ONLINE HEALTH MEDIA LITERACY FOR THAI OLDER ADULTS

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**A Dissertation Submitted in Partial
Fulfillment of the Requirements for the Degree of
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ABSTRACT

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This study was conducted with the objectives to examine 1) Lifestyle of older adults; 2) Study of Online Media and Online Health Media Exposure Behavior; 3) Level of Online Health Media Literacy; 4) Relationship between the Lifestyle of Older Adults and their level of Online Health Media Literacy; 5) Relationship between Online Health Media Exposure and Online Health Media Literacy; 6) Difference between Older Adults, who had different age groups had different levels of online health media literacy; and 7) Difference between older adults, who have different levels of education also have differences in online health media literacy.

This study utilized the Mixed Method Research methodology, which consisted of quantitative research method and qualitative research. In the quantitative study, the survey research for data collection using a questionnaire for data collection. The sample size is 404 respondents aged between 50-59 years. The researcher used in-depth interview and older adults aged between 60-69 from all of the five national regions, which are north, central, south and northeast, and Bangkok (28 respondents).

The research indicates that lifestyle of the 4 groups, which are 1) Internet addicted and follow the news; use mobile phone but do not trust purchases online and spend carefully; 2) use mobile phone but do not trust purchases online and spend carefully; 3) Create income for the family and believe in food supplements and herbal remedies; and 4) Health conscious, play sports, and do activities.

The findings indicate that they have been using through Line. This is followed by Facebook and YouTube. Most of them access online through their mobile phones. In exposure to media, they prefer reading text. This is followed by looking at images and video. Most older adults believe that they themselves are the most influential in receiving health information from the online channel. They love to expose their health

information from online media. They like to talk about the illness they have cured, exercise/play sports, food and nutrition information, and medicine for various diseases at a high level respectively.

In the study of online health media literacy of Thai older adults, the researcher has categorized it into 3 dimensions which are 1) Access; 2) Analyze & Evaluate; and 3) Use & Create. It is found that Thai older adults have a moderate level of online health media literacy.

The hypotheses testing revealed the following.

Online media exposure of older adults has a positive relationship with online health media literacy at a moderate level.

Older adults of different age groups have no difference in their level of online health media literacy.

Older adults of different levels of education have no difference in their level of online health media literacy. It is found that older adults, who had less than high school education have a difference in the online health media literacy of older adults from other higher levels of education.

The researcher found that older adults have a moderate level of online health media literacy. For older Thai adults to have a higher level of online health media literacy, the researcher has presented the guideline to promote online health media literacy of older Thai adults through the 5Ts: Older Adults's Online Health Media Literacy Model, which includes Try, Think, Talk, Take, and Tell.

ACKNOWLEDGEMENTS

TABLE OF CONTENTS

LIST OF TABLES

Page

LIST OF FIGUERS

Page

CHAPTER 1

INTRODUCTION

1.1 Background of the Study and Significance of the Research Problem

1.1.1 The World Enters the Aged Society Era

The world has entered the aging society era and would be a totally aged society in now more than 20 years. Between 2015-2030, the population aged over 60 years would be more than 56% of the population. There would be 901 million people from the 1.4 trillion people. In 2050 there would be more twice the number of older adults, which would be 2,100 million people (Department of Economic and Social Affairs Population Division, 2015, p. 2). The United Nations has categorized older adults into three levels as explained in the following section.

1) Aging society is the defined as the society where the proportion of people aged over 60 years make up more than 10% of the population in the country or those aged 65 years make up more than 7% of the population in the country. The country would then be defined as an aging society.

2) Aged society is defined as the society where the proportion of people aged over 60 years make up more than 20% or those aged 65 years make up more than 14% of the population in the country.

3) Super-aged society is defined as the society where the proportion of the people aged over 65 years make up more than 20% of the population in the country.

In 2015 Japan had the largest number of older adults in the world. The ratio was 33% of the population. This is followed by Germany and Italy with a ratio of 28% and Finland with a ratio of 27% (Department of Economic and Social Affairs Population Division, 2015, p. 3). Thus, it could be said that many countries in the world are becoming aging societies.

From the State of the Elderly Report 2013 (Foundation of Thai Gerontology Research and Development institute, 2016, p. 7). It is found that there are 65.1 Thais (excluding 3 million migrant workers). Of this number 11 million or 16% of the entire population are aged over 60 years. The most important issue is that the Thai population is aging rapidly. Thailand has become an aging society since 2005 that is 10% of the population is aged over 60 years. The aging Thai population is increasing rapidly at a rate of more than 4% per year while the entire population is growing at a rate of only 0.5%. From the population approximation of the National Economic and Social Development Commission, Thailand has become an aged society in 2021 with 20% of the population aged over 60 years. By 2031 Thailand would become a super-aged society. This would have major repercussions on the lifestyle and behavior of the people in society. Therefore, government agencies as well as local administrative units have to make the necessary preparations in a timely manner. They should be ready to keep up with the situation of older adults. There should be a shift in the paradigm from viewing the elderly as a burden to society to people, who can use their experience to benefit society (Weerasak Krueathep, 2009, p. 3).

Changes in the population structure when a country becomes an aging society has become an issue that the world is closely monitoring with great interest. This is because it has a major impact on a large scale not only in the macro level such as GDP, which would decline having an impact on the per capita income of the population, the products and services market, savings and investment. Eventually, it would have an impact at the micro level in terms of finances, lifestyle, and health of the elderly. These are issues that all relevant authorities need to be aware of and make the necessary preparations to gather the necessary resources and interdisciplinary skills to handle the changes.

1.1.2 Older Adults Use of Communications Technology to Search for Health Information

When the world entered into the Digital Era, the older adults, who were not born digital natives, need to adapt or migrate on to the digital realm. This group of people, who are not born digital natives are called digital immigrants. In terms of communications, some of the elderly are interested and see the virtue of using modern

communications technology. They have learned to study and use the benefits from the Internet. These older adults use online technology for communications, information search, and purchase of products. From the findings of the Pew Internet Research (Figure 1.1), it is found that older adults aged over 65 years between 2009-2012 are likely to use technology.

The findings indicate that there are more and more older adults are using more communications technology and the Internet. In the US Zickuhr and Madden (2012) indicated that more than half of older adults aged over 65 years used the Internet. In the 27 EU member countries (Eurostat, 2012, as cited in Zickuhr and Madden, 2012) indicated that in 2010 there were 17% older adults aged between 65-74 years, who used the Internet. In 2012 it is also found that there were 34% of older adults, who used social media. This was more than 8% in 2010. The statistics indicated that 18% of the older adults logged in to the Internet on a regular basis (Eye on the Lifestyle that is Interesting like the Teens, 2013).

Fig 1: Trends in technology use by older (65+) adults (Pew Internet Research report 2009-2012)
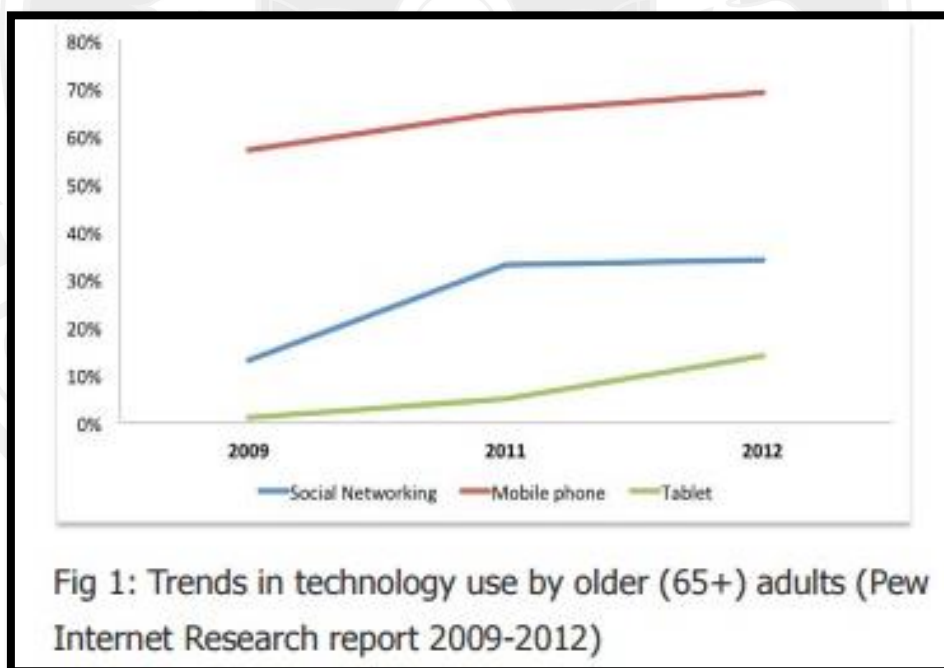
Figure 1.1 Trends in Technology Use by Older Adults Aged 65 Years and Above
Source: Zickuhr and Madden (2012).

Information from the mobile phone service operator, DTAC, revealed that 6% of the users were aged over 60 years and 2% were over 65 years (Telenor Reveals Research findings about older adults in Asia who have been neglected after the mobile revolution, May 28, 2015). Information from the Economic Intelligence Center (EIC), Siam Commercial Bank, indicated that the number of Internet usage among older adult consumers aged over 60 years increased 30% between 2009-2013 in comparison to consumers of other age groups, which grow at 10% per year. About 30% of older adults used social media and about 55% of them answered that they were happy to learn about new technology, while 20% agree to buy electronics equipment for convenience.

The Thailand Internet User Profile 2020 indicated that Baby Boomer (born between 1946-1964) used the Internet on average 8 hours 41 minutes. The three most popular activities done by Baby Boomers are ranked accordingly. The first is Social media usage (89.3%), which could be categorized as using Facebook (95.3%), Line (93.1%), and YouTube (88.4%). Second is information search (76%) and third Internet used to watch television/watch video clips/watch movies/listen to music online (71.4%).

The research titled, "Study of Communications Behavior and Sending Information on Line Application of the Elderly" was conducted by Kirana Somvatasan (2016, p. 25). The study found that most of the older adults used Line on their mobile phone. They have an income of more than 30,000 baht per month. The type of information they use most in communications are video clips, news images, situation, and news that happened in everyday life.

Figure 1.2 Internet Usage Behavior of Baby Boomers

Source: Electronic Transactions Development Agency (2020).

Moreover, in addition to the age, which the researcher expects would have an impact on the media exposure and online health literacy behaviors, the level of education is another factor that should be examined. In Thailand in 2017 (National Statistical Office, 2017) found that only 7% of the elderly had a bachelor's degree, while 74.33% only had less than primary school education. This is one third of the older adult Thai population. Communication tools are critical to the knowledge and understanding of how to access and use information. Older adults need to be able to evaluate the news, which includes both true and false information. Buckingham, Banaji, Carr, Cranmer, and Willett (2005) and Livingstone and Helsper (2007) explained that education is important to the ability to have critical thinking, which leads to media literacy. Therefore, it would be of interest to examine how older adults with different levels of education might have different levels of media literacy.

Research findings indicate that older adults accept technology adoption and use the Internet to search for information, second to using social media. Older adults are interested in searching for health information no less than other issues. This is in line with the study, "Behavior and Attitude of Older Thai Adults 2020" (April, 2015), which surveyed 378 respondents aged over 50 years. This is part of the research series examining the Knowledge and Opportunities in an Aging Society conducted by the Office of Knowledge Management and Development (OKMD) (2015, p. 4) in collaboration with the 101 Percent Co., Ltd. It is found that older adults are concerned about their health (60.9%), followed by finances (30.2%). Wannarat Rattanawarang (2016) studied the Internet usage behavior in searching for information among older adults in Bangkok and found that 46.6% searched for general health and illness symptoms. This is followed by search for remedies/alternative treatment (34.4%) and treatment technology (33%). Moreover, there is health information search in other areas such as care programs for the elderly, medication description, health products, food supplements, and comments and recommendations on health care from others on the Internet. The study conducted by Casado-Muñoz, Lezcano-Barbero, and Rodríguez-Conde (2015, pp. 37-46) titled, "Active Ageing and Access to Technology- An Evolving Empirical Study" used timeseries methodology. The data was collected between 2004-2012. The findings indicate that the Internet has helped people to communicate more, avoiding isolation, and loneliness. Older adults age

actively. This is in line with a previous study conducted by Gracia and Herrero (2008, as cited in Casado-Muñoz et al., 2015, p. 38). It is found that the elderly, who used the Internet would have better physical health care and have less mental problems. They have more participation level than older adults, who do not use the Internet. Viewed in a positive light, this means that older adults are able to use the media in a beneficial way to access information to care for their physical and mental health. This helps to reduce the burden of medical expenses. The ability to search for health information is termed in the medical field as health literacy, which is defined as the ability to search and access, understand, and use health information. From the past to present, Thai academics have translated this term differently as expertise about health, health literacy, being knowledgeable about health, and being health smart (Teera Worathanarat, Pattawan Worathanarat, Ornjira Wongplean, & Monticha Jenpanichsup 2015, p. 9).

1.1.3 Health Literacy and Media Literacy

Health literacy was defined by the World Health Organization (WHO) in 1998 as "Health literacy represents the cognitive and social skills which determine the motivation and ability of individuals to gain access to, understand and use information in ways which promote and maintain good health". The Public Health Research Institute had translated the term to mean, "skills and perceptions in society that determine motivation and ability of individuals to access, understand, and use information in various ways to promote and maintain their optimal health continuously." (Phisamai Chanthawimol, 1998). The World Health Organization in Europe explained in the report, Health Literacy-The Solid Facts, that stakeholders in health literacy included news organizations and electronics media (Figure 1.3). Media is a critical component in health literacy because it is central to the dissemination of health information to the public.

Source: adapted from: Mitic W, Rootman I. *An intersectoral approach for improving health literacy for Canada; a discussion paper.* Vancouver, Public Health Association of British Columbia, 2012.

Figure 1.3 Stakeholders in Online Health Media Literacy
Source: Kickbusch, Pelikan, Apfel, and Tsouros (2013, p. 10).

In addition, it is found that Online health Literacy is defined as the Online health media literacy. Chew (2015) from Syracuse University, USA, conducted a study, "Promoting Health among Older Adults via Online health Literacy" and explained that Online health literacy is the ability to use technology to search, indicate, and proceed with an understanding of health information to improve and take care of their health. This is based on a nationally representative Health Information National Trends Survey, HINTS 2012. From the study conducted by Norman and Skinner (2006, as cited in Gilstad, 2014, pp. 65-66), this is known as Lily Model (Figure 1.4), it is found that Online health Literacy is comprised of 6 components, which are basic literacy, information literacy, science literacy, media literacy, computer literacy, and health literacy. Thus, it could be said that media literacy is an important component of Online health media literacy.
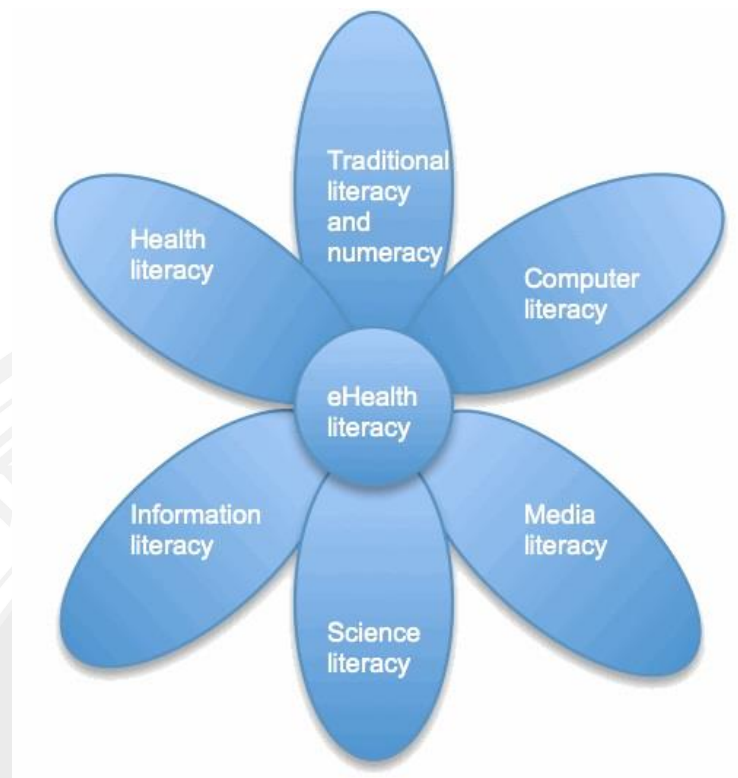
Figure 1.4 The Lily Model, Norman and Skinner (2006)
Source: Gilstad (2014, p. 65).

However, health communications has a varied nature particularly online.Communications technology is fast and free resulting in a large number of health media. It must be admitted that these health media have both positive and negative impact on the public. The Birmingham School indicated that media does not reflect the truth in society. However, media plays a role in the social construction of reality. While media constructs reality the process is presented as if it was the truth and natural. For instance, the case of images in television, where audiences feel that this is real. In reality it is truth that has already been modified. In the work process of mass media practitioners, they might do both things at the same time, which is to reflect and construct (Kanjana Kaewthep, 2001, pp. 308-309, as cited in Supanee Keawmanee, 2004). In online media with characteristics that is open to content producers and users because it has a high level of freedom. This allows equal opportunity in having media, owning media, and using media to fulfill the needs and interests of individuals (Pira Chirasopone, 2014, pp. 12-13). Media that is created is

more complex to the point where it is difficult to tell what is the truth and what is false. This is the same for health media presented online. Some of the people are confused about the objective of the communications. This is because communications is not just about providing health advice and recommendations from health organizations or experts, but it also incorporates well hidden advertising messages.

In 2015 the Public Health Support Service developed the National Public Protection Plan for Information News in order to improve access and promote media literacy. The study revealed insights about the health media communications in 2015, which found that the four most popular media are magazine, newspaper, television, and online media such as website, Facebook, and Instagram (IG). It is found that there were a total 37,057 pieces of health news. About 88% were disseminated on television. On the overall health news were presented in the form of advertising (92%). However, only 8% were informative in nature. Product information such as food supplements and cosmetics make up 67% of the information. The media that has the most health information for advertising purposes is the popular websites (99%). This is followed by television (98%) and Instagram (95%). The presentation format was using presenter or spokesperson such as celebrities or well-known people in society or people who are popular in society. Products presented as signs on television programs or game shows as advertising for cosmetics followed by food supplements. On Instagram most of the products are weight loss products. This is followed by cosmetics and supplementary food products. On magazine about 63% are advertising content. In online media four types are selected are the 10 most popular websites, 10 most popular health websites, 194 beauty accounts, and 130 Instagram related to health and beauty. The information could be categorized as health promotion, disease prevention, products, services, and mixed content. It is observed that even in health websites, there was 28% of hidden advertising. The Health Education Department, Director explained that findings indicated that today the dissemination of health news through public media has an impact on changing the health behavior of the public. Hidden advertising is laced with wrong values and tinged with business benefits more than health benefits of the public (ThaiPR.net, 2015).

Prof. Dr. Srisak Chamornman, President and Chairman, E-Learning, Assumption University and President Emeritus Thai Computer Association under His

Majesty's Royal Patronage, explained that the number of the older adults has grown rapidly. The use of computers and the Internet would help to develop the quality of life and lifelong learning. This provides an opportunity for older adults to use computers and the Internet would promote lifelong learning among older adults. It creates a sense of pride and realization of their own self-worth in being able to do things on their own. They can spend their free time in beneficial ways. This would enable them to create new bodies of knowledge through the use of the Internet. It enables them to connect with their children and grandchildren. However, on the flip side although the Internet helps the elderly promote lifelong learning, it also helps to reduce the technology divide. Information technology has its benefits but sometimes older adults may not have digital media literacy. This would have an impact on older adults. Prof. Dr. Srisak recommended that the older adults have to be careful of fraud on the Internet, which could be in the form of health insurance, fake medication, anti-aging products, and online commerce (Sirichai Sapsiri, 2009, p. 1).

