

THE EFFECT OF THE DEVELOPMENT OF WEB-BASED SUPPORTING SYSTEM
FOR MILITARY HEALTH PROMOTION USING PARTICIPATORY APPROACH:
A CASE STUDY OF FIRST INFANTRY REGIMENT, THE KING'S OWN BODYGUARD

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ผลของการพัฒนาระบบสนับสนุนบนฐานเว็บเพื่อการสร้างเสริมสุขภาพทหารโดยใช้แนวทางการมีส่วนร่วม: กรณีศึกษากรมทหารราบที่ 1 มหาดเล็กรักษาพระองค์ฯ



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การสร้างเสริมสุขภาพทหารมีความสำคัญอย่างยิ่งทั้งต่อสุขภาพของบุคคลและเสถียรภาพของกองทัพ รวมไปถึงความมั่นคงของประเทศ การสนับสนุนการดำเนินงานสร้างเสริมสุขภาพกำลังพลกองทัพโดยการประยุกต์ใช้เทคโนโลยีสารสนเทศและการสื่อสารที่เหมาะสม จะก่อให้เกิดประโยชน์ต่อการบรรลุเป้าหมายของการดำเนินงานได้เป็นอย่างดี การวิจัยนี้มีวัตถุประสงค์หลักเพื่อศึกษาผลของการพัฒนาระบบสนับสนุนบนฐานเว็บเพื่อการสร้างเสริมสุขภาพในพื้นที่ทหารที่มีต่อชุมชนและบุคคล เป็นการวิจัยเชิงปฏิบัติการที่ใช้แนวทางแบบมีส่วนร่วมและวิธีการวิจัยแบบผสม ดำเนินการในพื้นที่กรมทหารราบที่ 1 มหาดเล็กรักษาพระองค์ฯ ผลการศึกษาเบื้องต้นพบว่า กำลังพลกองทัพบกที่ใช้อินเทอร์เน็ตส่วนใหญ่เป็นผู้ใช้ข้อมูลสุขภาพทางอิเล็กทรอนิกส์และมีความรอบรู้ด้านสุขภาพทางอิเล็กทรอนิกส์อยู่ในระดับสูง โดยมีปัจจัยกำหนดระดับความรู้ด้านสุขภาพทางอิเล็กทรอนิกส์ ได้แก่ ประสบการณ์ในการใช้ข้อมูลสุขภาพทางอิเล็กทรอนิกส์และการรับรู้ความสำคัญของการเข้าถึงข้อมูลดังกล่าว ระบบสนับสนุนบนฐานเว็บที่พัฒนาขึ้นได้ถูกนำไปใช้ในการจัดการความเสี่ยงตามสายชุมชนเพื่อเผยแพร่ความรู้และข่าวสารด้านสุขภาพ ซึ่งมีการริเริ่มโดยชุมชนและดำเนินงานโดยกลุ่มเยาวชนในชุมชน การใช้ระบบสนับสนุนดังกล่าวส่งผลให้ระดับการมีส่วนร่วมของชุมชนในภาพรวมสูงขึ้นเมื่อเทียบกับการดำเนินงานสร้างเสริมสุขภาพที่ผ่านมา ที่สำคัญ การใช้ข้อมูลสุขภาพทางอิเล็กทรอนิกส์และความรอบรู้ด้านสุขภาพทางอิเล็กทรอนิกส์ของบุคคลก็เพิ่มสูงขึ้นด้วย ผลการศึกษาสะท้อนว่าระบบสนับสนุนที่พัฒนาขึ้นควรมีการนำไปใช้ในการสร้างเสริมสุขภาพและยกระดับความรู้ด้านสุขภาพทางอิเล็กทรอนิกส์ของกำลังพลกองทัพบก การวิจัยครั้งต่อไปควรศึกษาการแพร่กระจายนวัตกรรมสุขภาพและผลลัพธ์ด้านการสร้างเสริมสุขภาพในระยะยาวของการใช้ระบบสนับสนุนดังกล่าว

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THANITA WONGJINDA: THE EFFECT OF THE DEVELOPMENT OF WEB-BASED SUPPORTING SYSTEM FOR MILITARY HEALTH PROMOTION USING PARTICIPATORY APPROACH: A CASE STUDY OF FIRST INFANTRY REGIMENT, THE KING'S OWN BODYGUARD. ADVISOR: PROF. SURASAK TANEEPANICHSKUL, M.D., pp.

Health of military personnel is important not only for individuals' health, but also military stability, and nation security, in turn. The implementation of health promotion (HP) of Royal Thai Army (RTA) personnel facilitated systematically by using information and communication technologies enables outcomes achievement. The main purpose of this study was to investigate the effect of web-based supporting system (WBSS) on HP outcomes both at community and individual levels. This action research using participatory and mixed method approaches was carried out in the setting of First Infantry Regiment, The King's Own Bodyguard. Preliminary results showed that the majority of Internet users used eHealth and had high level of eHealth literacy. In addition, eHealth literacy was significantly determined by having experience of using eHealth and perceived importance of accessibility to online health information. After its development, WBSS was used by the community to support a health education program, a community initiative run by a youth group, broadcasting through public audio line system. Overall, community participation in HP using WBSS was higher than that in previous actions for health. HP outcomes in terms of usage of eHealth, and eHealth literacy were also increased. Findings from this study reflect the need for WBSS to be used extensively in RTA units in order to promote the health in general, and to scale up eHealth literacy in particular. Further researches to measure how this innovation can be diffused and its long term outcomes are required.

Field of Study: Public Health

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LIST OF ABBREVIATIONS

WHO	World Health Organization
MoPH	Ministry of Public Health
RTA	Royal Thai Army
AMED	Royal Thai Army Medical Department
PCU	Primary care unit
CHV	Community health volunteer
HP	Health promotion
NCD	Noncommunication disease
ICT	Information and communication technologies
IT	Information technology
EHEALS	eHealth literacy scale
WBSS	Web-based supporting system
DJ	Disk jockey

CHAPTER I

INTRODUCTION

1.1 Background and Rationale

Over the last few decades, the importance of health promotion has been increasingly recognized worldwide. With the contribution of World Health Organization (WHO) to a new public health and health promotion, the Ottawa Charter for Health Promotion (World Health Organization, 1986) was adopted in an international conference in 1986 (Kickbusch, 2007). Since its adoption, the Ottawa charter has become a fundamental document of health promotion (Potvin & Jones, 2011). Tremendous amounts of effort have been put into health promotion implementation. By further WHO conferences on health promotion, the Ottawa charter has been reinforced (Kwok-Cho Tang, Robert Beaglehole, & O'Byrne, 2005) and the value of health promotion has been increasingly emphasized. To announce the Bangkok Charter for Health Promotion in a Globalized World, WHO (2005) clearly reaffirmed that health promotion, as a core function of public health, “contributes to the work of tackling communicable and noncommunicable diseases and other threats to health.”

Based on a broad new understanding of health promotion, the Ottawa charter (World Health Organization, 1986) defines health promotion as “the process of enabling people to increase control over, and to improve, their health.” According to Nutbeam (1998), health promotion embraces not only actions directed towards strengthening the skills and capabilities of individuals, but also activities directed at modifying wider social, environmental and economic conditions that can affect health. With its holistic concept of health, the work on health promotion addresses

the full range of modifiable determinants of health to achieve better health outcomes.

In tackling the determinants of health, five action areas of health promotion set out in the Ottawa charter are building healthy public policy, creating supportive environment, strengthening community actions, developing personal skills and reorienting health services. This requires the co-ordinated action of several sectors working together, not merely a responsibility of the health sector (World Health Organization, 1986). Importantly, the integration of these strategies can be more effective than applying them separately (World Health Organization, 2009b). This new approach has been regarded as a revolution in health promotion field (Robertson & Minkler, 1994), which is different from the so-called health promotion in conventional public health.

Increasing evidence from around the world has suggested that investment in health promotion programs is of benefit to the community in promoting positive wellbeing, decreasing preventable illness and minimizing overall health care costs (Victorian Government Department of Human Services, 2003). In the Seventh Global Health Promotion Conference held in Nairobi, Kenya, WHO (2009a) confirmed that a huge body of evidence and experiences has accumulated over the period from the Ottawa Conference in 1986 through the Bangkok Conferences in 2005 about the importance of health promotion as integrative, cost-effective strategy, and as an essential component of health systems.

To encourage actions to influence health determinants, the Nairobi Conference points out the advantage of increasing access to and use of health information through information and communication technologies (ICTs). Furthermore, a meta-analysis of 75 randomized controlled trials showed that interventions delivered by computer technologies can result in improving health

behavior (David B. Portnoy, Lori A.J. Scott-Sheldon, Blair T. Johnson, & Carey, 2008) . Based on previous studies, Institute of Medicine (2009) also indicated information technology (IT) is important to address various challenges of health care system.

With the advancement of the Internet and related technologies in the Information Age, the world becomes progressively interconnected (Pew Research Center, 2016). The Internet has played an increasingly important role in daily lives due to its potential to become an effective communication channel for people. It provides an easy-to-use and universal access to information with various possibilities to find the latest up-to-date information. Most importantly, it can be accessed independently from location and time (Labonte & Schrecker, 2007).

The Internet population has grown rapidly over the last decade. According to Perrin and Duggan (2015), the overall number of American adults using the Internet has steadily increased from 52% in the year 2000 to 84% in 2015. The UK's Office of National Statistics (2016) recently reported that 82% of adults (41.8 million) in Great Britain used the Internet daily or almost daily in 2016, compared with only 35% (16.2 million) in 2006. The growth of the Internet access was markedly found in the survey across the 40 diverse countries by Pew Research Center (2016). Results from this survey also showed the highest rates of access in South Korea (94%), Australia (93%) and Canada (90%) in 2015.

In Thailand, as reported in 'The 2015 Household Survey on the Use of Information and Communication Technology' (National Statistical Office, 2015), 39.3% (24.6 million) used the Internet in 2015, while only 23.7% (14.8 million) did so in 2011. This expansion was paralleled by the increased proportions of computer and mobile phone use. In this report, 34.9% (21.8 million) were computer users and 79.3% (49.6 million) were mobile phone users.

Tremendously, the Internet has been used for health related purposes. The recent report of Pew Research center's Internet & American Life Project revealed that 72% of U.S. Internet users had looked online for health information in the past year (Fox & Duggan, 2013). For European citizens, the published study showed that Internet use for health purposes in Norway during 2000-2007 had increased dramatically from 19% to 67% and was estimated to be 84% in 2010 (Wangberg, Andreassen, Kummervold, Wynn, & Sørensen, 2008). In South Korea, nine out of ten Internet users reported that they have looked online for health information (Park & Lee, 2015).

The Internet is increasingly becoming a key source of health related information, which is greatly useful for health promotion. Defined as "the use of information and communication technologies (ICT) for health", 'eHealth' is one of the most rapidly growing areas in health nowadays (World Health Organization, 2006). It has gained increasingly attention for Internet users, both service providers and customers. Because of its innovation, cost effectiveness, and ability to deliver health information and services to remote locations, eHealth is being widely embraced (Obasola, Mabawonku, & Lagunju, 2015).

In health promotion field, much has been written about the advantages of using eHealth resources in different population groups around the world (Delgado et al., 2015; Gutierrez, Kindratt, Pagels, Foster, & Gimpel, 2014; Huberty, Dinkel, Beets, & Coleman, 2013; Montagni et al., 2016; Muellmann, Forberger, Mollers, Zeeb, & Pischke, 2016; C. D. Norman & Yip, 2012). The use of eHealth for seeking health information offers potential benefits to health promotion because people can utilize health information to change their behavior to be healthier. Effective health communication can provide reliable health information that enables individuals to improve their health literacy.

However, eHealth tools and services readily available through the Internet can be useless if people have less skills and ability to use them. In healthcare service, eHealth literacy intervention enables patients to become empowered and effective in the management of their health problems (Brown & Dickson, 2010). Effective use of the Internet for health requires 'eHealth literacy', defined as the ability to seek, find, understand, and appraise health information from electronic sources and apply such knowledge gained to addressing or solving a health problem (Cameron D. Norman & Skinner, 2006). Due to low levels of health literacy and computer skills, the proliferation of health information websites remains inaccessible to a large percentage of the population (Robinson & Graham, 2010). Previous researches indicated that eHealth literacy is essential and needs to be assessed (Astrid Karnoe & Kayser, 2015; Cameron D. Norman & Skinner, 2006; Park & Lee, 2015).

The issue of eHealth literacy had been studied in different groups of individual in many countries, such as U.S.A., Germany, Greece, China, Korea, Hong Kong, and so forth (Astrid Karnoe & Kayser, 2015; Julia L.Y. Chan et al., 2009; Malcolm Koo, Cameron D. Norman, & Chang, 2012; Cameron D. Norman & Skinner, 2006; Park & Lee, 2015; Soellner, Huber, & Reder, 2014; Xesfingi & Vozikis, 2016). Among these, several studies have focused on adolescent eHealth literacy, but few on adults. Still, knowledge on eHealth literacy in uniformed services and in Thailand has been so far limited.

In military service, promoting health of workforces is important not only for individuals, but also organization and the nation. This is because health and quality of life of soldiers can greatly affect military readiness and security of the nation, in turn. With regard to the importance of health promotion of its personnel, the Royal Thai Army (RTA) adopted health promotion policy in 2008. As a big organization, the RTA has implemented this policy hardly. Only few RTA units have carried out health

promotion interventions. This situation has existed with a lack of systematic support for health promotion in army setting.

Using eHealth to develop information systems and tools can be a cost-effective option to support health promotion implementation in the RTA. As other sectors, military sector has been increasingly interest in the use of the Internet for health promotion. So far, there has been neither eHealth tool created specifically for RTA personnel nor eHealth-related study investigated in populations in the RTA.

As mentioned earlier, previous eHealth studies have focused on eHealth interventions for adolescents and elderly rather than adults. Also, an abundant health websites in Thai have provided health information for too general population. None has been developed to target at promoting health of military personnel.

In this research, web technology was applied to develop an online system to support health promotion implementation in RTA units. Unlike general health websites available online, a web-based supporting system (WBSS) for military health promotion can be one of potential solutions to practical problems within the RTA.

Development of WBSS for military health promotion, together with an investigation of factors and outcomes of the intervention, was the main focus of this inquiry. To enhance effective use of these online resources, eHealth literacy of RTA personnel is invaluable worth being assessed. Ultimately, knowledge and evidence from this research can be applied to enhance health promotion and increase eHealth literacy through the extensive use of developed WBSS for health promotion in military settings of the RTA.

1.2 Research Questions

1.2.1 General Research Questions

- 1) What are the contexts in which health promotion is implemented in a military setting and the needs for the development of WBSS for military health promotion?
- 2) What is the effect of WBSS for military health promotion on health promotion outcomes at both community and individual levels?

1.2.2 Specific Research Questions

- 1) At community level, what are contexts of the setting, concerned health problems, existing health promotion actions and related policies, community participation in health promotion, and the needs and resources for the development of WBSS for military health promotion?
- 2) At individual level, what are general characteristics, health conditions, Internet access and usage, the usage of eHealth, eHealth literacy and its determinants, and the needs for the development of WBSS for military health promotion?
- 3) By using participatory approach, how can WBSS for military health promotion be developed based on the needs and resources?
- 4) What is the effect of WBSS for military health promotion on health promotion outcomes comparing between pre and post implementation?

- Community level: what is the effect of WBSS for military health promotion on the usage of WBSS for and community participation in health promotion in a military setting?
- Individual level: what is the effect of WBSS for military health promotion on the usage of eHealth and eHealth literacy?

1.3 Research Objectives

1.3.1 General Research Objectives

- 1) To explore the contexts in which health promotion is implemented and the needs for the development of WBSS for military health promotion
- 2) To examine the effect of WBSS for military health promotion on health promotion outcomes at both community and individual levels

1.3.2 Specific Research Objectives

- 1) At community level, to explore contexts of the setting, concerned health problems, existing health promotion actions and related policies, and community participation in health promotion and further assess the needs and resources for the development of WBSS for military health promotion
- 2) At individual level, to explore general characteristics, health conditions, Internet access and usage, the usage of eHealth, eHealth literacy and its determinants, and the needs for the development of WBSS for military health promotion
- 3) To develop WBSS for military health promotion based on the needs and resources using participatory approach

- 4) To investigate and compare the effect of WBSS for military health promotion on health promotion outcomes between pre and post implementation
- Community level: the usage of WBSS for and community participation in health promotion in a military setting
 - Individual level: the usage of eHealth and eHealth literacy

1.4 Research Framework

The framework of this study was conceptualized from literature review and drawn from an understanding of military context within RTA units. In the framework, development of WBSS for military health promotion was regarded as the study intervention, independent variables as input of the intervention, and dependent variables as the effect of the intervention.

Independent and dependent variables were explored at both community and individual levels. It is worth noting that the intervention and relevant variables were understood under the contexts of the setting. The research framework is presented in the following figure.

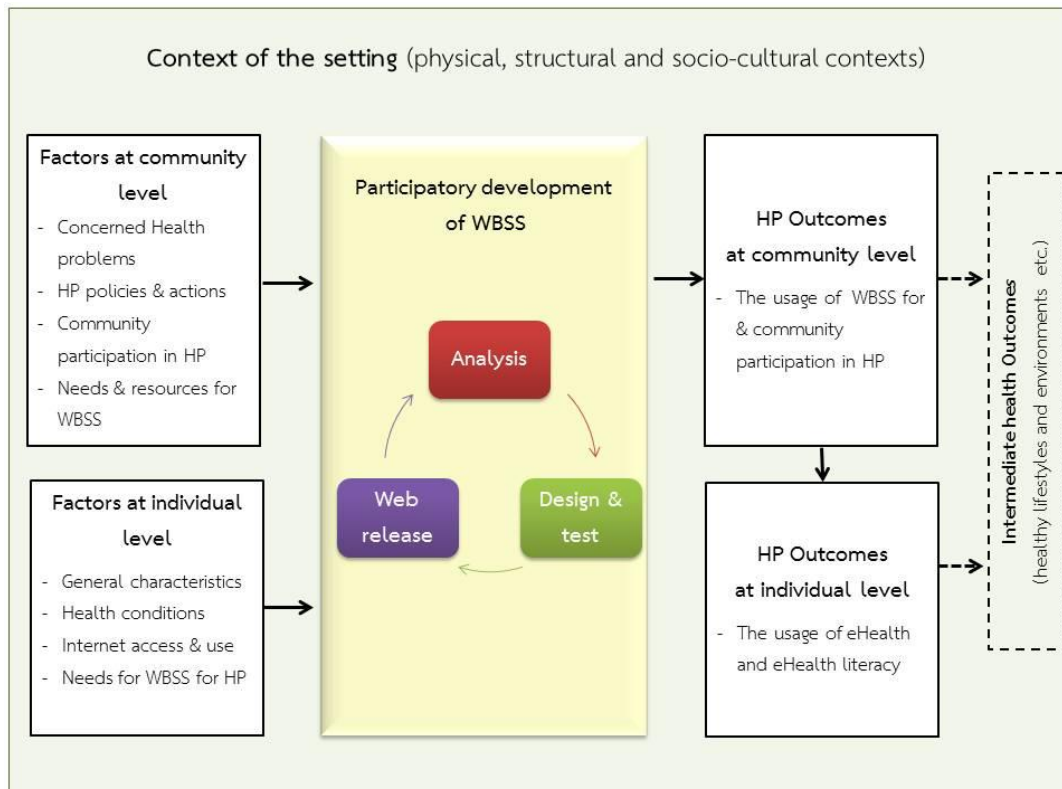


Figure 1 Research Framework

In the framework, contexts of the setting encompassed physical, structural and socio-cultural contexts. Independent variables at community level were concerned health problems, existing health promotion actions and related policies, community participation in health promotion, and the needs and resources for the development of WBSS for military health promotion. For individual level, independent variables were general characteristics, health conditions, Internet access and usage, and the needs for the development of WBSS for military health promotion. An understanding on these independent variables enabled the development of WBSS for military health promotion to be more relevant to health promotion in a military setting.

As mentioned earlier, development of WBSS for military health promotion using participatory approach was the study intervention. The participatory process of

WBSS development included analysis, design and test, and web release. Community participation was enhanced through this process. By the intervention, changes in health promotion outcomes under the context of the setting were expected.

Health promotion outcomes were selected from the literature to be dependent variables of the study. Those at community level were the usage of WBSS for and community participation in health promotion in a military setting. At individual level, health promotion outcomes were the usage of eHealth and eHealth literacy. Changes at individual level were better understood with the investigation of factors influencing them and the explanation of how the WBSS was utilized to promote usage of eHealth and eHealth literacy.

For intermediate health outcomes, such as changes in healthy lifestyles and environments, they may be worth following up after the intervention, but were excluded from the scope of this study.

1.5 Operational Definitions

‘Military setting’ refers to a place or an area where military installations are located in. Most of military settings have accommodations provided for military personnel and their families. In this study, a military setting of the RTA has both military installations and living sphere (houses, townhouses, flats, markets, public parks, kindergarten, sport clubs, football fields, etc.). Regularly, workforces of RTA units in this study work and live in this place.

‘Military community’ refers to a group of military personnel and their families, often living together in a military setting and sharing values, social norms.

‘Royal Thai Army personnel’ refers to permanent workforces of the Royal Thai Army. They are commissioned officers, non-commissioned officers, general

employee (those without rank). In this study, conscripts are excluded due to their different and temporary status of being soldiers, ranging from 6 months to 2 years.

‘Health promotion outcomes’ refers to changes to personal characteristics and skills and community actions and/or organizational practices which are attributable to the use of WBSS for military health promotion through community participation.

‘Community participation in health promotion’ refers to a social process of voluntarily taking part in health promotion activities, programs and/or discussions to bring about a planned change or improvement in community health

‘Web-based supporting system for military health promotion’ refers to an online system developed in this study using Internet and web technologies. Web-based supporting system, abbreviated to WBSS, intends to be developed in order to support and facilitate actions for health in military settings of the RTA.

‘Needs for the development of WBSS for military health promotion’ refers to components required or suggested to be included in WBSS for military health promotion in this study. The components can be menus or functions of the website, web content (topics or issues of interest), and online supportive tools. Opinions and suggestions on issues other than components for development of WBSS can also be regarded as the needs.

‘Resources for the development of WBSS for military health promotion’ refers to human, money, materials and time resources that the community has and can be used for the development and usage of WBSS.

‘Usage of WBSS for health promotion’ refers to the way in which WBSS is utilized by the community to support or facilitate health promotion implementation either directly or indirectly.

‘Internet access’ refers to how the Internet is accessed in terms of tools, channels, and places. Also, convenience in accessing to the Internet is included in the meaning of Internet access.

‘Internet usage’ refers to used or not used the Internet during the past year and how frequently it had been used for a particular purpose in a specific time. Using the internet during the past year was primarily identified. Only current Internet users, who used the Internet last year, can report frequency of using the Internet in the past three months.

‘Usage of eHealth’ refers to having experience in using the Internet for seeking or receiving health information and frequency of using in a specific duration. Having ever used the Internet for seeking or receiving health information before was primarily identified. Only eHealth users, who had ever used the Internet, can report frequency of using the Internet for seeking or receiving health information in the past three months. In addition, perceived usefulness of the Internet in making decision about health and perceived importance of accessibility to health information on the Internet are additional aspects of the usage of eHealth.

‘eHealth literacy’ refers to individuals’ perceived skills and abilities at using information technology for health. In this study, scores and levels of eHealth literacy was assessed based on the concept and tool developed by Norman and Skinner (2006). Both scores and levels of eHealth literacy are reported in this study.

CHAPTER II

LITERATURE REVIEW

To develop a well-suited framework for this study, existing knowledge in the literature relating to development of WBSS for health promotion, as well as factors and outcomes of the implementation, was reviewed. Related literatures provided useful knowledge and understanding to be applied in this study, particularly in developing a conceptual framework. The review of literature focused on:

- Health promotion: concept and principles
- Settings for health promotion and community participation
- Health promotion evaluation
- eHealth promotion and eHealth literacy
- Development of web-based system

2.1 Health Promotion: Concept and Principles

The concept and principles of health promotion based on the Ottawa Charter for Health Promotion and the subsequent series of WHO documents on Global Conference for Health Promotion are widely recognized as a foundation of modern health promotion (World Health Organization, 2009b). In 1986, WHO announced the Ottawa charter at the First Global Conference for Health Promotion held in Ottawa, Canada. Since its establishment, the Ottawa charter has been known as a source of guidance and direction of a new health promotion.

The Ottawa charter (World Health Organization, 1986) defined that health promotion is “the process of enabling people to increase control over, and to improve, their health.” Also, it provides a holistic approach to health improvement focusing on fundamental conditions and resources for health, which are peace,

shelter, education, food, income, a stable eco-system, sustainable resources, social justice, and equity. According to the charter, such basic prerequisites for health need to be addressed to improve the health of population. As a holistic approach, health promotion addresses the full range of modifiable determinants of health. It embraces not only actions targeted at strengthening the skills and capabilities of individuals, but also actions directed towards modifying social, environmental and economic conditions (D. Nutbeam, 1998). With regard to its comprehensive concept, health promotion goes beyond the responsibility of health sectors and requires co-ordinated actions of all relevant sectors (World Health Organization, 1986).

There are three basic strategies outlined in the Ottawa charter, including advocate, enable and mediate. Firstly, health promotion focuses on advocacy for health in which conditions can be made to favor health. These conditions are political, economic, social, cultural, environmental, behavioral and biological factors. Secondly, health promotion emphasizes on enabling all people to achieve their full health potential. Lastly, mediating between the different interests in society in the pursuit of health is also targeted. It is recommended that these strategies should be adapted to the local needs and possibilities of each country with regard to different social, cultural and economic systems.

