Roles of Family in the Prevention of Chronic Kidney Disease and Stroke among Family Members at Risk of Developing the Diseases\footnote{Financial support for this research is provided by Boromarajonani College of Nursing, Nakhon Lampang, Ministry of Public Health, THAILAND.}

Pachara Wiwoot, RN.\footnote{Correspondence concerning this article should be addressed to Pachara Wiwoot at email: Tonnum_159@hotmail.com}

Thaworn Lorga, Ph.D.

Anurak Sangjan, RN.

Kruawan Santhuankeaw, RN.

Boromarajonani College of Nursing Nakhon Lampang, Thailand

Abstract

Chronic kidney disease (CKD) and stroke are on the rising trend worldwide including Thailand. This is due to the increasing prevalence of risk factors such as diabetes, hypertension, and hyperlipidemia. Existing population and community-based prevention programs do not seem to be effective in delaying the progression of at-risk people to a disease state. In accordance with recent national policies on family health which call for a more active role of family in preventive health, a family-centred approach to prevention of CKD and stroke is considered. This article presents the findings from field experiences in accordance with relevant literature and proposes a family-centred model to CKD and stroke prevention among at-risk family members within Thai contexts. Findings suggest that people who develop the diseases often live in environments that promote unhealthy behaviours, do not have a good role model at home, lack of motivation for healthy behaviors and family support. Based on these findings, a system approach was used to design a model. The resultant model addresses the following aspects: 1) Advice and informational support, 2) Healthy home environments, 3) Family role modeling, 4) Motivational support, and 5) Improvement through Plan-Do-Check-Act. The model was rated by 10 family members as likely feasible.

Keywords: Chronic kidney disease, Stroke, Preventive health, Family role
Introduction

Current Non-communicable disease (NCD) is a major public health problem in the world and Thailand has a continuing illness rate, especially chronic kidney disease (CKD) and stroke. The estimated prevalence of CKD in Thailand in 2007-2008 was 17.6% of all patients with CKD and 50% of patients with stage 3-4, who is required for renal replacement therapy (Kidney Disease Association of Thailand, 2008). In addition, the patient has to spend all the time for his treatment and other expenses (Bureau of Non Communicable Disease, 2016). However, there are 17 million stroke patients worldwide (World Health Organization, 2008 cited in the Department of Medical Services, 2013). Especially in the United States, which they found new cases of stroke for about 610,000 of people are diagnosed with stroke per year or there are stroke patients every 40 seconds (Mozaffarianet al., 2016). For Thailand, the occurrence of stroke continues to increase for 352.30 per 100,000 populations. The mortality rate was 38.66 per 100,000 populations (Bureau of Non Communicible Disease, 2016). From the situation, it can be seen that the prevalence rate is likely to increase rapidly and causes of premature death and many public health problems (World Health Organization, 2014).

The risk factors of CKD and stroke, includes not only unhealthy lifestyle such as smoking and drinking (Maneesri, 2010) but also hypertension, diabetes, hyperlipidemia (Chantarametheekul, 2011; Horio et al., 2010) and a family history of disease (Marinigh, Lip, Fiotti, Giansante, & Lane, 2010). The effects of CKD to most patients will cause kidney disorders on both sides. At 1 or 2 stage, patients do not have symptoms until they go to 3-5 stage when the disease progresses. Symptoms of kidney dysfunction including overdose of minerals, excess water and waste in the blood such as decreased urine output, increased blood pressure, fatigue, nausea, vomiting, itching, swelling of both legs, decreased sensation or seizures, etc. (Kidney Association of Thailand, 2015). The study found that patients with stroke had a history of neurological disease. The disorder is usually stabilized, decrease perception, and has swallowing problems including uncontrolled excretion of urine and feces. In addition, it was found that 50% of stroke survivors are experiencing permanent paralysis. Only 26% of them can perform normal daily activities (Mackay & Mensah, 2004). This leads to patients are less able to take care of themselves and they need care from their family or caregiver for the most part.

Literature Review

Family institution is the smallest social system. It is an important context and environment for promotion, growth development of wellbeing, health promotion and health care of individuals. Wright & Leahey (2009) believe that the concept of a family system is "holistic" and effect the family boundaries, family adjustment, interpersonal relationship, and including family members who play an important role in driving the health and lifestyle of the family. The situation or condition in which family members are affected by illness or changes in health status can result to changes in the family. On the other hand, it also affects the person who is experiencing the illness. Family members are therefore important component of the family's strength, vulnerability, and well-being (Tirapiwong, 2011).