Dr. Wichai Chokwiwat, National Health Security Office (NHSO), gave a special lecture about health protection of older adult consumers. He explained that in the ASEAN region, Thailand is second to Singapore in entering an aging society. Although, older adults may have had more life experience, they are naturally more vulnerable. This is because they desire products and services that would help to improve their health. They become targets of persuasive advertising messages. Older adults are vulnerable because their children or grandchildren seek out health products for trial. They are also vulnerable because older adults have a lot of free time therefore, they are easily persuaded through mass media and online media.

Dr. Dolchai Saengprasert, SOS Specialist, explained that in this digital era, social network is very influential to daily life. Everyone can communicate quickly to the point that there might be a crisis from information overload. This lack of the ability to screen might lead to misunderstanding particularly the wrong medical information, which could be used leading to possible life-threatening circumstances. In the past medical information shared online usually came from information about the benefits of agricultural products such as substances from certain durian fruits can treat many types of cancer. Cowitch could be used for weight loss, however, some young adults have taken the product and died. These information are not supported by

medical research to ascertain the suitable dosage and means of extracting the substance. The information source is taken from agriculture pages that provide weight loss information. Consumers can know right away that it is an effort to sell products ("Doctor warns! "don't believe health misinformation on social media," 2016).

Sharing health information is very popular among older adults to the point that a doctor, who used the Facebook name, "Fun Facts with Dr. Maew" (Fun Facts with Dr. Maew, 2015) wrote anecdotes about older adults sharing information on popular online platforms that have become a social sensation. He called it "Sharing Deathly Health Tips". Some of the stories are presented in the following section.

"Dr. Pichai had done the autopsy of Teacher Yuth, who just died. There were traces of vomit on the floor. The most obvious thing he found was blood. All of Yuth's ten fingers were bloodied. There was a sewing needle nearby. After asking about the reason of his death from the senior lady next door. She said this morning Yuth had gone to water his garden. After that he fell down. His face and mouth were twisted. He could not lift his right arm and complained that he was having a headache. The lady and Teacher Sukhon, his wife brought him into the house. At first, they were going to call the ambulance, however, his wife went to get a sewing needle and punctured all of her husband's fingers. She then put her husband to sleep without calling an ambulance to take him to the hospital. However, when she went to wake him up, he was already dead.

Dr. Pichai even took his phone and went through point by point to explain that the messages he received were all fake. For instance, eating shrimp together with vitamin C would result in death, eating durian would help reduce weight, use a needle to prick the fingers of stroke victim before sending them to the hospital, or in case of electric shock do not perform CPR but put the person on zinc and pour discharge water, were all fake information. But Yuth did not believe him. After than Yuth never returned to the hospital again. Yuth even shared the information in the elderly group until a health news share group was formed."

The short story reflects how the online world of older adults today is full of massive amounts of health information. All of these attempt to provide health advice to older adults. Most of the older adults are exposed to this information. They also pass on the information to others in the comments section of this post in Dr. Maew's

page. There are many, who express their opinions regarding the seniors in their family as presented in the following section.

I really don't understand why older adults believe such things. They like to share health information very much. When I ask them where they get it from, they say they get it from a doctor acquaintance. (October 1, 2015)

Don't forget to add this. Honey lemon can cure every disease. You can even use it for eye drops. You also have kidney cleansing formula from Nakhon Pathom that a Chinese ghost had told the people. Oh, this is the best. Doctors don't want to treat the patients so they get well. They want to keep them ill to get more money. (October 1, 2015)

My relative died from kidney failure because of this ghost formula. I have warned the children but they did not believe me. (November 13, 2015)

There is this old lady near my house. She doesn't read. She just shares. When I asked her where she got the information from, she said someone shared it. At first I tried to explain to her but gave up eventually. She loves to share and truly believes it. She just won't listen to any explanation. So I let her do whatever. (October 1, 2015)

It just keeps coming in the elderly Line group. There are all sorts of types. Some are quite dangerous. (October 1, 2015)

My mom does everything. Now she is making her own pork oil. (October 2, 2015)

From the information presented in the previous section, it is found that older adults in the online world share health information and purchase health products advertised online. This is only part of the behavior. This is because older adults give importance to health issues, which is particularly true for those who have congenital diseases. They try to search for a means to cure themselves from the various illness. This happens to the point that they forget that the massive information online consists of both information that is true and those that are false. This has led the researcher to question what would happen if older adults, who have just adopted and entered the world of communications technology, cannot understand or categorize this large amount of health information online.

When online media has great unlimited freedom, people of all ages and gender can access information easily and quickly. They can also share information right away and can share their opinions openly. All of a sudden the media user is both receiver and sender at the same time. The communications cannot be controlled in terms of its boundaries and content. Online media, thus requires users to be highly media literate. They need to have a means to use media in a beneficial way without becoming a victim of the media. This is because media use has an impact on perceptions, beliefs, and attitudes, which is of particular importance because older adults are going to become the largest population group in Thailand. If they use media without reason or critical thinking, they might end up with a negative impact physically and mentally. Eventually, it would have an impact on society, thus, media literacy is an important skill. Thoman and Jolls (2003, p. 9) explained that media literacy is a skill that is necessary in a democratic society in the 21st century, where citizens should have critical thinking together with the ability to express their opinions and self-expression. These two skills are the important core components of media literacy.

When the world of communications grows rapidly in terms of number and variety, it is therefore important to be aware that media is allowed to become a part of life that cannot be controlled. Thus, the ability to assert this control is defined as media literacy. It is a clear demarcation between the real world and the world of media. Media literacy is akin to a plan to help create better understanding of the media. Thus, they can use media to their will rather than how the media wants them (Potter, 2001, pp. 9, as cited in Supanee Keawmanee, 2004). The definition of media literacy could generally come to mean the access, analysis, evaluation, and creating various types of media (Aufderheide, 1993; Chirst & Potter, 1998). Older adults' acceptance to adapt to using online media in their daily life in communications and information search. This is the first stage of media literacy particularly the fact that older adults can use online media to access information about physical and mental health.

The research of Wannarat Rattanawarang (2016) conducted the study titled, "Older Adults' Internet Usage Behavior to Search for Health Information in Bangkok 2014. The research found that the Internet usage of older adults only 1 out of 4 searched for health information. They might be exposed to information that is

inaccurate, not trustworthy, not complete, twisted, and unclear. Thus, they should have health media literacy or they should have more skills in using health information. Older adults should have the awareness in the accuracy and suitability of using health information for their own benefit.

Media literacy study among older adults is more of an examination of level of media literacy rather than whether they have media literacy or not. Instead of examining online media as having a one-sided impact on the audience. The research takes the perspective of active audiences examination that requires interpretation of the meaning of messages. Online media literacy has to examine health information simultaneously. This research is in line with the Section 52 of the Frequency Allocation and Management of Broadcast and Telecommunications Act of B.E. 2553, which stipulated the establishment of the Broadcast Media Research and Development Fund, under the National Broadcasting and Telecommunications Commission. Section 52 (3) stipulates that the fund has the objective to "promote and support the development of the communications resources. This includes the research and development of the broadcasting and telecommunications as well as media literacy, technology in using communications frequency, information technology, technology that provides convenience for the handicapped, elderly, and marginalized. It extends to the telecommunications business and relevant industries." (Supranee Srichatphimuk, 2016, p. 4) This research would help those who work with the elderly and society to better understand the behavior in using Online health media among older adults. In addition, the study would examine the level of media literacy of the Thai older adults in order to present a guideline for promoting and developing media literacy among Thai older adults.

1.2 Research Questions

1) What is the lifestyle of older adults?

2) What is the media and Online health media exposure behavior of older adults?

3) What is the level of Online health media literacy of older adults?

4) What is the relationship among the variables lifestyle of older adults, online media exposure, and level of Online health literacy?

5) Do older adults in different age groups and have different levels of education have different levels of Online health literacy?

1.3 Research Objectives

1) To study the lifestyle of older adults.

2) To study the online media and health media exposure of older adults.

3) To study the skills and level of Online health literacy of older adults.

4) To study the relationship among the variables lifestyle of older adults, online media exposure, and level of Online health literacy.

5) To study the differences between older adults of different age groups and level of education in terms of Online health literacy.

1.4 Research Hypotheses

1) Hypothesis 1-Lifestyle of older adults has a relationship with Online health literacy.

2) Hypothesis 2-Online media exposure of older adults has a relationship with Online health literacy.

3) Hypothesis 3-Older adults of different age groups have different levels of Online health literacy.

4) Hypothesis 4-Older adults with different levels of education have different levels of Online health literacy.

1.5 Scope of the Research

The study titled, "Online health Media Literacy of Thai Older Adults" has the research scope as explained in the following section.

1) Scope of the Sampling

The sampling frame is Thai nationals aged between 50-69 years, who have used online media to search for health information.

2) Scope of the Content

The research examines the health lifestyle of older adults, exposure to Online health media, and Online health media literacy. The study focuses on health news and advertising through online channels, which are Line, Facebook, YouTube, and websites only.

3) Geographic Scope

The researcher would collect data from five areas, which are Bangkok, northern region, northeastern region, and the south.

4) Scope of Data Collection Period

The study data collection period was from January 2017-June 2021 only.

1.6 Definition of Terms

Older adults are defined as Thai nationals aged between 50 – 69 years living in Thailand and use online media to search for health information.

Lifestyle is defined as the characteristics in the way Thai older adults live their life in particular about health issues. It is explained based on the AIO factors, which are education, activities, interest, and opinions.

Online media is defined as the Internet channel. Users use the Internet to access information, which are Line, Facebook, YouTube, and websites.

Online health media is defined as the health communications channel accessed through the Internet. This includes Line, Facebook, YouTube, and websites. This also includes physical and mental health news in online news and advertising in the form of image, video, and texts.

Exposure to online media is defined as older adults receiving information from online media. This includes frequency of online media use, characteristics in using online media, objective in using online media, duration and quantity of using online media, channel in using online media, and online media of choice.

Exposure to Online health media is defined as exposure to health information online, which include influencers, who got them interested in searching for online health media. Factors that influence exposure to online health information. Type of

exposure to online health media and behavior of the older adults in health media exposure.

Online health Media Literacy is defined as the ability of older adults to access and use media. This includes skills in understanding, critical thinking about health in many aspects, and the skill in evaluating the impact of the media to oneself and society as a whole. This includes the use of health information online for benefits and creative dissemination of information. This is based on the three components of media literacy which are 1) access, 2) analyze and evaluate, 3) and use and create. Online health media literacy among older adults can be categorized in five levels, which are very good, good, moderate, low, and lowest.

Access is defined as the skill and search ability to find the desired health information online. This includes the ability to search for health information online from various sources.

Analyze and Evaluate is defined as the skill and ability to understand and use various online health information in a critical manner to make beneficial health decisions. This includes the evaluation of health media regarding how it would impact oneself and society as a whole.

Use and Create is defined as when older adults analyze and evaluate health media in a critical manner. Older adults make use, adapt, and interaction with news from online health media. This would lead health decisions as well as the ability to create health media online from the information in a suitable way.

Level of Online health Media Literacy is defined as the average ability of media literacy among older adults based on the three components of media literacy, which could be categorized in five levels, which are very good, good, moderate, low, and lowest.

1.7 Significance of the Study

1) Medical organizations or agencies related to the elderly can understand the behavior in using online health media behavior of the elderly. This includes the level and skills of Online health media literacy of older adults. Also, they could be aware of the level of Online health media literacy of older adults, which could be used to

promote media literacy. This could be used to plan and develop media usage in order to reduce reliance on others and create better living conditions for older adults.

2) Older adults and their family could use the information to increase the level of media literacy among older adults.

3) Public relations practitioners, advertisers, and marketers can better understand the media exposure behavior of older adults through online media. This could be used for public relations or marketing planning to develop health products to serve the needs of older adults.

4) Academics and others, who are interested in the results of the study in order to compare with people in other age groups or from other geographic locations.

1.8 Conceptual Framework
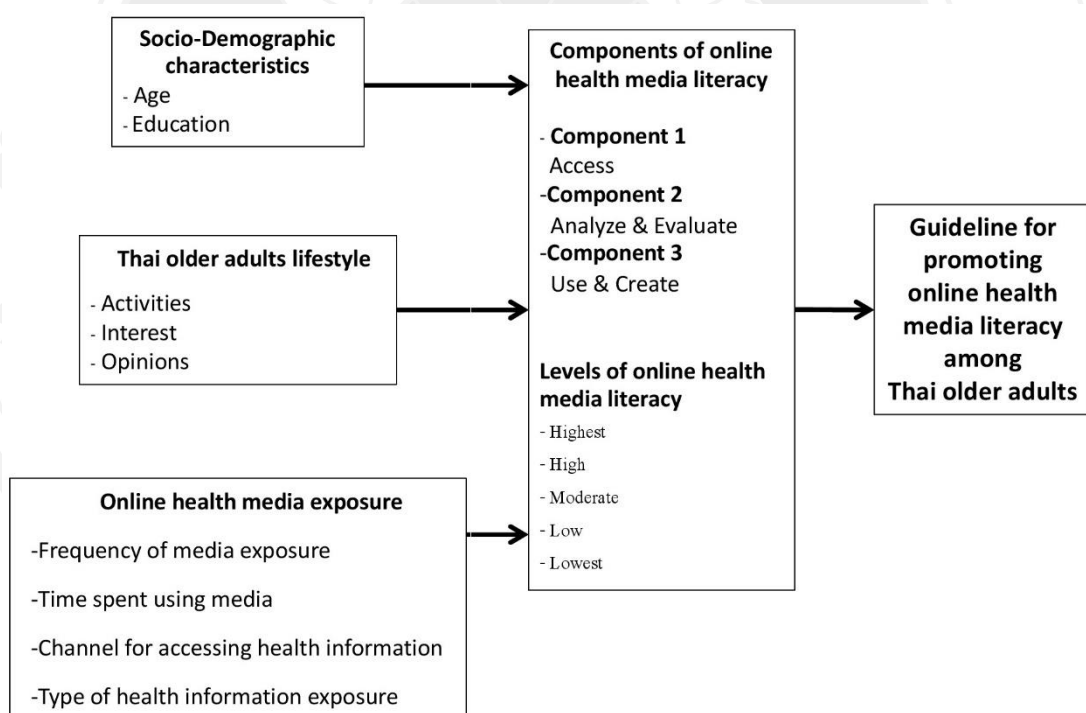
Figure 1.5 Conceptual Framework

CHAPTER 2

REVIEW OF RELATED THEORIES AND STUDIES

The study titled, "Online Health Media Literacy for Thai Older Adults" examined related theories and studies as presented in the following section.

2.1 Media Literacy Approach and Health Literacy

2.1.1 Media Literacy Approach

Media literacy approach was originated together with the advancement of media technology. This disruption of media has started from the era of broadcast radio and television in the analog system that has evolved onto the information superhighway. The various media on the digital platforms have entered into the era of convergence. Media technology advancement enables people in every corner of the world to access information. In a way it cannot be denied that these technological advancements empowers senders. Traditionally, these are usually large media organizations that have enormous funding held by few individuals, who can hold ownership of media. This drives economic factors under capitalism. Thus, media literacy was originated to create a balance of power (Kanjana Kaewthep, 2008, pp. 305-306).

Hobbs and Moore (2013) have reviewed literature regarding the development of the term, literacy. Today, literacy has more meaning than just being able to read or write. Literacy has evolved in various eras as follows:

Era 1 Rhetoric – Literacy from speech and listening

Era 2 Print Literacy – Literacy from reading and writing

Era 3 Visual Literacy – Literacy from designing images, interpretation, and creating works

Era 4 Information Literacy – Literacy from accessing information, search of information, evaluation and use of information

Era 5 Media Literacy – Literacy from analysis of media messages and creation of content using technology tools

Era 6 Critical Literacy – Literacy through understanding and use of computer technology effectively

Era 7 News Literacy – Literacy through understanding and evaluation of news and events that have occurred

Era 8 Digital Literacy – Literacy imbued with social responsibility in using the Internet and online social media

The term literacy has changed based on the development of media from mass media to online. In the field of academics, media literacy has been used widely in countries such as the European Union, the USA, and Japan (Porntip Yenjabok, 2009, pp. 9-10). In 1992 the National Leadership Conference on Media Literacy organized by educators, the definition of media literacy was coined. It was defined as the ability of individuals to access, analyze, evaluate, and communicate content in various forms. Media literate individuals have the ability to decode, evaluate, analyze, and create media in the form of print and electronics. From the aforementioned definition Silverblatt (1995) expanded the concepts and definition of media literacy to encompass the following:

1) Awareness of the impact of media

2) Understanding the process of mass media

3) Ability to analyze and discuss media content

4) Understanding media content in each culture

5) Ability to use media for entertainment with understanding and acceptance of the value of media content

Christ and Potter (1998) defined media literacy as the skill is more than knowledge or understanding about a particular issue. It includes the expertise in those particular issues as well. This is because media is about the putting together and creating reality. There is context in terms of business, politics, and ideology. It has form and content that are connected in each type of media with codes and format that is not fixed but rather fluid.

Baran (2004) defined media literacy (ML) as the ability to understand and make use of media and content from media efficiently and effectively. The researcher further defined media literacy expanding Silverbatt's five dimensions by adding two dimensions as follows:

1) Understanding the ethical requirements of media producers

2) Ability in using media appropriately and effectively

In addition, Livingstone (2004, pp. 2-3) explained media literacy, in the book titled, "What is Media Literacy?". The author included the dimensions of access, analyze, evaluate, and create message. The definition of media literacy presented by Livingstone includes media literacy on the Internet. The details of the abilities based on Livingstone are explained in the following section.

1) Access is the definition that depends on the social process, which is a shifting paradigm that is not static. It changes based on the social situation and eras. Access is the first stage for the ability of media literacy. The user is in the situation and condition to access various media such as updating, upgrading, increasing the effectiveness of hardware, and software. Problems that might occur in this stage include inequalities within the population in terms of various factors such as ownership of property, social capital, and symbolic capital. There are also inequalities in terms of knowledge and access to the Internet media including communications and participation.

2) Analysis is the ability to analyze. It is the most important skill in the present era, where people have to involve with print and audiovisual media. The ability to analyze audiovisual media includes understanding the agency, categories, technologies, languages, representations, and audiences.

3) Evaluation - In the first two stages does not require knowledge in making the decision. In this stage, there has to be more decision making. This might involve with policy questions based on various principles that might be specific or legal. These would be used for the evaluation based on critical literacy. These various principles would be used for decisions regarding aesthetics, politics, ideology, and economics. The scope and objectives of the evaluation could contradict one another. However, media literacy in the view of Livingstone supports democracy, diversity, anti-elitist approach. It is anti-establishment categorizing between good and bad, which are classified into levels that are authoritative in nature and supporting provision of data and communications.

4) Content creation - Livingstone explained that the definition of media literacy today still does not encompass the ability to create convergent media. In Livingstone's view, people have the ability to understand rules that are necessary in creating media professionally. They should have experience in media production. In addition, the characteristics of the Internet media today enables regular individuals to create content online.

Buckingham et al. (2005, p. 6) concluded about media literacy in the report titled, "The Media Literacy of Children and Young People", which was presented to OFCOM. The author explained three types of skills as explained in the following section.

1) Access is defined as the ability to search for the appropriate media content that serves the needs of the receiver. It is the ability to access technology and to use technological tools for communications and to search for what they want.

2) Understand is defined as the ability to interpret, evaluate, and understand the media language such as distinguishing between representation and reality. They must be aware of the persuasive means used in advertising. This includes more knowledge and understanding about the world. They should be capable of controlling their emotions resulting from stimulus in the media. It is the ability to evaluate the value of media such as critique of inappropriate content such as violence as well the ability to appreciate aesthetics of each type of media.