With this regard, the key action areas of health promotion encompass building healthy public policy, creating supportive environment, developing personnel skills and reorienting health services (World Health Organization, 2009b). Build healthy public policy is to direct policy makers to be aware of the health consequences resulted from their decisions. Create supportive environments focuses on generating both living and working conditions to be safe, stimulating, satisfying and enjoyable for people. Strengthening community actions is to empower communities to reach better health by a set of actions. Develop personal skills

addressed supporting personal and social development by the provision of information and education. Also, it enhances life skills that people can be more control over their own health and environments. For reorienting health services, this is to work together towards a health care system for health promotion.

This idea of health promotion action areas was mentioned further in the Jakarta Declaration on Leading Health Promotion into the 21st Century. In the declaration, it was suggested that combinations of the five strategies are more effective than using them separately (World Health Organization, 2009b).

Moreover, implementing such comprehensive strategies in particular settings is recommended. Those settings are mega-cities, islands, cities, municipalities, local communities, markets, schools, workplaces, and health care facilities. This notion is based upon the concept of health in the Ottawa charter emphasizing that health is created within the settings of people's everyday lives.

The declaration also pinpoints the crucial role of participation in sustaining health promotion action and priorities for health promotion in 21st century, including promote social responsibility for health, increase investment for health development, expand partnerships for health promotion, increase community capacity and empower the individual, and secure an infrastructure for health promotion (Schulz, Kremers, & De Vries, 2015).

Apart from the Ottawa charter and the Jakarta Declaration, the Bangkok Charter for Health Promotion in a Globalized World announced by WHO in 2005 is also an important source of updated direction for health promotion. This charter indicates critical factors that influence health today, including increasing inequalities, new patterns of consumption and communication, commercialization, global environmental changes, and urbanization. Also, new opportunities for cooperation to

improve health and reduce transnational health risks are mentioned, including 1) enhanced information and communication technology and 2) improved mechanisms for global governance and the sharing of experiences.

Additionally, required actions are listed in the Bangkok charter. The charter calls for all sectors and settings to act on: advocacy for health; investment to address the determinants of health; capacity building at all levels; regulation and legislation; and partnerships and alliances for sustainable action.

In 2009, Seventh Global Conference for Health Promotion was held in Nairobi, Kenya (World Health Organization, 2009a). This conference focuses on health promotion implementation gaps that have existed in many countries around the world. To fill the gaps, five domains that are urgently required were purposed:

- 1) Individual empowerment
- 2) Community empowerment
- 3) Health systems strengthening
- 4) Intersectoral action
- 5) Building capacity for health promotion

These domains are viewed as the basic building blocks for health promotion implementation.

2.2 Settings for Health Promotion and Community Participation

2.2.1 The Settings Approach to Health Promotion

As mentioned earlier, the Ottawa charter (World Health Organization, 1986) spotlighted the idea that health is created and lived by people within the settings of their everyday life. This has contributed to the emergence and application of the

settings approach to health promotion worldwide. There have been a number of literatures related to this approach and its utilization in health promotion field.

An updated and comprehensive one is the edited book 'Health Promotion Setting Principles and Practices' (Scriven, 2012b). A chapter in this book on 'The Setting Approach: Looking Back, Looking Forward' (Dooris, 2012) remarked that the Ottawa Charter introduced a framework for health promotion with a clear focus on settings. It also underlined that the charter represented a significant catalyst for the setting approach.

Since the Ottawa Charter, this approach has become an established part of the global health promotion agenda for action (Scriven, 2012a). Within this context, there has been a wide range of settings based health promotion programs and networks worldwide, including those that have been coordinated by WHO in Healthy Settings projects, such as cities, villages, schools, markets, islands, hospitals, prisons, and so on. Additionally, the Jakarta Declaration strongly endorses this approach by asserting that settings for health offer practical opportunities for the implementation of comprehensive strategies set out in the Ottawa Charter.

According to (Dooris, 2012), these movements, especially the global ones, provided legitimacy for the inclusion of the term 'settings for health' within WHO Health Promotion Glossary (D. Nutbeam, 1986). The glossary defines 'settings for health' as "the place or social context in which people engage in daily activities in which environmental, organizational and personal factors interact to affect health and wellbeing". It provides more clarification that a setting is also where people actively use and shape the environment and therefore create or solve problems relating to health.

As described in the glossary, settings can be normally identified as having physical boundaries, a range of people with defined roles, and an organizational structure. The glossary suggests that these can be used to promote health by reaching people who work in them or using them to gain access to services, as well as through the interaction of different settings with the wider community.

This comprehensive concept of settings based health promotion facilitates the paradigm shift from a focus on the individual to work within settings. It is developed on the basis of an appreciation that not only individual life-styles, but also social, economic, environmental and cultural circumstances that can critically affect health and well-being.

Dooris (2012) stated that this notion has the potential to multiply effectiveness by focusing on settings as channels for delivering interventions and, at the same time, as contexts which in themselves have directly and indirectly effects on wellbeing through social rules, norms, values and interrelationships. To make sure that the approach is applied properly, it is essential to understand key characteristics of the approach. The key characteristics of the settings approach are as follows.

Ecological Model of Health Promotion:

Based on an ecological understanding, the settings approach views health to be determined by a complex interplay of factors including environmental, organizational, and personal. This approach reflects an ecological model of health promotion. Most importantly, it represents a shift of focus from the individual to the population within a setting as well as a change of focus from a reductionist emphasis on single health issues, risk factors and linear causality towards a more holistic concern to develop supportive contexts within where people live.

System Perspective:

The settings approach regards settings as dynamic complex systems. It adopts system thinking to see the whole, which is not equal to the sum of its parts, with the recognition on interconnectedness, interrelationships, interdependency, and synergy between different components.

Whole System Development and Change Focus:

Informed by two perspectives mentioned above, this approach uses organization development and/or community development to introduce and manage change within the setting. ‘Whole system thinking’ is applied in this approach. It is essential to combine organization development with high visibility projects, to balance top-down commitment with bottom-up stakeholder engagement, and to ensure that initiatives are driven by both public health and core business agendas.

Having these characteristics makes this approach to be widely seen to have a number of advantages. A whole system ecological concept of the settings approach can make health promotion more relevant, appropriate and effective than narrowly focused topic-based and disease-specific intervention (Scriven, 2012b). The advantages of the setting-based approach include:

- Encouraged ownership for health among multi-stakeholders
- Explored connections between people, environment and behaviors
- Addressed interrelationships between different groups of people
- Recognized interactions between different health issues and initiatives
- Encouraged corporate citizenship through developing organizational awareness of the wider impacts on health and other issues

- Maximized contribution of particular settings to joined-up holistic public health

Despite the value of utilizing settings for reaching defined populations has long been recognized in health promotion, those initiatives have concerned with individual behavior change and omitted the contexts in their focus remain plentiful. For example, in relation to workplace, few studies have examined integrated, comprehensive strategies as a whole, but putting the focus on individual components instead.

It is noted that the works on settings based health promotion programs should provide evidence of effectiveness by demonstrating not only what works, but also how and under what conditions it works in a particular setting. In this regards, an analytic framework using the settings approach to analyze the conditions within the setting can contribute to a better understanding for the practitioner and provide clearer evidence for the use of the approach.

To guide setting-based intervention design and implementation, a useful analytic framework for practitioners was proposed (Scriven, 2012a). It firmly stated that using a settings approach in health promotion is to address the context within which people live, work, and play. They add that this makes such context the object of study and intervention enables the needs and capacities of people to be met in different settings.

The framework, with a nested series of questions, aims at better understanding on culture, history and unique context of each intervention settings. It can be used as a quick assessment tool prior to work with people in a setting (Dooris et al., 2007). The assessment using this framework focusing all aspects of the setting is preferable at initial stage of work. There are three parts in the framework:

understanding settings; changing settings and knowledge development and knowledge translation. Each part consists of numbers of questions organized under its groupings.

Understanding Settings

There are five subheadings: diversity across and within categories of settings; received knowledge; localized determinants of health; stakeholders and interests; and power, influence, and social change. This part consists of 19 questions organized under those subheadings, such as:

- What makes this category of setting different from/similar to other categories of settings?
- Who are the primary stakeholders in this setting or affecting this setting?

Changing Settings

There are six groupings: context; capacity; focus; engagement; strategy and evaluation. This part composes 20 questions organized under those groupings, such as:

- What is the history of health promotion in this setting?
- What capacities are required among local communities to make this setting effective?

Knowledge Development and Knowledge Translation

There are three items: identified knowledge gaps, forms of knowledge and information and theory-practice gaps. This part has three questions, such as:

- What do we still need to know about the settings approach, and about this setting in particular?

Also, this framework is recommended by Mittlemark (1999). He suggested using this framework for health need assessment in the settings. This assessment is essential for health promotion program planning and design in which a setting based approach is applied.

2.2.2 Community Participation in Health Promotion

The need for participation has been advocated consistently in the international health promotion conferences over the last two decades. In the 1997 Jakarta Declaration, the role of participation is strongly emphasized to sustain the health promotion efforts (World Health Organization, 2009b). Also, the 2005 Bangkok Charter asserts that active participation, especially by the community, is necessary.

Besides, a number of literatures have put the issue of participation to be central to health promoting settings. This includes several authors of the book 'Health Promotion Settings' (Scriven, 2012b) in which the value of participation in settings based health promotion programs is declared. For example, it is proved that participation in health promotion planning can improve project management and bring about sustainability (Scriven, 2012a). They illustrate that in a setting, a number of professional groups or staff will be involved as well as community member and/or those joining the program. Even in evaluation phase, use of participatory evaluation approach is also desirable.

'Community' refers to "a group of people who share an interest, a neighborhood, or a common set of circumstances" (Mittelmark, 1999). For the term 'participation', it is defined by Bracht (1999) as:

"A process by which people are enabled to become actively and genuinely involved in defining the issues of concern to them, in making decisions about factors that affect their lives, in formulating and

implementing policies, in planning, developing and delivering services and in taking action to achieve change”.

Putting two words together, ‘community participation’ is defined by Rissel and Bracht (1999) as:

“A social process of taking part (voluntary) in formal or informal activities, programs and/or discussions to bring about a planned change or improvement in community life, services and/or resources.”

According to a literature (Kickbusch, 2003), participation composes, and closely linked with, other concepts like empowerment, social capital and community capacity.

The contribution of community participation is described (McQueen & Anderson, 2004) as increasing democracy; combatting exclusion; empowering people; mobilizing resources and energy; developing holistic and integrated approaches; achieving better decisions and more effective services; and ensuring the ownership and sustainability of programs.

A set of indicators of community participation to be measured was set according to the review (Foege, 2010). Those indicators are:

- Diversity of participants/organizations
- Recruitment/retention of new members
- Role in the coalition or its activities
- Number and type of events attended
- Amount of time spent in and outside of coalition activities
- Benefits and challenges of participation

- Satisfaction with the work or process of participation
- Balance of power and leadership

There were four overarching dimensions of community participation found in the literature (McQueen & De Salazar, 2011), including:

- The extent and scope of community participation (e.g. the number and characteristics of participants)
- The process of working together (e.g. the organizational and community readiness for participation, effective communication)
- Capacity and support both for staff and community participants (skills, knowledge and confidence of staff and participants)
- Impact of participation (level of participation, power and control, changes resulted from participation)

Following table shows levels of community participation and gives examples for each level to be identified. It was presented by WHO (2002) adapted from what Brager and Specht developed in 1973.

Table 1 Levels of Community Participation

Level	Participant's action	Example
High	Has control	Organization asks community to identify the problem and make all key decision on goal and means. Willing to help community at each step to accomplish goals
	Has delegated authority	Organization identifies and presents a problem to the community. Defines limits and asks community to make a series of decisions which can be embedded in a plan which it will accept.
	Plans jointly	Organization presents tentative plan subject to change and open to change from those affected. Expects to change plan at least slightly and more subsequently.
	Advises	Organization presents a plan and initiates questions. Prepares to change plan only if absolutely necessary.
	Is consulted	Organization tries to promote a plan. Seeks to develop support to facilitate acceptance or give sufficient sanction to plan.
	Receives information	Organization makes plan and announces it. Community is convened for informational purposes.
Low	None	Community told nothing.

Source: WHO (2002) adapted from Brager and Specht (1973)

2.2.3 Measuring Community Participation in Health Program

In doing research using a participatory approach, it is essential to describe how to define participation in such a way as to reflect its levels and then how to use this into an evaluation framework for these processes to be described and linked with outcomes (Draper, Hewitt, & Rifkin, 2010). Also, how this evaluation framework was applied using a visualization technique (spidergram) is needed.

To understand the range of experiences of integrating community participation into health care programs, (Rifkin, Muller, & Bichmann, 1988) has previously developed a typology for planners to view how planners approached community participation in their own programs. Rifkin and team identified the ways in which communities participate in health programs as follows.

- The medical approach (mobilization): planners defined health as the absence of disease and participation as having people do according to the professional advises.

- The health services approach (collaboration): health is defined by the WHO definition as “the physical, mental and social well-being of the individual” and participation as a contribution of the community in terms of time, materials and/or money.

- The community development approach (empowerment): health is defined as a human condition and participation as the planning and managing of health activities by the community using professionals as resources and facilitators.

According to Draper et al. (2010), each of these approaches has distinct historical and ideological roots. They are not mutually exclusive but can be seen as points on a continuum of participation even though each of them is based upon particular views of health and community actions that lead to different expectations

of inputs and outcomes. This continuum is suggested as providing a practical lexicon for evaluation practice.

Rifkin et al. (1988) previously developed a continuum for participation. This continuum has narrow participation at one end and wide participation at the other end. The authors disaggregated the continuum in five elements or indicators of community participation. These indicators are used for analyses whether participation was wide or narrow in respect to each. They were: 1) Needs assessment; 2) leadership; 3) organization of the program; 4) management of the program; and 5) resource mobilization.

Each indicator was visualized as a continuum in its own right and linked to the other four indicators by placing the narrow end at the point of connection and the wider end away from the connecting point. It needs to be reminded that in all communities there is always some type of participation already existed.

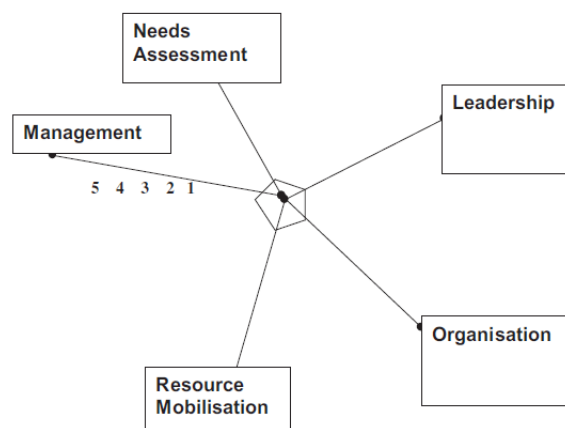


Figure 2 A Spidergram for Assessing Participation (Rifkin et al., 1988)

The five indicators within the spidergram were revisited by Draper et al. (2010) according to literature on community participation, the increasing use of the concept of empowerment, and relevant aspects of the child survival programmes reviewed. Revised indicators are:

1) Leadership (professionals introducing intervention, or by community of intended beneficiaries)

- Values for mobilization: Health professionals assume leadership. Local leadership does not necessarily try to widen the decision-making base in the community.

- Values for collaboration: Collaborative decision-making between health professionals and community leaders. Local leadership tries to present the interests of different groups.

- Values for empowerment: Program is led by community members who are selected through a representative process. Health professionals give leadership training if necessary. Local leadership ensures that the interests of various groups are represented in decision making.

2) Planning and Management (how partnerships between professionals and the community are forged)

- Values for mobilization: Health professionals tell the community how they may participate. They decide the program's focus, goals and activities and provide the necessary resources.

- Values for collaboration: Collaboration instigated by health professionals. Community invited to participate within a predetermined remit. Activities reflect community priorities and involve local people and existing community organizations. Both professionals and community members provide resources. Some transfer of skills occurs.

- Values for empowerment: Partnerships between health professionals created and institutionalized. Professionals' facilitate; the community defines

priorities and manages the program. Local people learn skills they need for management and evaluation.

3) Community people's involvement

- Values for mobilization: The inclusion of women is not specifically sought outside their traditional roles and their active participation is not a program objective.

- Values for collaboration: Women actively participate in some aspects of the program, but they have minor decision-making roles.

- Values for empowerment: The active participation of women in positions of decision-making and responsibility is a program objective.

4) External support for program development (in terms of finance and program design)

- Values for mobilization: Funding comes from outside the community and is controlled by health professionals. Program components, including community participation, designed by health professionals to address health outcomes they prioritize and in ways they deem appropriate.

- Values for collaboration: Majority of funding is from outside the community, but local people are asked to contribute time, money and materials. Professionals allocate resources, although they may consult community members. Program is designed by health professionals in discussion with community representatives. Role of each in the program, including women and minority groups, is negotiated.

- Values for empowerment: Community members work towards finding ways of mobilizing resources, including through external funding and with

their own resources, e.g. micro-financing. Program is designed by community members with technical advice from professionals on request. The design is flexible and incorporates wide community participation, including women and minority groups.

5) Monitoring and evaluation (how intended beneficiaries are involved in these activities)

- Values for mobilization: Health professionals design M&E protocols, choose the outcomes and analyze the data in ways to suit their information needs. Approach is mainly one of hypothesis testing and statistical analysis of health-related outcomes. Communities may not be made aware of the findings.

- Values for collaboration: M&E protocols and perform analyses, but community members are involved in data collection. A broad definition of 'success' is used. Responses to monitoring findings are jointly decided and community feedback is both sought and given.

- Values for empowerment: Community do a participatory evaluation that produces locally meaningful findings. A variety of data collection methods are used and the community chooses the indicators for success. Professionals assist at request of community. Communities actively involved in participatory monitoring and in deciding how to respond to monitoring findings. Communities contribute to any wider external evaluations.

In their study, Draper and team (2010) analyzed each case study using the process indicators above to assess the nature and extent of participation achieved in relation to each of the components. Also, they identified what overall point a program is on the continuum between community mobilization and community

empowerment. For each program, the indicators were scored in relation to the participation continuum using the following values:

- Value 1 represents mobilization
- Value 2 represents intermediate type between mobilization and collaboration
- Value 3 represents collaboration
- Value 4 represents intermediate type between collaboration and empowerment
- Value 5 represents empowerment

These values represent level of community participation in each component on a scale from low to high. The majority value can be applied if there is disagreement from assessors. The agreed values for each component are marked onto the spidergram. Importantly, the authors reminded that these values are not intended to be precise quantified measures, but rather a means of positioning each component on the participation continuum.

2.3 Health Promotion Evaluation

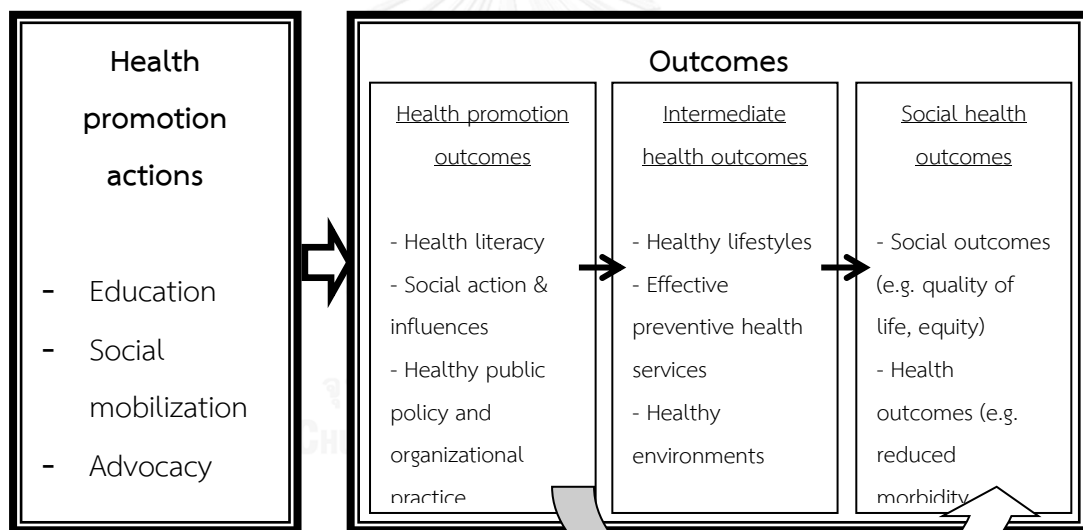
2.3.1 Health Promotion Actions and Outcomes

In health promotion, the value from a program can be viewed and measured differently by different groups, such as scientists, health practitioners, politicians, and the community. The basic idea is that program evaluation is the process of judging the value of a particular program.

An evaluation aims to determine to what extent that a program can achieve its desired outcomes and to assess the contribution of processes used in the program to reach the outcomes. The book 'Evaluation in a Nutshell' (Don Nutbeam

& Bauman, 2006) explains that a comprehensive promotion program can be composed of multiple interventions directed at achieving a number of different health promotion outcomes.

In This book, a comprehensive promotion program can be composed of multiple interventions directed at achieving a number of different health promotion outcomes. It provides a framework of the relationship between the process of health promotion or ‘health promotion actions’ and their outcomes. The figure below is adapted from what Nutbeam and Buam describe such relationship as well as different types of health promotion actions and outcomes.



Source: adapted from Nutbeam and Buam (2010)

Figure 3 Health Promotion Actions and Outcomes

It is clearly shown in the figure above that ‘social health outcomes’ have the highest value in this model. They are long-term outcomes determined by short-term outcomes or program impact, as called in the figure ‘intermediate health outcomes’.

Effective health promotion actions can create changes in health promotion outcomes, resulting in those intermediate health outcomes. Interestingly, the authors

suggest using this model not only for illustrating the linkages between these different levels of outcome, but also within levels. For example, healthy environments can directly affect to social health outcomes as well as separately influence healthy lifestyles.

At health promotion outcomes level, several measures can be evaluated. Health promotion outcomes are those personal, social and environmental conditions targeted to be modified in order to change intermediate health outcomes. Interesting examples of each measure (Smith, Tang, & Nutbeam, 2006) are presented below.

‘Health literacy’, described as personal skills that determine motivation and ability to gain access to, understand and use information in ways that promote and maintain good health, can be measured by:

- Improved health-related knowledge
- Improved motivation concerning to healthy lifestyles
- Improved knowledge of where to go and what to do to gain access to health and other support services
- Attitudes and behavioral intentions
- Participation in health promotion

‘Social action and influence’, described as organized efforts to promote or enhance the actions and control of social groups over health determinants or mobilization of human and material resources in social action to overcome structural barriers to health, to enhance social support, and to reinforce social norm conducive to health, can be measured by:

- Improved social connectedness
- Improved social support

- Improved community competency
- Improved community participation
- Improved community empowerment
- Others like social norm and public opinion

‘Healthy public policy and organizational practice’, described as changes to health and social policies directed towards improving access to services, social benefits and appropriate housing, can be measured by:

- Changes to organizational practices intended to create environments that are supportive to health
- Policy statements
- Legislation and regulations
- Organizational procedures, rules and administrative structures
- Management and practices
- Funding and resource allocation
- Institutionalization of health promotion programs

2.3.2 Formative, Process and Outcomes Evaluation

According to the review (Don Nutbeam & Bauman, 2006), there are three types of evaluation that can be used for health promotion programs. These include formative, process and outcomes evaluation. For a new program that has never been tested before, all these three types are essential.

Formative Evaluation

This type of evaluation is to answer questions concerning identified health problems and existing intervention methods. It is commonly adopted in program

planning for testing methods and materials. For example, formative evaluation can be used for testing which appropriate messages to use and which channel of message delivery will be effective in order to reach target audience. Formative evaluation requires participation of stakeholders within the process of evaluation. Both quantitative and qualitative methods can be used to define what the program should be in effective way through the participatory work with stakeholders. Various methods are used, including survey, focus group discussion, consultation, in-depth interview, material development, pilot testing, workshop and training.

Process Evaluation

It aims to answer questions concerning how a program was implemented and to what extent that the program could be implemented as planned. It consists of a set of activities for assessing progress in program implementation. This type of evaluation helps identifying exposure and participation of target groups as well as engagement of stakeholders with the program. It is specifically used for evaluating health promotion outcomes (impact of an intervention). Using process evaluation can contribute to gaining an understanding on how the program worked in the real life and how relevant people responded to it. Common measures in process evaluation are program exposure, program participation, program delivery and context of the program. Guidelines for carrying out process evaluation are also provided in the book 'Evaluation in a Nutshell' mentioned earlier.

Outcomes evaluation

It is to answer questions concerning program effectiveness or goal achievement, such as changes in health behavior. It can be used for innovation testing, replication, dissemination and institutionalization. A broad range of evaluation

design has been used, such as experimental designs, quasi-experimental designs and pre-experimental designs.

2.4 eHealth Promotion and eHealth Literacy

The Internet population has grown rapidly over the last decade. According to the Pew Research Center (Perrin & Duggan, 2015), the overall number of American adults using the Internet has steadily increased from 52% in the year 2000 to 84% in 2015. In Thailand, as reported by National Statistical Office (National Statistical Office, 2015), 24.6 million people (39.3%) used the Internet in 2015, while only 14.8 million people (23.7%) did so in 2011.

eHealth, the use of information and communication technologies (ICT) for health (World Health Organization, 2006), has gained increasingly attention for Internet users. In the recent report of Pew Research center's Internet & American Life Project in 2013, 72% of U.S. Internet users had looked online for health information in the past year (Fox & Duggan, 2013). For European citizens, the published study showed that Internet use for health purposes in Norway during 2000-2007 had increased dramatically from 19% to 67% and was estimated to be 84% in 2010 (Wangberg et al., 2008). In South Korea, nine out of ten Internet users reported that they have looked online for health information (Park & Lee, 2015).