Health care is based on the promotion of self and others in the family. An illness of one member can result to increase the family members' awareness of their health (Ongsuriyanondh, 2008). In addition, the family system is linked both within and outside the family and change of
environment which can affect the family system. An example is when a family member suffers from chronic illness, an illness that takes a continuous period to heal; all of this affects the patient's family through causing stress and change the role of family members. It also affects the health of other people in the family (Baiya, Chamsaeng, Peachaiyaphum & Tangsangworatumma, 2013). At the same time, it was found that family members were searching for knowledge about the disease and family’s history of the disease. This disturbs the positive correlation of their health care behaviors (Ratchatapaiboon, 2006).

Families with family members with various diseases are being affected by this phenomenon. Families are key roles including that family are primary source of behavioral health, decision making, collaborative care, patient care from healthy living conditions, promotion and protection, diagnosis, treatment, and rehabilitation. The role of the family is constantly changing depending on the nature and severity of the illness and the cooperation of the family (Watcharasin, Homchampa, & Suwan, 2010). Including 1) Health promotion stage 2) Stage of illness evaluation 3) Period of care seeking 4) Period of family members being admitted to health care facility 5) Acute illness response stage and 6) Adaptation period for illness and rehabilitation. These begin health promotion stage and begin the important role of being a healthy person and wellbeing, also to prevent the risk of disease.

Method

This field study was conducted by a literature review of Thailand’s local context and international researches to study the roles of family in the prevention of CKD and stroke among family members at risk of developing the diseases. Then, the authors came up to a model identifying the prevention of disease of the family members who are at risk for CKD and stroke. An evaluation of the model was conducted through an interview of 10 family members who are at risk of with obesity, diabetes, hypertension, and dyslipidemia about the possibility of adopting the model to prevent CKD and stroke. The interview took place in a community of Mueang district, Lampang province, Thailand.

Results and discussion

"No disease is a good fortune" is the point for family health promotion for good health status. They started this promotion from letting the person realize the importance of being healthy. The literature review found that people should have the ability to prevent diseases including 1) Advice and informational support 2) Healthy home environments 3) Family role modeling 4) Motivational support by all activities driven and planned to improve outcomes through the PDCA (Improvement through Plan-Do-Check-Act).
MODEL FOR PREVENTION OF CHRONIC KIDNEY DISEASE AND STROKE AMONG FAMILY MEMBERS AT RISK OF DEVELOPING THE DISEASE

Figure 1: The Model of Prevention of Chronic Kidney Disease and Stroke among Family Members at Risk of Developing the Diseases

From the literature review on family roles in caring for patients at risk for CKD and stroke, the role of the family in patient care is a factor that affects the risk of disease including the environment (Obrador et al., 2017; Wright & Leahey, 2009), role model for good health (Katon et al., 2010), and motivation and social support (Kazancioqlu, 2011). Therefore, the authors developed a model for the prevention of CKD and stroke by Plan-Do-Check-Act (PDCA) process to adapt the role to help family members understand the problem. This model includes advice and informational support, healthy home environments, family role modeling, and motivational support. The PDCA is used in all processes of preventing the CKD and stroke.

The model of prevention of CKD and stroke among family members at risk of developing the diseases consist 4 parts:

1) Advice and informational support

Cognition is based on education, research, experience, and individual practical ability (Dictionary of the Royal Institute, 1999). According to the study of Jangwang, Pittayapinune and Hutipattana (2016), it was found that health promotion by providing knowledge and advice relating to health will change the person’s behavior. It was also found that in the knowledge-
based group, health behaviors were better than those without knowledge. Therefore, educating and advising of families with the risk about the diseases, nutrition, exercise, and emotional management such as stress management, risk management, medication and behavioral modification will reduce the severity of the disease (Buathongchan, Sittineam & Teerawatsakul, 2013). Education and advice are more effective if training is provided through the process of PDCA (Moen, & Norman, 2006), also leads to effective work and endless development. The development of skills focused on health behavior to delay the progress of the disease and promote the health of family members by practicing the necessary skills as following (Suriwong, 2015):

Food and exercise- Selecting skills are modification dietary and exercise behavior by beginning from education and practice such as elastic exercise cooperate diet control under the nutrition flag and self-directed to control the weight in overweight adults (Manonom, 2009).

Stress management skills- Increasing stress management skills begins by educating of traditional folk style, webcast and handbook then home visits and counseling (loyha, 2007) or individual counseling (Lhaosupab, N., Monkong, S., & Sirapongam, 2014). It is combined with breathing practice, relax by contracting and loosen the muscles (progressive muscle relaxation) relax with deep breathing (autogenic training) and meditation (Santayakorn, 2011).