3) Create is defined as the ability to use communications tools. They can produce content for broadcast radio and television as well as new media that

reflect their identity and opinions. This includes production experience and ability to access and manage technology.

Media literacy would help to empower media receivers to choose their media and use it effectively in various contexts. In this view Buckingham (2003) and Buckingham et al. (2005) media literacy views that receivers of the media have the ability to analyze and use media well. They are reasonable consumers, who learn to monitor their own behavior and act rationally.

Potter (2001) defined media literacy from the perspective that individuals would use media and interpret the meaning of the content based on media used. They should have awareness of the media impact and consciousness in using media. The objective of media literacy is to empower individuals so that they may control the media. They should not fall under the influence of media. However, if the media receivers are not aware of the impact of the media, it would influence the person unknowingly. Potter explained that media audiences, who were highly media literate would be able to control the effects of media. These people, who are highly media literate are active audiences. They have an open-mind in their interpretation of media content. These people can make various interpretations. They can create many choices of meanings. Thus, they have the ability to control the effects of the media. On the other hand, those who have low media literacy would choose to accept the content. Thus, they have a narrower interpretation of the media content. They are therefore more confused in the interpretation accepting only meanings that are superficial. These people have a low ability in distinguishing right from wrong. It is the reason that they are easily influenced by the media.

In addition, Potter (2001) defined media literacy from the perspective of individuals regarding media categories such as news, advertising, and entertainment. This is based on the belief that individuals, who were not media literate would be easily influenced by media. Consequently, media literacy has to be taught in three areas as follows:

1) Mass media organizations have the characteristics with emphasis on business. For instance, advertising could be created under the condition of the product owner with the need to stimulate consumers.

2) This indicates the differences of content in each type of mass media. For instance, news is different from advertising because it emphasizes knowledge while advertising emphasizes information about products.

3) The creation of content, which might differ since each type of media would be different. However, it is still created such as the use of camera angles, audio, and selection of cast members or newscasters. This is not a natural occurrence because people could be trained to understand organizations that produce media including the types and process in creating content, which would enable individuals to be media literate.

When technology causes the world of media of change, academics have modified media literacy to better suit the new media. This results in convergence of media literacy with other related fields. UNESCO presented the concept, Media Information Literacy, which is the combination of literacy in various types of media such as News Literacy, Media Literacy, Library Literacy, and Digital Literacy. This results from the evolution of media, which is known as media convergence. Thus, Media Literacy, Information Literacy, ICT and digital literacy would be difficult to separate because of interconnectedness and overlap (Scientific and Cultural Organization (UNESCO, 2013, p. 27).

As Hobbs (2010, p. 17) explained media literacy of new media has been occurring for the past 50 years. The meaning overlaps for instance information literacy involves the skill for search. Media literacy is literacy about criticism of news, advertising, and mass media. Health media literacy is literacy about media in a positive way related to nutrition, exercise, personal identity, violence, and drugs. Digital literacy is literacy that is related to the use of computers, social media, and Internet. Hobbs used the term, digital and media literacy.
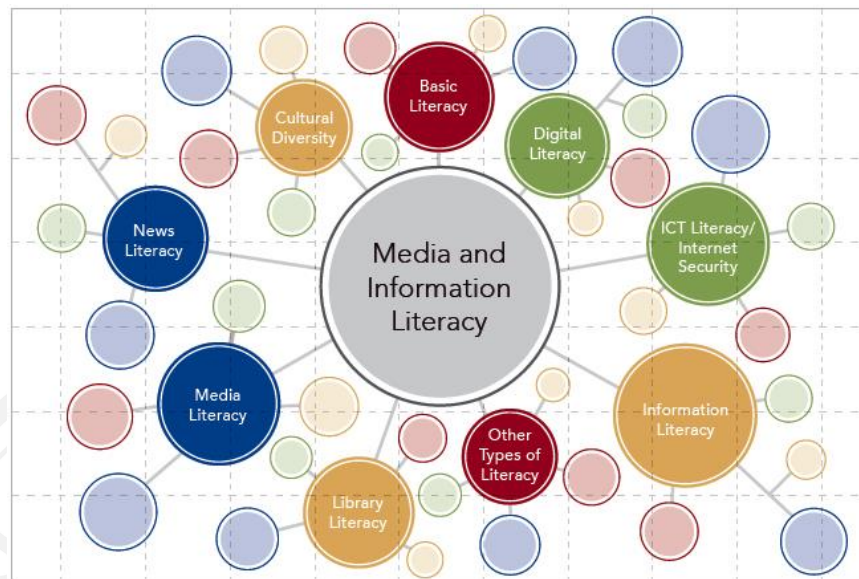
Figure 2.1 Composite Concept of Media and Information Literacy
Source: Scientific and Cultural Organization (UNESCO) (2013, p. 31).

Hobbs (2010, p. 18) explained the components of media and information literacy. The five dimensions are access, analyze and evaluate, create, reflect and act (Figure 2.2).
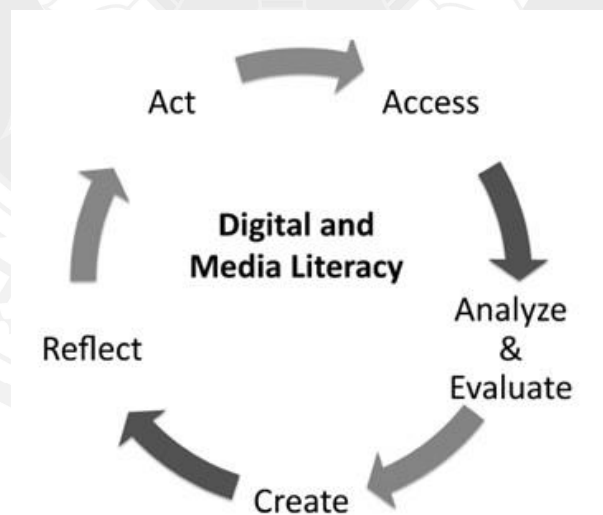
Figure 2.2 Capacity for Media and Information Literacy
Source: Hobbs (2010, p. 18).

From the Figure 2.2 Capacity for Media and Information Literacy presented by Hobbs could be further explained as follows (Hobbs, 2010, p. 19):

1) Access is defined as the search, use of media, and technology skillfully and share relevant suitable information with others.

2) Analyze and evaluate is defined as understanding of content and use of critical analysis in terms of the message quality, accuracy, credibility, and perspective that needs to be considered resulting from the impact of the message.

3) Create is defined as the modification and create content on their own using their creativity based on awareness of the objectives, audiences, and technique for content creation.

4) Reflect is defined as the adaptation of social responsibility and morals to create personal identity and life experiences, which reflects communication behavior.

5) Act is defined as the personal and group action in sharing knowledge and solutions to problems at the family, workplace, and community. This includes participation as members in the community, region, nation, and international level.

In the book, Discovering Medial Literacy, Hobbs and Moore (2013, pp. 16-17) proposed five components of digital media literacy with additional detail as follows:

1) Access is comprised of the following components:

    (1) Listening skills

    (2) Read with understanding

    (3) Use technology in a suitable manner

    (4) Asking questions

    (5) Collect data from multiple sources

    (6) Adapting the use of information for solving problems

2) Analyze is comprised of the following components:

    (1) Understanding symbols

    (2) Can categorize the different types of messages

    (3) Indicate the source, message objectives, and target of each message

(4) Can categorize the quality and reliability of message from different types of media

3) Composition is comprised of the following components:

(1) Face to face conversations and listening skills

(2) Talking with large groups and response reactions

(3) Communicate with individuals and express their opinions

(4) Choose to communicate and use messages to answer and combine them in creative ways

(5) Writing and creating images to explain, persuade, and entertain.

(6) Creating various types of media including email, review, report, screenwriting, songs, webpages, documentaries, novels, and other media literacy.

4) Reflect is comprised of the following components:

(1) Awareness, evaluate the relationship, and participation in the form of suitable social behaviors

(2) Brainstorming and thought participation

(3) Keep to their role and follow recommendations given

(4) Use good decisions and socially responsible messages when communicating with others

(5) Practice leadership, morals, and responsibility

(6) Have recommendations, assistance, and teach others

5) Act is comprised of the following components:

(1) Creative community participation

(2) Share and express opinions with others

(3) Aware of the differences

(4) Create connections between the events that happen to the community and to oneself

(5) Collect ideas to make things better

(6) Take part in solving problems based on the reality of the world

In addition, the components of digital media literacy has been presented by Potter (2001) has four components as follows:

1) Media literacy is a continuum. It is not a ready-made formula. There is no one person, who has the most knowledge. There is always room for development.

2) Media literacy needs to be developed. Individuals need to train not to be passive audiences. They need to question and create meaning on their own. They need to accept reason after careful consideration.

3) Media literacy is multi-dimensional. The dimensions include cognitive, which is the knowledge about literacy that starts from being simple to being more complicated.

Emotional is the dimension of feelings regarding the media created by the producer, which combines aesthetics and enjoyment of the media content from the perspective of arts. They need to discern between art and fakes.

Moral dimension is the knowledge and awareness in various forms of values that have been transmitted through media. They can manage their roles and know what stand to take.

1) Media literacy can be interpreted from the message that is presented through media.

Buckingham et al. (2005) and Livingstone and Helsper (2007) explained the factors of media literacy as follows:

1) Age is one of the factors that affects access and responses to media. When comparing between young adults and the elderly it is found that the elderly have a lower level of access to new media than young adults. However, they have better critical skills.

2) Socio-Economic Status: SES - This includes education, income, and social status. These factors impact access, understanding, and creativity in terms of media literacy. It is found that income is important to media literacy. Education is critical to understanding and critical skills.

3) Gender is another factor that is connected in a significant way to the access skills at a high level. For instance, males have the opportunity in creating media more than women.

4) Disability or being handicapped is an important hindrance to individuals at a significant level. However, this depends on the type of technology and characteristics of media literacy (or use of technology).

5) Technology and content design - It is found that if the use of communication and technology is well designed, the necessity for media literacy would be less. However, if the design of technology and content is of low quality, the necessity for media literacy would be more important.

6) Consumer Awareness is an important factor that results in the trust of the content. This coupled with the media organization and context would be the criteria that leads to unreasonable trust in the media.

7) Perceived Value for instance the Internet is a media that has perceived value that enables increase in media literacy at a significant level.

8) Self-Efficacy is an important component of media literacy. It is the combination and connection between skills and self confidence in using media. This would lead to increased search and learning.

9) Social Networks has a role that is important for individuals to promote and maintain access to media. This is particularly true for social networks that are informal would be beneficial to the increase of social capital in the community.

10) Family Composition particularly families with children in the home would have more media literacy of new media more easily. Children can cause changes in the gap between different age groups and promote learning of their parents in an informal way.

11) The Workplace helps individuals to work with new technology. They have more opportunity to learn and experience resulting in more media literacy.

12) Institutional Stakeholders including students, consumers, industrial factories, and the government are all involved in giving the public more in-depth and broad experience and expertise in media literacy, information, news, and communications.

Canada's Association of Media Literacy, which is a media literacy organization that is well-respected (Passawalee Nitikasetsoontorn, 2012) explained

the 6 factors (Bowen, 2003) that all media consumers need to have media literacy skills as follows:

1) Media can dominate all of our daily lives particularly about politics and culture.

2) Media offers all types of news in this modern world, where so much is presented through media.

3) Media is a good role model for values and behaviors of people in society.

4) Most people are not aware of the influence of media on them and on society.

5) Media literacy would increase enjoyment in media consumption.

6) Media literacy would enable media consumers to be active audiences, who are not passive.

2.1.2 Health Literacy Concepts

The World Health Organization defined health literacy as the social thinking and skills that determine motivation and the ability of individuals to access, understand, and use information as a means for having good health. This definition reflects that health literacy as the level of knowledge, skill, and personal confidence to take actions leading to good health (cited in the Department of Research and Development for Thai Health Insurance (June, 2015).

Hayryan (2008) explained that health literacy is related to the concept of literacy that is broader to encompass illness prevention, taking care of the illness in a suitable manner and following the orders of medical experts, use of medication, and the ability to read and apply to use the health insurance system and health service support in order to return to normal health.

This concept of being knowledgeable about health was developed since the 1970s. It started in the United States and gained the interest of various countries around the world. Being knowledgeable in health matters has not been universally defined. There were those, who gave different meanings. Some gave narrow definitions such as the ability to read, write, or remember various issues that are related to keeping good health and following recommended treatment. This includes

the complicated perspective that requires skills and ability to interact with news about health and influence of socio-cultural context. The use of skills, knowledge, and social motivations enables individuals to access, understand, and use health information to promote or maintain good health (Napaporn Wanichkul & Suchada Pattharamongkolrit, 2015).

In the same way Van den Broucke (2014) explained that traditionally health literacy was focused on the treatment and numbers from the medical profession. Later, the definition was expanded to include more complex skills that are more involved. This includes reading and expressing their thoughts regarding health issues. It is the necessity for communicating with health experts and understanding health recommendations.

The Dhurakij Pundit University Research Center (2012) explained that health literacy, is the ability to search, access, understand, and use information in ways that are beneficial for health. In Thailand this term has been translated as being knowledgeable about health or having health literacy or being health smart. Thus, definitions are broadened to encompass the fact that health literacy includes the ability to access information and knowledge about health from various sources. They should have an understanding of the content and can evaluate the trustworthiness and suitability of content to their needs. They can use information in a reasonable manner; thus, they give importance to that information. In addition, it could be used for decision making that is actionable. It could be evaluated and used in their daily lives.

Health literacy is defined as the ability to search, access, understand, and use health information. From the past to the present academics in Thailand have translated this term in various ways. For instance, the term has been translated to be expertise in health, health literacy, knowledgeable about health, and health smart (Teera Worathanarat et al., 2015, p. 9).

The term health literacy appearing in Thai literature can be defined as follows:

1) Health literacy is the definition that the Health Institute has translated from the definition by the World Health Organization.

2) Health literacy is the term that corresponds with communications, which has been developed and operated based on media literacy in the health media for youth that is supported by the Creative Media Foundation.

3) Health smart is the term that was used in academic circles, when discussing literacy in the context of health as termed by the Foundation for Development of Thai Studies, Parliament Secretariate Office under the support of the Office of the Health Promotion Fund.

4) Health smart is the term that was coined by the project to study and develop health literacy in order to promote the wisdom and learning about health by the Health Studies Fund, Health Service Support Department, Ministry of Health. The definition was "the ability and skill to access information, knowledge, and understanding for analysis, evaluation, and management of self. This includes the ability to provide good advice about personal, family, and community health".

The Annual Ministerial Review (AMR) of the United Nations Economic and Social Council (ECOSOC) Institute of Medicine, World Health Organization, US Department of Health and Human, Canadian Public Health Association, and the Australian Government Department of Health and Aging all agree that health literacy is an important part of health promotion to the world population. Individuals are limited in their access to information or understanding of news, knowledge about health from documents and various other media available in society. On the other hand, they might have difficulty in getting knowledge to be adapted in their daily life for better health behavior. Consequently, they would have bad health and stop trying to take care of their health or act in accordance to the treatment plan. This would lead to more users using the clinic services, spending more time in hospitals, and higher death rates. The health services in many countries have to lose significant amounts of budget particularly for treatment that requires the use of expensive equipment that have insignificant health improvement results (Napaporn Wanichkul & Suchada Pattharamongkolrit, 2015).

Jordan (2010, as cited in Napaporn Wanichkul & Suchada Pattharamongkolrit, 2015) compiled the opinions of the public, health officials, and health policy makers revealed that health literacy is a complex perspective that is more than just being able to read and write.

1) Ability of individuals to search for health information whenever they want; Individuals, who have health literacy are capable in searching for health

information whenever they need it. They know where to search for health information.

        2) Ability to create and promote health.

        3) Ability to protect one's own health and that of the community.

        4) Ability to prevent and search for illness in the early stages.

        5) Ability to create a relationship with health service providers, family, or health care workers.

        6) Ability to access the necessary health services as well as having the skills to apply the information to use in their daily life.

The necessity of the respective aspect of the ability would vary for the entire population or parts of it.

The major obstacle of health literacy is the complexity of writing health information in print media and websites. Some information was in a foreign language for which some do not have the necessary skills. Other obstacles include the lack of knowledge regarding the characteristics of the information, which might not be direct or complete. This is a challenge for those with low ability to read such as the elderly or ethnic minorities. The ability to develop health literacy is very important to the public health in particular during this era where information could be easily spread through media without detailed check and control.

Gazmararian et al. (as cited in Napaporn Wanichkul & Suchada Pattharamongkolrit, 2015) explained that cultural differences had an impact on learning and information search of individuals. Therefore, the definition of health literacy might differ among countries that different learning cultures. The understanding of the adult learning process is related to the factors that impact learning. Thus, these factors need to be considered in differences of health literacy such as the differences in the level of stress resulting from the seriousness of the illness, age, community where they live, use of language, physical limitation, or level of education.

The concept of Health Literacy has been developed to be Online Literacy, which is defined as the ability to use information technology to search, select, and understand health information to improve and take care of health from a national representative (Health Information National Trends Survey (HINTS), 2012). Chew (2015, p. 323) explained that Online Literacy has six components as follows:

1) Basic Literacy
2) Information Literacy
3) Science Literacy
4) Media Literacy
5) Computer Literacy
6) Health Literacy

From review of the literature in the area of health literacy and Online literacy, it is found that media literacy is a part of health literacy and health media literacy. Therefore, the access and understanding of health information through the use of data from medical experts in the form of various media. However, from the communication arts perspective it is found that in the world of modern communications, the public is bombarded with a magnitude of health information. This is more than just the news created by medical experts. It includes health information that is created in the capitalist system such as advertising and public relations for products and health equipment. Modern communications that occur in the online world where anyone can produce information and disseminate it to the world of online social media easily. Academics, who studied Online literacy explained that the definition encompassed access and understanding of health media that was produced not only created by medical experts. People need to understand and consider that health media is created to fulfill business needs, which is highly complex, thus it is considered Online literacy.

From the initial review of definitions and concepts of media literacy, the researcher in the study of Online literacy among Thai elderly citizens, who are experiencing physical and mental changes due to their age as well as the rapid changing context of Thai society as a result of information technology. The study of media literacy of this age group is very important. This is because it cannot be denied that media has the power to shape perceptions, beliefs, and attitudes of audiences. In spite of these technological advances wherein communications can reach the elderly in various forms under the context of the capitalist society. There are a large number of these media particularly online, where the law or controls cannot reach. Thus, these messages have the goal to seek out the highest profit. Media literacy is the mechanism that creates the power balance to empower the elderly. Being media literate enables

them to negotiate and reject the meaning of various messages produced by the media. As a result, this study examines three components of Online literacy of the Thai elderly as explained in the following section.

Component 1 - Access is defined as the skill in searching to access information sources and online health media that they need. This includes the ability to search for health information from various sources.

Component 2 - Analyze and Evaluate is defined as the skill and ability to understand media in a critical manner. The use of the critical perspective in terms of online health media such as producers of health media, reason for creating health media, factors (economic, political, and social) that influence the production of media. The understanding of health information such as the communication objective, target, reason for creating content, technique in producing content to stimulate feelings to receivers. The understanding of signs and symbols in health media, interpret, and typify the content. This would allow for decision-making in the use of online health media as well as evaluate the value of the health media that impacts the individual and society.

Component 3 - Use and create is when the elderly analyze and evaluate health media critically. The elderly would use, adapt, and participate with online health information leading to health decisions. This includes the ability to create online media health from health data in a suitable manner.

2.2 Literature on Older Adults

2.2.1 Definition and Characteristics of Older Adults

The terms, older adult, elderly, and seniors have been defined by various organizations and academics as explained in the following section.