Internet is increasingly becoming a key source of health related information, which is greatly useful for health promotion. With an advancement of today technologies in digital world, it has the potential to become an effective communication channel for people. The internet provides an easy-to-use and universal access to information with various possibilities to find the latest up-to-date information. Internet can be accessed independently from location and time (Labonte & Schrecker, 2007).

According to World Health Organization (World Health Organization, 2006), eHealth is one of the most rapidly growing areas in health nowadays. Because of its innovation, cost effectiveness, and ability to deliver health information and services to remote locations, eHealth is being widely embraced (Obasola et al., 2015). Much has been written about the advantages of using eHealth resources for promoting health in different population groups around the world (Delgado et al., 2015; Gutierrez et al., 2014; Huberty et al., 2013; Montagni et al., 2016; Muellmann et al., 2016; C. D. Norman & Yip, 2012).

In the seventh global health promotion conference held in Nairobi (World Health Organization, 2009a), WHO firmly announced the importance of health literacy in encouraging actions to influence health determinants. It proposed four major topics related to health literacy, focusing on increasing access to and use of health information through ICTs. In this regard, the internet can be used for health promotion as a pathway to improve health outcomes.

Health literacy is regarded as a public health goal for the 21st century (Cameron D. Norman & Skinner, 2006). There has been the need to look at the different contexts where health information is obtained and used as part of a strategy of addressing health literacy. More than ever, this health information context includes electronic resources such as the World Wide Web and other technologies that now play an increasing role in consumer health.

Use of the internet for seeking health information offers potential benefits to health promotion. This is because people can utilize health information to change their behavior to be healthier. Effective health communication can provide reliable health information that enables individuals to improve their health literacy. Currently, that there is an increase of health information demands.

However, eHealth tools and services readily available through the Internet can be useless if people have less skills and ability to use them. Previous researches indicated that eHealth literacy is essential and needs to be assessed (Blackstock et al., 2016; Cardoso Tomás, Pina Queirós, & Rodrigues Ferreira, 2014; Cameron D. Norman & Skinner, 2006; Park & Lee, 2015; van der Vaart et al., 2011).

According to Norman & Skinner (2006), using information technology for health requires eHealth literacy, “the ability to read, use computers, search for information, understand health information, and put it into context”. This kind of literacy requires that people are able to: work with technology; critically think about issues of media and science; and navigate through a vast array of information tools and sources to acquire the information necessary to make decisions.

The authors stated that being health literate in an electronic world needs a different or at least expanded set of skills to engage in health care and promotion, or eHealth literacy. They proposed 6 core skills, or literacies as follows.

- 1) Traditional literacy
- 2) Health literacy
- 3) Information literacy
- 4) Scientific literacy
- 5) Media literacy
- 6) Computer literacy

To measure these core skills, the authors developed eHealth Literacy Scale (eHEALS) for a wide range of populations and contexts. The eHEALS, a self-report tool, is based on an individual’s perception of her or his own skills and knowledge within each measured domain. It is designed to provide a general estimate of

consumer eHealth-related skills to be used to inform clinical decision making and health promotion planning with individuals or specific populations. The developers pointed out that it is not unreasonable to assume a link between eHealth literacy and technology use in general because the more an individual uses technology, the more likely they are to develop skills in using that technology as a tool.

2.5 Development of a Web-Based System

In a research article ‘Development of a User-Centered Health Information Service System for Depressive Symptom Management’ (Chen, Huang, Chang, Chang, & Chuang, 2016), the authors adopted a user-centered design to develop service system promoting the use of online health information among those affected by depression in Korea.

A development model presented in this article can be useful for the work of developing web-based system. There are four main steps of development as shown below. In a research article ‘Development of a User-Centered Health Information Service System for Depressive Symptom Management’ (Chen et al., 2016), the authors adopted a user-centered design to develop service system promoting the use of online health information among those affected by depression in Korea.

- 1) Need assessment
 - Literature review and scale development
 - Study of existing websites
 - Community and clinical surveys to establish needs for depression management
- 2) Analysis:
 - Expert panel prioritized information needs and identified solutions

- intervention content
 - Pilot testing
- 3) Development:
- Identification of user culture, interface needs, task analysis
 - Integration of web content, task requirement and interface design
 - Pilot testing with representational cases and usability heuristics
- 4) Application release:
- Roll-out application to targeted audience
 - Ongoing evaluation of use patterns and application efficacy



CHAPTER III

RESEARCH METHODOLOGY

3.1 Research Design

This study was an action research, using participatory and mixed method approaches. The development of WBSS for health promotion in a military setting was regarded as the intervention of the study. To create knowledge and evidence on the effect of the development of WBSS for health promotion and its factors, both qualitative and quantitative research methods were adopted.

Qualitative inquiry contributed to an understanding of the context in which the intervention was conducted. Also, it facilitated variables, both factors and outcomes of the intervention, at community level to be explored under the same context. It is noteworthy that results from qualitative study provided a better understanding on health promotion outcomes of the intervention at individual level.

Quantitative study adopted cross-sectional and pretest-posttest research designs. Primarily, the pretest adopted a cross-sectional study to examine variables at individual level before the intervention. Dependent variables at this level, including the usage of eHealth and eHealth literacy, were repeatedly measured in posttest, after the intervention, to compare with the pretest results. This comparison was to gain knowledge and evidence on the effect of WBSS development on health promotion outcomes at individual level by using quantitative research approach.

As mentioned earlier, the study intervention was the development of WBSS for military health promotion. It adopted participatory approach to enhance community participation in health promotion in army units. By this approach, the developed WBSS was expected to meet community needs and to be accepted by

the community. In addition, health promotion actions supported by the developed system could create ownership, leading to program sustainability.

The study intervention was regarded as a setting-based health promotion intervention and the unit of analysis in this study was a military setting in where the intervention was implemented. The study composed of three phases: 1) situation analysis and need assessment; 2) web development and testing; and 3) web release and outcome evaluation. Followings demonstrate purposes of each phase.

Phase I: situation analysis and need assessment

- To explore contexts of the setting and of health promotion implementation
- To describe characteristics and health conditions of army personnel
- To identify Internet users, describe their usage of eHealth and eHealth literacy, and examine determinants of eHealth literacy
- To assess the needs and resources for WBSS for military health promotion
- To develop work plan for WBSS development
- To mobilize resources and build capacity that serves development of WBSS for military health promotion

Phase II: web development and testing

- To analyze and design the web based on findings from phase I
- To try out the usability of the web and revise
- To make a plan for activities to promote the web and enhance the usage of eHealth

Phase III: Web release and outcomes evaluation

- To promote the web and make known its benefits
- To assess the usage of the WBSS and evaluate the changes resulted from the WBSS

3.2 Study Site

The study was conducted in a military setting of the RTA. With the permission and cooperation of army unit leaders, the setting of First Infantry Regiment, The King's Own Bodyguard, located in Phayathai District, Bangkok, was selected as the study site.

Similarly to most army settings, both office and living zones were located inside the setting. The office zone composed of three main army units, including:

- First Infantry Regiment Headquarters, The King's Own Bodyguard
- First Infantry Battalion, First Infantry Regiment, The King's Own Bodyguard
- Fourth Infantry Battalion, First Infantry Regiment, The King's Own Bodyguard.

Those two battalions were in the line of command under the regiment headquarters. In the living zone, there were three army communities. Each community consisted of army families of each unit. Also, there were places for community members, such as kindergarten, market, shops, learning center, etc.

Seventh Primary Care Unit (PCU) was also placed in this area. It was a branch of Pramongkutkiao hospital (tertiary care level) to provide primary healthcare services for army personnel and their family members in the setting.

The main selection criterion for study site included the permission of commanding officer of the regiment and willingness of chief of PCU to join the research. Both commanding officer of the regiment and chief of PCU were interested in health promotion of army personnel and felt welcome to be a pilot army unit to develop and use web-based system for supporting army health promotion actions to benefit army personnel in the setting.

The whole area of the setting was considered as a study site. The study focused on the regiment level rather than the battalion one. This was because the regiment can direct health promotion policy for its battalions, especially in the same setting. Therefore, the study site was the location where army personnel of these three combat units worked and mostly lived in.

3.3 Study Population and Sampling

3.3.1 Population and Sampling for Qualitative Study

In qualitative study, the population included authorities and relevant people involving in health promotion policy and implementation in the setting. With their authorities and involvement, these people were regarded as the population in the study.

Purposive sampling technique was adopted to select key informants from several groups of authorized and relevant people. Selected key informants were commanders, officers, health providers, community leaders, and representatives of community health volunteer (CHV). Primarily, 20 key informants were chosen as key informants to share their experiences and ideas so that an understanding on the context of the setting and variables at community level could be created. They were:

- 3 unit commanders
- 3 personnel officers
- 3 IT officers
- 4 health providers
- 3 community leaders
- 4 representatives of CHV

Later, snowball technique was adopted to select informants recommended by those purposively selected key informants. By using this technique, 4 key informants were selected from the group of officers and CHV as they had experience in health promotion activities. They were:

- 3 public relations officers
- 1 company commander

In total, there were 24 key informants purposively selected for qualitative study. All key informants for qualitative study were approached to ask for their willingness and cooperation to join the study following to the process of informed consent stated later in ethical consideration section in this chapter. Research informant for qualitative study was described in table 3.

Table 2 Research Informants for Qualitative Study

Group of sample	Number of case	General characteristics
Unit commander	3	Commissioned officers (male aged 43 – 48 years, completed bachelor degree)
Personnel officer	3	Commissioned officers (male aged 35 – 55 years, completed high school or undergraduate degree)
IT officer	3	Non-commissioned officers (male aged 33 – 37 years, completed diploma)
Public relations officer	3	Commissioned officer (male aged 35 – 55 years, completed diploma or bachelor degree)
Company commander	1	Commissioned officer (male aged 52 years, completed high school)
Chief of PCU	1	Commissioned officer (female aged 50 years, completed master degree)
Paramedic	3	Non-commissioned officers (male aged 35 – 55 years, completed diploma)
Community leader	3	Commissioned and non-commissioned officer (aged 42 – 51 years, completed diploma or bachelor degree)
Representative of CHV	4	Army wife (female aged 47 – 59 years, completed high school or diploma)

3.3.2 Population and Sampling for Quantitative Study

In quantitative study, target population was the group of general army personnel working in the selected setting but different from those of qualitative study. Population of quantitative study was identified for investigating variables at individual level.

In total, there were 1,495 army personnel working in army units in the setting.

This number was the sum of:

- 205 army personnel of First Infantry Regiment Headquarters, The King's Own Bodyguard
- 270 army personnel of First Infantry Battalion, First Infantry Regiment, The King's Own Bodyguard
- 1,020 army personnel of Fourth Infantry Battalion, First Infantry Regiment, The King's Own Bodyguard

Sample size was calculated from the population of 1,495 army personnel in the setting. By using PS program to get the number of sample for Paired T-Test, 249 samples were needed for this study. Due to some special military missions that might take long periods of time for army personnel to be on duty outside Bangkok, sample size was added up 40 percent to avoid the loss of sample after the intervention.

Quota and stratified random sampling techniques were used to draw sample from each group stratified by unit and age. Calculated sample size by these techniques was shown in figure 4.

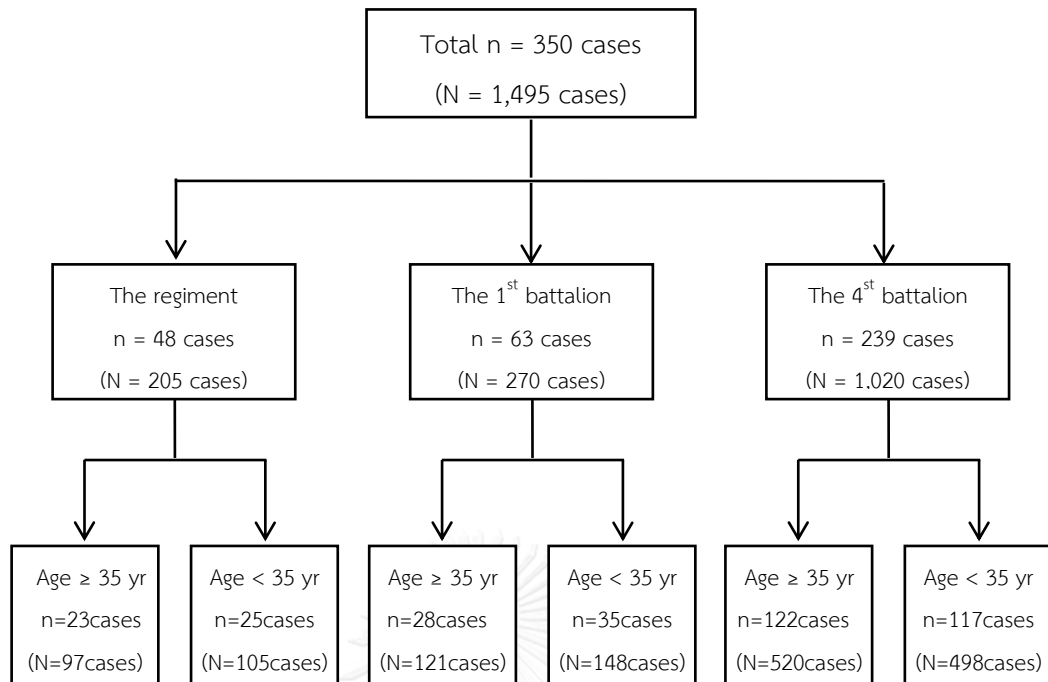


Figure 4 Calculated Sample Size

In pretest, a total of 313 participants joined the study. Although this number was lesser than 350 from the final calculation, it was greater than 249 as primarily calculated. Posttest required only Internet users participated in pretest. With this regard, 300 participants who reported that they used the Internet last year were followed up for posttest.

Of the 300 Internet users participating in the pretest, 19 Internet users could not join the posttest due to military missions outside Bangkok during data collection. Therefore, there were 281 participants of the pretest left for the pretest-posttest analysis. This final number of participants was acceptable as it was greater than 249 gained from sample size calculation for Paired T-Test based on PS program.

3.4 Measurements

This research was conducted by using a range of qualitative and quantitative methods and tools to explore factors and outcomes of the development of WBSS.

Those methods and tools for qualitative study enabled measurements of variables at community level. For quantitative part, methods and tools helped measurements of variables at individual level.

3.4.1 Measurements of Qualitative Study

For qualitative study, measurements heavily focused on variables selected as factors and outcomes of the study intervention at community level. Factors influencing outcomes at community level included concerned health problems, existing health promotion actions and related policies, community participation in health promotion, and the needs and resources for the development of WBSS for military health promotion. Outcomes resulted from the study intervention were the usage of and community participation in health promotion. While factors were primarily explored under the context of the setting in Phase I (before the intervention), outcomes were inspected in Phase III (after the intervention).

A measurement tool for qualitative part was in-depth interview guidelines on 'Participation in Health Promotion in Royal Thai Army Units'. It was constructed by applying from the updated assessment tool for community participation by Draper et al. (2010). This tool was modified from a well-known spidergram for assessing participation originally developed by Rifkin et al. (1988). The assessment tool covered five dimensions of participation, including:

- Leadership
- Planning and management
- Community involvement
- External support for program development
- Monitoring and evaluation

Score given to each dimension can be ranged from 1 (low community participation) to 5 (high community participation). Possible scores represent different values: scores 1 represents mobilization, 3 represents collaboration, 5 represents empowerment, 2 and 4 represent intermediate types.

Indicators of participation for scores 1, 3, and 5 of each dimension were described using indicators of Participation and descriptions (Draper et al., 2010) as follows.

1) Leadership (professionals introducing intervention, or by community of intended beneficiaries)

- Values for mobilization: health professionals assume leadership. Local leadership does not necessarily try to widen the decision-making base in the community.

- Values for collaboration: collaborative decision-making between health professionals and community leaders is met. Local leadership tries to present the interests of different groups.

- Values for empowerment: pProgram is led by community members who are selected through a representative process. Health professionals give leadership training if necessary. Local leadership ensures that the interests of various groups are represented in decision making.

2) Planning and Management (how partnerships between professionals and the community are forged)

- Values for mobilization: health professionals tell the community how they may participate. They decide the program's focus, goals and activities and provide the necessary resources.

- Values for collaboration: collaboration instigated by health professionals. Community invited to participate within a predetermined remit. Activities reflect community priorities and involve local people and existing community organizations. Both professionals and community members provide resources. Some transfer of skills occurs.

- Values for empowerment: partnerships between health professionals created and institutionalized. Professionals' facilitate; the community defines priorities and manages the program. Local people learn skills they need for management and evaluation.

3) Community people's involvement

- Values for mobilization: the inclusion of community people is not specifically sought outside their traditional roles and their active participation is not a program objective.

- Values for collaboration: community people actively participate in some aspects of the program, but they have minor decision-making roles.

- Values for empowerment: the active participation of women in positions of decision-making and responsibility is a program objective.

4) External support for program development (in terms of finance and program design)

- Values for mobilization: funding comes from outside the community and is controlled by health professionals. Program components, including community participation, designed by health professionals to address health outcomes they prioritize and in ways they deem appropriate.

- Values for collaboration: majority of funding is from outside the community, but local people are asked to contribute time, money and materials.

Professionals allocate resources, although they may consult community members. Program is designed by health professionals in discussion with community representatives. Role of each in the program, including women and minority groups, is negotiated.

- Values for empowerment: community members work towards finding ways of mobilizing resources, including through external funding and with their own resources, e.g. micro-financing. Program is designed by community members with technical advice from professionals on request. The design is flexible and incorporates wide community participation, including women and minority groups.

5) Monitoring and evaluation (how intended beneficiaries are involved in these activities)

- Values for mobilization: health professionals design monitoring and evaluation protocols, choose the outcomes and analyze the data in ways to suit their information needs. Approach is mainly one of hypothesis testing and statistical analysis of health-related outcomes. Communities may not be made aware of the findings.

- Values for collaboration: monitoring and evaluation protocols and perform analyses, but community members are involved in data collection. A broad definition of 'success' is used. Responses to monitoring findings are jointly decided and community feedback is both sought and given.

- Values for empowerment: community does a participatory evaluation that produces locally meaningful findings. A variety of data collection methods are used and the community chooses the indicators for success. Professionals assist at request of community. Communities actively involved in

participatory monitoring and in deciding how to respond to monitoring findings. Communities contribute to any wider external evaluations.

Level of community participation in health promotion both before and after the intervention was appraised by key informants. The agreed or majority values were applied to the spidergram. Although community participation of each dimension was identified into number, the values were a means of positioning those 5 dimensions on the continuum rather than precise quantified measures.

Question guidelines for exploring variables at community level other than community participation were added in the same tool. After its construction, the interview guidelines were tested for quality in term of content validity by 3 experts.

3.4.2 Measurements of Quantitative Study

Variables, both dependent and independent, at individual level were examined in quantitative study. A measurement tool for quantitative study was a structured questionnaire entitled 'Survey for the Development of Web-Based Supporting System for Army Health Promotion in a Pilot Setting.' It was constructed to measure individuals' characteristics, health conditions, Internet access and use, the usage of eHealth and eHealth literacy in pretest and the usage of eHealth and eHealth literacy in posttest. There were 5 sections in the questionnaire as outlined below.

- Section I: general characteristics (age, rank, marital status, education, income, working place, and living place)
- Section II: health conditions (perceived health status, having disease, smoking, alcohol consumption, doing exercise, and level of stress)

- Section III: Internet access and use (current use of the Internet, convenience of use, access tools, places, and times, and frequency of Internet use)
- Section IV: usage of eHealth and eHealth literacy (experience in and frequency of using eHealth, perceived usefulness of the Internet on health, perceived importance of accessibility to eHealth, and eHealth literacy)
- Section V: the needs for WBSS (needs for health topics, supportive tools, menu and functions of the web, opinions and suggestions toward developing WBSS)

eHealth Literacy Scale (eHEALS) developed by Norman and Skinner (2006) was adopted to construct this questionnaire survey in Section IV. By this existing tool, perceived eHealth literacy, perceived usefulness of the Internet in making decision about health, and perceived importance of accessibility to health information on the Internet were measured. The tool provided a general estimate of an individual's combined knowledge, comfort, and perceived skills at finding, evaluating, and applying eHealth information to health conditions. There were 8 questions in eHEALS as follows.

- 1) I know what health resources are available on the Internet
- 2) I know where to find helpful health resources on the Internet
- 3) I know how to find helpful health resources on the Internet
- 4) I know how to use the Internet to answer my health questions
- 5) I know how to use the health information I find on the Internet to

help me

6) I have the skills I need to evaluate the health resources I find on the Internet

7) I can differentiate high-quality health resources from low-quality health resources on the Internet

8) I feel confident in using information from the Internet to make health decisions

Participants indicated their level of agreement with eHealth statements on a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). eHEALS had score totals ranged from 8 to 40.

To use eHEALS in the survey questionnaire, the original version of eHEALS was translated from English to Thai using back translation technique. The reliability test showed Cronbach's alpha coefficient 0.89. The criteria to determine high or low eHealth literacy in this study was based on the mean score of eHealth literacy (8 items). Higher scores mean higher levels of eHealth literacy.

It is noteworthy that posttest was to measure the effect of the development of WBSS using the questions in Section IV only. The results gained from posttest were compared with those from pretest.

3.5 Study Procedures

Three phases of the study were conducted during the year 2016 according to procedures of each phase. Details of what procedures were executed are in table 4.

Table 3 Study Procedures

Research phase	Procedure	Time
Phases 1: situation analysis and need assessment	<ul style="list-style-type: none"> - Making rapport and trust building - Assessing community needs - Building team 	One and a half month
Phase 2: Web development and testing	<ul style="list-style-type: none"> - Web design and development - Pilot testing and revising 	One and a half month
Phase 3: Web release and outcomes evaluation	<ul style="list-style-type: none"> - Releasing and promoting the developed website - Evaluating on - Workshops for reflection 	Three months

3.6 Data Collection

The process of data collection was conducted step by step. Following procedures were implemented.

- Ask for cooperation and find the entry point, starting at the primary health care unit located in the setting
- Establish a rapport and trust
- Identify key stakeholders and informants
- Build working team
- Conduct rapid rural appraisal (RRA)
- Conduct pre-test in both intervention and control groups

- Arrange 2-3 meetings for program planning
- Organize workshop trainings for skills building as needed
- Work in a team to design and develop the Website and test
- Launch the Website and monitor
- Conduct post-test in both intervention and control groups
- Organize workshops for reflection

3.7 Data Analysis

3.7.1 Qualitative Data Analysis

For qualitative data, an ongoing data analysis was performed since the beginning to the end of the participatory process. Variables at community level measured by qualitative methods were analyzed under an understanding of the context of the setting. These variables included major health problems, health promotion related policy and actions directed towards solving the problems, community participation in those actions, community needs and resources for WBSS for military health promotion, the use of WBSS for health promotion and community participation.

Content analysis was applied to the creation of an understanding of these variables. The procedures of qualitative data analysis included data managing, reading and memoing, interpreting and data coding, classifying and describing the themes, and drawing conclusion.

3.7.2 Quantitative Data Analysis

Quantitative data collected from questionnaire survey were analyzed by using a computer program (SPSS for window version 22.0). Descriptive statistics, including frequency, percentage, mean, and standard deviation, were used for describing

variables at individual level (see table 5). Those variables included personal characteristics, health conditions, Internet access and use, needs for WBSS development, the use of eHealth, perceived usefulness and importance of the internet for health, and eHealth literacy.

For inferential statistics, Chi-Square, T-TEST, and ANOVA were adopted for univariate analysis to examine relationships between independent (personal characteristics, health conditions, Internet access and use, needs for WBSS development) and dependent variables (the use of eHealth, perceived usefulness and importance of the internet for health, and eHealth literacy). Multiple logistic regression was adopted for multivariate analysis to investigate determinants of eHealth literacy. To investigate differences of dependent variables (the use of eHealth, perceived usefulness and importance of the internet for health, and eHealth literacy) between pretest and posttest, Paired T-Test and McNemar test were used.

3.8 Limitation of the Study

Time was an important resource for doing community research using participatory approach. Unlike basic researches, this action research heavily focused on the process of development and participation which is usually time-consuming. Limited time for studying made it less possible to follow the change in the long term and to measure outcomes like sustainability or networking.

3.9 Ethical Consideration

Main ethical issues of doing research in human were strictly considered in this study. Individuals' privacy and confidentiality were protected throughout the research. Before participate to the study, all key informants were informed about the research project, their roles in the research and advantages and disadvantages of the

research by using information sheet. Then, they were asked for voluntary participation in the research by using informed consent form. The real name of participants was not presented. Only using pseudonyms or coding was accepted to protect the rights and privacy of participants.

All research participants could drop out from the study at any stage without getting negative impact. To reach the ethical standard of this inquiry, the research proposal was approved by institutional review board of RTA Medical Department.



CHAPTER IV

RESULTS

4.1 Results of Qualitative Study

Qualitative study conducted during pre and post implementation provided an understanding of the setting and variables at community level. The study results are presented as follows.

4.1.1 Context of the Setting

1) Physical and Structural Contexts

The setting selected in this study was a military setting of the RTA located in Phayathai District, Bangkok. It was the setting of an army unit at regiment level, namely First Infantry Regiment, The King's Own Bodyguard. This army unit was a combat unit, consisting of four battalions in line of command. Figure 5 presents the organizational structure of the regiment.