Smoking cessation skills- This is a behavior modification to quit smoking or alcohol. Families are important in providing support and motivation. Therefore, adjusting to smoking or drinking habits will need the family’s involvement through positive communication, love and relationship, help solve the problem, record goals and achieve the goals (Khasemophas & Rojanapraser, 2015; Raya, Benjakul, Kengganpanich, Kengganpanich & Lattanand, 2015; Suriyachai, 2013). Skill training on quitting smoking or alcohol drinking uses the PDCA process to patients and families to learn to solve the problems by their selves.

2) Healthy home environment

The environment affects the health of people including, the home which is very important to the person’s health because it is likely to be at the least risky and least accidental place. However, there are many factors that negatively affect the health of the people at home such as lack of water supply, unsanitary surroundings, rowdy noise, polluted air, insufficient garbage collection and cooking facilities, unhealthy food storage, excessive temperature and humidity, dense housing residents, inadequate lighting, poor quality building materials and insect vectors diseases. These factors lead to risk of diseases (Kadkarnkai, Tachasan & Inmuang, 1997). Therefore, environmental management for health promotion starts from the family such as maintaining hygienic house surrounding, avoiding air pollution in the home through installing proper ventilation, include nutritious food for family members. In addition, families may request assistance from relevant agencies to organize the community’s environment which affect the health of family members. Lastly, use the PDCA process to manage the environment where the family dwells in.
3) Family role modeling

Success of an individual or failure of one's actions will affect the family member’s perception of the things around him. This means that family members are successful models of health care because they are closest. So this learning model contains 4 processes: 1) attention processes 2) retention processes 3) production processes and 4) motivational processes (Bandura, 1977). Learning from a good health model begins from showing examples such as exercising, eating nutritious food, emotional control, avoiding illegal drugs, building a happy family, helping one another etc. (Gruber & Haldeman, 2009; Vipavanich & Sungrugsa, 2016). In addition to being an example of health promotion for vulnerable groups, promotion of good hygiene behavior for other family members will cultivate a healthy behavior for the next generation. Implementing a health model in cooperation with the PDCA process improves the learning of risk groups in health behavior modification. Families should start planning a health model to train the family members to be better at health care. In addition, family members should check the consistency of behavior inside the home and evaluate on the effects of family modeling to make the behavior suitable to the family’s context.

4) Motivational support

Motivation changes both internal and external behavior of a person. The use of Protection Motivation Theory includes: 1) Perception of the severity of the disease. (Noxiousness) 2) Perceived probability and 3) Response efficacy (Prentice-Dunn, & Rogers, 1986). The motivation for health behaviors to promote health is based on the individual's intention, perception danger, violence and the impact of disease. At the same time, external motives such as family support are important to improve the health and behavior of vulnerable people. Thus, when family members are motivating patients in risky care to prevent CKD and stroke, they should motivate the risk group through encouraging them to be aware of the severity and impact of the disease. It also helps the patients to strengthen their self-confidence to avoid risky behavior and seeking agency support (Julawong, 2014).

Family Perception of the Model:

From interviews with 10 at risk family members (with obesity, diabetes, hypertension, and dyslipidemia) about the possibility of adopting the model to prevent CKD and stroke, the results say that this model can be adapted to their families. Accordingly, "This model may help control their diabetes and hypertension" and "formerly, I went to the doctor to ask for adjustment of the medication and he introduced a diet exercise but I did not do it because I eat like everyone else do in the house and If I eat separately with them, it will cost me money.” While for family members with diabetes and obesity, accordingly, "This model will be good at home because there are obese family members and if this will helpful for the vulnerable people and in whole family.”

Summary and Application of the Model

Non-communicable disease especially CKD and stroke trend has increased throughout the world, including Thailand. The risk factors of CKD and stroke such as diabetes, hypertension
and hyperlipidemia affect the physical, mental, emotional, social and economic well-being of patients and families. It is a complex health problem that is costly and requires close supervision. According to the public health policy, families are taking part in the health care and family oriented. Families are responsible for helping and preventing CKD and stroke. It plays an important role in the prevention of the disease and provide care to delay the onset of the disease and to prevent the progress of severe disease and complications. A review of literature on the role of families in caring for individuals at risk for CKD and stroke found that the risk group did not perform well and they are living in an environment that affects bad health behaviors, such as lack of good health care, lack of motivation, and social support for good health behaviors. From the literature review, it was also found that the ways to prevent the disease for the families are 1) Advice and informational support, 2) Healthy home environments, 3) Family role modeling, 4) Motivational support, and 5) Improvement through Plan-Do-Check-Act for prevention of CKD and stroke and slow the disease or slow disease progression to severe disease. The results for individuals at risk for disease are indicative of the prevention of CKD and stroke and good quality of life. This model can be used to guide a family-centred approach to the prevention of CKD and stroke among at risk individuals. The model can also be used to inform capacity building or training programs for family whose family members are at risk of developing and sustaining the diseases.

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