The Elderly Royal Decree (B.E. 2546) defined the elderly as those aged over 60 years old of Thai nationality (Ministry of Social Development and Human Security, 2005, p. 2). Although Thailand has defined the elderly as being those aged over 60 years, it has been recommended that in establishing the club for the elderly. If most of the members were the elderly, the club would usually lack strong organizational operations due to the lack of personnel. Therefore, the members of the

elderly club should include those from different age groups starting from those aged over 50. If possible the elderly membership in the club should be a mixture of those aged 50-59 years (15%), aged 60-69 years (65%), aged 70-79 years (15%), and above 80 years (5%) (Banlu Siripanich et al., 1996, pp. 103-104).

National Statistical Office (2012) has categorized the elderly into three groups, which are early elderly, elderly, and late elderly.

       1) Early elderly is defined as those aged between 60-69 years.

       2) Elderly is defined as those aged between 70-79 years.

       3) Late elderly is defined as those aged over 80 years.

Sriprapa Chaisinthop (2011) explained that the setting of old age does not have a set number since there is still no conclusion on the matter. If this is viewed from the retirement angle, in Thailand it is defined as 60 years. It is the age of retirement for government officials. Some might retire at the age of 55 years or 65 years. In medical terms it is defined as the changes and deterioration of the body. The various body organs would deteriorate at different times. Thus, the physical changes in the elderly happen at different times. Some people may age at 50 years physically and mentally. On the other hand, some people at the age of 65 years may not be any different from a younger person at the age of 50.

From the aforementioned information, the criteria in typifying the elderly differs in each society. This research is about the elderly and use of online media, which is considered a new communications tool for the elderly. The use of online media by the elderly in Thailand has only been recently accepted and popular. The researcher would choose to study the elderly aged between 60-69 years. This is because this group are in the early stages of being elderly. In addition, the research would study those aged between 50-59 years because this group are experiencing physical and mental changes that characterize early elderly stage. Thus, it is appropriate to study the use of online media to search for health information of those in this age group.

2.2.2 Age

Changes that occur when people enter the elderly stage is a combination of the development and changes that occur in the human life. This starts from fertilization to

the death of individuals. The changes that occur result in physical, mental, emotional, and social deterioration are continuous throughout the entire life (Wongkrasan, 2000, as cited in Patarawat Kumdee, 2012). These changes in older adults could be categorized into three aspects as follows:

1) Biological change include changes in the various body organs in the body. These changes occur at different times in individuals. The body of the elderly deteriorates rather than grow. The various cells in the body would work less and reduce in number when compared to youths. These changes occur in every system of the body starting from the cells. Thus, the body organs in the elderly work less effectively. As a result, they are more likely to get sick or have illnesses easily. This is derived from the physical changes in the body and its various systems.

2) Psychological Change is part of the changes that result from physical and social changes. The deterioration of the body organs create feelings of worry, sadness, depression, and lack of enthusiasm.

3) Social Change – There is less social interaction in the elderly group. This might result from the decline in the number of duties on the job and social roles. The elderly, thus, have difficulty in adjusting themselves resulting in both physical and mental injuries.

The most important component from the problems resulting from the increase in the number of the elderly is the need for health, medical, and public services. This is because old age is a time of changes resulting from deterioration in the function of the various systems in the entire body. Consequently, there are physical, mental, emotional, social, and spiritual problems (Sakuna Bunnakorn, 2011).

Information derived from the National Elderly Assembly 2013, it is found that most of the elderly have health problems from the most basic level to chronic diseases or disability. More than half of the elderly have some sort of congenital disease that requires medical treatment and continuous care (Subcommittee for Organizing the National Elderly Assembly, 2013). In the survey of the Thai Elderly Health 2013 regarding the situation of health problems among older adults, it is found that Thai elderly suffer from major diseases such as high blood pressure (41%), diabetes (18%), rheumatics (9%), depression (1%), and bedridden patients (1%) (Department of Public Health, 2013).

From the study monitoring and evaluating the operations of the National Elderly Plan 2 Phase 2 (2007-2011). Desirable health behaviors for the elderly include exercising, eating fresh fruits and vegetables, and drink 8 classes of clean water a day or more. Most importantly they should not drink whisky or alcohol and not smoke. However, it is found that only 18.7% of the elderly have these behaviors, which is less than the objective set in the National Elderly Plan 2 at 30% (Vipan Prachuabmoh et al., 2013).

Taking care of the health of the elderly is an important issue. This is because when people get older, the body deteriorates. Physical illness would also affect the mental state. Even in cases where there is no evident physical illness, if the mind is sad, it would also lead to illness as well. It is clear that health problems are an important aspect of people in this age group. Therefore, the elderly should receive good health information and that is why health literacy is a very critical issue.

2.2.3 Education

From the survey of the education level of Thai elderly people aged between 60-69 years in 2017 (National Statistical Office, 2017), it is found that of the 6,491,458 Thai elderly about 5,830,319 can read and write. There are 4,824,864 Thai elderly, who have less than Grade 4 education, which is 74.33% of the older adult population when compared to the 455,322 or 7% of the older adult population, who have a bachelor's degree.

In this modern world where online media plays an important role that cannot be avoided in the daily life of the elderly. Adjusting to use communication devices such as mobile phones, which could do more than communicate with others can also be used to access various information. There are both real and fake information, therefore the elderly audience has to have media literacy in this age of online social media. Therefore, education is very important to the elderly in this era. Buckingham et al. (2005) and Livingstone and Helsper (2007) explained that education is important to critical thinking necessary for media literacy. Lee, Kim, and Neum (2020) conducted the study "Factors affecting information and communication technology use and eHealth literacy among older adults in the US and South Korea".

The researchers explained that factors affecting Online literacy is education and confidence in using ICT.

There are only a few studies examining media literacy and level of education of the elderly. It is found that there are works studying the behavior of youths. For instance, Nattawadee Boonwattanopas (2016) conducted the study "Use of Social Media and Health Literacy of Youths in Phuket". It is found that students with different levels of education have an average media literacy that are different at a significant level. Therefore, it is interesting to examine whether the elderly who have different levels of education would have different levels of media literacy.

2.3 Literature on Older Adult's Communication

2.3.1 Older Adult's and Online Media

Many academics have defined online media as follows:

Rogers (1986) defined online media as the media that allows the exchange of large amounts of information to a large number of people through the Internet.

Morris and Ogan (1996) categorized online media into three types as follows:

1) One-to-one asynchronous communication
2) Many-to-Many asynchronous communication
3) Synchronous communication
4) Asynchronous communication

Monovich (2002) explained that online media is the use of digital systems to store information first through data entry using electronic devices. This data would be changed into second level codes.

Kawamoto (2003) defined online media as media resulting from various factors that come together such as technology, the Internet, community networks, and idiosyncratic aspects. These factors come together systematically through the Internet that is linked at a global level.

Information technology has brought the world into the information era, which enables quick and easy transfer of data. It also enables real time communication (Sutee Polphong, Buppa Lapawattanaphun, & Praphat Nuannet, 2007).

Online media gives importance to the components and connects and means of communicating particularly using computer and mobile phones. Today connectivity is an important characteristic of online media. It is the ability to connect over distances or connecting with one person or many people at the same time. Moreover, it leads to other consequences such as being modern, changes in the structure of society and culture, politics, and economics (Siapera, 2012).

New technology and network communications is changing society in many ways. First it changes the paradigm from mass to more personal. Second, it is shifting from information search to interaction. Third, it changes from unclear to being disseminated widely (Littlejohn & Foss, 2008).

Many studies reveal that people can use health information on the Internet to make decisions and act in ways to improve their health. Fox and Duggan (2013a) studied 3,014 American adults. It is found that 70% have received advice from doctors or medical experts. About 35% use the Internet and make their own diagnosis. About 46% of this group indicate that they would like to meet the doctors that they have met online. Fox and Rainie (2000) studied 6,413 adult Americans and found that 55% decided to meet doctors and get treatment after searching for medical information online.

Survey results show that the online media used most by Thai elderly citizens are Line, YouTube, and Facebook (Figure 2.1). It can thus be said that these online media have high levels of freedom enabling search and receiving of information right away.

Figure 2.3 Online Media Used Most by Thai Older Adults
Source: iT24Hrs (2016).

In addition, the Thailand Internet User Profile 2016 revealed the top 5 online activities among Baby Boomers (born between 1946-1964). First, use for making conversations through online social media (89.8%). This is followed by information search (69.1%), use to receive and send email (66.6%), use to read electronic books (66.1%), and watch video on YouTube (65.4%). They spend 31.8 hours per week on the Internet, which is 4.5 hours per day.

When considering the role of new media (Furlong, 1989; Lawhon, Ennis, & Lawhon, 1996; White et al., 1999, as cited in Kamjohn Louiyapong, 2010), it could be concluded as follows:

1) Internet is a media that results in good mental benefits for the elderly. It makes them feel they belong and not isolated. They can form groups through the Internet and it becomes the channel for social support.

2) The Internet enables the elderly to become enthusiastic communicators. This is because it is a media that makes it easy to search for various information such as health, education, and entertainment. In this case Wright and Query (2004) added that the Internet is a media that enables weak-tie networks, wherein members are not that close. Therefore, they did not have to reveal much about themselves. As a result, the elderly can search for various information they would want without revealing all about themselves. They could discuss sex but they also have to be careful of fraud.

3) It is the space where the elderly can communicate their knowledge and exchange their emotions and experiences with people of the next generation. They are in the position of the source, which is different from the case of mass media, where they can only be receivers. Thus, the Internet is the media that helps to develop the life of the elderly.

In this communications technology era where change happens rapidly, communications technology has become an important part in daily life even for the elderly. For them being able to adapt is an important issue for society to study. There are many studies regarding the use of new media in particular the Internet and online media. The use of communications technology and the Internet could be used to promote physical and mental health for the elderly in many ways. For instance, it could be use for regular communications such as talking with family members and

family. The research conducted by Casado-Muñoz et al. (2015) in the Media Education Research examined the elderly in Spain, titled, "Active Aging and Access to Technology - An Evolving Empirical Study. It was a time-series conducted between 2004-2012. The Internet helps people to communicate more avoiding feelings of isolation and loneliness. The elderly, who age actively is in line with the study conducted by Gracia and Herrero (2008, as cited in Casado-Muñoz et al., 2015). It is found that the elderly, who used the Internet have better physical health. They have less mental problems and more participation than the elderly, who do not use the Internet.

2.3.2 Media Exposure of the Older Adults

Media exposure of the older adults explains that news is an important factor for decision-making in conducting various human activities. The need for news would increase when individuals want information in order to make decisions or are not sure about any particular issue. It is an influential factor that affects how individuals expose themselves to information, which are need, attitude and values, goal, capability, utility, communication style, context, experience and habit (Parama Satawatin, 2003).

Audiences choose to expose, become aware, and remember news that they are interested in, trust, beliefs, attitudes, and needs (Klapper, 1960). The process of selective attention has various stages as explained in the following section.

1) Selective Exposure – Individuals can choose to expose to media and information from various sources. This. is based on their thoughts and needs to use the information to solve their problems and fulfill their needs.

2) Selective Attention – Individuals would choose information of their interest in line with their attitude and beliefs.

3) Selective Perception – Individuals would choose to be aware or select to interpret information that they have received in the way that is in line with their attitudes and past experiences. They would also choose to remember and keep certain experiences to use in the future while trying to forget the parts they choose not to remember.

Receivers (audiences) could choose information that is in line with their role and situation in their social context. Communication behaviors of individuals, differences in the individuals' status or differences in psychological situation results from selective processes of the message receivers.

The measurement of mass media exposure has been explained by McLeod and O'Keefe (1972). It could be categorized into two indicators as follows:

1) Measured from time spent using media

2) Measured from frequency in using media

This could be measured as the time spent using media. There are many factors that could cause errors in the answers such interest of the receivers and the free time that the receivers have. Therefore, oftentimes the measurement would be frequency in using media such as the frequency in watching television programs.

Information from the US Senate's Special Committee on Aging 2000 (Yoon & Cole, 2008, as cited in Chananya Pekanan, 2013, p. 22) revealed that 58% of older adults aged 50-64 years. About 22% of older adults aged over 65 years start to become Internet users. In addition, Gilly and Ziethamal (1985, as cited in Chananya Pekanan, 2013, p. 22). It is found that elderly consumers are exposed to information about innovation in the same way as younger consumers.

In Thailand the Thailand Internet User Profile 2016 revealed that the most popular 5 activities online of Baby Boomers (people born between 1946-1964). Ranked first is to communicate through online social media (89.8%), followed by information search (69.1%), use for receiving and sending E-mail (66.6%), use to read electronic books (66.1%), and watching YouTube videos (65.4%), respectively. They spend an average of 31.8 hours per week online or 4.5 hours per day.

From the related concepts and theories regarding older adults, when the elderly get older, their body would deteriorate and become weaker becoming mentally unstable (Napaporn Hawanon, & Teerawan Wattananothai, 2009, pp. 10-11; Pranom Otkanon, 2011, pp. 11-24). In terms of the health situation of the elderly, it is found that more Thai older adults have congenial diseases such as diabetes, high blood pressure, and kidney failure. These illnesses could lead to disabilities or death, which could be crippling in terms of health for the elderly (Foundation of Thai Gerontology Research and Development Institute, 2011, p. 25). Thus, health is an indicator of the

quality of life of the elderly. For older adults to have good health, it is dependent on many factors and conditions. Online media is the space to exchange information, emotions, and experiences for the elderly. They are particularly interested in health information. This is because the changes in the body and mind occur as part of the aging process. Online media is one of the sources for health information that serves the needs of the elderly. It results in positive physical and mental health of the elderly. However, the online world has a large variety of information that changes very quickly. Consequently, this might lead the elderly, who are not media literate, to misunderstand. They might even use the information in the wrong way or might even be fooled and become victims of fraud. This would eventually lead to physical and mental damages. In this study, the researcher is dedicated to examine the use of online health media among the elderly. The focus is on the exploration of how the Thai elderly today have health media literacy in a variety of ways in the online world and the level of that literacy.

2.4 Lifestyle

Lifestyle is part of psychology and reason that often results from living patterns that reflect the characteristics of the receiver. It could be used to explain various behaviors that are detailed. It is more accurate than market segmentation based on demographics. The way humans stay together in groups, each of which have their groups and criteria that everyone in the group have to follow. Thus, all the members of the group have to act in the same way. In addition, social status and cultural behaviors of individuals that could be developed as the pattern for living. This leads to consumption patterns used in society, which is termed as lifestyle (Adul Jaturongkul, 1996, p. 277).

Assael (1995, p. 384) has defined lifestyle as the pattern of living that can be observed from the time spent doing activities, giving importance to certain issues, and thoughts about themselves and the environment. Engel, Blackwell, and Miniard (1993, pp. 368-369) gave importance to the patterns that individuals have in their lives including how they spend money and time. The lifestyle patterns are reflected in activities, interests, and opinions of people.

The study of psychology and lifestyle are directly related. They might be different in some dimensions of personality such as self-confidence and ability to be accepted in society. This reflects how information regarding consumption would be more detailed (Gunter & Furnham, 1992). In general characteristics and patterns of lifestyle are often used interchangeably. Psychological analysis would be focused on various activities, interests, and opinions. These measurement tools would comprise of questions that are about the level of agreement or disagreement that is expressed. There are three dimensions of this definition as explained in the following section (Antonides & Van Raaij, 1998).

Activities determine the lifestyle, which include how consumers spend their time, what they do, their hobbies, conversation topics, sports, and frequency of shopping, how often they go, activities during holidays, travel, meeting with friends, meeting with relatives, gardening, and car washing.

Interests determine the desire to understand and learn various things. It is the satisfaction and giving importance to things that are part of the lifestyle. It is the indicator of activities that consumers like. This includes activities like reading up on their interests as well as conversing about those topics. The media is usually segmented to suit the interest of consumers such as travel, music, politics, and sports.

Opinions are the expressions based on the thoughts and values of individuals as well as the environment such as their thoughts about certain situations or phenomena. This includes products, government, politicians, nation, newspaper, magazines, or even social media. Opinions are related with objectives such as the opinions people have about the minimal wage.

The measurement of lifestyle by using the AIOs (Activities, Interests, and Opinions) could be applied to large number of examples. For instance, AIOs and demographics could be applied to lifestyle as presented in Figure 2.1.

LIFE STYLE DIMENSIONS

ACTIVITIES	INTERESTS	OPINIONS	DEMOGRAPHICS
Work	Family	Themselves	Age
Hobbies	Home	Social issues	Education
Social events	Job	Politics	Income
Vacation	Community	Business	Occupation
Entertainment	Recreation	Economics	Family size
Club membership	Fashion	Education	Dwelling
Community	Food	Products	Geography
Shopping	Media	Future	City size
Sports	Achievements	Culture	Stage in life cycle

Figure 2.4 AIO Categories of Lifestyle Studies
Source: Plummer (1974, p. 34).

Using lifestyle variables to study the behaviors expressed by the audience is not just beneficial for advertising only. However, it is also beneficial for examining communications as well. Usually mass communication studies examine the audiences using external variables from the field of socio-psychology. The lifestyle studies is the in-depth analysis that are inherent in the audiences (Rungrudee Honarak, 1998).

In Thailand Lertying Hirunro (2002, pp. 118-119) conducted the study titled, "Lifestyle, Media Exposure Behavior, and Consumption Behavior of Older Adults in Bangkok" using AIOs and found that the elderly could be categorized into 8 groups as explained in the following section.

1) Conservative lifestyle – They have the same thinking about themselves and society in a positive way. They think that no one is too old to learn and believe that the Thai economy would be better. Although there are problems in the marriage, they should not divorce. They comply with tradition in society such as believing that children should take care of their parents or should not have sex before getting married because it is a bad thing. They view aging as a natural process. Age is only a number. They work hard even after they have retired giving importance to their work and loving their family. They spend time with their family and do not one to be alone.

2) Active lifestyle – This group like to watch, read, and meet people. They like festivities and entertainment such as dancing, singing, parties, enjoying the night scene, watching movies, and listening to music. They like to use media such as

watching TV, movies in theaters, reading newspapers, magazines, playing on the Internet and computer. This group likes to meet people and their friends. They like to travel on holidays and do not like to stay home idly. They prefer going outside. They are the elderly, who are enthusiastic and do not want to stay idle.

3) Progressive and Challenging lifestyle – This group of older adults have modern thinking. They are the elderly of the IT Era. They are interested in technology with no fear in learning new things such as using computers or the Internet. This group likes challenges that are in line with new things. They do not like to do things the conventional way. They follow fashion and like to travel upcountry on weekends.

4) Happy lifestyle – This is a lifestyle, where people are satisfied with their age. They do not feel that being old is a bad thing. They are positive about being old thinking that it is the age that has the highest freedom. This group accepts the reality of life and are ready to deal with illness and death. They do not feel that they have been abandoned and are not afraid to live in the home for the elderly. These people do not alienate themselves from society. They agree with what most people think in society. This people believe in doing what is right for instance doing good would result in good, while doing bad would result in bad. They are against the use of drugs and love Thai culture and arts.

5) Caring lifestyle – This group likes to take care of others. They like to take care of their grand children or pets to alleviate the loneliness. This group are involved in jobs that require them to take care of themselves such as exercising or playing sports. They regularly check their health, take supplements, choose to eat food that is good for their health, and are always caring for themselves.

6) Religious lifestyle – This group live their life with strong faith in religion. They hold on to religion and join activities related to religion such as reading religious books and going to the temple. This group of people think that religion is still important. They use dharma as the guide for living their lives.

7) Home maker lifestyle – This group spends most of their time at home. They love homemaking and like their home neat and tidy. They like to do activities in the home such as cooking, stitching, and crafts.

8) Pessimistic lifestyle – This group are pessimistic. They view being old in a negative way believing that the family does not give much importance to the elderly. This group thinks that the elderly are often stubborn. They view themselves in a negative way. These people are not interested in news and politics nor learning new things.