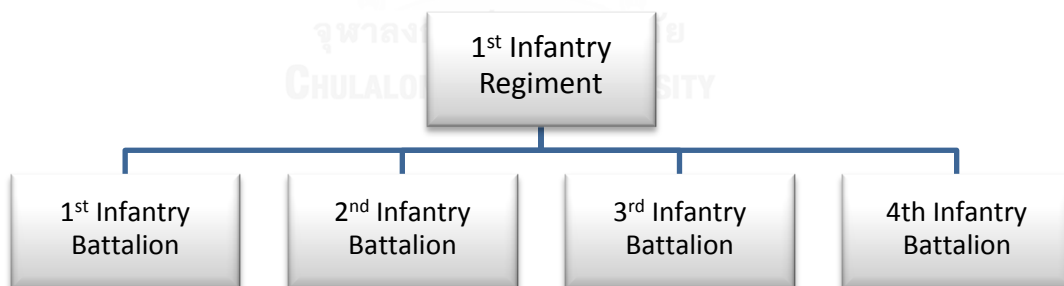


Figure 5 Organizational Structure

In this setting, First Infantry Battalion, First Infantry Regiment, The King's Own Bodyguard, and Fourth Infantry Battalion, First Infantry Regiment, The King's Own Bodyguard, were placed together with the regiment headquarters. The rest two battalions were located in different districts of Bangkok, Second Infantry Battalion,

The King's Own Bodyguard, in Laksi District and Third Infantry Battalion, The King's Own Bodyguard, in Dusit District.

The story about the regiment as a whole was told by the head of personnel officers of the regiment headquarters. At the regiment level, commanding officer was the highest position. His policy and order could direct both the regiment headquarters and all battalions in line of command. Battalion was a smallest army unit led by battalion commander. As each battalion had specific mission, it could create its own policy and regulation for its own workforces. However, those policies and regulations had to follow the policy and order directed by the superior units as well.

Generally, main mission of infantry units was to protect the country by operating close combat and counterattack. Similarly to other infantry units, routine trainings were scheduled ahead for the whole year. As being the King's own bodyguard units, this regiment and its battalions also had an extra but very important mission to provide security protection for the King, the Queen, and all royal family members. Therefore, these units were responsible for arranging sets of bodyguard to be on duty around the palaces in Bangkok and its perimeter. Also, they had to arrange sets of bodyguard to follow the King, the Queen, and royal family members in the trips to province outside Bangkok.

Apart from these 3 infantry units, Seventh Primary Care Unit (7th PCU), a branch of Pramongkutklao hospital (tertiary care level), was also located in the setting. It was responsible for providing primary healthcare services for army personnel and families in the setting. According to the chief of 7th PCU, this setting had CHVs to support the work of PCU, especially on basic health aid, health promotion, and disease prevention.

CHVs were army wives volunteering to be CHV to work for the community. In Bangkok, this PCU was the first PCU of Pramongkutkiao hospital that had CHVs. There were about 10 CHVs in this setting who got training and certification from Ministry of Public Health.

Inside the setting, the living zone where army personnel lived in was separated from the office zone where army personnel worked. The results from an interview of the head of community leaders showed that there were 3 communities living in the same area. Each community consisted of army families of each unit. 'Ratchawallop community' was known as the whole community. It included:

- Ratchawallop community 1, First Infantry Regiment, The King's Own Bodyguard
- Ratchawallop community 2, First Infantry Battalion, First Infantry Regiment, The King's Own Bodyguard
- Ratchawallop community 3, Fourth Infantry Battalion, First Infantry Regiment, The King's Own Bodyguard

The leader of Ratchawallop community 1 was also the leader of Ratchawallop community as a whole. With his high capacity and good reputation, he was selected to be the leader of 27 communities in Phayathai District. High capacity community leader could be regarded as good resources for community actions, including actions for health.

After the interview, the community leader showed the real places of the living zone. Inside, community people lived in provided accommodation. There were public places for community member, such as football field, playground, minimarts and shops, kindergarten, evening market, learning center, etc. Interestingly, each community had its own health center in where CHVs worked.

2) Socio-Cultural Contexts

With such special and important military mission, army personnel working here were trained hardly and strictly. They were very well-disciplined and always obeyed the rules and commands. However, this made soldiers and their family members felt proud of their outstanding responsibility and being well-disciplined. Following quotation is what a personnel officer said during the interview.

“Because our special mission to be King’s own bodyguard, we are special. No one can be like us. Only this unit can serve security services to the royal family. We have to be very strict in our performance, have to practice...We are proud to work in this unit.”

Also, many CHVs, wives of army personnel, said that their husbands worked very hard and be on duty very often. Sometimes army personnel had to work until at night or were notified to be on duty urgently. That was common life for army personnel in this setting. One of CHVs said about her husband’s work that *“It’s his job, his responsibility.”*

Interestingly, the way army personnel devoted for their jobs created a sense of community for their family members. Many CHVs said that if they can help other people or do some work for the community, they will do so.” As they worked hard together and lived in the same setting, community people had good social relationships. They helped each other whenever the community initiated activities, including those works for health. Also, they supported all projects from people outside the setting. This is why there had been a number of research projects conducted in this setting.

However, only the commanding officer agreed and permitted to implement new activities could make any activities done. The permission of the

highest leader meant to be able to use resources available in the community. Importantly, programs initiated at regiment level could reach the whole community rather than initiated at battalion level. Once a battalion initiated some good ideas or projects, it was also hard to expand the ideas or project to other battalions without the acceptance and order of policy maker at above level.

4.1.2 Concerned Health Problems

Army personnel in combat units were expected to have better health status than those working in non-combat units. This was because the combat units required strong and healthy soldiers and emphasized more on physical exercises. Also, combat units practiced military training more frequent than other units. Still, there were some health problems concerned by the community.

As elsewhere, noncommunication diseases (NCDs) and unhealthy behavior were the main health problems of the setting. From health providers' view, unhealthy consumption like smoking, alcohol drinking, and eating unhealthy food were common risk behaviors among army personnel in this setting. The results from annual health checkup were the evidence they referred to. Following is what expressed by health providers.

“Results of annual health checkup showed that we have hyperlipidemia, hypertension, and diabetes mellitus every year.”

“Certainly, risk behavior like smoking and alcohol are the main problems. But these are common, difficult to solve. We have limited resources, but a lot of work.”

Obesity and mental health problems were raised as the needs for health information on healthy eating and supportive tools for mental health assessment. Obesity was highly concerned because working in RTA units in this setting should be

physically smart. Stress test online was requested to support monitoring and evaluation for stress problem among army personnel, especially in the fourth battalion as it had more strict and serious work.

4.1.3 Existing Health Promotion Actions and Related Policies

In this setting, various actions for health implemented by the community for the community become more routine practices rather than new interventions. Those actions addressed on physical activities, sport games, planting, making healthy products for home use, garbage bank, and so on. Regiment commander and the chief of PCU were interested in promoting the health of army personnel. In this setting, the PCU was expected to play the main role in promoting health of the community. However, health promotion had not been implemented by PCU as much as it should be due to the limitation of resources and lack of support.

Interestingly, various health promotion activities were implemented by the community. Those initiated at the regiment level were carried out mostly by the leader of Ratchawallop community and followed the order of the commanding officer. When health promotion activities were done at regiment level, all communities were enhanced to participate. Unlike the regiment level, health promotion activities implemented at battalion level promoted participation merely by its own community.

4.1.4 Community Participation in Health Promotion

Various health promotion activities were carried out with high participation level in terms of leadership, management and external support. Concerning to the issues of community involvement and evaluation, however, level of participation was low. Details are described as follows.

‘Leadership’ dimension was scored 4 as health promotion programs were mostly led by leaders both at organizations and community. Health professionals gave leadership training if necessary. Interests of various groups were represented in decision making.

‘Planning and Management’ dimension was scored 5 as the community defined priorities and manages the program. Local people learned skills they need for management and evaluation.

‘Community people’s involvement’ dimension was scored 1 because community people actively participated in some aspects of the program and they did not have decision-making roles.

‘External support for program development’ dimension was scored 5 due to the community worked towards finding ways of mobilizing resources, including through external funding and with their own resources.

‘Monitoring and evaluation’ dimension was scored 1 as there has been no protocol for monitoring and evaluation. Therefore the outcomes were not monitored and evaluated. The community was not made aware of the findings.

Overall, level of participation was high in terms of leadership, management and external support, but low in terms of community involvement and evaluation. Level of participation in all five dimensions was dynamic rather than static and relied upon authorities. The figure below demonstrated level of participation in each dimension into a spidergram.

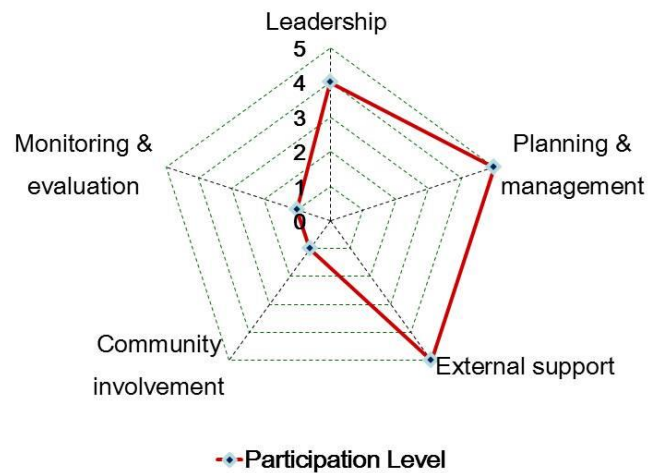


Figure 6 Community Participation in Health Promotion

4.1.5 Community Needs and Resources for WBSS for Health Promotion

The needs for WBSS were assessed before the system was developed. Main functions of WBSS for health promotion required by the community were as follows.

- Providing health information and tools for self-care
- Sharing information on health promotion activities implemented by RTA units
- Sharing and announcing information on health related activities that useful for army personnel to join
- Providing user-friendly tools for self-health assessment, such as stress test
- Providing platform for sharing ideas and opinions or giving suggestions on health promotion like web board
- Providing service for health consult
- Linking to social media like Facebook

The functions of WBSS were used to draft menus on the website. There were 6 menus as follows.

- Health information services
- Health consult
- Self-assessment tools
- Health learning through online activities
- Health news
- Web board for sharing ideas about army health promotion

Army personnel also expressed their needs in terms of menus on the web and health information topics. Web menus and information topics were selected as needed. The most popular menu was health consult, followed by health information services, web board for sharing ideas about army health promotion, health assessment, health news, and health learning through online activities, in turn. For health information, the top five popular topics were:

- Food and nutrition
- Physical activities
- Diseases and basic care and treatment
- Guideline for health checkup
- Mental health

By working with IT officers of three units, all needs of the community were used for planning to develop the WBSS. Finally, a met-need supporting system was developed and tested.

Most interestingly, there was a suggestion given by a battalion leader to bring the youth in the community to be the new generation of health promoters. Recruitment should be volunteer, not forceful. Training might be useful for kids and could be arranged inside the setting because of available resources like places, staff, and materials, were ready for youth training.

4.1.7 Usage of WBSS for and Community Participation in Health Promotion

The website, as a supporting system for community health promotion, was called 'Army Smart health'. It had been promoted by public relations officers and community leaders. After the web development was completed, health information menu was firstly used.

With the useful suggestion of a battalion commander, the project 'Little DJ', a community initiative on health promotion, was developed to enhance the use of WBSS among health volunteers and community members. This project was to bring health information on the website to communicate to offline people using community resources. Most importantly, main resources in this project were youth and public audio line of the community.

In the project 'Little DJ', children in army families who were interest in training to be little DJ (disk jockey) were recruited and trained. After 2-day training, a health information program, called 'Kobdek Sangsook' program, had been broadcasted by little DJ group, also called 'Kobdek Sangsook' group, through public audio line of the community. The scripts for the programs were created by kids and proved health related content by professionals. It is noteworthy that during the program broadcasted, kids always announced that health information they told could be further read more on the website 'Army Smart Health'.

Moreover, kids in Kobdek Sangsook Group were empowered by community leaders and health volunteers to join, even lead sometimes, a number of health promotion activities. This group had become a symbol of youth health promoter as they had shown their capacity and volunteer spirits in many health campaigns and actions.

After 3 months, community participation in health promotion using WBSS was assessed. Scores assigned for each dimension of community participation can be described as follows.

‘Leadership’ dimension was scored 5 as the program was led by community members. Health professionals gave leadership training. Local leadership ensured that the interests of various groups are represented in decision making.

‘Planning and Management’ dimension was scored 5 as professionals’ facilitate and the community defined priorities and managed the program. Local people learned skills they need for management and evaluation.

‘Community people’s involvement’ dimension was scored 4 as it started to be active participation of CHVs and youth leaders in positions of decision-making and responsibility was a program objective.

‘External support for program development’ dimension was scored 4 as community members worked towards finding ways of mobilizing resources, including through external funding and with their own resources. However, program design was relied upon professionals’ decision. The design was flexible and incorporated wide community participation.

‘Monitoring and evaluation’ dimension was scored 3 as monitoring and evaluation plan was designed by professional. Community members involved in data

collection. Definition of ‘success’ was not clear. Community feedback was sought informally and given by small groups.

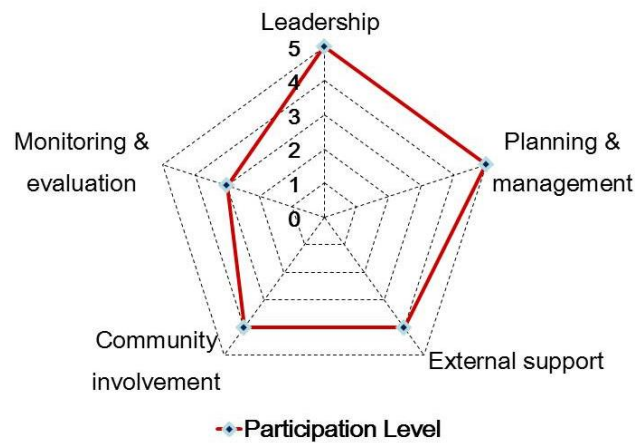


Figure 7 Community Participation in Health Promotion using WBSS

4.2 Results of Quantitative Study: Pretest

4.2.1 Sample Characteristics

A total of 313 participants completed the survey. All participants were male and between the ages of 19 – 59 years ($M = 34.7$, $SD = 10.43$). The majority of participants were non-commissioned officers ($n = 208$, 66.5%), educated at high school or lower level ($n = 222$, 70.9%), had monthly income lower than 15,000 Thai baht ($n = 177$, 56.5%), and married ($n = 176$, 56.2%). Mostly, they lived inside the setting. See Table 4 for details.

Table 4 General Characteristics (n = 313)

	Item	Frequency	Percentage
Age (Y)	19 – 29	135	43.1
	30 – 39	68	21.7
	40 – 49	79	25.3
	50 – 59	31	9.9
Rank	Volunteer conscript	93	29.7
	Non-commissioned officer	208	66.5
	Commissioned officer	12	3.8
Education	High school or lower	222	71.0
	Diploma/certificate	38	12.1
	Undergraduate degree and above	53	16.9
Monthly income (TB)	< 15,000	177	56.5
	15,000 – 24,999	111	35.5
	≥ 25,000	25	8.0
Marital status	Married	176	56.2
	Single/widow/divorced	137	43.8
Accommodation	Inside the setting	255	81.5
	Outside the setting	58	18.5

4.2.2 Health Conditions

4.2.2.1 Perceived Health Status and Having Diseases

Most of participants (n = 243, 77.6%) perceived that they had good or very good overall health status. 69.0% of participants (n = 226) reported that they had no diseases. See table 5 for details.

Table 5 Having diseases and Perceived Health Status (n = 313)

Item		Frequency	Percentage
Perceived health status	Fair to poor	70	22.4
	Good	215	68.7
	Very good	28	8.9
Having disease(s)	No	216	69.0
	Yes	97	31.0

4.2.2.2 Current Diseases

Those participants reporting that they had diseases or health problems identified their problems as shown in table 10. Top three diseases that had highest prevalence were hyperlipidemia (12.1%), followed by hypertension (10.9%), and anemia (6.1%). See table 6 for details.

Table 6 Current Diseases (n = 313)

Item		Frequency	Percentage
Hyperlipidemia	No	275	87.9
	Yes	38	12.1
Hypertension	No	279	89.1
	Yes	34	10.9
Anemia	No	294	93.9
	Yes	19	6.1
Diabetes mellitus	No	302	96.5
	Yes	11	3.5

Table 6 (Continued)

	Item	Frequency	Percentage
Liver disease	No	303	96.8
	Yes	10	3.2
Renal disease	No	306	97.8
	Yes	7	2.2
Gout	No	306	97.8
	Yes	7	2.2
Heart disease	No	312	99.7
	Yes	1	0.3
Others	No	297	94.9
	Yes	16	5.1

4.2.2.3 Health Risk Behavior

When asked the question about smoking, percentage of participants who had smoked more than 100 pieces of cigarette was largest (n = 131, 41.9%). For those smokers (n = 197), only half of them (n = 103, 52.3%) smoked every day in the last one month. Concerning to drinking alcohol behavior last month, most of participants (n = 194, 62% from a total of 313) drank 1 – 5 days a week. In the same period of time, 47% (n = 147) of them did exercise 1 – 2 days a week. See table 7 for details.

Table 7 Health Risk behavior (n = 313)

	Items	Frequency	Percentage
Smoking (n = 313)	Never	116	37.1
	Smoke but not > 100 pieces	37	11.8
	Smoke > 100 pieces but quitted	29	9.3
	Smoke > 100 pieces	131	41.9
Smoking in the last 1 month (n = 197)	Every day	103	52.3
	Somedays	58	29.4
	None	36	18.3
Drinking in the last 1 month (n = 313)	> 5 days/week	21	6.7
	1-5 days/week	194	62.0
	None	98	31.3
Doing exercise in the last 1 month (n = 313)	At least 3 days/week	131	41.9
	1-2 days/week	147	47.0
	None	35	11.2

4.2.2.3 Level of Stress

For mental health, participants were assessed level of stress in the last one month by using ST-5 questionnaire. High level of stress presented highest prevalence of 43.1% (n = 135). See table 8 for details.

Table 8 Level of Stress (n = 313)

Level	Frequency	Percentage
Low level	38	12.2
Moderate level	99	31.6
High level	135	43.1
Very high level	41	13.1

4.2.3 Internet Usage

The usage of Internet was measured to identify current users and frequency of use in the last three months among current Internet users. Participants mostly were current users (n = 300, 95.8%), who used the Internet in the past year. Of this 300 current users, all of them reported the use of the Internet at least once in the last three months and most of them (n = 233, 77.7%) used the Internet every day. See table 9 for details.

Table 9 Internet Usage

Item	Frequency	Percentage	
Using the Internet (n = 313)	Never	10	3.2
	Ever used but not currently use	3	1.0
	Currently use	300	95.8
Frequency of Internet use in the last 3 month (n = 300)	Used < 1 day/month	5	1.7
	At least 1 day/month, < 1 day/week	13	4.3
	1-6 days/week	49	16.3
	Every day	233	77.7

4.2.4 Internet Access

Among 300 Internet users, most of them (n = 164, 54.6%) reported convenient and very convenient when accessing to the Internet. Top three tools used for accessing the internet were mobile phone (n = 283, 94.6%), Notebook (n = 70, 23.3%), and personal computer (n = 58, 19.3%). For places that Internet users accessed to the Internet, using Internet service on mobile phone/computer tablet/aircard had highest prevalence (n = 155, 51.7%), followed by workplace (n = 135, 45%) and home (n = 133, 44.3%). See table 10 for details.

Table 10 Internet Access (n = 300)

	Items	Frequency	Percentage
Convenience of using the	Inconvenient	14	4.7
	Fair	122	40.7
	Convenient/very convenient	164	54.6
Access via mobile phone	No	16	5.4
	Yes	283	94.6
Access via notebook	No	230	76.7
	Yes	70	23.3
Access via PC	No	242	80.7
	Yes	58	19.3
Access at mobile service	No	145	48.3
	Yes	155	51.7
Access at workplace	No	165	55.0
	Yes	135	45.0
Access at home	No	167	55.7
	Yes	133	44.3

4.2.4 Usage of eHealth

Regarding to experience in using eHealth, the majority of Internet users (n = 221, 73.7%) had ever used eHealth. Of this eHealth users, 13 participants (5.9%) did not use in the last three months, 39 participants (17.6%) used less than once a month, 60 participants (27.1%) used at least once a month, but not every week, 68 participants (30.8%) used at least once a week, but not every day, and 47 participants (18.6%) used every day. In total, 73.7% of participants had experience in using eHealth, but only 69.3% currently used eHealth in the last three months. See table 11 for details.

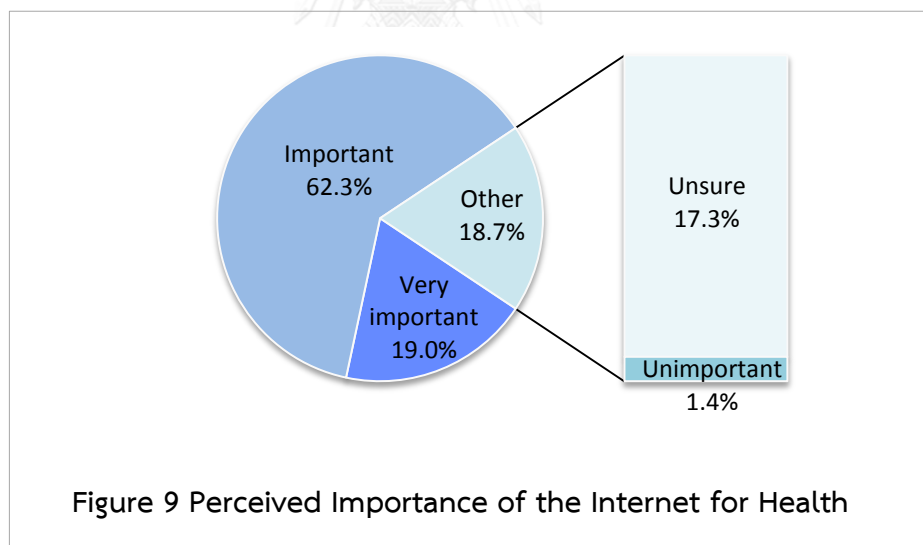
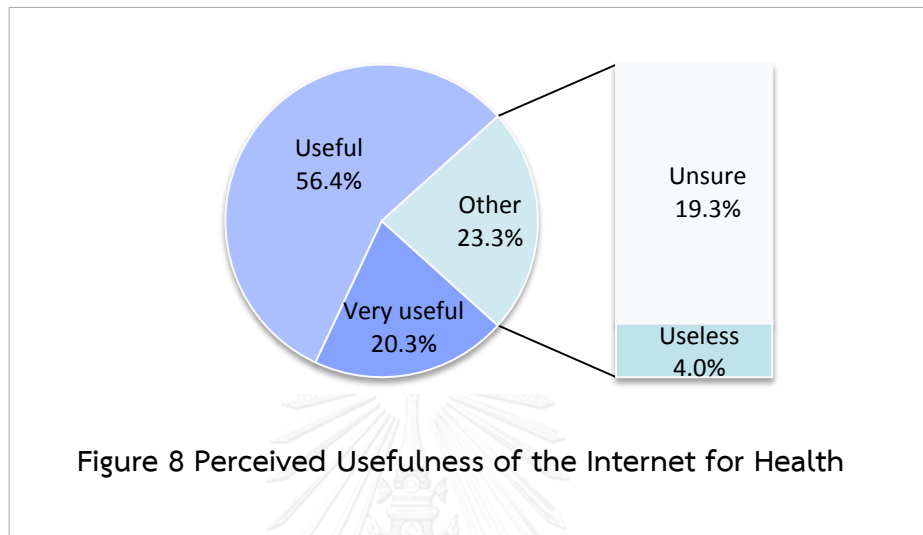
Table 11 Usage of eHealth

	Item	Frequency	Percentage
Experience of Using eHealth (n = 300)	Never	79	26.3
	Ever	221	73.7
Frequency of using eHealth eHealth (n = 221)	Not used at all	13	5.9
	Used < 1 day/month	39	17.6
	At least 1 day/month, < 1 day/week	60	27.1
	1-6 days/week	68	30.8
	Every day	41	18.6

4.2.5 Perceived Usefulness and Importance of the Internet for Health

Participants who currently used the Internet responded that the Internet is useful (n = 169, 56.3%) or very useful (n = 61, 20.3%) in helping them make decisions about their health. Moreover, they perceived that it is important (n = 187, 62.3%) or very important (n = 57, 19.0%) to be able to access health resources on the Internet.

Totally, there were 76.7% of Internet users perceived that the Internet was useful or very useful for health and 81.3% perceived that the Internet was important or very important for health. See figure 8 - 9.



4.2.6 eHealth Literacy

The mean score of eHealth literacy as measured by the eHEALS was 31.61 (SD = 3.78) with a range from 20 to 40. By determining high or low eHealth literacy with the mean score as the cut-off point, more than half of participants (N = 164, 54.7) had high eHealth literacy. See Table 12 for details.

Table 12 Level of eHealth Literacy (n = 300)

	Item	Frequency	Percentage
Level of eHealth	Low	136	45.3
	High	164	54.7
	Min	Max	Mean
eHealth literacy	20	40	31.61
			SD
			3.78

When investigating individual items on the eHEALS, participants scored the highest ($M = 4.11$, $SD = 0.59$) on knowing where to find helpful health resources on the internet and the lowest ($M = 3.85$, $SD = 0.59$) on being able to tell high quality health resources from low quality health resources on the internet. See table 13 for details.

