer for many international journals, which are at ISI web of Science and Scopus journals.

Assoc. Professor Dr. Chonticha Kaewanuchit

Advisor for Research Facilitation Division
Faculty of Medicine Vajira Hospital
Navamindradhiraj University
Bangkok 10300, Thailand

E-mail: sim356@yahoo.com

Nayan Deep S. Kanwal

received his BAG., and M.Sc., degrees from UPNG in 1982 and 1984, respectively. Nayan received a French government scholarship in 2005 to undertake his Ph.D. studies in France.



He joined Universiti Putra Malaysia, Serdang in 1996, where he served as a Lecturer and subsequently a Professor (visiting) at BINUS University. In addition, he functioned as the Chief Executive Editor with several university prestigious journals in Malaysia, Indonesia and Southeast Asia.

His main areas of research interest are environmental issues, and English language studies.

Professor Kanwal is a Fellow of the Royal Society of Arts (FRSA), United Kingdom, a Life Member of the British Institute of Management (BIM), United Kingdom, an Associate Member of the Marketing Institute of Singapore (AMIS) and an Associate Member of the Australian Institute of Agricultural Science and Technology (AIAST).

Dr. Nayan Deep S. Kanwal, FRSA, ABIM, AMIS, Ph.D.

Independent Researcher
Texas, USA

E-mail: nayan.kanwal@gmail.com