Ten years later Chananya Pekanan (2013, pp. 109-115) conducted the study titled, "Lifestyle, Media Exposure, and Innovation Acceptance of Older Adults". The elderly have different lifestyles and can be categorized in 10 groups as explained in the following section.

1) The modish – This group are the elderly in the city, who are modern and ready to keep up to date with the changes. They use the computer, Internet, stocks, and investment funds. This group is interested and have positive feelings towards technology. They like to use mobile phones and are ready to learn new things all the time. This group is always following the news from television, newspaper, or magazine. They usually drove around themselves. This group like to spend their time out of their home such as eating meals out, shopping, or buying things at department stores. They also like to travel upcountry and abroad for new experiences for themselves. If given the chance, they would like to travel around the world.

2) The lively – This group live an enthusiastic life. They like to do things in their own lives so they won't be too idle. When compared to people of the same age group, they have more activities. Although, they like meeting their friends, this group are still interested in dhamma and like to pray, go to the temple to listen to sermons, meditate, and make merit. In addition, this elderly group care about their health and take good care of themselves. They eat fruits and vegetables avoiding meat. This group regularly exercises and meet their doctors. They also like to travel with their family and spend time with their children on weekends. Also, they give importance to various celebrations. Although, they can adapt themselves well to the environment, this elderly group like to stay in their comfort zone and avoid various risks in their lives.

3) The compassionate are those who live their lives to the elderly stage by depending on themselves. They do not rely on the people around them as much because they believe that money is still always the most important issue. This group

believe that they should depend on themselves therefore, they see the necessity to have life and health insurance. They take food supplements because it would keep them emotionally happy and physically healthy. Also, they can accept that one day they would have to live at a nursing home. In addition, they view Thai society with worry and would like Thailand to have public infrastructure as well as a good insurance system for the elderly. This group also believes that Thai education should be improved. They also believe that climate change is an important problem that needs to be remedied. This group cares deeply for how people around them think about them. Moreover, they think having a mobile phone keeps them up to date.

4) The energetics – This group spend their free time in beneficial ways by working in crafts. They also like to take additional jobs regularly. In addition, they like to join activities with a lot of people such as community activities, volunteering for projects, joining club activities, and meet with their friends. They also like to sing karaoke and join parties such as playing cards as well as spending the night out. This group still enjoys living their life out of the home. They watch movies in the theater, go to parks, spend their vacation up country and are happy to watch TV or VCD and listening to music or radio as well.

5) The earnest – This group worry about the things around them. They think that the country is going backward economically. This group thinks that the Thai economy is not strong and they think that there is a huge gap between the rich and the poor. They think that the Thais are not as harmonious as they once were and that Thai politics is boring. This group also feel that Thai dramas are rotten while the media has an impact on behavioral and mental violence among consumers. Moreover, they think that Thai mass media is not trustworthy. In addition, this group are quite pessimistic thinking that most of the people do not care about the elderly and ignore them. They feel that death is something to be feared.

6) The day seizers – This group like to live life to the fullest as they have done so in their youth. They like to smoke and drink while living life with risk and challenges. They also like to eat whatever they want such as fast foods, sweets, and soft drinks regularly.

7) The stay-home – This group are home makers, who stay home and cook. They rather do not go out anywhere and like to follow up on the news. This

group follow political news by reading newspaper regularly and join political activities. In addition, they like to watch television and listen to music to reduce their loneliness and boredom.

8) The chillax grandparents – This group likes to spend their free time taking care of their grandchildren. They take care the various things around the house such as gardening and pets. This group would help care for the grandchildren and decorate the home. In addition, they need time to watch plays and concerts occasionally.

9) The exuberant – This group are attached to capitalism. They think that foreign products have higher quality than Thai products. This group thinks that expensive products have better quality than cheaper ones. They live life accepting risk. It can be observed that this group think that having surgery is normal and do not think that investment is risky or dangerous.

10) The conventional – This group are conservative. They are attached to tradition and old Thai ways. This group feel that Korean popular culture is something that cannot be accepted. They believe that Thai teens act in a non-sense manner. They also believe that having sex before being married is damaging. This group believe that Thais should learn to discern things properly.

In this study, the researcher has decided to use AIOs lifestyle factors as tools in the research. This is because the researcher believes that segmenting the elderly based on the similar characteristics is more effective than using demographics. This is because today spending time with the elderly could be categorized in many ways. The use of gender or age as the criteria to segment the elderly would not result in clear enough analysis. In addition, this study would emphasize the lifestyle of the elderly in terms of health issues. Consequently, the lifestyle factors relationship to health media literacy would be examined.

2.5 Diffusion and Adoption of Innovation Theory

Online literacy among older adults should start with the elderly accepting the use of communication technology that is rapidly changing. The main obstacles to technology adoption among the elderly explained in Gatto and Tak (2008, as cited in Chew, 2015, p. 327) as follows:

1) Use of technology among the elderly have limitations because of their physical and emotional deterioration. This includes chronic diseases. Their eyes, ears, and memory starts to deteriorate.

2) They are concerned about their privacy and safety.

3) They spend on technology and update it.

2.5.1 Meaning of Innovation Diffusion

The process of innovation diffusion and adoption has been used to explain the behavior of the target. The Diffusion and Adoption Innovation proposed by Rogers and Shoemaker explained 2 processes as presented in the following section.

1) Diffusion of Innovation

Diffusion of innovation is defined as the process wherein an innovation is diffused or reaches the target to the point that the majority accept this innovation for their use. This process of innovation diffusion to the target has time as its most important component.

Thus, it can be observed that innovation diffusion has to be prepared and planned in advance. The innovation spread has factors to be determined such as the target in order to elicit the acceptance of the innovation based on the objectives.

2) Adoption of Innovation

The adoption of innovation is defined as the process wherein the target acknowledge, consider, reject or practice/adopt a certain innovation. This is known as the innovation-decision process, which has five stages as follows:

(1) Knowledge stage – The receiver of the innovation would be receiving knowledge or would search for additional information about that particular innovation.

(2) Persuasion stage – The receiver of the innovation show their interest and have a more positive attitude towards the innovation with a tendency to agree more to the innovation.

(3) Decision-making stage – The receiver of the innovation has to consider the pros and cons before making the decision to adopt or not to adopt the innovation.

(4) Implementation stage – The receiver of the innovation uses the innovation.

(5) Confirmation stage – The receiver of the innovation would use the innovation after using the innovation for the first time.

Factors that have an influence on the innovation diffusion process.

1) Innovation
2) Communication channels
3) Time
4) Social system
5) Adoption

There are previous research works that have revealed that the elderly would accept the technology that is suitable and there won't be any problems. Family and friends play an important role in stimulating and providing moral support for using technology. The study also found that technology acceptance among the elderly aged over 65 years increased Internet use to 59%. In 2013 (Gatto & Tak, 2008, as cited in Chew, 2015, p. 327). In the same vein the elderly in Thailand data from the Economic Intelligence Center (EIC) of the Siam Commercial Bank indicated that the number of Internet users aged over 60 years has increased over 30% over the 2009 – 2013. When compared to other age groups that have a growth rate of 10% per year. About 30% of the elderly use social media and 55% of the them said that they were willing to use new technology.

It can be seen that the more of the elderly are accepting the use of technology. Exposure to the Internet or online media is something close to the elderly. As a result, of the large amount of information in the online world, there is both benefit and harm to the elderly. As a result, media literacy is important in creating protection for the elderly.

2.6 Uses and Gratification Theory

Katz (1959) proposed an explanation of this theory by combining relevant research about media. It is found that audiences have the motivation to use media differently. The researcher explained the research paradigm to communicate differently from the traditional studies, what do media do to the people. This would be changed to a new line of questioning, which is what do people do with the media. Moreover, audiences have a role in determining what news to be considered. They are active audiences, who make decisions in which media to use and what they use it for. This theory has the following assumptions (Katz, Gurevitch, & Haas, 1973).

1) The audience are active and have clear intent on choosing and using the media to achieve gratification

2) The media compete with other resources of satisfaction

3) People have enough self-awareness of their media use, interests, and motives.

In addition, Katz et al. (1973, as cited in Pira Chirasopone, 2014, pp. 12-86) had drawn 5 social and psychological needs in using media as follows:

1) Cognitive needs – Need for news, information, thoughts, and understanding

2) Affective needs – Need for feelings, entertainment, and recreation

3) Personal integrative needs – Need to connect, create trust, interest, security, and personal status

4) Social integrative needs – Need to create confidence in having relationships with family, friends, and others in society.

5) Tension release needs – Need to avoid and reduce tension as well as other problems. They look for entertainment in the mass media to reduce stress.

Orchard, Fullwood, Galbraith, and Morris (2014, p. 389) indicated that "media audiences have the objective to use and seek satisfaction serving their needs". They use media in order to serve their specific needs based on their "personal psychological and social factors". It is the same as using online media, which could be generated by other users. The choice to use this information would differ depending on the needs and situations of the target individuals. Consequently, the satisfaction to search and

receive something from the media would differ among individuals. Sundar and Limperos (2013, p. 504) explained that those who used the Internet tend to be enthusiastic people called users and audiences. In addition, Weiyan (2015, p. 77) explained that the choice to use media has objective, goal, and motivation to serve the needs of the user. This could include social and psychological needs. The goals are not stable and can change depending on the situation of the individual, environmental context, and life stage. This could be explained based on the Uses and Gratifications framework in social media (Cutler & Danowski, 1980; Stafford & Schkade, 2004; Gan, 2018, as cited in Johnson, 2021).

**Gratifications Sought
(Needs or Motives)**

Information seeking Information sharing Surveillance/knowledge about others	Convenience utility Pass time Relaxation Entertainment	Social interaction Communicatory utility Expressions of opinions	Showing concern Encouraging others Expressing friendship Helping others
Content Gratification	Process Gratification	Social Gratification	Affection Gratification

Gratifications Obtained

Figure 2.5 A Conceptual Model of Uses and Gratification in Social Media
Source: Johnson (2021, p. 32).

Consequently, Uses and Gratification Theory is used to explain how individuals use media to serve their idiosyncratic needs. In this research the researcher used this theory to explain how the elderly would choose to use Online media to serve their needs.

2.7 Related Research

Adul Pianrungroj (2000) conducted the study, titled "Examination of the Framework of Media Literacy for Mass Media Research". The study analyzed content from media literacy research between 1990-1999. The researchers also conducted an in-depth interview of eight mass media academics, practitioners, and educators. The research revealed that media literacy results from understanding and skill in using media, which could be categorized into two levels. Basic media literacy and high-level media literacy or criticism of media. Basic media literacy is defined as the knowledge and understanding about media that enables the ability to categorize the media content. The user has self-awareness of their own media use behavior. The skill in using various types of media is the understanding of the media content as intended by the sender. High-level media literacy is defined as the knowledge and understanding about 1) media work process; 2) knowledge about economic and political context; 3) understanding how the media perceives the audiences and who are the target group; 4) understanding of the short-term and long-term results to the individual and society in terms of knowledge, attitude, behavior, and psychology as well as critical skills such as 1) can analyze the objective of the sender and hidden meanings; 2) can separate facts from opinions in the messages; and 3) can evaluate the trustworthiness of the media content. Media literacy could be further categorized into four dimensions, which are knowledge and understanding dimension, aesthetics dimension, emotional dimension, and ethical dimension.

Chananya Pekanan (2013) conducted the study, "Lifestyle, Media Exposure, and Innovation Adoption among the Elderly". Data was collected from 400 elderly aged over 60 years both male and female in Bangkok. The research revealed that their lifestyles could be categorized into 10 groups, which are 1) the modish; 2) the lively; 3) the compassionate; 4) the energetics; 5) the earnest; 6) the day seizers; 7) the stay-home; 8) the chillax grandparents; 9) the exuberant; and 10) the conventional. It is found that older consumers prefer traditional, which are television and newspaper. They use new media at a low level. In addition, they also have a low level of innovation acceptance. There are only 2 lifestyle types, which are the lively and earnest that accept innovation.

Wannarat Rattanawarang (2016) conducted the study, "Internet Behavior Use for Health Information of the Elderly in Bangkok". The study examined the elderly aged over 60 years. It is found that most of the respondents are women (61.6%) aged between 60-64 years. The most found health problem is diabetes. Most of the elderly search for health information from doctors. The media channel that the elderly trusted the most is doctors. Most of the elderly use the Internet 1-2 hours for 2-3 days a week. A majority of the elderly are satisfied with using the Internet. They feel that 1) Using the Internet helps them to stay abreast of the events; 2) In terms of health information most of the elderly search for basic information about diseases and illnesses; and 3) frequency of health information search. Demographics factors that can jointly predict information health search on the Internet is 7.4% (p < 0.5). Most of the health problems today, satisfaction in using the Internet jointly predict the use of the Internet to search for health information 4.3% (p < 0.5).

Kantapon Buntadthong (2015) conducted the study titled, "Social Network Usage Behavior and Satisfaction of the Older Adults in Bangkok". The respondents for the study were older adults aged over 55 years both male and female. This included civil servants, who were going to retire at the age of 60 years and those, who are applying for early retirement. The data was collected from 400 respondents living in Bangkok. It was found that 1) Older adults have differing average income and have different levels of satisfaction in using online social media at the significance level of 0.05. The analysis of the satisfaction in using online social media is at a high level. When considering each of the items it is found that the item that the item with the highest satisfaction is "Conversation with friends and those whom they wish to communicate with (highly satisfied)". This is followed by "Easy to use and not complicated (highly satisfied)". The third rank is "Flexibility or speed in communicating (highly satisfied)". The lowest rank is "Expressing their opinions in their various news groups (moderately satisfied) accordingly.

Pattamas Petsom (2015) conducted the study, "Health Behaviors of the Thai Older Adults" by using data from the survey of the Thai elderly population in 2011. The sample size was 16,660. The research findings indicate that the average score for health behavior is 8.95 points from 12. It is also found that the elderly, who have the desired healthy behaviors number only 12.3%. The multi-regression analysis revealed

that the factors that are related to health behaviors among the elderly that is significant at the 0.05 comprise of gender, marital status, education level, occupation, income, sufficiency of income, attitude towards aging, self-health evaluation, ability to conduct daily activities, mental health condition, number of congenital diseases, care by health care providers, condition of the household, and geographic location of household. All of these factors have a positive relationship to the health behaviors of the elderly except the number of congenital diseases, which has a negative relationship with health behaviors.

Samarn Loipha (2014) conducted the study titled, "Thai Older Adults Behavior of Internet Use". The objective of the study is to examine the present condition of using the Internet among the elderly and to survey the opinions they have about the factors related to using the Internet. The study was conducted with 385 respondents living in the Khon Kaen city district, Khon Kaen province. The survey was conducted using a questionnaire to collect data. The research findings indicate that most of the elderly do not use the Internet (80.7%). There are more female elderly than male, who do not use the Internet. While the elderly aged over 70 years do not use the Internet at all, the people who do use the Internet spend about 30 minutes. The main objective of using the Internet is for entertainment (57.6%). This is followed by access to information (51.5%). The Internet activities the elderly engage in include entertainment such as watching videos (60.6%). This is followed by information search (57.6%). The problems they faced using the Internet include (1) aching in the eye; (2) lack the technique and skills to search for information; and (3) no computer at home. The examination of the opinions that the elderly hold in using the Internet revealed the factors that impact Internet use. This includes expertise in using the mouse and keyboard, experience in using the Internet, desire to learn new things all the time, and suitable Internet costs. When comparing the opinions of male and female elderly and those of different age groups, it is found that there is no difference in the aforementioned factors.

Chew (2015) conducted the study titled, "Promoting Health among Older Adults via Online Literacy", which analyzed data from a nationally representative Health Information National Trends Survey HINTS 2012. Online Literacy has 6 components which are 1) basic literacy, 2) information literacy, 3) science literacy, 4)

media literacy, 5) computer literacy, and 6) health literacy. Statistical results reveal that the elderly aged over 65 years have higher Online literacy than the results of their health measured from BMI ranking and reducing the number of visitation with doctors. This is because they can better care for their health and increase media literacy through training.

Patchanee Cheyjunya (2016) conducted the study titled, "Type of Usage and Factors that Impact the use of Communications Technology among Thai Older Adults". This study utilized qualitative methodology. The researcher conducted focus groups and in-depth interviews of 35 older adults defined as digital-minded elderly. This was taken from the factor analysis in the quantitative study. The research findings indicate that 1) type of communication technology usage of the elderly can be categorized into 4 categories, which are (1) create new modern identity; (2) develop one's potential; (3) interact with others in their family and their groups of friends; and (4) use during free time or for relaxation after they have finished their work. 2) The second factor included internal and external factors that impact the usage of communications technology of older adults. There are five factors, which are (1) original skill and experiences of the elderly in using communications technology; (2) characteristics of information use related to the physical and mental health; (3) concern over doing financial transactions; (4) ability to adapt communications technology and external factors; and (5) influence of usage among close acquaintances. 3) The third is the result of communications technology usage in the daily life of older adults, which are (1) knowledge from information search; (2) results in terms of self awareness potential in learning; and (3) results in terms of interpersonal relationships with family and friends.

Nattawadee Boonwattanopas (2016) conducted the study titled, "Using Online Social Media and Health Media Literacy among Youths in Phuket City District. There were a total of 465 respondents, who answered the questionnaire. Most of them used the Internet everyday going to sites such Facebook and Line. The most searched content is using information technology to care for good health. This is followed by using medicine for treatment. Overall, the questionnaire revealed a high level of health media literacy on average. Female students have a higher average health media

literacy than male students at a significant level. It is found that students, who have different levels of education have different media literacy at a significant level.

Kitsanaporn Tipkanjanaraykha, Siritorn Yingrengreung, Jantima Kheokao, Kayarat Ubolwan, Netiya Jaemtim and Woranart Promsuan (2017) conducted the study titled, "Online Information Search Behavior and Social Media Use of Older Adults Based on Health Literacy Level". The study examined 1,269 respondents in line with the proportion of the population in every region. The research findings indicate that the elderly have a good level of personal health awareness. Health information search online is at a low level. The three most searched for health issues are information about using medicine to treat illness, healthy lifestyles, and ways to treat illness. In addition, it is found that health information that the elderly never searched online are legal information, regulations, and criteria regarding health conditions.

Manassinee Boonmeesrisa-nga and Mintra Sodchuen (2017) conducted the study titled, "Social Media Use Patterns of Older Adults in Thai Society: Case Study of Bangkok. It is a qualitative research utilizing in-depth interview of 15 informants of the elderly aged over 60 years. There were 7 male and 8 female informants. The objective of the study is to examine social media usage among the elderly, problems in learning, limitations of social media, and the importance of using social media among the elderly. The research findings indicate that social media help the elderly reduce the gap in their relationship with their family. The problems and obstacles in learning to use social media among the elderly is the lack of skills and experiences. They are not capable in solving the problems that happen while using social media on their own. They lack the understanding of the system and operation stages in social media. In addition, they also found that social media usage among the elderly included audio, image, and video more than text messages. This is because sending images or videos is easier and not complicated.

Lee, Kim, and Beum (2020) conducted the study titled, "Factors affecting information and communication technology use and eHealth literacy among older adults in the US and South Korea". It is a study that collected data from 113 Koreans residing in the US and 104 in Korea. The research findings indicate that Online literacy in both groups are at a high level. The factors that impact Online literacy

include education level and confidence in using ICT. In both countries ICT is used as a source for online media searches with a variety of information for the elderly with low income to deal with their health problems and keep their social relations. Thus, it is necessary to have additional services to assist the elderly so that they would be more participative with technology in order to utilize ICT to its highest benefit.