Table 13 eHealth Literacy (n = 300)

Question	Totally agree N (%)	Agree N (%)	Undecided N (%)	Disagree N (%)	Totally disagree N (%)	Mean (SD)
1. I know what health resources are available on the internet	52 (16.7)	213 (68.3)	47 (15.1)	0 (0)	0 (0)	4.02 (0.564)
2. I know where to find helpful health resources on the internet	69 (22.1)	206 (66)	36 (11.5)	1 (0.3)	0 (0)	4.1 (0.584)
3. I know how to find helpful health resources on the intern	48 (15.4)	200 (64.1)	63 (20.2)	1 (0.3)	0 (0)	3.95 (0.606)
4. I know how to use the internet to answer my questions about health	58 (18.6)	186 (59.8)	64 (20.6)	3 (1)	0 (0)	3.96 (0.656)
5. I know how to use the health information I find on the internet to help me	52 (16.7)	196 (62.8)	62 (19.9)	2 (0.6)	0 (0)	3.96 (0.625)

Table 13 (Continued)

Question	Totally agree N (%)	Agree N (%)	Undecided N (%)	Disagree N (%)	Totally disagree N (%)	Mean (SD)
6. I have the skills I need to evaluate the health resources I find on the internet	43 (13.8)	193 (61.9)	75 (24)	1 (0.3)	0 (0)	3.89 (0.617)
7. I can tell high quality health resources from low quality health resources on the internet	38 (12.2)	192 (61.5)	81 (26)	1 (0.3)	0 (0)	3.86 (0.612)
8. I feel confident in using information from the internet to make health decisions	42 (13.5)	186 (59.6)	81 (26)	3 (1)	0 (0)	3.86 (0.643)

4.2.7 Factors Associated with eHealth Literacy

The results from univariate analysis of eHealth literacy based on age, rank, education, income, having disease(s), perceived health status, current use of the Internet as well as perceived usefulness and importance of the Internet revealed that eHealth literacy of Internet users significantly associated with perceived importance of the Internet on health ($\chi^2 = 27.484$, p-value < 0.001), experience of use of eHealth ($\chi^2 = 21.653$, p-value < 0.001), perceived usefulness of the Internet on health ($\chi^2 = 13.234$, p-value < 0.001), and perceived health status ($\chi^2 = 8.081$, p-value = 0.018). See table 14 for details.

Table 14 Factors Associated with eHealth Literacy

	Variable	eHealth literacy		χ^2	Sig.
		Low	High		
Perceived health status	Fair to poor	34 (53.1)	30 (46.9)	8.081	0.018*
	Good	96 (46.2)	112 (53.8)		
	Very good	6 (21.4)	22 (78.6)		
Experience of use of eHealth	Never	53 (67.1)	26 (32.9)	21.653	0.000**
	Ever, but currently not	5 (38.5)	8 (61.5)		
	Ever, currently used less than once a week	41 (41.4)	58 (58.6)		
	Ever, currently used at	37 (33.9)	72 (66.1)		
Perceived usefulness	Unsure/useless	45 (64.3)	25 (35.7)	13.234	0.000**
	Useful/very useful	91 (39.6)	139 (60.4)		
Perceived importance	Unsure/unimportant	43 (76.8)	13 (23.2)	27.484	0.000**
	Important/very	93 (38.1)	151 (61.9)		

* significant at p -value < 0.05, ** significant at p -value < 0.001

4.2.8 Multivariate Analysis of eHealth Literacy

By using logistic regression analysis to investigate variables predicting eHealth literacy, the results showed that only perceived importance of internet on health and experience of use of eHealth significantly determined eHealth literacy. The chi-squared goodness of fit test was significant (p -value < 0.001) and the Hosmer-Lemeshow test result was not significant (p -value = 0.317) which suggested a good fit.

Table 15 presented the results of the logistic regression model predicting eHealth literacy. Participants who had experience in using eHealth, either used or not used in the past three months, were more likely to have high eHealth literacy than participants who had never used eHealth before.

For example, participants with experience of use of eHealth, although not current users, were almost 6 times more likely to have high eHealth literacy (OR = 5.86, C.I. = 1.474 - 23.298) than those without any experience of use of eHealth. Additionally, participants who perceived that it is important or very important to be able to access health resources on the Internet were 5 times more likely than participants who felt unsure or reported that it is unimportant to have high eHealth literacy (OR = 5.426, C.I. = 2.255 - 13.060).

This showed the significant difference between eHealth literacy in participants with and without experience in using eHealth as well as in participants perceived and did not perceive importance of being able to access health resources on the Internet. See table 15 for details.

Table 15 Level of eHealth Literacy by Sample Characteristics

Variable	β	Odds ratio	95% CI	Sig.
Age (Y) (Reference 19 – 29)				
30 – 39	- 0.306	0.737	0.355 -	0.413
40 – 49	- 0.441	0.643	0.257 -	0.436
50 – 59	- 0.034	0.967	0.191 -	0.967
Rank (Reference Volunteer conscript)				
Non-commissioned officer	- 0.336	0.714	0.110 -	0.724
Commissioned officer	0.532	1.702	0.910 -	0.096

Table 15 (Continued)

Variable	β	Odds	95% CI	Sig.
Education (Reference High school or				
Diploma or certificate	0.316	1.372	0.611 -	0.444
Undergraduate degree and above	0.015	1.015	0.493 -	0.967
Monthly income (TB) (Reference < 15,000)				
15,000 – 24,999	0.080	1.083	0.511 -	0.835
≥ 25,000	1.157	3.179	0.504 -	0.218
Having disease(s) (Reference No)				
Yes	- 0.434	0.648	0.327 -	0.214
Perceived health status (Reference Fair to				
Good	0.235	1.265	0.660 -	0.479
Very good	1.063	2.896	0.938 -	0.065
Current use of the Internet (Reference Not				
Every day	- 0.565	0.568	0.294 -	0.093
Experience of use of eHealth (Reference				
Ever, but currently not used	1.768	5.860	1.474 -	0.012*
Ever, currently used less than once a	0.797	2.218	1.092 -	0.028*
Ever, currently used at least once a week	1.134	3.108	1.530 -	0.002**
Perceived usefulness (Reference				
Useful/very useful	0.028	1.208	0.477 -	0.943
Perceived importance (Reference				
Important/very important	1.691	5.426	2.255 -	0.000***

* significant at p -value < 0.05, ** significant at p -value < 0.01, *** significant at p -value < 0.001

Additionally, participants who perceived that it is important or very important to be able to access health resources on the Internet were 5 times more likely than participants who felt unsure or reported that it is unimportant to have high eHealth literacy (OR = 5.426, C.I. = 2.255 - 13.060). This showed the significant difference between eHealth literacy in participants with and without experience in using eHealth as well as in participants perceived and did not perceive importance of being able to access health resources on the Internet.

4.3 Results of Quantitative Study: Posttest

The posttest was to follow up the use of eHealth, perceived usefulness and importance of the Internet for health, and eHealth literacy among 300 Internet users participated in pretest. There were 281 participants completed the survey in posttest. The results are presented below.

4.3.1 Usage of eHealth: Posttest

Of the 281 Internet users, most of them (n = 258, 91.8%) had experience in using eHealth. Still, there were 23 participants (8.2%) had never used it. All participants who had experience in using eHealth were current eHealth users since they used it at least once in the last three months. Most of eHealth users (n = 146, 56.6%) used eHealth at least once a week. See table 16 for details.

Table 16 Usage of eHealth: Posttest

	Item	Frequency	Percentage
Experience of Using eHealth (n = 281)	Never	23	8.2
	Ever	258	91.8

Table 16 (Continued)

	Item	Frequency	Percentage
Frequency of using eHealth in the last 3 months (n = 258)	Not used at all	0	0.0
	Used < 1 day/month	17	6.6
	At least 1 day/month, < 1 day/week	95	36.8
	1-6 days/week	73	28.3
	Every day	73	28.3

4.3.2 Perceived Usefulness and Importance: Posttest

Participants responded that the Internet is useful (n = 81, 28.8%) or very useful (n = 189, 67.3%) in helping them make decisions about their health. Moreover, participants perceived that it is important (n = 82, 29.2%) or very important (n = 198, 70.4%) to be able to access health resources on the Internet. See figure 10 for details.

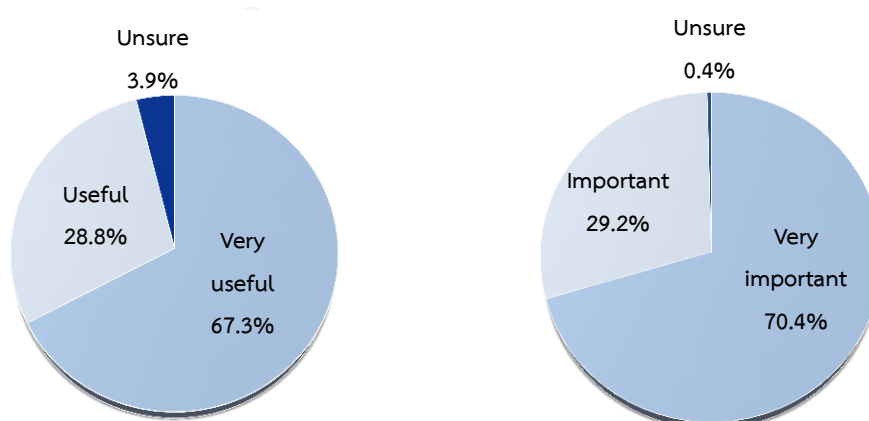


Figure 10 Perceived Usefulness and Importance of Online Health Information: Posttest

When investigating individual items on the eHEALS, participants scored the highest ($M = 4.67$, $SD = 0.49$) on knowing know what health resources are available on the internet and the lowest ($M = 3.98$, $SD = 0.56$) on being able to tell high quality health resources from low quality health resources on the internet. See table 17 for details.

Table 17 eHealth Literacy

Question	Totally agree N (%)	Agree N (%)	Undecided N (%)	Disagree N (%)	Totally disagree N (%)	Mean (SD)
1. I know what health resources are available on the internet	52 (16.7)	213 (68.3)	47 (15.1)	0 (0)	0 (0)	4.67 (0.486)
2. I know where to find helpful health resources on the internet	69 (22.1)	206 (66)	36 (11.5)	1 (0.3)	0 (0)	4.33 (0.584)
3. I know how to find helpful health resources on the intern	48 (15.4)	200 (64.1)	63 (20.2)	1 (0.3)	0 (0)	4.32 (0.606)
4. I know how to use the internet to answer my questions about health	58 (18.6)	186 (59.8)	64 (20.6)	3 (1)	0 (0)	4.43 (0.538)
5. I know how to use the health information I find on the internet to help me	52 (16.7)	196 (62.8)	62 (19.9)	2 (0.6)	0 (0)	4.04 (0.625)
6. I have the skills I need to evaluate the health resources I find on the internet	43 (13.8)	193 (61.9)	75 (24)	1 (0.3)	0 (0)	4.10 (0.617)
7. I can tell high quality health resources from low quality health resources on the internet	38 (12.2)	192 (61.5)	81 (26)	1 (0.3)	0 (0)	3.98 (0.564)
8. I feel confident in using information from the internet to make health decisions	42 (13.5)	186 (59.6)	81 (26)	3 (1)	0 (0)	4.04 (0.643)

4.3.3 eHealth Literacy: Posttest

The mean score of eHealth literacy as measured by the eHEALS was 33.90 (SD = 2.63) with a range from 25 to 40. By determining high or low eHealth literacy with the mean score as the cut-off point, more than half of participants (N = 148, 52.7%) had high eHealth literacy. See table 18 for details.

Table 18 Level of eHealth Literacy: Posttest

Item		Frequency	Percentage	
Level of eHealth	Low	133	47.3	
	High	148	52.7	
	Min	Max	Mean	SD
eHealth literacy	25	40	33.90	2.63

4.4 Results of Quantitative Study: Pretest-Posttest Analysis

In pretest-posttest analysis, comparisons were made to investigate whether or not any changes occurred. Variables for comparing between before and after intervention were the use of eHealth and eHealth literacy.

4.4.1 Usage of eHealth: Comparison between Pretest and Posttest

The majority of participants had ever used eHealth both in pretest (n = 221, 73.7%) and posttest (n = 258, 91.8%). As the proportion of participants with experience in using eHealth increased, the different of these proportions was examined. The result from McNemar test showed that the use of eHealth between pretest and posttest was significantly different (p-value < 0.01). See table 19 for details.

Table 19 Usage of eHealth: Comparison between Pretest and Posttest

Item	Pretest N (%)	Posttest N (%)	McNemar test (sig)
Usage of eHealth			0.00*
Never used eHealth	79 (26.3)	23 (8.2)	
Ever used eHealth	221 (73.7)	258 (91.8)	

* significant at p -value < 0.01

4.4.2 eHealth Literacy: Comparison between Pretest and Posttest

Comparing eHealth literacy between pretest and posttest was examined by Paired T-Test. The results showed that pretest and posttest had significant differences in terms of perceived usefulness (p -value < 0.01) and importance (p -value < 0.01) of the Internet on health and eHealth literacy scores (p -value < 0.01). See table 20 for details.

Table 20 eHealth Literacy: Comparison between Pretest and Posttest

Item	Pretest M (SD)	Posttest M (SD)	Paired T-Test
Perceived usefulness	3.91 (0.81)	4.63 (0.56)	0.00*
Perceived importance	3.99 (0.64)	4.70 (0.47)	0.00*
eHealth literacy scores	31.63 (3.78)	33.90 (2.63)	0.00*

* significant at p -value < 0.01

CHAPTER V

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Discussion

The results from qualitative study showed a variety of health promotion activities implemented in the military setting at the regiment, battalion, even company levels. At the regiment level, which was the main focus of the study, most of health promotion initiatives were carried out by community leaders with the permission of military commanders. Health providers played a major role in routine health promotion services rather than community actions for health. The role of health providers was more passive than that of community leaders. This context in which health promotion of RTA personnel was implemented has not yet been explored. Therefore, studying such unique context of health promotion can result in a valuable understanding for the move towards development of WBSS for army health promotion in this study and also for community actions using WBSS for health promotion.

Before starting the study intervention, community participation in health promotion was already high in terms of leaderships, planning and management, and external support for program development. In contrast, community participation in community people' involvement and monitoring and evaluation were very low. Low level of community participation in monitoring and evaluation was also found in previous study assessing community participation in Basic Development Needs Program launched by WHO in 1987 (Draper et al., 2010). As Draper said, the score on monitoring and evaluation was low because being conducted by external professionals, did not involve community members.

Regarding to the lack of these two dimensions, the development of WBSS, as the study intervention, enabled community participation largely on the dimension of community involvement and also tried to scale up the dimension of monitoring and evaluation. However, community participation in monitoring and evaluation could be a little bit increased from the value of mobilization to collaboration, not yet reached the value of empowerment, which the community can do a participatory evaluation that produces locally meaningful findings. This was because the issue of monitoring and evaluation usually not an interest of the community and indicators regularly proposed by researchers or professionals outside.

For quantitative study, the results from pretest showed that almost all army personnel in the setting (95.8%) used the Internet in the past year. This prevalence is more than two times of the Internet population in Thailand reported in 2015, which reported 39.3% of the population using the Internet (National Statistical Office, 2015). Furthermore, this number of Internet users among army personnel is higher than the international survey by Pew Research Center (2016) mentioned in Chapter I. According to the survey, even South Korea, the top country having highest rate of Internet access (94%), had percentage of Internet users lower than reported in the setting.

Chapter IV presented that 73.7% of Internet users had ever used eHealth information. Comparing to previous studies, this number of eHealth users is higher than other countries. In U.S.A., for example, 'Health Online 2013' reported that 72% of Internet users looked online for health information in the past year (Fox & Duggan, 2013). The recent study in Poland found that the Polish population used the Internet for health related purposes 66.7% in 2012 (Bujnowska-Fedak, 2015). However, a study among Norwegians published in 2008 predicting that 84% of the population

might be using the Internet for health purposes by the year 2010 (Wangberg et al., 2008).

Interestingly, the pretest found that the majority of army personnel had eHealth literacy level higher than average. The results showed that the average score of eHealth literacy was 31.61 (SD = 3.78) and a little bit more than half of participants (54.7%) had eHealth literacy scores above the average. Considering to previous researches using eHEALS, the mean score of eHealth literacy in the present study was higher than those found earlier. For example, a study participated by American adults aged over 18 years old during 2013 revealed that the mean eHealth literacy score was 29.7 with SD equaled to 5.88 (Jung Hoon Baeg & Park, 2015). In Asian countries, a study in Korea (Park & Lee, 2015) found that eHealth literacy scores of nursing students was 27.06 at the average. Also, another study among university students in Hong Kong presented that the mean score of eHealth literacy was 24.13 (Julia L.Y. Chan et al., 2009).

According to the review of literature on using eHEALS, there has been no standard of adequate mean score of eHealth literacy. Nevertheless, comparing the results with previous researches enables a better understanding of the issue, indicating that army personnel had higher mean eHealth literacy scores than participants in reviewed studies, even higher than the younger populations, which may be assumed to have more skills and ability to use the Internet and related technologies.

The point that the majority of army personnel had high level of eHealth literacy should be aware for promoting health through the Internet. Even though the results showed that 54.7% of participants had scores higher than the mean, almost half of participants still had low eHealth literacy with the minimum score of 20. This

has an implication for public health intervention to address this issue in order to enhance effective use of eHealth.

In addition, the results from pretest clearly affirmed that key determinants of eHealth literacy of army personnel were eHealth use and perceived importance of being able to access eHealth resources. Also, it proved that there was no significant effect of socio-demographical characteristics, perceived health status, having disease, frequency of Internet use, and perceived usefulness of the Internet on health, on eHealth literacy. Therefore, increases only these two key determinants can effectively multiply eHealth literacy. Following to the literature, the majority of studies have used eHEALS as a baseline measure and to set up levels of eHealth literacy in different populations (Astrid Karnoe & Kayser, 2015). Similarly, the results from the pretest can be regarded as baseline information for further actions to promote health by using eHealth resources.

Quantitative survey in posttest found the increase of eHealth usage and eHealth literacy, as well as perceived usefulness and important of eHealth. The positive change of eHealth literacy after intervention was also reported in the study of American adolescents 6-8 grades in Michigan's Upper Peninsula, who exposed to eHealth literacy training (Thomas Hove, Hye -Jin Paek, & Isaacson, 2011). In addition, the study of university students in Hong Kong indicated an increase of eHealth literacy score in the intervention group provided a web-based learning (Julia L.Y. Chan et al., 2009). However, the results from the control group also showed the same direction of change. Therefore, no statistically significant difference was finally found. This was assumed to be too small sample size to detect whether any changes really happened.

5.2 Conclusion

Qualitative study showed that various health promotion activities implemented in the setting were reported before the implementation. Those initiated at the regiment level were carried out with high participation level in terms of leadership, management and external support. Concerning to the issues of community involvement and evaluation, however, level of participation was low. Level of participation in all five dimensions was dynamic rather than static and relied upon authorities.

Such levels of community participation in health promotion were existed in the context of health promotion implementation in a military setting where community leaders played a very important role in driving health promotion activities and CHVs representatives had high both capacity and volunteer spirit to work on community health promotion.

WBSS for military health promotion was developed through a participatory process. After web released for 3 months, usage of WBSS for health promotion in the military setting was assessed. It found that WBSS was used by the community to promote accessibility to eHealth information and tools as well as to disseminate health information or self-care to those offline people through a program broadcasted via community voice on the line. Levels of community participation in health promotion during using WBSS were scaled up, especially in terms of community people's involvement and evaluation.

Pretest of quantitative study showed that participants aged between 19-59 years currently used the Internet in the past year 95.8%. All Internet users reported the use of the Internet at least once in the last three months and most of them (77.7%) used the Internet every day. Regarding to experience in using eHealth, 79 Internet users (26.3%) had never used eHealth, 13 Internet users (4.3%) had ever

used but did not use in the last three months, 99 Internet users (33.0%) had experience but used less than once a week in the last three months, and 109 Internet users (36.0%) had experience of use at least once a week in the last three months. In total, 73.6% of Internet users (n = 221) had experience in using eHealth and 69.3% (n = 208) currently used eHealth. Participants responded that the Internet is useful (n = 169, 56.3%) or very useful (n = 61, 20.3%) in helping them make decisions about their health. Moreover, participants perceived that it is important (n = 187, 62.3%) or very important (n = 57, 19.0%) to be able to access health resources on the Internet.

The mean score of eHealth literacy as measured by the eHEALS was 31.61 (SD = 3.78) with a range from 20 to 40. By determining high or low eHealth literacy with the mean score as the cut-off point, more than half of participants (N = 164, 54.7) had high eHealth literacy. This means that the majority of army personnel in the study area had high eHealth literacy. By determining high or low eHealth literacy with the mean score as the cut-off point, more than half of participants (N = 164, 54.7) had high eHealth literacy. This means that the majority of army personnel in the study area had high eHealth literacy. The mean score of eHealth literacy as measured by the eHEALS was 31.61 (SD = 3.78) with a range from 20 to 40. By using logistic regression analysis to investigate variables predicting eHealth literacy, the results showed that only perceived importance of internet on health and experience of use of eHealth significantly determined eHealth literacy. The chi-squared goodness of fit test was significant (p-value < 0.001) and the Hosmer-Lemeshow test result was not significant (p-value = 0.317) which suggested a good fit.

Posttest of quantitative study showed that most of 281 Internet users (n = 258, 91.8%) had experience in using eHealth. Still, there were 23 participants (8.2%) had never used it. All participants who had experience in using eHealth were current eHealth users since they used it at least once in the last three months. Most of

eHealth users (n = 146, 56.6%) used eHealth at least once a week. See table 20 for details. Participants responded that the Internet is useful (n = 81, 28.8%) or very useful (n = 189, 67.3%) in helping them make decisions about their health. Moreover, participants perceived that it is important (n = 82, 29.2%) or very important (n = 198, 70.4%) to be able to access health resources on the Internet. Participants scored the highest (M = 4.67, SD = 0.49) on knowing what health resources are available on the internet and the lowest (M = 3.98, SD = 0.56) on being able to tell high quality health resources from low quality health resources on the internet.

The mean score of eHealth literacy as measured after the intervention by using the eHEALS was 33.90 (SD = 2.63) with a range from 25 to 40. By determining high or low eHealth literacy with the mean score as the cut-off point, more than half of participants (N = 148, 52.7%) had high eHealth literacy.

Comparing between of pretest and posttest in the same group, the results showed that the use of eHealth between pretest and posttest was significantly different (p-value < 0.01). Also, pretest and posttest had significant differences in terms of perceived usefulness (p-value < 0.01) and importance (p-value < 0.01) of the Internet on health and eHealth literacy scores (p-value < 0.01).

5.3 Recommendations

5.3.1 Recommendations for General Applications

- Usage of WBSS for health promotion should be vigorously enhanced in military settings of the RTA in order to scale up eHealth literacy and to promote the health of workforce through the Internet.

- Usage of WBSS for army health promotion should be monitored to see the outcomes of the intervention in longer term. Results from monitoring can be used to prove whether WBSS is worth being developed or not. Also, satisfaction of users should be evaluated.

- WBSS for military health promotion needs to be continuously improved in terms of technology, contents, function, and so on.

- Other kinds of supporting system using modern technology should be introduced for the benefits of army health, not only health promotion, but also disease prevention and treatment.

5.3.2 Recommendations for Policies

- WBSS for military health promotion should be added in the formal system of health promotion in the RTA as an alternative channel to facilitate RTA units in implementing health promotion. Also, web administrator should be officially assigned in long term practice.

- It is essential to revise health promotion policy of the RTA by addressing community participation and use of eHealth and related technologies in general, or WBSS in particular.

- Health promotion should be formally integrated in human resource development policies, especially the policy on quality of life development. The use of WBSS can benefit not only health promotion implementation, but also other dimensions of human resource development.

5.3.3 Recommendations for Future Researches

- Further study in different army settings should be conducted to gain more knowledge and understanding about Internet access and use, usage of eHealth, eHealth literacy, and determinants of those variables.

- Health promotion outcomes resulted from the use of WBSS should be further evaluated. These include changes at behavioral level to be more healthy lifestyles.

- It is worth exploring that how WBSS can be diffused as an innovation for health.
Concept of diffusion of innovation may be useful for this kind of evaluation.



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APPENDIX

APPENDIX A
ENGLISH QUESTIONNAIRE

**Survey for the Development of Web-Based Supporting System for Army Health
Promotion in a Pilot Setting**

Description

This survey is part of a research project on ‘The Effect of the Development of Web-Based Supporting System for Military Health Promotion Using Participatory Approach: a Case Study of First Infantry Regiment, The King’s Own Bodyguard’, which focuses on the participation of all parties involved in the development process. The Information from the survey will be useful for planning and designing such systems to be appropriate and consistent with the problems and needs of the users and be able to support the implementation of the Army personnel’s enhanced health promotion program as stated in the unit’s objective and the Army’s directives. To be able to subjectively obtain the vital information on the subject, it is, therefore, kindly requested for your assistance to respond openly to all questions in the survey. The obtained data will be compiled and analyzed in the different scopes. Your responses will be strictly confidential.

Part 1 Personal Information

Please mark ✓ in or fill in the blank (As applicable)

1. Affiliated unit
2. Work place (for example, department or division etc.)
3. Rank
 Commissioned Officer Noncommissioned Officer
 Private Others please identify

4. Age years

5. Marital status

Single

Married

Widow

Divorced/separated

6. Education

Junior high school or lower

High school or equivalent

Certificate/equivalent

Bachelor degree/ equivalent

Master degree or higher

7. Monthly incomes

Less than 10,000 Baht

10,000 – 14,999 Baht

15,000 – 19,999 Baht

20,000 – 24,999 Baht

25,000 – 29,999 Baht

more than 30,000 Baht

8. Accommodation

Official provided accommodation within the unit

Official provided accommodation outside the unit, please identify unit.....

Relative's or own accommodation

Rented house/rented room

Others, please identify.....