Lee and Maher (2021) conducted the study titled, "Factors Affecting the Initial Engagement of Older Adults in the Use of Interactive Technology", which examined participation of the elderly in adopting interactive technologies in order to understand the behavior related to technology use of the elderly through focus groups, in-depth interviews, and diary study. It was found that the elderly are more aware about digital. However, most of the elderly are not capable of starting to use technology on their own without assistance. They might suffer from technophobia; therefore, the elderly might not have much chance to try new technology. Consequently, it is not possible to ignore the obstacles for older adults to start using technology. Thus, there should be more research work on how to deal with these obstacles.

Summary of Relevant Studies

From the research work discussed in the previous section, the researcher observed the relationship between Online media literacy among Thai elderly. It was also found that the majority of the behaviors of the elderly in using online media was used to help them keep abreast of the news and entertainment. They also use it to communicate with others. It is also found that they use online media to reduce the gaps in their relationship with their family. The elderly lacked skills and experiences in using online media, thus, it is necessary to provide basic assistance because some of them might have technophobia. In addition, it is also found that the elderly who used online social media used audio, images, and video more than text. This is because image or video is easier and not complicated. In the search for health information most of the issues are about using medicine to treat diseases, healthy lifestyle, and ways to treat illnesses. In addition, it is found that the health information that is not searched online include legal information, regulations, and criteria regarding health conditions. Only some groups of the elderly that accept using online media. It is also found that some of the elderly are enthusiastic and are determined in

leading their lives. In terms of Online literacy, it is found that factors impacting Online literacy among the elderly is education and confidence in using social media.

CHAPTER 3

RESEARCH METHODOLOGY

The study titled, "Online Health Media Literacy for Thai Older Adults" is a mixed method research, which utilized both quantitative and qualitative research methodologies. Survey research was used to collect quantitative data with a questionnaire from respondents aged between 50-69 years. Data about lifestyle, Online health media exposure, behaviors after Online health media exposure, and Online health literacy of the elderly were collected. The survey yielded a broad overview of the aforementioned research topics. The qualitative study provided more in-depth knowledge about the behavior after Online health media exposure by using in-depth interview for data collection as explained in the following section.

3.1 Population and Sampling Frame

The population of this study are the elderly of all genders aged between 50-69 years, who have been exposed to Online health media. The selection of this age group is because the older adults aged between 60-69 years are considered to be in the initial stages of being elderly. Those between 50-59 years are in the age where there are both physical and mental changes that lead to the entry into the initial stages of being elderly. Therefore, they need to study how to use online media in order to access health information. The elderly in Thailand have just started to accept and use online media. These two groups of elderly have the potential to learn and have the opportunity to use online media more than those elderly in other age groups. However, this study cannot discern the population number of this group.

3.1.1 Sampling Methodology for the Quantitative Study

The National Statistics Office website (National Statistical Office, 2015) revealed that there are 13,538,659 elderly in Thailand in 2014. However, this study

has defined that the sampling frame are the elderly, who have been exposed to Online health media. As a result, it is not possible to determine the population size. Thus, the quantitative data collection utilizing the survey method determined that sample size by using the formula that does not require knowing the exact size of the population (Cochran, 1953) at the confidence interval of 95% with an error of 5% as follows:

$$n = \frac{P(1-P)(Z)^2}{e^2}$$

n = sample size

P = desired sample percentage

e = sampling error

Z = confidence level 95%, which is 1.96

Use in formula $\frac{(0.5)(1-0.5)(1.96)^2}{0.0.5^2}$

n = 384.16 or equal to 384 respondents

Using the formula yielded 384 respondents, however to reduce the error, the researcher collected data from 404 respondents. The questionnaire was used to collect data from 5 geographic areas-Bangkok, the northern region, the central region, the northeastern region, and the south.

The sampling methodology used was accidental sampling by collecting data at community areas such as school for the elderly, offices, government center, and community center in order to reach the most varied types of elderly. In addition, online data collection was used through the website link https://docs.google.com that was shared on social media such as Line and Facebook. The data was collected between May 2019-April 2020.

3.1.2 Sampling for the Qualitative Study

Data was collected for the qualitative study utilizing the in-depth interview method from elderly respondents aged between 50-69 years, who have been exposed

on Online health media. The data was collected across 5 regions, which are the north, central region, south, northeastern, and Bangkok. The researcher has a criteria in selecting respondents, which is exposure on Online health media with no criteria regarding how long they have been exposed to Online health media. In addition, there were limitations in the time spent for the data collection. As a result, the researcher used the snow ball sampling to connect to the elderly respondents, who knew each other. This was done until there was sufficient in-depth information from 28 informants.

3.2 Data Collection Methodology

3.2.1 Quantitative Data Collection Methodology

1) Secondary Data was collected from textbooks, documents, research articles, theories, and related research in order to determine the scope of the study and create the research tool that would answer all of the research goals.

2) Primary Data was used to develop the questionnaire in order to determine the scope and content of the study in order to better clarify the study based on the research goals.

3) Use the data to develop the questionnaire

4) The questionnaire that has been developed would be tested for content validity by consulting an expert (Dissertation Supervisor), who examined the questionnaire and made modifications for ease of reading and understanding in line with the research goals.

5) The questionnaire was modified based on the suggestions given and pretested on 30 target respondents.

6) The questionnaire that was collected was tested for reliability. The Cronbach Alpha-coefficient was more than the criteria of 0.7. The results reported in Table 1.1 show Cronbach Alpha-coefficient value of .939, which shows that the questionnaire has high reliability. The Cronbach Alpha-coefficient for each of the variables are also presented in Table 3.1.

Table 3.1 Cronbach Alpha-coefficient of Each Variable

Variable	No. of Items	Cronbach's Alpha-coefficient
Lifestyle	15	.782
Media Exposure and Online Health	42	.777
Online Health Literacy	65	.922

3.2.2 Qualitative Research Data Collection

1) Secondary Data was collected from textbooks, documents, research articles, theories, and related research in order to determine the scope of the study and create the research tool that would answer all of the research goals.

2) Primary Data was used to develop the questionnaire in order to determine the scope and content of the study in order to better clarify the study based on the research goals.

3) Use the data to develop the questionnaire

4) The questionnaire that has been developed would be tested for content validity by consulting an expert (Dissertation Supervisor), who examined the questionnaire and made modifications for the reliability of the research instrument. The Methodological Triangulation was used for different tools. The in-depth interview and observation of the informants during the interview. The researcher had recorded the information and asked the informants to record the conversation.

5) The completed question guide was used to collect data from 28 target respondents.

3.2.3 Tools for Quantitative Data Collection

Tools for data collection in this study is a questionnaire that the researcher had developed from textbooks, documents, research articles, theories, and related research as well as requesting advice from experts. The questionnaire has both close-ended questions and open-ended questions. There are four sections in the questionnaire.

Part 1 Demographics of Older Adults

Part 2 Lifestyle Questions wherein the researcher has developed from the three components based on the AIO factors, as follows:

1) Section 1 Five questions about activities, which are work, hobbies, relaxation, entertainment, membership and community participation, and sports.

2) Section 2 Five questions about the interests, which are family, work, community, food, and media.

3) Section 3 Five questions about the attitudes towards one-self, society, and health, which include questions about one-self, social issues, business, products, and culture. The questionnaire was developed based on the AIOs lifestyle factors as follows:

LIFE STYLE DIMENSIONS			
ACTIVITIES	*INTERESTS*	*OPINIONS*	*DEMOGRAPHICS*
Work	Family	Themselves	Age
Hobbies	Home	Social issues	Education
Social events	Job	Politics	Income
Vacation	Community	Business	Occupation
Entertainment	Recreation	Economics	Family size
Club membership	Fashion	Education	Dwelling
Community	Food	Products	Geography
Shopping	Media	Future	City size
Sports	Achievements	Culture	Stage in life cycle

Figure 3.1 AIO Categories of Lifestyle Studies
Source: Plummer (1974, p. 34).

Part 3 The questionnaire about online media usage behavior and Online health media, which includes frequency in using online media, characteristics in using online media, objectives in using online media, time spend and quantity in using online media, channel in using online media, online media often used, influencers, who impact interest in Online health information, factors that influence them to seek out Online health information, type of Online health information sought out, and behavior of the elderly after exposure to Online health media.

Part 4 The questionnaire about Online health media literacy. The researcher had developed this component of media literacy questions from three components, which are access, analyze and evaluate, and use and create.

3.2.4 Tools for Qualitative Data Collection

The field study used the in-depth interview to collect data, which can be categorized in three major topics as follows:

    1) Topic 1 General information and the media usage behavior of older adults

    2) Topic 2 Online health media exposure behavior

        (1) Interest in Online health media exposure of the older adults

        (2) Behavior after exposure to Online health media.

    3) Topic 3 Online health Media Literacy of the older adults

        (1) Access

        (2) Analyze & Evaluate

    Analyze and Evaluate supplementary food advertising and information about exercise by swinging their arms.

        (3) Use & Create

3.3 Analysis and Presentation of Data

3.3.1 Analysis of Quantitative Data

    1) Initial analysis would be conducted using descriptive statistics to present frequency, percentage, average, and standard deviation to explain the demographics and Online health media exposure behavior.

    2) Factor analysis was used for data reduction purposes in order to group the factors that are related using the principal component and varimax rotation to analyze the relationship between activities, interest, and opinions. This is done in order to categorize the lifestyle of older adults.

    3) Measurement of the level of Online health media literacy. The researcher needs the respondents to demonstrate their knowledge and skills in three

dimensions, which include interpretation of the data, calculate the interval by using the formula presented as follows (Kanlaya Vanichbuncha, 2008).

$$\text{Intervals} = \frac{\text{Highest Value} - \text{Lowest Value}}{\text{Number of Levels}}$$

$$= \frac{5 - 1}{5}$$

$$= 0.80$$

Intervals	Interpretation of Scores
4.24 – 5.00	Highest Level
3.43 – 4.23	High Level
2.62 – 3.42	Moderate Level
1.81 – 2.61	Low Level
1.00 – 1.80	Lowest Level

4) Hypotheses testing was done using inferential statistics

(1) Analysis to determine the Pearson's product moment correlation coefficient to find the relationship between the variables.

(2) Analysis to test the differences between two population groups (t-test).

(3) Analysis of Variance (ANOVA) conducted to test the differences between two population groups.

3.3.2 Data Analysis

The analysis was conducted using SPSS (Statistical Package for the Social Sciences) to calculate the desired statistics test. The results would then be subject to statistical tests for analysis and presentation of the findings.

3.3.3 Analysis of Qualitative Research Data

After the data collection based on the question guide has been completed, the researcher would organize the data from the interviews and observation of the behavior of the older adults. The researcher would analyze the various information

and analyze the overall theme based on the theories that were reviewed in Chapter 2. In addition, the findings would be used to corroborate with the quantitative research results in a systematic manner.

CHAPTER 4

QUANTITATIVE RESEARCH FINDINGS

This chapter presents the data analysis of the study titled, "Online Health Media Literacy for Thai Older Adults". The data analysis is made on the questionnaires collected from a sample size of 404 respondents. The researcher has divided the analysis and presentation of the data into six sections as follows:

4.1 Demographics Profile of Older Adults

4.2 Health Lifestyle of Older Adults

4.3 Exposure to Online Media and Online Health Media of Older Adults

4.4 Online Health Media Literacy of Older Adults

4.5 Analysis of Online Health Media of Older Adults

4.6 Relationship between Lifestyle of Older Adults and Level of Online Health Media Literacy of Older Adults

4.1 Demographics Profile of Older Adults

Study of Demographics Profile of Older Adults (Figure 4.1) – The Research Findings are presented as follows:

1) Gender

50% of the older adults are male (50%) and female (50%)

2) Age

Older adults aged between 50-69 years are categorized into two groups, which are 50-59 years (50%) and 60-69 years (50%).

3) Marital Status

Most of the older adults have married status (62.6%). This is followed by widowed at 23.8% and single (13.6%).

4) Education Level

Most older adults have less than high school education (27.7%). This is followed by those who have bachelor's degree (22%) and vocational school and master's degree at about the same numbers, 12.6% and 12.1% respectively.

5) Region of Residence

Most of the older adults live in the north region (32.4%). This is followed by central region (24.6%) and northeast region (20.6%).

6) Employment Status

Most of the older adults are still employed (64.4%) and no longer employed (35.6%).

7) Occupation

Most older adults are still employed (64.4%). The most occupation of employment is own business or commerce (33.9%). This is followed by employed and government officials and state enterprise employees at 29.7% and 17.8% respectively. The average expenditure is between 1-10,000 Baht the most (46.1%). This is followed by 10,001-20,000 Baht (23.4%) and 20,001-30,000 Baht (12%). Older adults have an average expenditure of 29,247.52 Baht. The highest expenditure is 1,200,000 Baht and the least is 2,000 Baht.

8) Residence

Most older adults live with their spouse and children at 56.2% and 50.5% respectively. There are also older adults who live with their parents (9.9%). Some live alone (7.4%) and with friends the least (0.5%).

9) Chronic Disease

Both older adults who have chronic disease and those who do not are found to be similar in numbers 53.7% and 46.3%. The chronic disease found most among older adults are diabetes, hyper tension, and cholesterol in the blood stream.

Table 4.1 Number and Percentage of Older Adults Categorized by Demographics

Demographics		Number (Respondents)	Percentage
Gender	Male	202	50.0
	Female	202	50.0
Age	50 - 59 years	202	50.0
	60 - 69 years	202	50.0
Marital Status	Married	253	62.6
	Widowed	96	23.8
	Single	55	13.6
Level of Education	Less than high school	112	27.7
	Bachelor's Degree	89	22.0
	High School/ Vocational School	75	18.6
	Higher Vocational	51	12.6
	Masters + PhD.	54	12.1
	Middle School	23	5.7
Region of Residence	North Region	132	32.4
	Central Region	100	24.6
	Northeast Region	84	20.6
	South Region	48	11.8
	Bangkok	40	9.8
Employment Status	Still Employed	260	64.4
	Not Employed	144	35.6
Occupation	Own business/ Commerce	137	33.9
	Employed	120	29.7

Demographics		Number (Respondents)	Percentage
	Government official/ employee	72	17.8
	Private company employee	44	10.9
	State enterprise employee	15	3.7
	Housewife	14	3.5
Expenditure per month	1-10,000 Baht	187	46.1
	10,001-20,000 Baht	95	23.4
	20,001-30,000 Baht	48	12.0
	50,001 Baht and above	30	7.5
	30,001-40,000 Baht	24	6.0
	40,001-50,000 Baht	20	5.0
Remark	Average monthly expenditure 29,247.52 Baht		
	Highest monthly expenditure 1,200,000 Baht		
	Lowest monthly expenditure 2,000 Baht		
Residence	Spouse	227	56.2
	Children	204	50.5
	Relatives	64	15.8
	Parents	40	9.9
	Stay alone	30	7.4
	Friends	2	0.5

Demographics		Number (Respondents)	Percentage
Chronic Disease	None	217	53.7
	Have Chronic Disease	187	46.3

4.2 Lifestyle of Older Adults

The researcher has collected data from the sample of older adults respondents nationwide regarding activities, interest, and opinions in living their daily lives. The results of the research analysis are presented as numbers and percentages in the following section.

Table 4.2 reveals that most older adults do activities such as house cleaning and caring for the garden at the high level (mean = 4.18). This is followed by surfing the Internet, exercising, and joining activities at a high level as well (mean = 3.78, 3.70, and 3.66 respectively). Hobbies are favored by older adults at a moderate level (mean = 3.04).

Table 4.3 reveals that most older adults have the interest to care for the family and grandchildren at a high level (mean = 4.04). This is followed by interest in caring for their health, food, and nutrition, follow news in society, join various activities of the community or organizations at a high level as well (mean = 3.97, 3.63, and 3.54 respectively). In terms of business that generates income, older adults are interested at a moderate level (mean = 3.26)

Table 4.2 Percentage, Mean, and Standard Deviation of Activities of Older Adults

Activities	Mean	Standard Deviation	Meaning
House cleaning and gardening	4.18	1.00	High Level of Activities
Surfing the Internet	3.78	1.21	High Level of Activities
Exercise/ Play sports	3.70	1.16	High Level of Activities
Join activities such as temple Communities	3.66	1.06	High Level of Activities
Hobbies such as crafts	3.04	1.14	Moderate Level of Activities
Mean	**3.67**	**1.11**	**High Level of Activities**

Table 4.3 Percentage, Mean, and Standard Deviation of Interest of Older Adults

Activities	Mean	Standard Deviation	Meaning
Take care of family members	4.18	1.00	High Interest
Take care of health and nutrition	3.78	1.21	High Interest
Follow news on social media	3.70	1.16	High Interest
Join community and organization activities	3.66	1.06	High Interest
Do business for income	3.26	1.23	Moderate Interest
Mean	**3.72**	**1.13**	**High Interest**

Table 4.4 reveals that most older adults are of the opinion that they should save money and not spend too much at a high level (mean = 3.99). This is followed by using mobile phone or Internet to have a modern look and there should be no retirement age as long as people can still work (mean of 3.48, 3.45 respectively). They

have the opinion that making online purchases might lead to risk of fraud and herbs and food supplements can improve health at a moderate level (mean of 3.40, 3.31 respectively).

Table 4.4 Percentage, Mean, and Standard Deviation of Opinions of Older Adults

Opinions	Mean	Standard Deviation	Meaning
Older adults should save money and not spend too much	3.99	0.99	Strongly Agree
Using the mobile phone or Internet creates a modern look	3.48	0.99	Strongly Agree
There should be no retirement age as long people can work	3.45	1.21	Strongly Agree
Making purchase online has a risk of fraud	3.40	1.29	Moderately Agree
Herbs or food supplements improve health	3.31	1.02	Moderately Agree
Mean	**3.53**	**1.11**	**Strongly Agree**

The researcher then subject the questions regarding activities, interests, and opinions in the lifestyle of older adults to categorize the lifestyle of older adults. The analysis was conducted using factor analysis utilizing varimax rotation. The relationship between the various and the categorization of the lifestyle of older adults into four groups can be presented as follows:

1) Those who are addicted to the Internet and follow the news

2) Those who use the mobile phone but they do not believe in online purchases and tend to spend carefully

3) Those who have income to take care of their family and trust food supplements and herbal remedies

4) Health conscious, play sports, and do activities

Group 1 Internet Addicted Follow the News

This group are older adults who are Internet addicted and follow the news through online social media.

Table 4.5 Analysis of Internet Addicted Follow the News Lifestyle Group

Type 1 Internet Addicted Follow the News	Factor Loading
Surf Internet	.822
Follow news online	.775

Group 2 Use mobile phone but do not believe in online purchases and tend to spend carefully

This group of older adults believe that using mobile phone or the Internet makes them appear modern. However, they still believe that making online purchases subjects them to risk of fraud easily. This group also prefers to save and do not spend frivolously.

Table 4.6 Analysis of the Lifestyle Group Use Mobile Phone but do not Believe in Online Purchase and Tend to Spend Carefully

Group 2 Use Mobile Phone but do not Believe in Online Purchases and Tend to Spend Carefully	Factor Loading
Making purchase online has a risk of fraud/cheating	.720
Older adults should save money and not spend too much	.630
Using the mobile phone or Internet creates a modern look	.579

Group 3 Have income to take care of their family and trust food supplements and herbal remedies

This group of older adults are interested in doing business to generate income. They take care of their family including their own health. They believe that taking herbal remedies and food supplements would make them stronger.

Analysis of the lifestyle group have income to take care of their family and trust food supplements and herbal remedies

Table 4.7 Analysis of the Lifestyle Group have Income to Take Care of their Family and Trust Food Supplements and Herbal Remedies

Group 3 Have Income to Take Care of their Family and Trust Food Supplements and Herbal Remedies	Factor Loading
Income Generation	.734
Care for Family	.642
Herbal and food supplements for stronger health	.565

Group 4 Health conscious, play sports, and do activities

This group of older adults prefer to do various types of activities such as house cleaning, gardening, and join activities. They exercise regularly including taking care of their health by being careful in food nutrition.

Table 4.8 Analysis of The Lifestyle Group Health Conscious, Play Sports, and do Activities

Group 4 Health Conscious, Play Sports, and do Activities	Factor Loading
Join various activities	.740
Exercise/play sports	.675
Clean house and tend to garden	.645
Take care of health, food, and nutrition	.526

4.3 Online Media and Online Health Media Exposure Behavior of Older Adults

4.3.1 Frequency in Using Online Media in a Week

In each week most older adults use the online media platform Line the most (mean = 4.50). This is followed by Facebook (mean = 3.30) and Youtube (mean = 3.23) respectively as presented in Table 4.9.

Table 4.9 Frequency in Using Online Media in a Week

Online Media Used	Frequency of Media Used in A Week					Total	Mean	S.D.	Meaning
	Everyday	5-6 days	3-4 days	1-2 days	Never				
Line	310	33	25	25	11	404	4.50	1.04	Use Most
	(76.7)	(6.2)	(6.2)	(8.2)	(2.7)	(100)			
Facebook	161	45	56	39	103	404	3.30	1.65	Use Most
	(39.9)	(11.1)	(13.9)	(9.7)	(25.5)	(100)			
Youtube	141	55	50	70	88	404	3.23	1.59	Use Most
	(34.9)	(13.6)	(12.4)	(17.3)	(21.8)	(100)			
Website	63	44	59	65	173	404	2.40	1.50	Moderate use
	(15.6)	(10.9)	(14.6)	(16.1)	(42.8)	(100)			
Mean							**3.36**	**1.44**	**Use Most**

4.3.2 Type of Online Media Usage

Most of the older adults prefer to use online media in the form of reading or watching the most (88.6%). This is followed by sharing, posting status, and expressing their thoughts through the use of emoticons and emojis, 41.6%, 30.7%, and 30.4% respectively. They prefer to express their opinions by writing texts the least, which is 27.0% as presented in Table 4.10.

Table 4.10 Type of Online Media Usage

Type of Online Media Usage	Number (Respondents)	Percentage
Read or watch	358	88.6
Share	168	41.6
Post status	124	30.7
Express opinion using emoji or emotion	123	30.4
Express opinion in the form of text	109	27.0

4.3.3 Objective in Using Online Media

Most older adults (77.0%) use online media to follow the news and various situations. This is followed by contacting others, for entertainment, relaxation, and searching for more information at 55.9%, 51.7%, and 50.7% respectively. Post, share, and use for work and business contact at 33.9% and 28.7% respectively. Older adults use online media to buy products and services the least at 22.0% as presented in Table 4.11.

Table 4.11 Objective in Using Online Media

Objective in Using Online Media	Number (Respondents)	Percentage
Keep up with the news and situation	311	77.0
Contact other people	226	55.9
For entertainment and relaxation	209	51.7
Search for new information	202	50.0
Post, share other information	137	33.9
Work, business, purchase products or services	116	28.7
	89	22.0

4.3.4 Daily Online Media Use

Most older adults (84.9%) use online media when they are free from their duties. There are only 13.4% who are online almost all the time. It is found that older adults who use online media before going to bed and after they wake up number 25.7% and 18.4% respectively as presented in Table 4.12.

Table 4.12 Daily Online Media Use

Daily Online Media Use	Number (Respondents)	Percentage
Free time for work	343	84.9
Before bedtime	104	25.7
After waking up	73	18.1
Almost all the time	54	13.4

4.3.5 Amount of Time Spent using Online Media Daily

Older adults use online media about 3.17 hours a day on average. The least amount of time spent is 20 minutes and the most amount of time used is 16 hours per day as presented in Table 4.13.

Table 4.13 Amount of Time Spent Using Online Media Daily

	Number (Respondents)	Least (Minutes)	Most (Hours)	Mean (Hours)
Amount of Time Spent	404	20	16	3.17

4.3.6 Online Media Channel

Most older adults use online media through their mobile phone (93.8%). This is followed by tablet and desktop computer (2.7%) and notebook is the least (0.8%) as presented in Table 4.14.

Table 4.14 Online Media Channel

Online Media Channel	Number (Respondents)	Percentage
Mobile phone	379	93.8
Tablet	11	2.7
Desktop computer	11	2.7
Notebook	3	0.8

4.3.7 Preferred Media Usage Typology

In using media most older adults prefer to read content the most (66.6%). This is followed by looking at images and watching videos (15.6% and 12.4%) respectively. Listening to sounds are the least used (5.4%) as presented in Table 4.15.

Table 4.15 Preferred Media Usage Typology

Preferred Media Usage Typology	Number (Respondents)	Percentage
Read content	269	66.6
Look at images	63	15.6
Watch videos	50	12.4
Listen to sounds	22	5.4

4.3.8 Influencers of Interest in Online Health Media

Most older adults (56.9%) believe that they are their own most influential influencer of their interest in online health media. This is followed by friends, doctors, nurses, and family members, which are 14.6%, 13.9%, and 13.4% respectively. Celebrities, singers, and emcees have the least influence on interest in online health media at 1.2% as presented in Table 4.16.

Table 4.16 Influencers of Interest in Online Health Media

Influencers of Interest in Online Health Media	Number (Respondents)	Percentage
Own self	230	56.9
Friends	59	14.6
Doctors, nurses	56	13.9
Family members	54	13.4
Celebrities, singers, emcees	5	1.2

4.3.9 Factors that Influence Exposure to Online Health Information

Factors that influence older adults' exposure to online health information the most is the need to prevent illness and take care of their health (68.1%). This is followed by exposure to online health media due to one's own illness and news of various situations at 46% and 42.6% respectively as presented in Table 4.17.

Table 4.17 Factors that Influence Exposure to Online Health Information

Factors that Influence Exposure to Online Health Information	Number (Respondents)	Percentage
Take care of their own health	275	68.1
Own illness	186	46.0
News and situations	172	42.6
Have family members who are ill	106	26.2
Convenience of online media	77	19.1

4.3.10 Type of Exposure to Online Health Media Information

Most older adults are exposed to online health media information about the knowledge and treatment of the illness they have (mean = 3.46), exercise/play sports (mean = 3.45), information about nutrition/food (mean = 3.40), and medical treatment (mean = 3.09) at a high level respectively.

Exposure to content about health food supplements herbal products (mean = 2.88), hospital/medical centers (mean = 2.72), technology equipment for health (mean = 2.71), and beauty products (mean = 2.52). Older adults are interested in this content at a moderate level as presented in Table 4.18.

Table 4.18 Mean and Standard Deviation of Exposure to Online Health Media

Health Information	Exposure to Online Health Media					Total	Mean	S.D.	Meaning
	Every day	5-6 days	3-4 days	1-2 days	Never				
Knowledge and treatment of illness that they have	101 (25.0)	96 (23.8)	115 (28.5)	70 (17.3)	22 (5.4)	404 (100)	3.46	1.19	Often
Exercise/ play sports	102 (5.2)	95 (23.5)	111 (27.5)	75 (18.6)	21 (5.2)	404 (100)	3.45	1.20	Often
Information about nutrition/ food	78 (19.3)	105 (26.0)	137 (33.9)	67 (16.6)	17 (4.2)	404 (100)	3.40	1.10	Often
Medical remedies	34 (8.4)	101 (25.0)	125 (30.9)	83 (20.5)	61 (15.1)	404 (100)	3.09	1.18	Often
Food supplements	51 (12.6)	75 (18.6)	110 (27.2)	109 (27.0)	59 (14.6)	404 (100)	2.88	1.24	Moderate
Herbal remedies	41 (10.1)	79 (19.6)	123 (30.4)	112 (27.7)	49 (12.1)	404 (100)	2.88	1.23	Moderate
Hospital/ medical facility	43 (10.6)	52 (12.9)	120 (29.7)	126 (31.2)	63 (15.6)	404 (100)	2.72	1.19	Moderate
Health equipment or technology	44 (10.9)	50 (12.4)	119 (29.5)	128 (31.7)	63 (15.6)	404 (100)	2.71	1.19	Moderate
Beauty products	41 (10.1)	51 (12.6)	91 (22.5)	115 (28.5)	106 (26.2)	404 (100)	2.52	1.12	Moderate
Mean							**3.01**	**1.18**	**Often**

4.3.11 Behavior after Exposure to Online Health Media

After exposure to online health media, most older adults would follow the recommendation that they receive. This includes exercising and eating properly (mean = 3.01), discuss and comment about the health information received with family members and friends (mean = 2.84), search for additional health information from other sources (mean = 2.69), and post status or share health information received (mean = 2.64) respectively at a moderate level.

In terms of passing along health information received to others (mean = 2.51), express their opinions in the posts' comments (mean = 2.27), purchase products or services related to the health information read or watched (mean = 2.13), and contact the seller through direct messaging (mean = 1.87), which older adults exhibit this behavior at a low level as presented in Table 4.19.

Table 4.19 Percentage, Mean, and Standard Deviation of Older Adults Behavior after Exposure to Online Health Media

Behavior After Exposure to Online Health Media	Behavior after Exposure to Online Health Media					Total	Mean	S.D.	Meaning
	Always	Often	Sometimes	Not often	Never				
Follow the recommendation from online health media such as exercise, eating good food	44 (10.9)	86 (21.3)	156 (38.6)	66 (16.3)	52 (12.9)	404 (100)	3.01	1.15	Moderate
Discuss and make comments about health information received with family members or friends	30 (7.4)	91 (22.5)	130 (32.2)	89 (22)	64 (15.8)	404 (100)	2.84	1.63	Moderate
Seek for additional health information from other media	21 (5.2)	80 (19.8)	128 (31.7)	103 (25.5)	72 (17.8)	404 (100)	2.69	1.13	Moderate
Post status or share health information received	24 (5.9)	70 (17.3)	132 (32.7)	94 (23.3)	84 (20.8)	404 (100)	2.64	1.17	Moderate
Pass on information received to others	24 (21.3)	49 (30.7)	121 (30.0)	124 (12.1)	86 (5.9)	404 (100)	2.51	1.13	Less
Write comments in the post	17 (4.2)	51 (12.6)	96 (23.8)	101 (25.0)	139 (34.4)	404 (100)	2.27	1.18	Less
Buy products and services tied to the health information read or watched	14 (3.5)	41 (10.1)	89 (22.0)	98 (24.3)	162 (40.1)	404 (100)	2.13	1.15	Less

Behavior After Exposure to Online Health Media	Behavior after Exposure to Online Health Media					Total	Mean	S.D.	Meaning
	Always	Often	Sometimes	Not often	Never				
Send Direct Messages to producer of content	9 (2.2)	25 (6.2)	79 (19.6)	81 (20.0)	210 (52.0)	404 (100)	1.87	1.07	Less
							2.49	**1.20**	**Less**

4.4 Online Health Media Literacy of Thai Older Adults

The study titled, "Online Health Media Literacy for Thai Older Adults" has divided the research into three dimensions, which are access, analyze & evaluate, and use & create. The research findings are presented in the following section.

4.4.1 Level of Online Health Media Literacy Dimension 1 Access

Table 4.20 reveals that older adults have dimension 1 access at the moderate level (mean = 3.30). Older adults know the meaning of basic medical terminology (mean = 3.71), can access desired health information through online media (mean = 3.52), and search for online health media information from various channels (mean = 3.46) respectively.

In terms of speed in searching for online health media (mean = 3.52), search for online health information that is trustworthy (mean = 3.52), search for online health information in Thai as well as other languages (mean = 3.52), examine the trustworthiness of online health media (mean = 3.52), and can search for their health privileges through online media (mean = 3.52) at the moderate level respectively.

Table 4.20 Percentage, Mean, and Standard Deviation of the Online Health Media Literacy Dimension 1 Access

Dimension 1 Access	Level of Online Health Media Literacy					Total	Mean	S.D.	Meaning
	Highest	High	Moderate	Low	Lowest				
1. Understand basic medical terminology such as taking medication before meals, which means 30 minutes prior to eating or taking 1 teaspoon means 5 cc, which is not the coffee spoon.	111 (27.5)	135 (33.4)	108 (26.7)	30 (7.4)	20 (5.0)	404 (100)	3.71	1.09	High
2. Can access desired health information through online media	80 (8.7)	153 (7.9)	104 (25.7)	32 (37.9)	35 (19.8)	404 (100)	3.52	1.15	High
3. Can search for health information from many online media channels	73 (18.1)	141 (34.9)	115 (28.5)	47 (11.6)	28 (6.9)	404 (100)	3.46	1.12	High
4. Know how to find health answers online quickly	63 (15.6)	134 (33.2)	135 (33.4)	31 (7.1)	41 (10.1)	404 (100)	3.36	1.14	Moderate
5. Know quality source for online health information and which ones are not trustworthy	58 (10.1)	117 (11.6)	141 (34.9)	47 (29.0)	41 (14.4)	404 (100)	3.26	1.15	Moderate

Dimension 1 Access	Level of Online Health Media Literacy					Total	Mean	S.D.	Meaning
	Highest	High	Moderate	Low	Lowest				
6. Search for online health information both in Thai and other languages to know, choose, and screen the correct news that is most trustworthy.	64 (15.8)	105 (26.0)	129 (31.9)	54 (13.4)	52 (12.9)	404 (100)	3.19	1.22	Moderate
7. Can find information on benefits and negative effects of the health products before consumption from online channels.	44 (10.9)	108 (26.7)	142 (35.1)	58 (14.4)	52 (12.9)	404 (100)	3.08	1.16	Moderate
8. Know how to check the trustworthiness of online health information	45 (11.1)	102 (25.2)	138 (34.2)	71 (17.6)	48 (11.9)	404 (100)	3.06	1.16	Moderate
9. Can search their own health privilege information from online media	55 (13.6)	100 (24.8)	118 (29.2)	67 (16.6)	64 (15.8)	404 (100)	3.04	1.26	Moderate
							3.30	**1.16**	**Moderate**

4.4.2 Level of Online Health Media Literacy Dimension 2 Analyze & Evaluate

Older adults can analyze and evaluate at a moderate level (mean = 2.95). They usually tell people around them to be careful in believing online health media (mean = 3.62), older adults can discern which information is news and which is advertising (mean = 3.51), and they are aware of hidden agenda in health media that they receive continuously (mean = 3.44) at a high level respectively.

In regards to self questioning when asking whether online health information was trustworthy or not (mean = 3.51), consider if the health information is interesting (mean = 3.51), always thinking that health information would have an impact in one way or another (mean = 3.51), not believing that herbal remedies or food supplements advertised online can really treat illnesses as suggested in the advertising (mean = 3.51), and observing who is the producer of the content (mean = 3.51). Older adults have a level of agreement at a moderate level respectively.

Not believing that celebrities in the herbal remedies or food supplements can give them good health if they actually consume the products (mean = 3.51). Older adults have a level of agreement at a low level as presented in Table 4.21.

Table 4.21 Percentage, Mean, and Standard Deviation of the Online Health Media Literacy Dimension 2 Analyze and Evaluate

Dimension 2 Analyze & Evaluate	Level of Online Health Media Literacy					Total	Mean	S.D.	Meaning
	Highest	High	Moderate	Low	Lowest				
1. They warn people around to be careful in believing online health media.	98 (24.3)	145 (35.9)	99 (24.5)	35 (8.7)	27 (6.7)	404 (100)	3.62	1.14	High
2. Can discern which information is news and which is advertising.	94 (23.3)	128 (31.7)	108 (26.7)	38 (9.4)	36 (8.9)	404 (100)	3.51	1.20	High
3. Aware of hidden agenda in health media that they receive continuously	73 (18.1)	141 (34.9)	111 (27.5)	48 (11.9)	31 (7.7)	404 (100)	3.44	1.14	High
4. Aware that health information would have an impact in one way or another	75 (18.6)	121 (30.0)	136 (33.7)	38 (9.4)	34 (8.4)	404 (100)	3.41	1.14	Moderate
5. Self questioning when asking whether online health information was trustworthy or not	66 (16.3)	124 (30.7)	134 (33.2)	38 (9.4)	42 (10.4)	404 (100)	3.33	1.17	Moderate
6. Consider if the health information is interesting	57 (14.1)	125 (30.9)	144 (35.6)	42 (10.4)	36 (8.9)	404 (100)	3.31	1.11	Moderate
7. Aware that health information would have an impact in one way or	60 (14.9)	128 (31.7)	128 (31.7)	52 (12.9)	36 (8.9)	404 (100)	3.31	1.14	Moderate

another

Dimension 2 Analyze & Evaluate	Level of Online Health Media Literacy						Mean	S.D.	Meaning
	Highest	High	Moderate	Low	Lowest	Total			
8. Don't believe that herbal remedies or food supplements advertised online can really treat illnesses	70 (17.3)	91 (22.5)	157 (38.9)	62 (15.3)	24 (5.9)	404 (100)	3.29	1.12	Moderate
9. When exposed to health media content observing who is the producer of the content	65 (16.1)	121 (30.0)	102 (25.2)	65 (16.1)	51 (12.6)	404 (100)	3.21	1.25	Moderate
10. Don't believe that celebrities in the herbal remedies or food supplements can give them good health if they actually consume the products	98 (24.3)	119 (29.5)	119 (29.5)	51 (12.6)	17 (4.2)	404 (100)	2.70	1.11	Less
							2.95	1.15	Moderate

4.4.3 Level of Agreement of Older Adults on Dimension 3 Use & Create

Examination of dimension 3 use & create positively, it is found that older adults have a moderate level of agreement (mean = 2.86), older adults can choose to expose themselves to online health media that is beneficial to their health (mean = 3.60), and online health information can be adapted to their health or illnesses (mean = 3.11) at a high level respectively.

They use online media to communicate about health information all the time (mean = 2.87), discuss and express their opinions when others share health information that is not trustworthy (mean = 2.67), and have the ability to create and disseminate health information that is beneficial to others online (mean = 2.47). Older adults have a moderate level of agreement respectively. They try the health recommendation or act based on their personal experience to disseminate information online at a low level (mean = 3.62) as presented in Table 4.22.

Examination of dimension 3 use & create negatively revealed that older adults have a moderate level of agreement (mean = 2.60). Older adults do not hesitate and are willing to follow health advise when family and friends send them the information (mean = 3.27). They often try and follow the health advice that is of interest in the social media with no hesitation (mean = 2.60) at a moderate level respectively.

Dissemination of health information received from family members immediately without verification of the information (mean = 2.38). They have been fooled with online health information (mean = 2.13) at a low level as presented in Table 4.23.