Part 2 Health-related Information

Please mark ✓ in or fill in the blank (As applicable)

9. Currently, what is the level of your overall health conditions?

Excellence

Very Good

fair

poor

worst

10. Do you have health problems?

Never

Yes, please identify disease(s) or health-related issue(s) (can be more than 1 item) and method(s) of curing /healing

Health problems	Treatments			
	Continuous	Sometimes	None	Other
<input type="checkbox"/> Diabetes mellitus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Hypertension	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Hyperlipidemia	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Kidney disease	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Heart disease	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Liver disease	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Gout	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Anemia	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Others (specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

11. In the past 1 month, how often do you practice these?

11.1. Smoking

Everyday

Sometimes

Never

11.2. Drinking alcohol

More than 5 days/wk 1 – 5 days/wk Never

11.3. Doing exercise

At least 3 days/wk 1 – 2 days/wk Never

12. For the last one month, Have you troubled with these symptoms?

Symptoms or feelings	Rarely	Sometimes	Often	always
12.1 Problems with insomnia issues, snoring or difficult to sleep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12.2 Less focused/concentrated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12.3 Annoyed/restless/anxious	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12.4 Boring	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12.5 Want to be alone/isolated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Part 3 accessibility and the use of the INTERNET

Please mark ✓ in before your selected messages or fill in the blank

13. Have you ever used the Internet?

- Never (go straight to part 5)
- Yes, but never used for the last 1 year (go straight to part 4)
- Yes, and used for the last 1 year

14. What is your overall comfort level in accessing to the Internet on a daily basis?

Very good Good Fair Poor Very poor

15. You access to the Internet with any device. (Select more than one item).

- Mobile phone
- Tablet computer
- Desktop computer
- Notebook computer or Laptop computer
- Others, please identify

16. For the past three months, how often have you used the Internet?

- Never
- Less than one day in a month
- More than one day per month, but not every week
- More than one day per a week, but not every day
- Every day

Part 4 The use of electronic health information and knowledge of health electronically.

Please mark ✓ in before your selected messages

17. Have you ever used the Internet to search for health information?

- Yes
- Never (go to 22)

18. For the past three months, how often have you used the Internet to search for health information?

- Never
- Less than one day in a month
- More than one day per month, but not every week
- More than one day per a week, but not every day
- Every day

19. How useful is the Internet to assist you making decisions about your health?

- Very useless
- Useless
- Not sure
- Useful
- Very useful



20. How important to you is being able to access health information on the Internet?

- Very unimportant
- Unimportant
- Not sure
- Important
- Very important

21. Please give your opinion towards the texts below

Texts	Totally agree	Agree	Not sure	Disagree	Totally disagree
21.1 I know what health resources are available on the internet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21.2 I know where to find helpful health resources on the internet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21.3 I know how to find helpful health resources on the internet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21.4 I know how to use the internet to answer my questions about health	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21.5 I know how to use the health information I find on the internet to help me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21.6 I have the skills I need to evaluate the health resources I find on the internet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21.7 I can tell high quality health resources from low quality health resources on the internet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21.8 I feel confident in using information from the internet to make health decisions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Part 5 Opinion on the development of support system of health promotion for the Army's personnel on the Internet.

Please mark ✓ in the box before your selected messages or fill in the space

22. In a case of development of the website system for the Army's personnel health promotion on the Internet? What activities or services should the website consist of? (as applicable / can be more than 1)

- Health information services
- Counseling services on health problems
- Health self-assessment through online applications such as body mass index calculation, assessment of the risk of cardiovascular disease, and stress test
- Exchanging and learning activities for health, such as opening disease-specific chat rooms, good-book sharing corners, health-problem questions and answers contest, and photo contest / health promotion slogan contest
- Others

23. Any other comments, remarks or suggestions

.....

.....

.....

.....

.....

.....

.....

*** Thank you for your open responses ***

APPENDIX B
THAI QUESTIONNAIRE

แบบสำรวจข้อมูลเพื่อการพัฒนาาระบบสนับสนุนการสร้างเสริมสุขภาพกำลังพลกองทัพบก
แบบบูรณาการผ่านอินเทอร์เน็ตในพื้นที่นำร่อง

คำชี้แจง

การสำรวจครั้งนี้เป็นส่วนหนึ่งของโครงการวิจัยเรื่อง ผลของการพัฒนาาระบบสนับสนุนบนฐานเว็บเพื่อการสร้างเสริมสุขภาพทหารโดยใช้แนวทางการมีส่วนร่วม: กรณีศึกษากรมทหารราบที่ 1 มหาดเล็กรักษาพระองค์ฯ ซึ่งมุ่งเน้นการมีส่วนร่วมของทุกฝ่ายที่เกี่ยวข้องในกระบวนการพัฒนา ข้อมูลที่ได้จากการสำรวจจะเป็นประโยชน์อย่างยิ่งต่อการวางแผนและออกแบบระบบดังกล่าวให้มีความเหมาะสม สอดคล้องกับสถานการณ์ปัญหาและความต้องการของผู้ใช้ สามารถสนับสนุนการดำเนินงานสร้างเสริมสุขภาพกำลังพลกองทัพบกได้ตรงตามความมุ่งหมายของหน่วยและนโยบายของกองทัพบก จึงใคร่ขอความอนุเคราะห์จากท่าน ในการตอบคำถาม ตามความเป็นจริงทุกข้อ เพื่อให้ได้ข้อมูลที่ถูกต้องและครบถ้วน โดยข้อมูลที่ได้ทั้งหมดจะถูกนำไปวิเคราะห์ในภาพรวม ไม่มีการระบุชื่อท่าน คำตอบของท่านจะถือเป็นความลับ และจะไม่ส่งผลกระทบต่อตัวท่าน

ส่วนที่ 1 ข้อมูลพื้นฐานส่วนบุคคล

กรุณาทำเครื่องหมาย ในช่อง หน้าข้อความที่ท่านเลือก หรือเติมคำในช่องว่าง (แล้วแต่กรณี)

1. หน่วยที่สังกัด.....
2. สถานที่ปฏิบัติงาน (เช่น ฝ่าย แผนก กอง)
3. ชั้นยศ
 นายทหารสัญญาบัตร นายทหารประทวน
 พลอาสาสมัคร อื่นๆ กรุณาระบุ
4. อายุ ปี

5. สถานภาพสมรส

- โสด คู่ หม้าย หย่า/แยก

6. ระดับการศึกษา

- มัธยมต้นหรือต่ำกว่า มัธยมปลาย/เทียบเท่า อนุปริญญา/เทียบเท่า
 ปริญญาตรี/เทียบเท่า ปริญญาโทหรือสูงกว่า

7. รายได้ต่อเดือน

- น้อยกว่า 10,000 บาท 10,000 – 14,999 บาท 15,000 – 19,999 บาท
 20,000 – 24,999 บาท 25,000 – 29,999 บาท ตั้งแต่ 30,000 บาทขึ้นไป

8. ที่พักอาศัย

- ที่พักอาศัยของทางราชการ ในพื้นที่หน่วยที่ปฏิบัติงาน
 ที่พักอาศัยของทางราชการ นอกพื้นที่หน่วยที่ปฏิบัติงาน กรุณาระบุชื่อหน่วย.....
 ที่พักอาศัยของตนเองหรือญาติ
 บ้านเช่า/ห้องเช่า
 อื่นๆ กรุณาระบุ

ส่วนที่ 2 ข้อมูลด้านสุขภาพ

กรุณาทำเครื่องหมาย ✓ ในช่อง หน้าข้อความที่ท่านเลือก หรือเติมคำในช่องว่าง (แล้วแต่กรณี)

9. ปัจจุบัน สุขภาพของท่านโดยรวม อยู่ในระดับใด

- ดีมาก ดี พอใช้ แย่ แย่มาก

10. ท่านมีโรคหรือปัญหาสุขภาพหรือไม่

- ไม่มี
 มี กรุณาระบุโรคหรือปัญหาสุขภาพ (เลือกตอบได้มากกว่า 1 ข้อ) และการรักษา

15 ท่านเข้าใช้งานอินเทอร์เน็ตด้วยอุปกรณ์ชนิดใดบ้าง (เลือกตอบได้มากกว่า 1 ข้อ)

- โทรศัพท์มือถือ
- คอมพิวเตอร์แท็บเล็ต (Tablet computer)
- คอมพิวเตอร์ตั้งโต๊ะ (Desktop computer)
- คอมพิวเตอร์โน้ตบุ๊ก (Notebook computer) หรือ แล็ปท็อป (Laptop computer)
- อื่นๆ กรุณาระบุ

16 ในช่วง 3 เดือนที่ผ่านมา ท่านเข้าใช้งานอินเทอร์เน็ตบ่อยเพียงใด

- ไม่ได้ใช้เลย
- น้อยกว่าเดือนละ 1 วัน
- เดือนละ 1 วันขึ้นไป แต่ไม่ทุกสัปดาห์
- สัปดาห์ละ 1 วันขึ้นไป แต่ไม่ทุกวัน
- ทุกวัน

ส่วนที่ 4 การใช้ข้อมูลข่าวสารสุขภาพทางอิเล็กทรอนิกส์ และความรอบรู้ด้านสุขภาพทางอิเล็กทรอนิกส์

กรุณาทำเครื่องหมาย ✓ ในช่อง หน้าข้อความที่ท่านเลือก

17 ท่านเคยใช้อินเทอร์เน็ตเพื่อค้นหาหรือรับข้อมูลข่าวสารสุขภาพหรือไม่

- ไม่เคย (ข้ามไปตอบข้อ 19)
- เคย

18 ในช่วง 3 เดือนที่ผ่านมา ท่านใช้อินเทอร์เน็ตเพื่อค้นหาหรือรับข้อมูลข่าวสารสุขภาพบ่อยเพียงใด

- ไม่ได้ใช้เลย
- น้อยกว่าเดือนละ 1 วัน
- เดือนละ 1 วันขึ้นไป แต่ไม่ทุกสัปดาห์
- สัปดาห์ละ 1 วันขึ้นไป แต่ไม่ทุกวัน
- ทุกวัน

19 อินเทอร์เน็ตมีประโยชน์เพียงใดในการช่วยท่านตัดสินใจเกี่ยวกับสุขภาพของท่าน

- ไม่มีประโยชน์อย่างยิ่ง ไม่มีประโยชน์ ไม่แน่ใจ
 มีประโยชน์ มีประโยชน์อย่างยิ่ง

20 การที่ท่านสามารถเข้าถึงแหล่งข้อมูลสุขภาพบนอินเทอร์เน็ตได้ มีความสำคัญต่อท่านอย่างไร

- ไม่สำคัญอย่างยิ่ง ไม่สำคัญ ไม่แน่ใจ
 สำคัญ สำคัญอย่างยิ่ง

21 ท่านมีความคิดเห็นอย่างไรเกี่ยวกับข้อความดังต่อไปนี้

ข้อความ	เห็นด้วย อย่างยิ่ง	เห็น ด้วย	ไม่ แน่ใจ	ไม่เห็น ด้วย	ไม่เห็นด้วย อย่างยิ่ง
21.1. ท่านรู้ว่ามีแหล่งข้อมูลสุขภาพ อะไรบ้างอยู่บนอินเทอร์เน็ต	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21.2. ท่านรู้ว่าจะค้นหาแหล่งข้อมูล สุขภาพที่เป็นประโยชน์ได้ที่ใดบน อินเทอร์เน็ต	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21.3. ท่านรู้ว่าจะค้นหาแหล่งข้อมูล สุขภาพที่เป็นประโยชน์บนอินเทอร์เน็ตได้ ด้วยวิธีการอย่างไร	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21.4. ท่านรู้ว่าจะใช้อินเทอร์เน็ตเพื่อตอบ ข้อสงสัยของท่านเกี่ยวกับสุขภาพได้ด้วย วิธีการอย่างไร	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21.5. ท่านรู้ว่ามีวิธีการอย่างไรที่จะนำ ข้อมูลสุขภาพที่ท่านค้นหบบนอินเทอร์เน็ต มาใช้เพื่อช่วยท่าน	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

ข้อความ	เห็นด้วย อย่างยิ่ง	เห็น ด้วย	ไม่ แน่ใจ	ไม่เห็น ด้วย	ไม่เห็นด้วย อย่างยิ่ง
21.6. ท่านมีทักษะที่จำเป็นสำหรับการประเมินแหล่งข้อมูลสุขภาพที่หาได้จากอินเทอร์เน็ต	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21.7. ท่านสามารถแยกแยะแหล่งข้อมูลสุขภาพที่มีคุณภาพสูงออกจากที่มีคุณภาพต่ำได้	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21.8. ท่านรู้สึกมั่นใจในการใช้ข้อมูลจากอินเทอร์เน็ตเพื่อตัดสินใจด้านสุขภาพ	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

ส่วนที่ 5 ความคิดเห็นเกี่ยวกับการพัฒนาระบบสนับสนุนการสร้างเสริมสุขภาพกำลังพลกองทัพผ่านอินเทอร์เน็ต

กรุณาทำเครื่องหมาย ✓ ในช่อง หน้าข้อความที่ท่านเลือก หรือเติมคำในช่องว่าง (แล้วแต่กรณี)

22 หากมีการพัฒนาระบบเว็บไซต์สำหรับการดูแลสุขภาพของกำลังพลกองทัพโดยเฉพาะ ท่านคิดว่าเว็บไซต์ดังกล่าว ควรประกอบด้วยกิจกรรมหรือบริการใดบ้าง (เลือกตอบได้มากกว่า 1 ข้อ)

- บริการข้อมูลข่าวสารสุขภาพ
- การให้คำปรึกษาปัญหาสุขภาพ
- การประเมินสุขภาพด้วยตนเองผ่านโปรแกรมออนไลน์ เช่น คำนวณดัชนีมวลกาย ประเมินความเสี่ยงต่อโรคหัวใจและหลอดเลือด ทดสอบความเครียด
- การประชาสัมพันธ์ข่าวสาร/กิจกรรมสร้างเสริมสุขภาพ เช่น โยคะฟรี ตลาดนัดผักผลไม้ปลอดสารพิษ มหกรรมสมุนไพรแห่งชาติ ผลิตภัณฑ์เพื่อสุขภาพ เป็นต้น
- อื่นๆ กรุณาระบุ

23 ความคิดเห็นและข้อเสนอแนะอื่น ๆ

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*** ขอขอบคุณที่ให้ความร่วมมือในการตอบแบบสอบถาม ***



APPENDIX C
ENGLISH IN-DEPTH INTERVIEW GUIDELINES

"Participation in Health Promotion in Royal Thai Army Units"

These in-depth interview guidelines have been prepared so as to fundamentally guide the interview on the issue of "The participation in health promotion within the Thai Army's unit". Key informants include unit commander (or deputy commander), chief of personnel section, chief of health personnel section, community leaders and the president of village health volunteers. In practice, the questions in these in-depth interview guidelines can be used for other interviews by simply adding designed modifications or detailed additions appropriate for the context of the discussion so as to usefully and objectively collect data for the research meeting the most realistic facts. In addition, during the interview the guidelines may be supplemented by a general discussion dictated by situations on the ground in order to achieve a complete understanding of the issues of the interview.

The in-depth interview guidelines consist of three sets of questions; including questions about personal information, questions about experiences, relevance and opinions on health promotion in the areas of the Thai army's unit and the question about participation in health promotion in the areas of the Thai army's unit.

Part 1: questions about personal information

- What is the informant's demographic and social background information? (age, education, marital status, rank, position, occupation type, part time job).

- How long have informants worked in the unit? Why did informants eventually end up working in such an area? How long will informants plan to work in such an area? For any reasons?
- Have informants stayed within the areas of their units? And if not, why?

Part 2: Questions about experiences, relevance and general opinions about the health promotion within the areas of the army's unit

- Have informants ever initiated a project/ health promotion activities in the areas of the unit (or partly involved, related)? If so, what were the projects/activities?
- What are the informants' responsibilities or involvements?
- What were the informants' general opinions of the execution of health promotion campaign in the areas of the army unit? In what direction would informants like to see it go, especially, in the development of supporting systems?

Part 3: Questions about their involvement in the implementation of health promotion in the areas of the army's units

- Leadership
 - In the current situation, what roles do Health personnel have to play, in the decision-making process, as a leader in initiating a project / an activity for personnel's health in the area of the unit?
 - In addition to Health personnel, were there any other groups representatives in the military community involved in the

process? or do they have a role in leading a project / an activity or not? How? Why?

- Planning management
 - In planning and managing projects / activities. What roles do Health workers play? How much/little does the military community contribute to projects/activities? How much/little do both groups provide resources to support projects / activities?
 - Has there been any form of cooperation/collaboration or partnership / equal related parties between community health workers and military community either officially or unofficially formed or established? How?
- The involvement of the army personnel in the area
 - Has the involvement of the army personnel in the area been the objective of the project / activity?
 - How much have the army personnel in the area been involved in the project / activity? How? In what parts of the projects/activities have they been responsible for?
- External Support of the budget and project design
 - Where does the budget of the project / activity come from? Who or which groups actively have a related role in the acquisition budget? Does the military community have a role in it or not? How?

- Which individuals or what groups are in charge of supervising and budgeting of the project / activity? Does the military community have a role in it or not? How?
- By whom(individuals/groups) were projects / activities designed? Who (individuals/groups) determine the outcome of the project/activity? Does the military community become involved in these matters? How?
- The monitoring and evaluation of activities
 - Who or which groups are responsible for the design of the monitoring and evaluation of the project / activity? Why? How does the military community become involved in the planning process? What would be a definition of the success of the project? And by whom or which groups?
 - Who or which groups are responsible for collecting data in the evaluation of projects / activities? Why? How does the military community get involved in the process of data collection?
 - How much does the military community recognize the importance of the outcome of project? Is there any data recovery process to community (presentation of the outcome of the project to the community)? If so, by whom and how? How does the military community respond to the outcome of the project?

APPENDIX D

THAI IN-DEPTH INTERVIEW GUIDELINES

แนวทางการสัมภาษณ์เชิงลึก

เรื่อง “การมีส่วนร่วมของในการสร้างเสริมสุขภาพในพื้นที่หน่วยกองทัพบก”

แนวทางการสัมภาษณ์เชิงลึกฉบับนี้ จัดทำขึ้นเพื่อเป็นแนวทางพื้นฐานสำหรับการสัมภาษณ์ในประเด็น “การมีส่วนร่วมในการสร้างเสริมสุขภาพในพื้นที่หน่วยกองทัพบก” โดยมีผู้ให้ข้อมูลหลักคือผู้บังคับหน่วย (หรือรองผู้บังคับหน่วย) หัวหน้าฝ่ายกำลังพล หัวหน้าบุคลากรสุขภาพ ผู้นำชุมชน และประธานอาสาสมัครสาธารณสุขประจำหมู่บ้าน (อสม.) ในทางปฏิบัติ ข้อคำถามในแนวทางการสัมภาษณ์เชิงลึกฉบับนี้สามารถนำไปใช้สำหรับการสัมภาษณ์ผู้ให้ข้อมูลโดยอาจปรับเปลี่ยนหรือเพิ่มเติมรายละเอียดให้เหมาะสมกับบริบทของการสนทนา ทั้งนี้ เพื่อประโยชน์ในการเก็บรวบรวมข้อมูลการวิจัยให้ได้ตรงตามความเป็นจริงมากที่สุด นอกจากนี้ ระหว่างการสัมภาษณ์อาจเสริมด้วยการสนทนาทั่วไปตามแต่สถานการณ์เพื่อให้เกิดความเข้าใจที่สมบูรณ์ในประเด็นของการสัมภาษณ์

แนวทางการสัมภาษณ์เชิงลึกประกอบด้วยแนวคำถามจำนวน 3 ชุด ได้แก่ แนวคำถามเกี่ยวกับข้อมูลส่วนบุคคล แนวคำถามเกี่ยวกับประสบการณ์ความเกี่ยวข้องและความคิดเห็นเกี่ยวกับการสร้างเสริมสุขภาพในพื้นที่หน่วยกองทัพบก และ แนวคำถามเกี่ยวกับการมีส่วนร่วมในการสร้างเสริมสุขภาพในพื้นที่หน่วยกองทัพบก

ชุดที่ 1 แนวคำถามเกี่ยวกับข้อมูลส่วนบุคคล

- ผู้ให้ข้อมูลมีลักษณะทางประชากรและสังคมเป็นอย่างไร (อายุ การศึกษา สถานภาพสมรส ชั้นยศ ตำแหน่ง ลักษณะงาน อาชีพเสริม)
- ผู้ให้ข้อมูลปฏิบัติงานในพื้นที่หน่วยมานานเท่าไร เหตุใดจึงมาปฏิบัติงานในพื้นที่ดังกล่าว วางแผนจะปฏิบัติงานในพื้นที่ดังกล่าวอีกนานเท่าไร เพราะเหตุใด
- ผู้ให้ข้อมูลพักอาศัยอยู่ในพื้นที่หน่วยหรือไม่ ถ้าไม่ เพราะเหตุใด

ชุดที่ 2 แนวคำถามเกี่ยวกับประสบการณ์ความเกี่ยวข้องและความคิดเห็นโดยรวมเกี่ยวกับการดำเนินงานสร้างเสริมสุขภาพในพื้นที่หน่วยกองทัพบก

- ผู้ให้ข้อมูลเคยริเริ่มโครงการ/กิจกรรมด้านการสร้างเสริมสุขภาพในพื้นที่หน่วย (หรือมีส่วนเกี่ยวข้อง) บ้างหรือไม่ ถ้าเคย มีโครงการ/กิจกรรมใดบ้าง
- โครงการ/กิจกรรมล่าสุดคืออะไร ผู้ให้ข้อมูลรับผิดชอบหรือมีส่วนเกี่ยวข้องอย่างไรบ้าง
- ผู้ให้ข้อมูลมีความคิดเห็นโดยรวมต่อการดำเนินงานสร้างเสริมสุขภาพในพื้นที่หน่วยอย่างไร และต้องการให้มีทิศทางในการดำเนินงานต่อไปอย่างไร โดยเฉพาะอย่างยิ่งในการพัฒนาระบบสนับสนุนฯ

ชุดที่ 3 แนวคำถามเกี่ยวกับการมีส่วนร่วมในการดำเนินงานสร้างเสริมสุขภาพในพื้นที่หน่วยกองทัพบก

- ด้านการนำ:
 - ในสถานการณ์ปัจจุบัน บุคลากรสุขภาพมีบทบาทอย่างไรในฐานะผู้นำในกระบวนการตัดสินใจริเริ่มโครงการ/กิจกรรมเพื่อสุขภาพกำลังพลในพื้นที่หน่วย
 - นอกจากบุคลากรสุขภาพแล้ว ตัวแทนกลุ่มต่าง ๆ ในชุมชนทหารมีส่วนร่วมในกระบวนการดังกล่าวหรือมีบทบาทในการนำโครงการ/กิจกรรมหรือไม่อย่างไร เพราะเหตุใด
- ด้านการวางแผนและบริหารจัดการ:
 - ในการวางแผนและบริหารจัดการโครงการ/กิจกรรม บุคลากรสุขภาพมีบทบาทอย่างไร ชุมชนทหารเข้ามามีส่วนร่วมมากน้อยเพียงใด ทั้งสองกลุ่มให้ทรัพยากรสนับสนุนโครงการ/กิจกรรมมากน้อยเพียงใด

- มีความร่วมมือ หรือ การเป็นหุ้นส่วน/ภาคี ระหว่างบุคลากรสุขภาพและชุมชนทหารทั้งรูปแบบที่เป็นทางการและไม่เป็นทางการเกิดขึ้นหรือไม่ อย่างไร
- ด้านการมีส่วนร่วมเกี่ยวข้องของกำลังพลกองทัพบกในพื้นที่:
 - การมีส่วนร่วมเกี่ยวข้องของกำลังพลกองทัพบกในพื้นที่เป็นวัตถุประสงค์ของโครงการ/กิจกรรมหรือไม่
 - กำลังพลกองทัพบกในพื้นที่มีส่วนร่วมเกี่ยวข้องในโครงการ/กิจกรรมมากน้อยเพียงใด มีบทบาทในการตัดสินใจหรือไม่ อย่างไร รับผิดชอบส่วนใดในโครงการบ้าง
- ด้านการสนับสนุนจากภายนอกเกี่ยวกับงบประมาณและการออกแบบโครงการ:
 - งบประมาณของโครงการ/กิจกรรมมาจากแหล่งใด บุคคลใดหรือกลุ่มใดที่มีบทบาทเกี่ยวข้องในการได้มาซึ่งงบประมาณดังกล่าว ชุมชนทหารมีบทบาทเกี่ยวข้องในเรื่องนี้หรือไม่ อย่างไร
 - บุคคลใดหรือกลุ่มใดเป็นผู้ควบคุมดูแลและจัดสรรงบประมาณของโครงการ/กิจกรรม ชุมชนทหารมีบทบาทเกี่ยวข้องในเรื่องนี้หรือไม่ อย่างไร
 - โครงการ/กิจกรรมถูกออกแบบโดยใครหรือกลุ่มใดบ้าง ผู้กำหนดผลลัพธ์การดำเนินงานคือใครหรือกลุ่มใด เพราะเหตุใด ชุมชนทหารมีบทบาทเกี่ยวข้องในเรื่องเหล่านี้หรือไม่ อย่างไร
- ด้านการติดตามประเมินผลการเข้าร่วมกิจกรรม:
 - ผู้ออกแบบกระบวนการติดตามประเมินผลของโครงการ/กิจกรรมคือใครหรือกลุ่มใดบ้าง เพราะเหตุใด ชุมชนทหารเข้ามาเกี่ยวข้องในการวางแผนออกแบบกระบวนการดังกล่าวอย่างไรบ้าง ความสำเร็จของโครงการถูกนิยามว่าอย่างไร และโดยใครหรือกลุ่มใด

- การเก็บรวบรวมข้อมูลผลการประเมินโครงการ/กิจกรรมดำเนินการโดยใคร หรือกลุ่มใดบ้าง เพราะเหตุใด ชุมชนทหารเข้ามาเกี่ยวข้องในการเก็บรวบรวมข้อมูลอย่างไรบ้าง
- ชุมชนทหารตระหนักหรือให้ความสำคัญกับผลลัพธ์ของโครงการมากน้อยเพียงใด มีกระบวนการคืนข้อมูลสู่ชุมชน (นำเสนอข้อมูลผลลัพธ์ของโครงการให้ชุมชนทราบ) หรือไม่ ถ้ามี เกิดขึ้นโดยใครและอย่างไร ชุมชนทหารตอบสนองต่อข้อมูลผลลัพธ์ของโครงการอย่างไร



APPENDIX E

ENGLISH RESEARCH SUBJECT INFORMATION SHEET

Research Project The Effect of the Development of Web-Based Supporting System for Military Health Promotion Using Participatory Approach: a Case Study of First Infantry Regiment, The King's Own Bodyguard

Date

Researcher Lieutenant Colonel Thanita Wongjinda

Work Place Armed Forces Research Institute of Medical Sciences

Research Funder ThaiHealth

You have been invited to participate in this research project. But before you decide to participate or not, please read this entire document, then you will know the reason why you get invited to participate in this project. This project aims to do nothing more, if you choose to participate, you will need to do in the research, including the advantages and disadvantages that may arise during the research.

This document may contain text that you read and do not understand. Please do not hesitate to contact the researcher or research assistant, and make sure that the project is to be explained to you until you understand. You will receive a set of document to be brought home in order to talk with relatives, friends or doctors you know to help decide whether to participate in this project or not. Participation in this research project must be voluntary, no coercion or inducement. Even if you do not participate in the research project, you will receive the full medical treatment as usual. Failure to participate or withdraw from this project will

not affect the usual services received, medical treatment or other benefits that you should get.

Please do not sign your document until you are certain that you wish to participate in this research project, the word "you" in this document refer to the participants as a volunteer in this project. If you are a legitimate representative of those who will take part in the research project and sign in this document, please understand that "you" in this document refers to a participant in a research project only.

The project background and its purposes

Health promotion is crucially important to improving the health and quality of life of citizens and regarded as a strategic public health that are highly integrated and the most paid-off. The focus on public involvement and coordinated cooperation of all sectors to rectify a major health problem, together with increasing evidence worldwide, show that investments in public health promotion can lead to better conditions of population health. This helps reduce the incidences of preventable diseases and also results in a cost reduction in overall health payments.

Nowadays information and communication technology can play many more roles in the daily lives of the people, even more widespread and popular in the field of health. The web technology can beneficially be applied in health promotion such as increasing access to health information as well as enhanced potential surveillance of health problems, including supporting the communication and sharing of information for the health promotion practice. However, most of health websites are public on-line space focusing on providing tailored health care for general public and lack of a system of two-way communication. Also, the website of the US military health care is another one-way communication.

For the Royal Thai Army, personnel's health promotion has continuously been a priority for development. However, there has been no practical application of technological website in supporting health promotion actually. Thus, if there is application of such technology as a tool using in health promotion practice, the army personnel can be optimally more effective. This research is intended to focus on the study of the outcome of the development of a website to promote healthy living environment by means of participation so as to have better knowledge and understanding of the military units of the Army. This will form the basis for other military units in the next higher echelons and the knowledge obtained can also be applied to the support of the practical implementation of health promotion together with the beneficial use of modern technology. Eventually, it is expected that the soldiers will be able to develop better health not only for the sake of the stability and security of the army but also the nation in the long run.

You are invited to participate in this project because of the following (One of)

You are a governmental agency served under the First Infantry Regiment, the King's Guards or the First Infantry Battalion, the First Infantry Regiment of the King's Guards or the Fourth Battalion, 1st Infantry Regiment of the King's Guards or a participant involved in the implementation of the unit's health promotion program.

You cannot take part in the research if you have the following issues.

You have limitations in communications due to illnesses such being incapable of speaking.

Where will this project be conducted? And, how many participants will participate in the study?

The places for this research are the First Infantry Regiment, the King's Guards or the First Infantry Battalion, the First Infantry Regiment of the King's Guards or the

Fourth Infantry Battalion, 1st Infantry Regiment of the King's Guards, situated in Phayathai district, Bangkok province.

The estimated number of participants included about 380 people in the survey of 350 people who provide information and data to the interviews of 30 people.

Time for you to join the project and number of shots

The survey questionnaire will be conducted before and after the study intervention. Respondents will be informed ahead for the date and time to join the. Interview will be 2-3 times before and after the implementation. Appointments will be made for each informants based on their convenient.

Participants supported the development. There will be a meeting to plan the operation and implementation of the common plan. By appointment.

If you join the study, you have to follow procedure, or treated, however,

The participants in the survey questionnaire will be divided by age group (35 years of age or over and under 35 years) and randomly selected. The respondents provided. It takes about 10-15 in the questionnaire.

Participants have been chosen as the backbone of the military unit and the research community in the area. There will be groups of commander, community leaders, health personnel, IT personnel, community health volunteers, other officers, and so on.

The anticipated benefits to be derived from the project

Benefit to participants is a direct channel of information, news, health, convenience and more rapid. You can ask questions and comment on the health of both personal and collective. It has been promoted for their health care increases.

Social benefits

The site has contributed to the health of the general's grip on the army. This is an innovative health technology that can be applied to benefit worthwhile. Able to meet the requirements of health promotion officer actually. Consistent and appropriate to the military context.

The potential increase in military health. With a focus on engaging more. And is supported with concrete.

Pilot areas in the study as a model in the application of online technology to promote health. To expand in other areas.

There was a knowledge in the development of innovative approaches to health promotion by taking part in a military context. As well as ways to support the various agencies involved in the implementation of health promotion officer.

Are there any costs to the participants in the research project that will be responsible (if any)?

There is no charge for any of the participants for participating in the research project.

Any tangible return received when taking part in the research project (if any).

The informants who complete the survey will get a gift or souvenir in return. The key informants participate in the interviews and co-lead in the development of a support system will receive travelling allowances/ meeting allowances when attend and participate in the project implementation / activities at 300-500 baht/activity.

If you do not participate in this project, do you have some other options?

You can refuse to participate in this project and can use other online tools to search for information on health, learning independently.

If any dangers associated with this project occur, who should be in contact and how to be treated?

Lieutenant Colonel Thanita Wongjinda

Research Institute of Medical Sciences

315/6 Ratchavithi road, Ratchatewi subdistrict, Bangkok

087-925-9925 (phone can be in and out of office hours)

If you have any questions related to the project, who will be asked, the researcher or co-researcher?

Lieutenant Colonel Thanita Wongjinda

Research Institute of Medical Sciences

315/6 Ratchavithi road, Ratchatewi subdistrict, Bangkok

087-925-9925 (phone can be in and out of office hours)

If you feel you were treated unfairly during this project. You may have noticed that

Institutional Review Board, Royal Thai Army Medical Department, 5th Floor, Building VI call 02-3547600-28 per 94297

Your personal information gained from this research will be applied as follows

Presentation of data obtained from the study will be for the benefit of academic without revealing the participants' name, surname, address as well as taking necessary measures to keep the private information confidential.

Can you withdraw from the project after the trial participants already signed?

Participants in research projects can withdraw from the study at any time. It does not apply to any loss incurred. And participants in the study will be asked to

leave the project if there are unwanted diseases or severe symptoms detected for the benefit of the health of the participants.

If there is new information relevant to the project, you will be informed by the researcher or co-researcher immediately. (In the case of research-related treatment, particularly the use of drugs)

None



APPENDIX F

THAI RESEARCH SUBJECT INFORMATION SHEET

เอกสารชี้แจงข้อมูลแก่ผู้เข้าร่วมโครงการวิจัย

ชื่อโครงการวิจัย	ผลของการพัฒนาระบบสนับสนุนบนฐานเว็บเพื่อการสร้างเสริมสุขภาพทหารโดยใช้แนวทางการมีส่วนร่วม: กรณีศึกษากรมทหารราบที่ 1 มหาดเล็กรักษาพระองค์ฯ
วันที่ชี้แจง
ชื่อผู้วิจัย/ผู้ร่วมวิจัย	พ.ท.หญิง ธนิตา วงษ์จินดา
สถานที่ทำงานของผู้วิจัย	สถาบันวิจัยวิทยาศาสตร์การแพทย์ทหาร
ผู้ให้ทุนวิจัย	สำนักงานกองทุนสนับสนุนการสร้างเสริมสุขภาพ

ท่านได้รับการเชิญชวนให้เข้าร่วมในโครงการวิจัยนี้ แต่ก่อนที่ท่านจะตกลงใจเข้าร่วมหรือไม่ โปรดอ่านข้อความในเอกสารนี้ทั้งหมด เพื่อให้ทราบว่า เหตุใดท่านจึงได้รับเชิญให้เข้าร่วมในโครงการวิจัยนี้ โครงการวิจัยนี้ทำเพื่ออะไร หากท่านเข้าร่วมโครงการวิจัยนี้ท่านจะต้องทำอะไรบ้าง รวมทั้งข้อดีและข้อเสียที่อาจเกิดขึ้นในระหว่างการวิจัย

ในเอกสารนี้ อาจมีข้อความที่ท่านอ่านแล้วยังไม่เข้าใจ โปรดสอบถามผู้วิจัยหรือผู้ช่วยผู้วิจัยที่ทำโครงการนี้เพื่อให้อธิบายจนกว่าท่านจะเข้าใจ ท่านจะได้รับเอกสารนี้ 1 ชุด กลับไปอ่านที่บ้านเพื่อปรึกษาหารือกับญาติพี่น้อง เพื่อน หรือแพทย์ที่ท่านรู้จัก ให้ช่วยตัดสินใจว่าควรจะเข้าร่วมโครงการวิจัยนี้หรือไม่ การเข้าร่วมในโครงการวิจัยครั้งนี้จะต้องเป็นความสมัครใจของท่าน ไม่มีการบังคับหรือชักจูง ถึงแม้ท่านจะไม่เข้าร่วมในโครงการวิจัย ท่านก็จะได้รับการรักษาพยาบาลตามปกติ การไม่เข้าร่วมหรือถอนตัวจากโครงการวิจัยนี้ จะไม่มีผลกระทบต่อท่านได้รับการรักษาพยาบาลหรือผลประโยชน์ที่พึงจะได้รับของท่านแต่อย่างใด

โปรดอย่าลงลายมือชื่อของท่านในเอกสารนี้จนกว่าท่านจะแน่ใจว่ามีความประสงค์จะเข้าร่วมในโครงการวิจัยนี้ คำว่า “ท่าน” ในเอกสารนี้ หมายถึงผู้เข้าร่วมโครงการวิจัยในฐานะเป็นอาสาสมัคร

ในโครงการวิจัยนี้ หากท่านเป็นผู้แทนโดยชอบธรรมของผู้ที่จะเข้าร่วมในโครงการวิจัย และลงนามแทนในเอกสารนี้ โปรดเข้าใจว่า “ท่าน” ในเอกสารนี้หมายถึงผู้เข้าร่วมในโครงการวิจัยเท่านั้น

โครงการวิจัยนี้มีที่มาอย่างไร และวัตถุประสงค์ของโครงการวิจัย

การสร้างเสริมสุขภาพ หรือการสร้างเสริมสุขภาพ มีความสำคัญอย่างยิ่งต่อพัฒนาสุขภาพ และคุณภาพชีวิตประชาชน และถือเป็นยุทธศาสตร์ด้านสุขภาพที่บูรณาการและมีความคุ้มค่ามากที่สุด เนื่องจากมุ่งเน้นการมีส่วนร่วมของประชาชนและการประสานร่วมมือจากทุกภาคส่วนในการปรับเปลี่ยนแก้ไขปัญหาสุขภาพ ที่สำคัญ มีหลักฐานปรากฏเพิ่มขึ้นทั่วโลกแสดงให้เห็นว่าการลงทุนเพื่อการสร้างเสริมสุขภาพสามารถนำมาซึ่งสุขภาพที่ดีขึ้นของประชาชน ช่วยลดการเกิดโรคที่ป้องกันได้ ทั้งยังส่งผลให้ค่าใช้จ่ายด้านสุขภาพในภาพรวมลดลง

ปัจจุบัน เทคโนโลยีสารสนเทศและการสื่อสารได้เข้ามามีบทบาทในชีวิตประจำวันของผู้คนมากขึ้น และเป็นที่ยอมรับหลายมากขึ้นในแวดวงสุขภาพ ซึ่งเทคโนโลยีเว็บสามารถนำมาประยุกต์ใช้ให้เกิดประโยชน์ในการสร้างเสริมสุขภาพได้เป็นอย่างดี โดยช่วยเพิ่มการเข้าถึงข้อมูลข่าวสารสุขภาพ และเพิ่มศักยภาพในการเฝ้าระวังปัญหาสุขภาพ รวมทั้งสนับสนุนด้านการติดต่อสื่อสารและการแบ่งปันข้อมูลเพื่อการดำเนินงานสร้างเสริมสุขภาพ อย่างไรก็ตาม เว็บไซต์ด้านสุขภาพส่วนใหญ่เป็นพื้นที่ออนไลน์สาธารณะที่มุ่งเน้นการให้ข้อมูลการดูแลสุขภาพตนเองสำหรับประชาชนทั่วไป และขาดการสื่อสารแบบโต้ตอบกลับได้ทั้งสองทาง รวมถึงเว็บไซต์เพื่อการดูแลสุขภาพทหารของประเทศสหรัฐอเมริกา ก็เป็นการสื่อสารแบบทางเดียวเช่นกัน

สำหรับกองทัพไทยนั้น การสร้างเสริมสุขภาพกำลังพลเป็นภารกิจสำคัญที่ได้รับการพัฒนาอย่างต่อเนื่อง แต่ยังไม่มีการนำเทคโนโลยีเว็บมาใช้ในการสนับสนุนการดำเนินงานสร้างเสริมสุขภาพอย่างจริงจัง ดังนั้น หากมีการใช้เทคโนโลยีเป็นเครื่องมือสนับสนุนจะช่วยให้การดำเนินงานสร้างเสริมสุขภาพกำลังพลกองทัพมีประสิทธิภาพยิ่งขึ้น การวิจัยครั้งนี้ จึงมุ่งศึกษาผลของการพัฒนาเว็บไซต์เพื่อการสร้างเสริมสุขภาพทหารโดยอาศัยแนวทางการมีส่วนร่วม เพื่อสร้างความรู้ความเข้าใจในพื้นที่หน่วยทหารของกองทัพ อันจะเป็นพื้นฐานสำหรับหน่วยทหารในระดับที่สูงขึ้นต่อไป ทั้งนี้ องค์กรความรู้ที่ได้จะสามารถนำไปใช้สนับสนุนให้เกิดการดำเนินงานสร้างเสริมสุขภาพทหารอย่างเป็นรูปธรรมและใช้เทคโนโลยีที่ทันสมัยให้เกิดประโยชน์ โดยคาดหวังว่าจะสามารถพัฒนาสุขภาพทหารให้ดียิ่งขึ้น เพื่อประโยชน์ต่อเสถียรภาพของกองทัพและความมั่นคงของประเทศชาติในระยะยาว

ท่านได้รับเชิญให้เข้าร่วมโครงการวิจัยนี้เพราะคุณสมบัตินี้เหมาะสมดังต่อไปนี้ (ข้อใดข้อหนึ่ง)

ท่านเป็นข้าราชการทหาร สังกัดกรมทหารราบที่ 1 มหาดเล็กรักษาพระองค์ฯ หรือกองพันทหารราบที่ 1 กรมทหารราบที่ 1 มหาดเล็กรักษาพระองค์ฯ หรือกองพันทหารราบที่ 4 กรมทหารราบที่ 1 มหาดเล็กรักษาพระองค์ฯ หรือเป็นผู้ที่มีส่วนเกี่ยวข้องในการดำเนินงานสร้างเสริมสุขภาพของหน่วยดังกล่าว

ท่านไม่สามารถเข้าร่วมโครงการวิจัยได้หากท่านมีคุณสมบัติดังต่อไปนี้

ท่านมีข้อจำกัดในการสื่อสารเนื่องจากปัญหาความเจ็บป่วย เช่น พูดไม่ได้

จะมีการทำโครงการวิจัยนี้ที่ใด และมีจำนวนผู้เข้าร่วมโครงการวิจัยทั้งสิ้นเท่าไร

สถานที่ทำการวิจัย คือ กรมทหารราบที่ 1 มหาดเล็กรักษาพระองค์ฯ หรือกองพันทหารราบที่ 1 กรมทหารราบที่ 1 มหาดเล็กรักษาพระองค์ฯ หรือกองพันทหารราบที่ 4 กรมทหารราบที่ 1 มหาดเล็กรักษาพระองค์ฯ ตั้งอยู่ที่เขต พญาไท จ.กรุงเทพฯ

จำนวนผู้เข้าร่วมโครงการวิจัย รวม 380 คน แบ่งเป็นผู้ที่ให้ข้อมูลแบบสอบถามจำนวน 350 คน และผู้ให้ข้อมูลการสัมภาษณ์และสนทนากลุ่ม 30 คน

ระยะเวลาที่ท่านจะต้องร่วมโครงการวิจัยและจำนวนครั้งที่นี่

ผู้ให้ข้อมูลการสำรวจแบบสอบถาม จะมีการตอบแบบสอบถาม 2 ครั้ง (ก่อนและหลังการดำเนินกิจกรรมการพัฒนาระบบสนับสนุนฯ) โดยมีการนัดหมายล่วงหน้า ตามวันเวลาที่ผู้ให้ข้อมูลสะดวก

ผู้ให้ข้อมูลการสัมภาษณ์ จะมีการสัมภาษณ์ 2-3 ครั้ง (ก่อนและหลังการดำเนินกิจกรรมการพัฒนาระบบสนับสนุนฯ) โดยมีการนัดหมายล่วงหน้า ตามวันเวลาที่ผู้ให้ข้อมูลสะดวก

ผู้เข้าร่วมกิจกรรมการพัฒนาระบบสนับสนุนฯ จะมีการประชุมวางแผนการดำเนินงานและปฏิบัติงานตามแผนร่วมกัน โดยมีการนัดหมายล่วงหน้า ตามวันเวลาที่ผู้ให้ข้อมูลสะดวก

หากท่านเข้าร่วมโครงการวิจัย ท่านจะต้องปฏิบัติตามขั้นตอน หรือได้รับการปฏิบัติอย่างไร

ผู้เข้าร่วมโครงการวิจัยในการสำรวจแบบสอบถามจะถูกแบ่งตามกลุ่มอายุ (35 ปีบริบูรณ์ขึ้นไปและต่ำกว่า 35 ปี) และเลือกโดยการสุ่ม เพื่อตอบแบบสอบถามที่เตรียมไว้ให้ โดยใช้เวลาประมาณ 10 - 15 ในการตอบแบบสอบถาม

ผู้เข้าร่วมโครงการวิจัยในการสัมภาษณ์และการพัฒนาระบบสนับสนุนฯ จะได้รับเลือกให้เป็นแกนนำของหน่วยทหารและชุมชนในพื้นที่วิจัย โดยแบ่งเป็นกลุ่มของฝ่ายอำนวยการ กลุ่มบุคลากรสุขภาพ กลุ่มบุคลากรไอที และกลุ่มชุมชน สามารถเสนอความคิดเห็นและวางแผนการดำเนินงานตลอดจนลงมือปฏิบัติตามแผน และร่วมกันประเมินผล

ประโยชน์ที่คาดว่าจะได้รับจากโครงการวิจัย

ประโยชน์ต่อผู้เข้าร่วมวิจัยโดยตรง คือ มีช่องทางในการรับทราบข้อมูลข่าวสารสุขภาพที่สะดวกและรวดเร็วมากขึ้น สามารถสอบถามและแสดงความคิดเห็นเกี่ยวกับเรื่องสุขภาพทั้งส่วนบุคคลและส่วนรวมได้ ตลอดจนได้รับการส่งเสริมด้านการดูแลสุขภาพของตนเองเพิ่มขึ้น

ประโยชน์ต่อส่วนรวม

ทำให้ได้เว็บไซต์สนับสนุนการสร้างเสริมสุขภาพกำลังพลกองทัพบก ซึ่งเป็นนวัตกรรมด้านการสร้างเสริมสุขภาพที่นำเทคโนโลยีมาประยุกต์ใช้ให้เกิดประโยชน์อย่างคุ้มค่า สามารถตอบสนองความต้องการด้านการสร้างเสริมสุขภาพทหารได้จริง และสอดคล้องเหมาะสมกับบริบททางทหาร

การดำเนินงานสร้างเสริมสุขภาพทหารมีศักยภาพเพิ่มขึ้น ให้ความสำคัญกับการมีส่วนร่วมมากขึ้น และได้รับการสนับสนุนอย่างเป็นรูปธรรม

พื้นที่นำร่องในการวิจัยสามารถเป็นพื้นที่ต้นแบบในการประยุกต์ใช้เทคโนโลยีออนไลน์เพื่อการสร้างเสริมสุขภาพ นำไปขยายผลในพื้นที่อื่นๆ ได้

เกิดองค์ความรู้ใหม่ด้านการพัฒนานวัตกรรมด้านการสร้างเสริมสุขภาพโดยใช้แนวทางการมีส่วนร่วมในบริบทของทหาร ตลอดจนแนวทางในการสนับสนุนหน่วยงานต่าง ๆ ที่เกี่ยวข้องในการดำเนินงานสร้างเสริมสุขภาพทหาร

ค่าใช้จ่ายที่ผู้เข้าร่วมในโครงการวิจัยจะต้องรับผิดชอบ (ถ้ามี)

ไม่มีค่าใช้จ่ายใด ๆ ที่ผู้เข้าร่วมโครงการวิจัยต้องจ่ายสำหรับการเข้าร่วมโครงการวิจัย

คำตอบแทนที่จะได้รับเมื่อเข้าร่วมโครงการวิจัย (ถ้ามี)

ผู้ให้ข้อมูลการสำรวจจะได้รับของที่ระลึกสำหรับการตอบแบบสอบถาม ผู้ให้ข้อมูลการสัมภาษณ์และร่วมเป็นแกนนำในการพัฒนาระบบสนับสนุนฯ จะได้รับค่าเดินทาง/ค่าเสียเวลามาเข้าร่วมประชุมวางแผนและเข้าร่วมดำเนินงาน/กิจกรรม ครั้งละ 300 - 500 บาท

หากท่านไม่เข้าร่วมโครงการวิจัยนี้ ท่านมีทางเลือกอื่นอย่างไรบ้าง

ท่านสามารถปฏิเสธไม่เข้าร่วมโครงการวิจัยนี้และสามารถเลือกใช้เครื่องมือออนไลน์อื่น ๆ ในการค้นหาข้อมูลเพื่อการเรียนรู้ด้านสุขภาพได้โดยอิสระ

หากเกิดอันตรายที่เกี่ยวข้องกับโครงการวิจัยนี้ จะติดต่อกับใครและได้รับการปฏิบัติอย่างไร

พ.ท.หญิง ธนิตา วงษ์จินดา สถาบันวิจัยวิทยาศาสตร์การแพทย์ทหาร 315/6 ถ.ราชวิถี แขวงทุ่งพญาไท เขตราชเทวี กทม. โทรศัพท์ 087-925-9925 สามารถติดต่อได้ทั้งในและนอกเวลาราชการ

หากท่านมีคำถามที่เกี่ยวข้องกับโครงการวิจัย จะถามใคร ระบุชื่อผู้วิจัยหรือผู้ร่วมวิจัย

พ.ท.หญิง ธนิตา วงษ์จินดา สถาบันวิจัยวิทยาศาสตร์การแพทย์ทหาร 315/6 ถ.ราชวิถี แขวงทุ่งพญาไท เขตราชเทวี กทม. โทรศัพท์ 087-925-9925 สามารถติดต่อได้ทั้งในและนอกเวลาราชการ

หากท่านรู้สึกว่าจะได้รับการปฏิบัติอย่างไม่เป็นธรรมในระหว่างโครงการวิจัยนี้ ท่านอาจแจ้งเรื่องได้ที่

สำนักงานพิจารณาโครงการวิจัย กรมแพทย์ทหารบก ชั้น 5 อาคารพระมงกุฎเกล้าเวชวิทยา เบอร์โทร 02-3547600-28 ต่อ 94297

ข้อมูลส่วนตัวของท่านที่ได้จากโครงการวิจัยครั้งนี้จะถูกนำไปใช้ดังต่อไปนี้

การนำเสนอข้อมูลที่ได้จากโครงการวิจัย จะเป็นไปเพื่อประโยชน์ทางวิชาการโดยไม่เปิดเผยชื่อนามสกุล ที่อยู่ของผู้เข้าร่วมในโครงการวิจัยเป็นรายบุคคล และมีมาตรการในการเก็บรักษาข้อมูลส่วนตัว

ท่านจะถอนตัวออกจากโครงการวิจัยหลังจากได้ลงนามเข้าร่วมโครงการวิจัยแล้วได้หรือไม่

ผู้เข้าร่วมในโครงการวิจัย สามารถถอนตัวออกจากโครงการวิจัยได้ตลอดเวลา โดยจะไม่มีผลเสียใดๆเกิดขึ้น และผู้เข้าร่วมในโครงการวิจัยจะถูกขอให้ออกจากโครงการวิจัยหากมีโรคที่มีอาการรุนแรง เพื่อประโยชน์ต่อสุขภาพของผู้เข้าร่วมโครงการวิจัย

หากมีข้อมูลใหม่ที่เกี่ยวข้องกับโครงการวิจัย ท่านจะได้รับแจ้งข้อมูลนั้นโดยผู้วิจัยหรือผู้วิจัยร่วมชั้นทันที (ในกรณีที่เป็นการวิจัยเกี่ยวข้องกับการรักษาโดยเฉพาะการใช้จ่าย)

(ไม่มี)



APPENDIX G
ENGLISH INFORMED CONSENT FORM

Research Project: The Effect of the Development of Web-Based Supporting System for Military Health Promotion Using Participatory Approach: a Case Study of First Infantry Regiment, The King's Own Bodyguard

Signing Date

- Before you sign a consent form to take part in this research, I have been explained by the research project manager to be aware of objectives of the research, methods, danger or symptoms that may cause from the research or from drug use as well as the expected benefits resulting from the thorough study and better understanding.
- The research project manager or researcher guarantees that all my queries will be answered willingly and openly until I satisfy with the responses.
- I participate in this study voluntarily and without coercion or persuasion.
- I have the right to terminate my participation in the project at any time and the termination will not affect the medical care I should receive today and in the future.
- The researcher or the research project manager guarantees that the information about me collected will be kept as confidential and can only be disclosed in the form of conclusions, without specifying the name of the participant. Disclosures information about me to other agencies associated can be done for academic reasons only.

- The research manager or the researcher guarantees that if there is any harm from the research I will get appropriate medical treatment as stated in the documents explained to the participants.
- I will retain a copy set of the briefing information document for the participants.
- I have read and thoroughly understood the above statements and signed a consent form willingly.

Signature Research Participant

(.....Name - last name in capital letters)

Signature The research project manager

(.....Name - last name in capital letters)

Signature..... The first witness

(.....Name - last name in capital letters)

Signature..... The second witness

(..... Name - last name in capital letters)

APPENDIX H
THAI INFORMED CONSENT FORM

หนังสือแสดงเจตนายินยอมเข้าร่วมการวิจัย (Informed Consent)

ชื่อโครงการวิจัย ผลของการพัฒนาระบบสนับสนุนบนฐานเว็บเพื่อการสร้างเสริมสุขภาพ

ทหารโดยใช้แนวทางการมีส่วนร่วม: กรณีศึกษากองทหารราบที่ 1 มหาดเล็กรักษาพระองค์ฯ

วันที่ลงนาม.....

- ก่อนที่จะลงนามในใบยินยอมให้ทำการวิจัยนี้ ข้าพเจ้าได้รับการอธิบายจากผู้วิจัยถึงวัตถุประสงค์ของการวิจัย วิธีการวิจัย อันตราย หรืออาการที่อาจเกิดขึ้นจากการวิจัย หรือจากยาที่ใช้ รวมทั้งประโยชน์ที่คาดว่าจะเกิดขึ้นจากการวิจัยอย่างละเอียด และมีความเข้าใจดีแล้ว
- ผู้วิจัยรับรองว่าจะตอบคำถามที่ข้าพเจ้าสงสัยด้วยความเต็มใจ และไม่ปิดบังซ่อนเร้น จนข้าพเจ้าพอใจ
- ข้าพเจ้าเข้าร่วมในโครงการวิจัยนี้ด้วยความสมัครใจ โดยปราศจากการบังคับหรือชักจูง
- ข้าพเจ้ามีสิทธิที่จะบอกเลิกการเข้าร่วมในโครงการวิจัยเมื่อใดก็ได้ และการบอกเลิกนี้จะไม่ส่งผลต่อการรักษาพยาบาลที่ข้าพเจ้าจะพึงได้รับในปัจจุบันและในอนาคต
- ผู้วิจัยรับรองว่าจะเก็บข้อมูลเกี่ยวกับตัวข้าพเจ้าเป็นความลับ และจะเปิดเผยเฉพาะในรูปของสรุปผลการวิจัยโดยไม่มีการระบุชื่อนามสกุลของข้าพเจ้า การเปิดเผยข้อมูลเกี่ยวกับตัวข้าพเจ้าต่อหน่วยงานต่างๆ ที่เกี่ยวข้อง จะกระทำด้วยเหตุผลทางวิชาการเท่านั้น
- ผู้วิจัยรับรองว่าหากเกิดอันตรายใดๆ จากการวิจัย ข้าพเจ้าจะได้รับการรักษาพยาบาล ตามที่ระบุในเอกสารชี้แจงข้อมูลแก่ผู้เข้าร่วมโครงการวิจัย
- ข้าพเจ้าจะได้รับเอกสารชี้แจงข้อมูลแก่ผู้เข้าร่วมโครงการวิจัย เก็บไว้ 1 ชุด
- ข้าพเจ้าได้รับทราบข้อความข้างต้น มีความเข้าใจดี และลงนามในใบยินยอมด้วยความเต็มใจ

ลงชื่อ.....ผู้เข้าร่วมโครงการวิจัย

(.....ชื่อ-นามสกุล ตัวบรรจง)

ลงชื่อผู้ดำเนินโครงการวิจัย

(.....ชื่อ-นามสกุล ตัวบรรจง)

ลงชื่อ.....พยานคนที่1

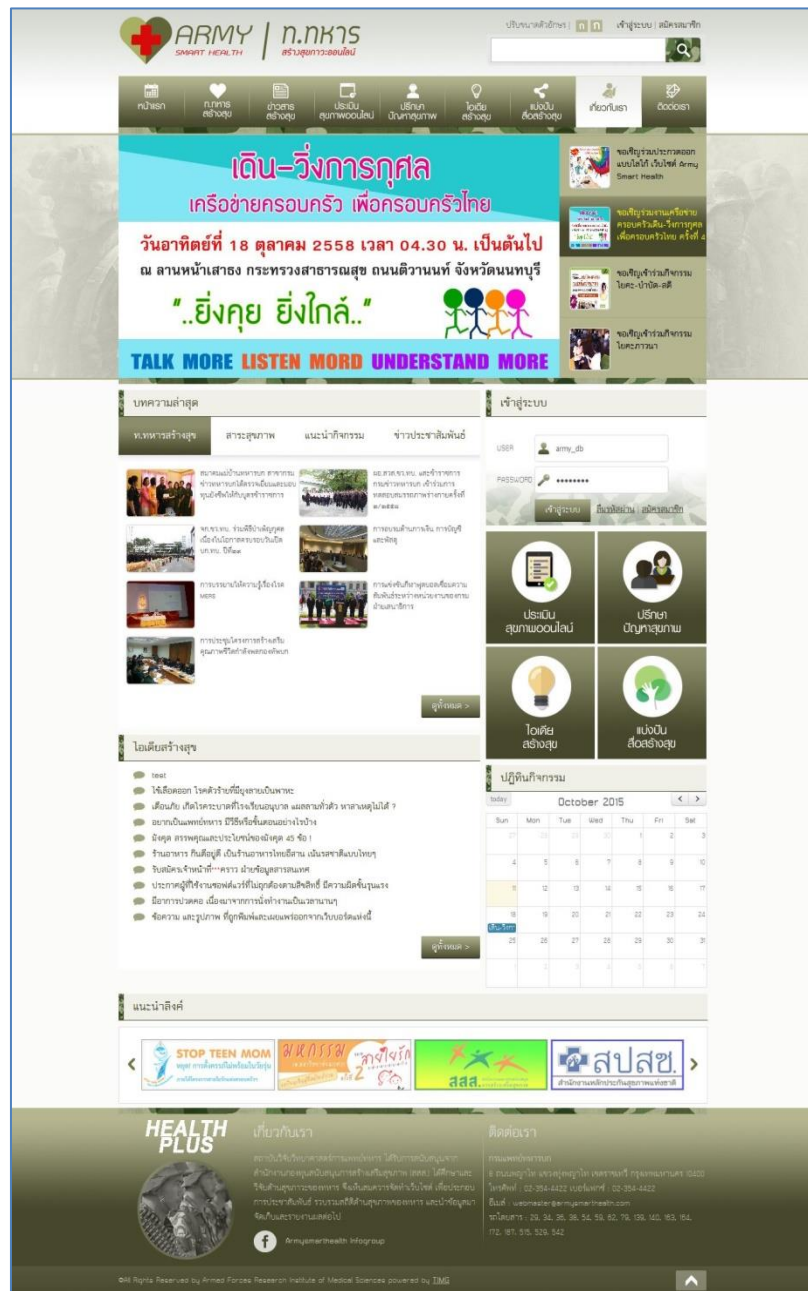
(.....ชื่อ-นามสกุล ตัวบรรจง)

ลงชื่อ.....พยานคนที่ 2

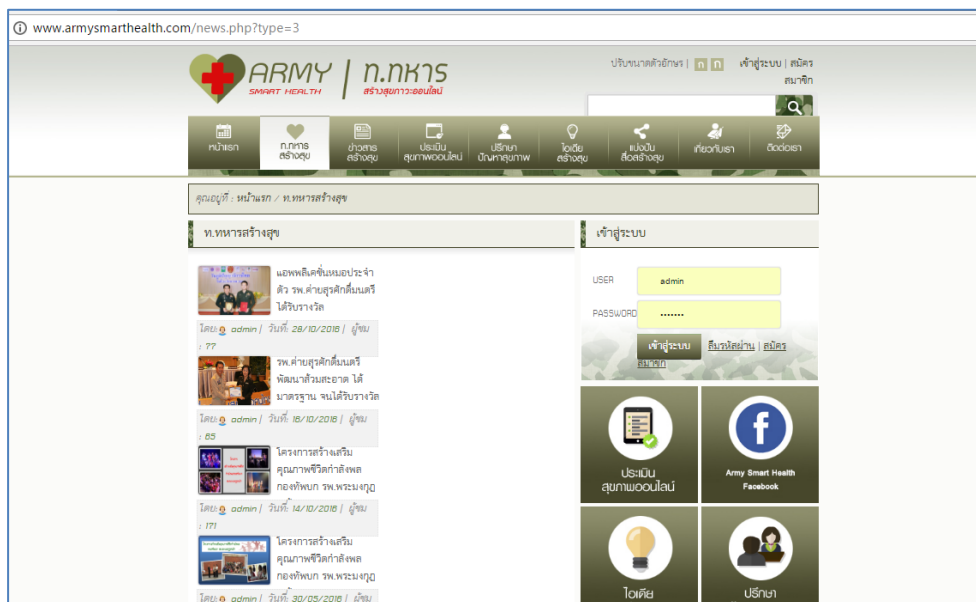
(.....ชื่อ-นามสกุล ตัวบรรจง)

APPENDIX I
WEB PAGES

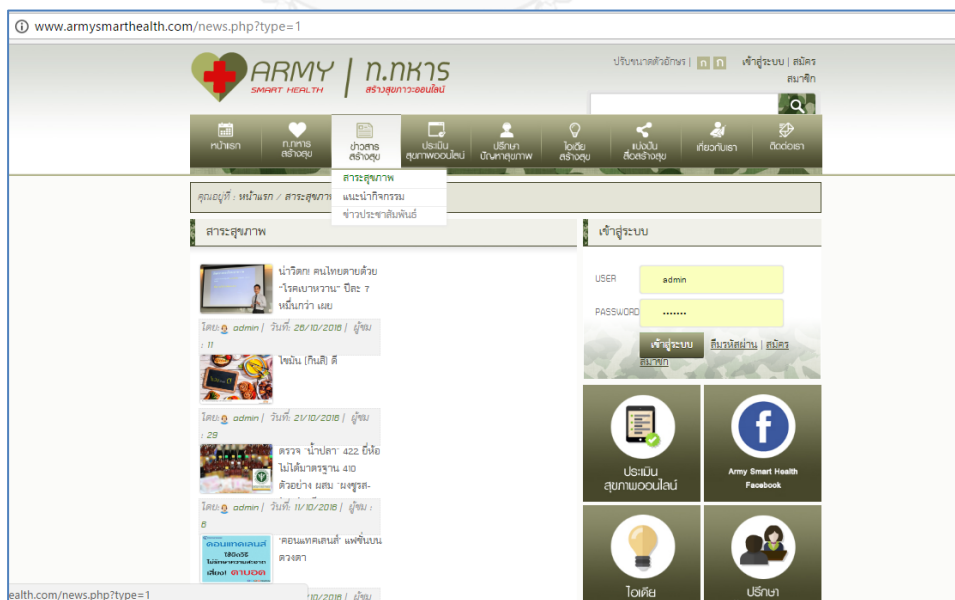
1. Home page



2. Health Promotion Activities Menu



3. Health Information Menu



4. Health check for BMI Menu

The screenshot shows the BMI health check menu on the website www.armysmarthealth.com/bmi.php. The page features a navigation bar with various health services and a main content area with a form for BMI calculation.

Navigation Bar: Includes icons for Home, Health Services, Services, BMI, Health Services, Health Services, Health Services, Health Services, and Health Services.

Main Content:

- Header:** "ประเมินดัชนีมวลกาย (BMI)" and "แบบทดสอบความเครียด"
- Section:** "โปรแกรมคำนวณดัชนีมวลกาย (BMI)" and "ความเครียดหัวใจ"
- Text:** "ดัชนีมวลกาย หรือ Body Mass Index (BMI) เป็นการวัดความอ้วนหรือไขมันในร่างกาย โดยใช้น้ำหนักตัวเทียบกับส่วนสูง"
- Form:** "มาคำนวณ 'ดัชนีมวลกาย' กันเถอะ" with input fields for "ส่วนสูง" (Height) and "น้ำหนัก" (Weight), and a "เช็ค" (Check) button.
- Visuals:** Five icons representing BMI categories: <math>< 18.5</math> (Underweight), 18.5-22.9 (Normal), 23.0-24.9 (Overweight), 25.0-29.9 (Obese), and ≥ 30.0 (Severely Obese).
- Equation:** "วิธีการคำนวณหาค่า BMI" and "ดัชนีมวลกาย = น้ำหนักตัว (กิโลกรัม) / (ส่วนสูง (เมตร))²"

5. Health Check for Stress Test Menu

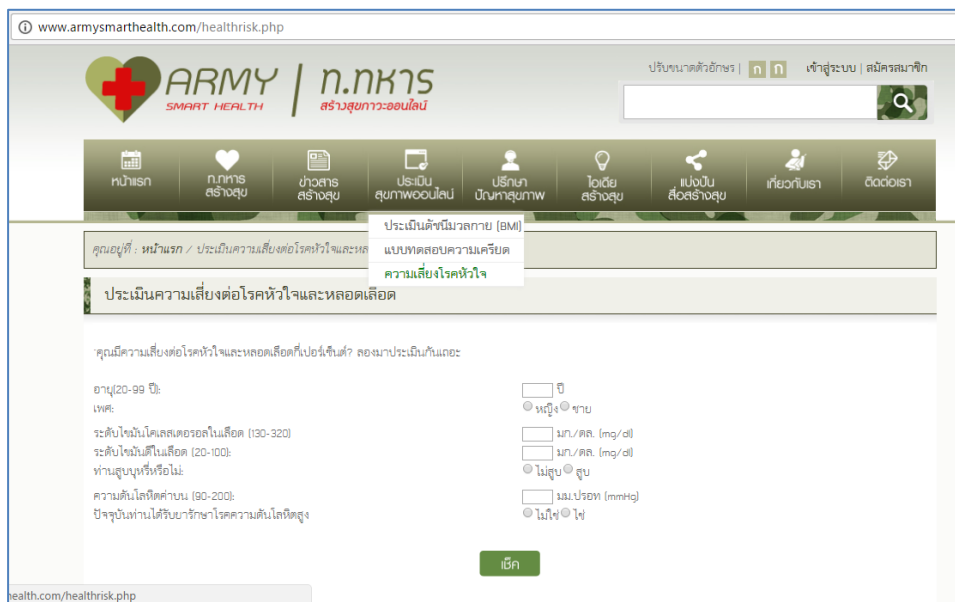
The screenshot shows the Stress Test health check menu on the website www.armysmarthealth.com/strain.php. The page features a navigation bar with various health services and a main content area with information about stress tests.

Navigation Bar: Includes icons for Home, Health Services, Services, BMI, Health Services, Health Services, Health Services, Health Services, and Health Services.

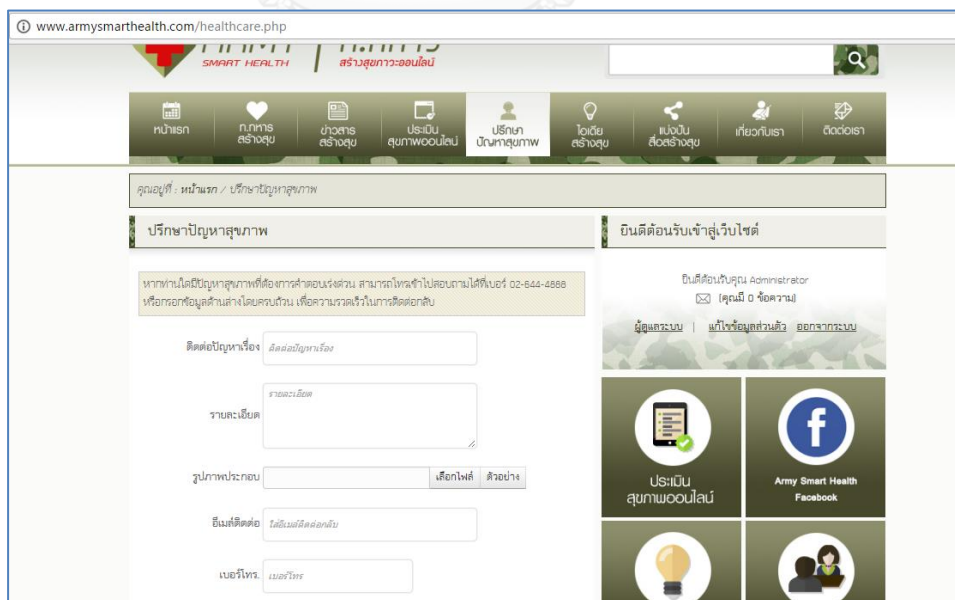
Main Content:

- Header:** "ประเมินดัชนีมวลกาย (BMI)" and "แบบทดสอบความเครียด"
- Section:** "แบบประเมินความเครียด"
- Text:** "แบบประเมินความเครียด (STS)" and "แบบทดสอบดัชนีชี้วัดสุขภาพจิตคนไทยฉบับสมบูรณ์ 55 ข้อ ปีพ.ศ. 2550 UPDATE"
- Text:** "แนะนำลิงค์"

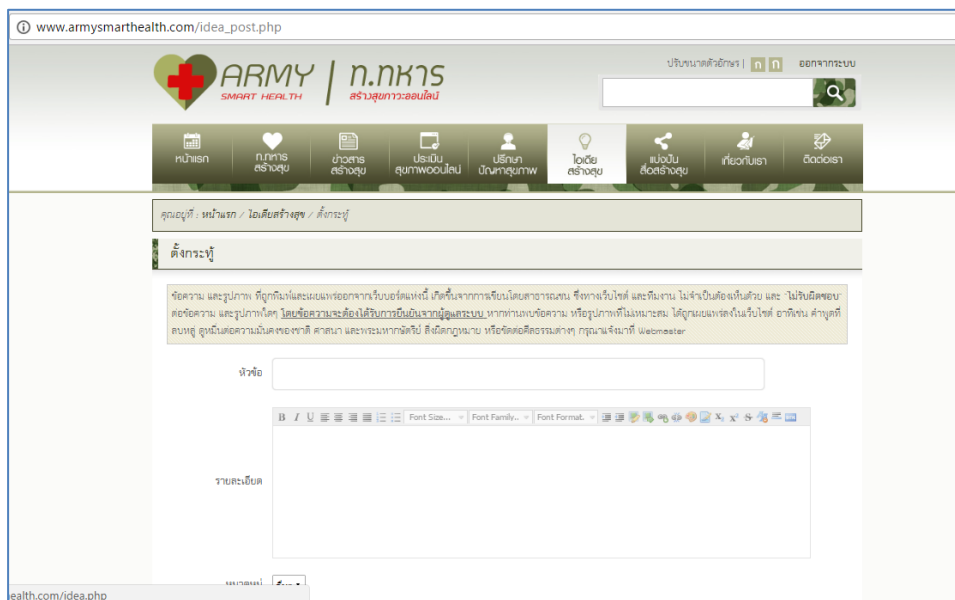
6. Health Check for Cardiovascular Diseases Risk Menu



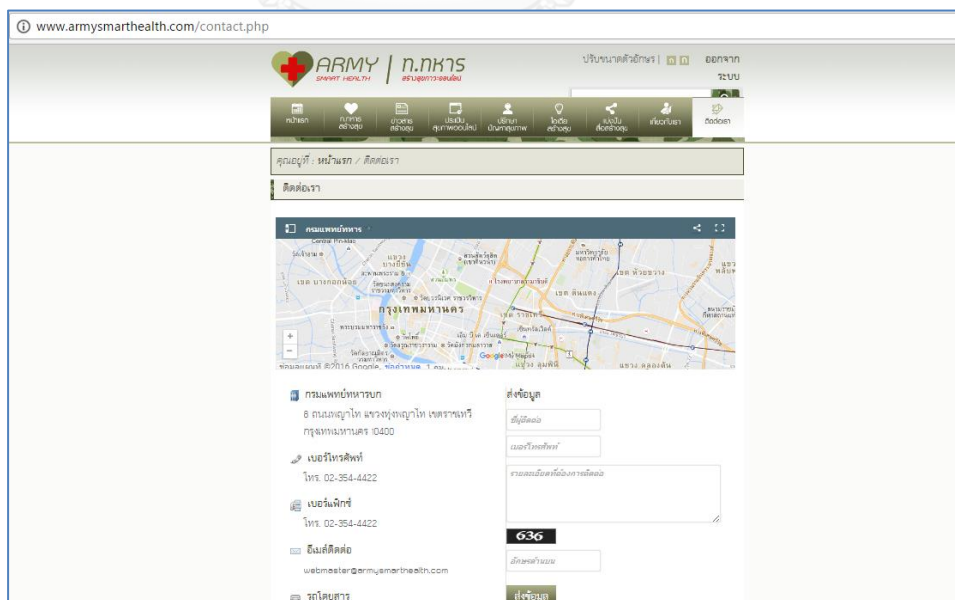
7. Health Consult Menu



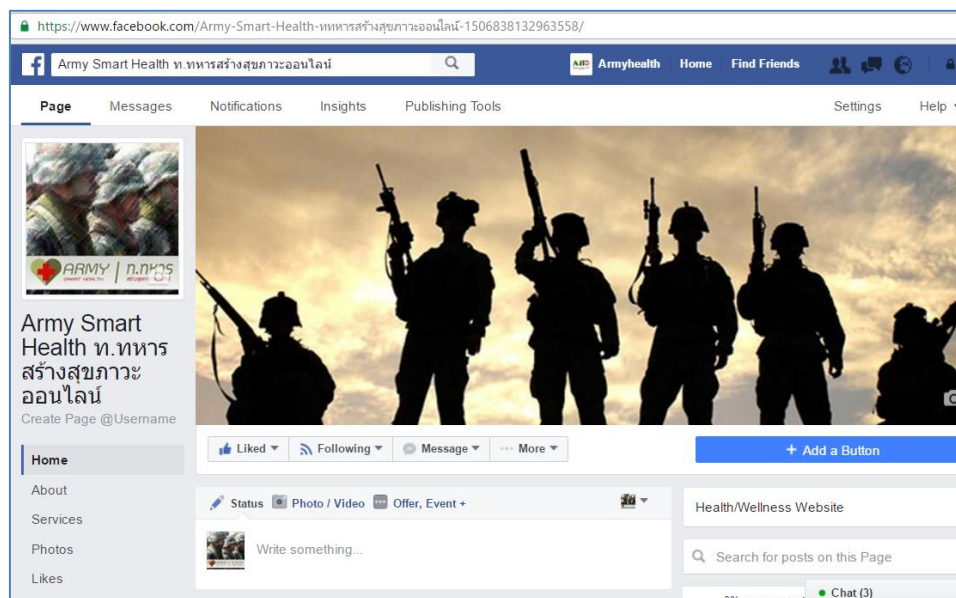
8. Health Web Board Menu



9. Contact Us



10. Facebook Fan Page



The image shows a screenshot of a Facebook fan page for 'Army Smart Health'. The page URL is <https://www.facebook.com/Army-Smart-Health-ทหารสร้างสุขภาพออนไลน์-1506838132963558/>. The page name is 'Army Smart Health ท.ทหารสร้างสุขภาพออนไลน์' and it was created by '@Username'. The cover photo features silhouettes of soldiers holding rifles against a sunset sky. The page has a 'Like' button, a 'Following' button, and a 'Message' button. The main content area shows a status update with a 'Write something...' prompt. The right sidebar includes a search bar and a 'Chat (3)' button. The bottom of the page features a watermark for Chulalongkorn University.

VITA

Name: Lieutenant Colonel Thanita Wongjinda

Date of Birth: April 4, 1972

Nationality: Thai

Email Address: tnicasom@gmail.com

Education Background

2004 – 2006: Mahidol University, Nakornpathom (MA in Health Social Sciences)

1996 – 1997: Sukhothai Thammathirat Open University, Bangkok (Certificate English for Public Health Personnel)

1991 – 1994: Royal Thai Army Nursing College, Bangkok (BN)

Professional Working Experience

2015 – present: Chief of Biochemistry Section, Analysis Division, Armed Forces Research Institute of Medical Sciences, Bangkok

2007 – 2015: Officer, Armed Forces Research Institute of Medical Sciences, Bangkok

2006 – 2007: Medical Logistic Officer, Armed Forces Research Institute of Medical Sciences, Bangkok

1998 – 2003: Nurse, Army Fort Pokhunpamuang Hospital, Petchaboon

1994 – 1998: Nurse, Army Fort Chakrapong Hospital, Prachinburi