Table 4.22 Percentage, Mean, and Standard Deviation of the Online Health Media Literacy Dimension 3 Use & Create

Dimension 3 Use & Create	Level of Positive Online Health Media Literacy						Mean	S.D.	Meaning
	Highest	High	Moderate	Low	Lowest	Total			
1. Can choose online health media that is beneficial to your health	99 (24.5)	144 (35.6)	95 (23.5)	33 (8.2)	33 (8.2)	404 (100)	3.60	1.18	High
2. Can use health information from online media to adapt to their health or illness	43 (10.6)	106 (26.2)	152 (37.6)	60 (14.9)	43 (10.6)	404 (100)	3.11	1.12	Moderate
3. Use online media for communicating and exchanging health information with others regularly	39 (9.7)	78 (19.3)	149 (36.9)	67 (16.6)	71 (17.6)	404 (100)	2.87	1.20	Moderate
4. When others share health information from non-reliable sources, they usually speak up	31 (7.7)	74 (18.3)	120 (29.7)	89 (22.0)	90 (22.3)	404 (100)	2.67	1.22	Moderate
5. Can produce and disseminate beneficial health information to others online	28 (6.9)	60 (14.9)	114 (28.2)	73 (18.1)	129 (31.9)	404 (100)	2.47	1.27	Moderate

Dimension 3 Use & Create	Level of Positive Online Health Media Literacy						Mean	S.D.	Meaning
	Highest	High	Moderate	Low	Lowest	Total			
6. Use health information from experimentation or personal experience to disseminate online	19 (4.7)	61 (15.1)	118 (29.2)	93 (23.0)	113 (28.0)	404 (100)	2.46	1.18	Less
							2.86	**1.20**	**Moderate**
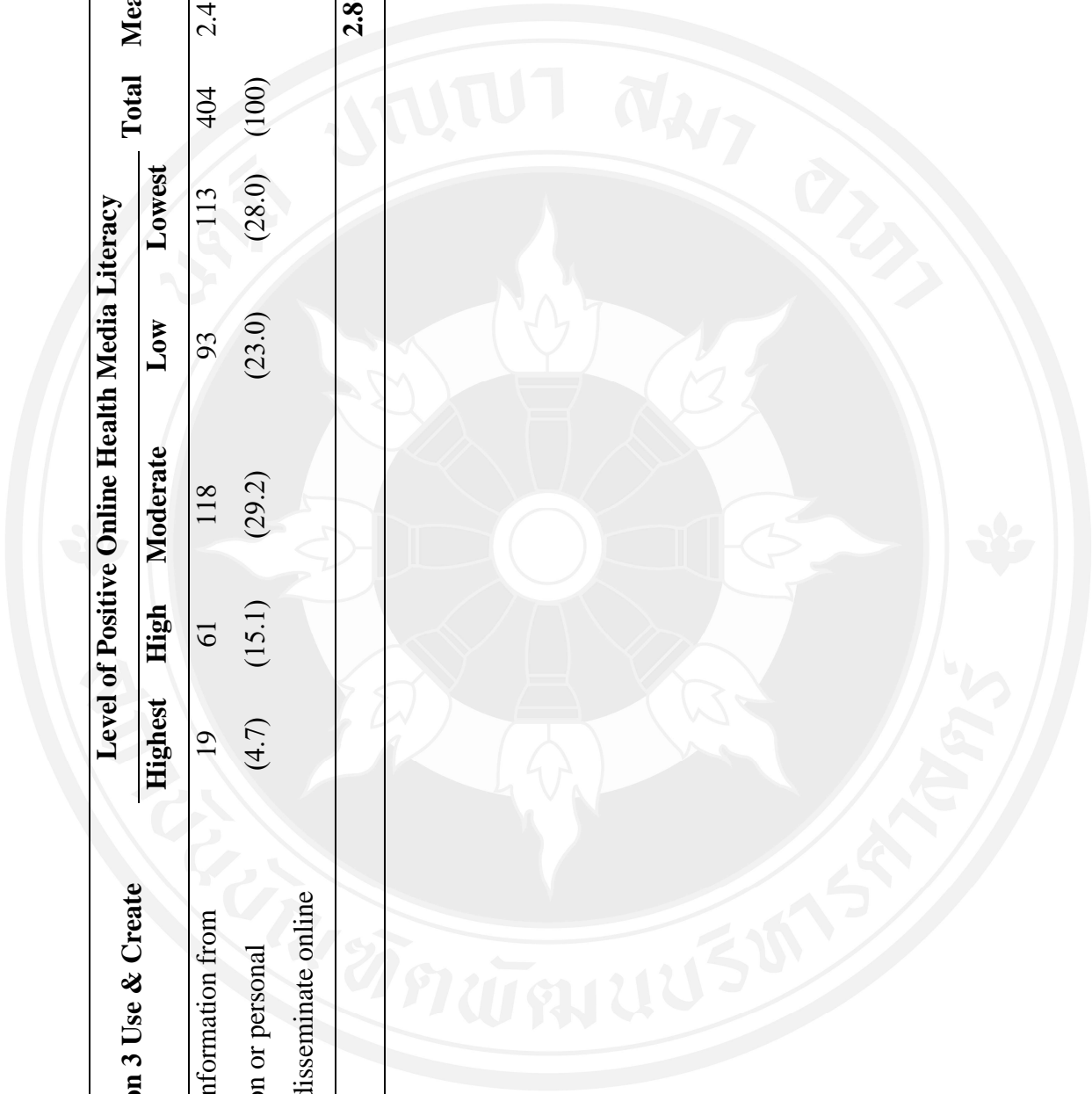
Table 4.23 Percentage, Mean, and Standard Deviation of Level of Negative Online Health Media Literacy Dimension 3 Use & Create

Dimension 3 Use & Create	Level of Negative Online Health Media Literacy						Mean	S.D.	Meaning
	Highest	High	Moderate	Low	Lowest	Total			
1. When family or friends send health information, they gladly follow with no hesitation	30 (7.4)	67 (16.6)	144 (35.7)	87 (21.6)	75 (18.6)	404 (100)	3.27	1.16	Moderate
2. Try and follow health information that is in trend or of interest on social media with no hesitation	21 (5.2)	73 (18.1)	132 (32.7)	81 (20.0)	97 (24.0)	404 (100)	2.60	1.18	Moderate
3. Pass along health information received to family members immediately without verification	14 (3.5)	57 (14.1)	114 (28.2)	103 (25.5)	116 (28.7)	404 (100)	2.38	1.14	Less
4. Have been fooled by online health information such as sales of products, inform of false health information	17 (4.2)	52 (12.9)	75 (18.6)	84 (20.8)	176 (43.6)	404 (100)	2.13	1.22	Less
							2.60	1.18	Moderate

The study titled, "Online Health Media Literacy for Thai Older Adults" categorized media literacy into 3 dimensions which are access, analyze & evaluate, and use & create. The findings indicate that online health media literacy among older adults is at a moderate level (mean = 2.93) as presented in Table 4.24.

Table 4.24 Percentage, Mean, and Standard Deviation Level of Online Health Media Literacy

	Total	Mean	Standard Deviation	Meaning
Online health media literacy	404 (100)	2.93	1.17	Moderate

4.5 Analyze & Evaluate Online Health Media among Older Adults

Figure 4.1 Health Media Lemon Soda Health Tip from Dr. Preeyapha

Figure 4.2 Online Health Media Lemon Soda Share for Merit

The researcher has chosen to examine health media content that appear in online social media and are often shared. They believe and follow the advice given by the health media content such as the lemon soda remedy for cancer, which has been disseminated in many forms. The researcher selected the example presented because it provides a reference to a global source as well as the name of the physician, along with the name of the source. It also cites the merit making aspect when sharing the message, which reflects the perspective of the analyst.

4.5.1 Exposure and Channel for Receiving Health Media Lemon Soda among Older Adults

The research findings indicate that most older adults (60.4%) have received online health media (Table 4.25). They are exposed most on Line (43.3%). This is followed by Facebook and YouTube at 25.5% and 21.8% respectively. Website is the media with the least exposure among older adults at 5.4% (Table 4.26).

Table 4.25 Percentage, Mean Exposure to Health Message Lemon Soda of Older
Adults

Exposure to Health Message Lemon Soda of Older Adults	Number (Respondents)	Percentage
Exposure to Online Health Media	244	60.4
Never exposed to online health media	160	39.6

Table 4.26 Exposure to Health Message Media Lemon Soda of Older Adults

Exposure to Health Message Media Lemon Soda of Older Adults	Number (Respondents)	Percentage
Line	175	43.3
Facebook	103	25.5
YouTube	88	21.8
Website	22	5.4

4.5.2 Trustworthiness of Health Message Lemon Soda of Older Adults

Most older adults are not sure regarding the credibility of the lemon soda health message (63.9%). This is followed by not believing this information (23.2%) and 12.9% of the older adults believed the information as presented in Table 4.27.

Table 4.27 Percentage, Mean Trustworthiness of Health Message Lemon Soda of
Older Adults

Trustworthiness of Health Message Lemon Soda of Older Adults	Number (Respondents)	Percentage
Not Sure	258	63.9
Not Trust	94	23.2
Trust	52	12.9

In the opinion of older adults who believed and are uncertain about the lemon soda health content, most of them strongly believed it. This is because there is the name of the physician on it (Dr. Preeyapha, Alternative Medicine) (mean = 3.63) and there is credible medical evidence (acid in lemon kills the cancer cells directly) (mean = 3.44).

The reference to global standard organization (World Health Organization) (mean = 3.42) and the writer (benz monkhon) (mean = 3.08). Older adults have a moderate level of agreement as presented in Table 4.28.
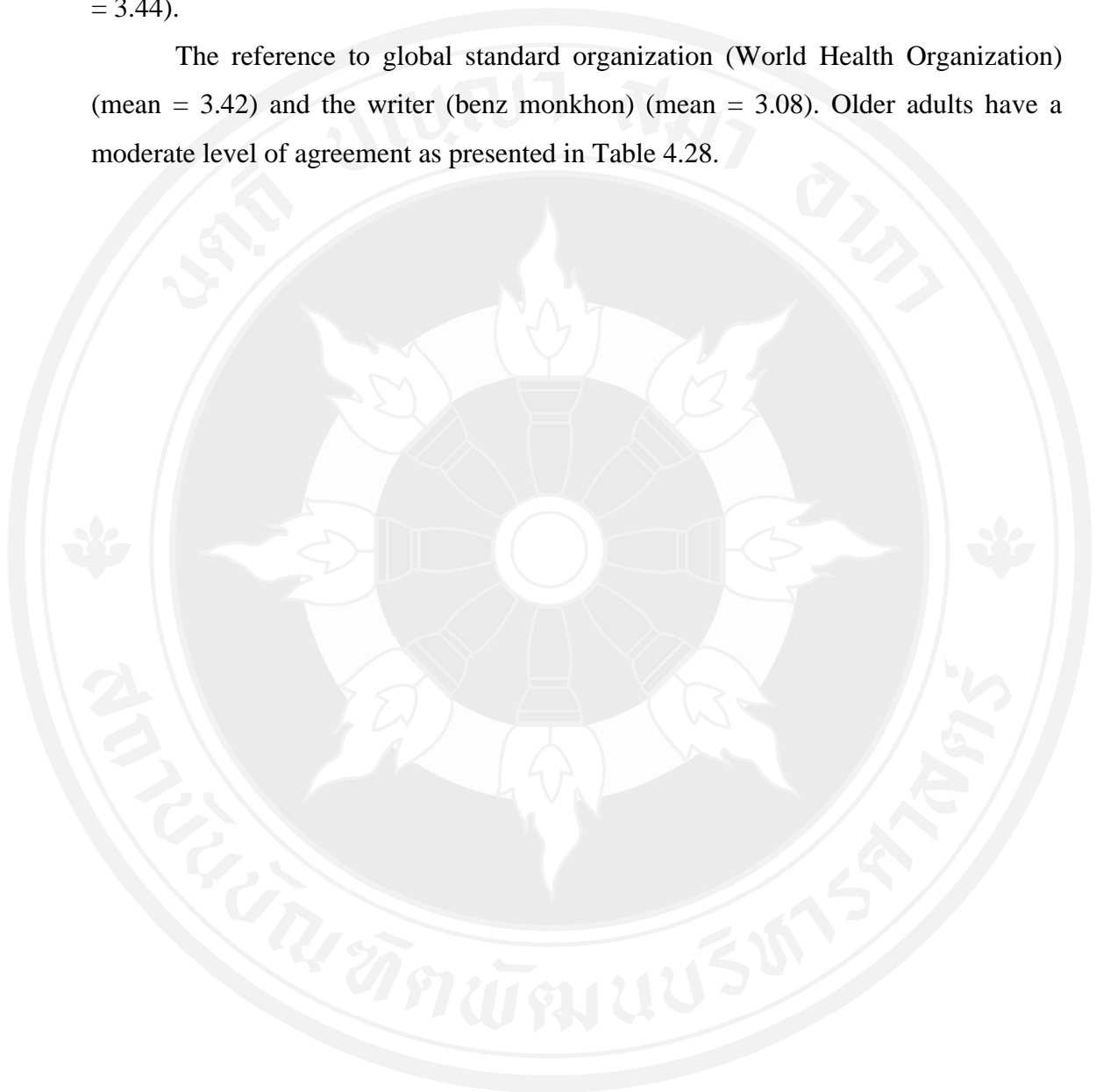
Table 4.28 Percentage, Mean, and Standard Deviation of Reason for Trusting Health Message Lemon Soda of Older Adults

Reason for Trusting Health Message Lemon Soda of Older Adults	Level of Agreement					Total	Mean	S.D.	Meaning
	Highest	High	Moderate	Low	Lowest				
1. Has name of physician (Dr. Preeyapha, Alternative Medicine)	13 (25.0)	18 (34.6)	13 (25.0)	5 (9.6)	3 (5.8)	52 (100)	3.63	1.14	High
2. Have credible medical evidence (Lemon acid would destroy cancer cells directly)	16 (30.8)	9 (17.3)	16 (30.8)	4 (7.7)	7 (13.5)	52 (100)	3.44	1.36	High
3. Has reference to global agency (World Health Organization)	12 (23.1)	15 (28.8)	15 (28.8)	3 (5.8)	7 (13.5)	52 (100)	3.42	1.29	Moderate
4. Has writer's name (benz monkhon)	8 (15.4)	16 (30.8)	9 (17.3)	10 (19.2)	9 (17.3)	52 (100)	3.08	1.36	Moderate
							3.39	**1.29**	**Moderate**

4.5.3 Opinion of Older Adults regarding the Impact of Health Media Lemon Soda

When older adults were asked about their opinions about the health media lemon soda and whether it was true, about 55.2% believed that it would have a major impact. They believe that the cancer patients would not be cured and might even die. This is followed by Dr. Preeyapha, Alternative Medicine, who has been implicated and might be damaged, and the World Health Organization might be misunderstood at 41.6% and 38.4% respectively.

Older adults (27%) believe that if this information was not true, it would not have any impact. There are 19.6% of the older adults, who believe that passing this information along was sinful as presented in Table 4.29.

Table 4.29 Percentage and Mean of Opinion of Impact of Health Message Lemon Soda of Older Adults

Impact of Health Message Lemon Soda of Older Adults	Number (Respondents)	Percentage
1. Cancer patients would not be cured and might even die	223	55.2
2. Dr. Preeyapha, Alternative Medicine, who has been implicated and might be damaged	168	41.6
3. World Health Organization might be misunderstood	155	38.4
4. There is no impact at all	109	27
5. Passing on this information is a sin	79	19.6

4.5.4 Demographics Profile of Older Adults who believe Health Media Lemon Soda

The research findings indicated that older adults believe health media lemon soda message at 12.9% or 52 out of 440 respondents. The researcher is interested in the demographics profile of older adults and the level of online health media literacy.

The analysis of this group of respondents is presented in Table 4.30 as presented in the following section.

    1) Gender

53.8% of the older adults are male and female (46.2%)

    2) Age

Older adults are aged between 50-69 years. This can be categorized as those aged between 50-59 years (48.1%) and 60-69 years (51.9%).

    3) Education Level

Most older adults have less than high school education (48.1%). This is followed by high school or vocational school (19.2%), bachelor's degree, master's degree, middle school, and higher vocational, which is 11.5%, 7.7% ,7.7% and 5.8% respectively.

    4) Region of Residence

Older adults, who trust the health information about lemon soda live in the north region the most (36.5%). This is followed by northeast and central regions at 30.8% and 23.1%. Older adults in the south region and Bangkok believe this health information at 5.8% and 3.8% respectively.

    5) Chronic Disease

Older adults who have chronic diseases and those who don't, number approximately about the same (51.9% and 48.1%) respectively.

Table 4.30 Number and percentage of Older Adults who Trust Health Message
        Lemon Soda Categorized by Demographics (n = 52 respondents)

Demographics		Number (Respondents)	Percentage
Gender	Male	28	53.8
	Female	24	46.2
Age	50 - 59 years	25	48.1
	60 - 69 years	27	51.9

Demographics		Number (Respondents)	Percentage
Level of Education	Less than high school	25	48.1
	Bachelor's Degree	10	19.2
	High School/ Vocational School	6	11.5
	Higher Vocational	4	7.7
	Masters + PhD.	4	7.7
	Middle School	3	5.8
Region of Residence	North Region	19	36.5
	Central Region	16	30.8
	Northeast Region	12	23.1
	South Region	3	5.8
	Bangkok	2	3.8
Chronic Disease	Have chronic disease	27	51.9
	Have no chronic disease	25	48.1

4.5.5 Daily Amount of Time Spent using Online Media of Older Adults who believe Health Message Lemon Soda

Older adults who believe health message lemon soda use online media on average 2.74 hours per day. The least amount of time spent is 30 minutes. Most older adults spent the longest amount of time of 15 hours per day as presented in Table 4.31.

Table 4.31 Daily Amount of Time Spent using Online Media

	Number (Respondents)	Least (Minutes)	Most (Hours)	Average (Hours)
Amount of time spent	52	30	15	2.74

4.5.6 Online Media Usage of Older Adults who believe Health Message Lemon Soda in a Week

In each week, older adults who believed the health media lemon soda have a moderate level of online media usage at 3-4 days a week (mean = 3.01).

Most use Line daily (mean = 4.29). This is followed by use of YouTube, 3-4 days a week (mean = 2.94) and Facebook 3-4 days a week (mean = 2.69) respectively as presented in Table 4.32.

Table 4.32 Level of Online Media Usage of Older Adults who believe Health Message Lemon Soda in a Week

Online Media Used	Level of Online Media Usage Weekly					Total	Mean	S.D.	Meaning
	Everyday	5-6 days	3-4 days	1-2 days	Never				
Line	35 (67.3)	5 (9.6)	5 (9.6)	6 (11.5)	1 (1.9)	52 (100)	4.29	1.16	Often
Youtube	15 (28.8)	9 (17.3)	4 (7.7)	6 (11.5)	18 (34.6)	52 (100)	2.94	1.70	Moderate
Facebook	13 (25)	2 (3.8)	11 (21.2)	8 (15.4)	18 (34.6)	52 (100)	2.69	1.60	Moderate
Website	8 (15.4)	4 (7.7)	4 (7.7)	6 (11.5)	30 (57.7)	52 (100)	2.12	1.54	Low
Mean Total							**3.01**	**1.50**	**Moderate**

4.5.7 Online Media Health Literacy of Older Adults who believed Health Media Lemon Soda in Dimension 1 Access

Older adults have access at the moderate level (mean = 3.33). Consequently, older adults understand the meaning of basic medical terminology (mean = 3.90), can access desired health information in online (mean = 3.52), and can search for online information from various sources (mean = 3.46) at a high level respectively.

In terms of speed in searching for online health information (mean = 3.49), search for online health information both in Thai and other languages (mean = 3.23), search for online health media information that is trustworthy (mean = 3.21), know how to check the trustworthiness of online health information (mean = 3.15), can find information on benefits and negative effects of the health products before consumption from online channels (mean = 3.06), and ability to search for beneficial information or risk from health products before consuming the product from online channels (mean = 3.04) at a moderate level respectively as presented in Table 4.33.

Table 4.33 Percentage, Mean, and Standard Deviation of Online Health Media Literacy of Older Adults who believe the Lemon Soda Health Message Dimension 1 Access

Dimension 1 Access	Online Health Media Literacy						Mean	S.D.	Meaning
	Highest	High	Moderate	Low	Lowest	Total			
1. Understand basic medical terminology such as taking medication before meals, which means 30 minutes prior to eating or taking 1 teaspoon means 5 cc, which is not the coffee spoon.	15 (28.8)	21 (40.4)	13 (25.0)	2 (3.8)	1 (1.9)	52 (100)	3.90	0.93	High
2. Can access desired health information through online media	11 (21.2)	18 (34.6)	15 (28.8)	3 (5.8)	5 (9.6)	52 (100)	3.52	1.18	High
3. Can search for health information from many online media channels	15 (28.8)	12 (23.1)	12 (23.1)	8 (25.0)	5 (9.6)	52 (100)	3.46	1.32	High
4. Know how to find health answers online quickly	13 (25.0)	13 (25.0)	16 (30.8)	2 (3.8)	8 (15.4)	52 (100)	3.40	1.33	Moderate
5. Search for online health information both in Thai and other languages to know, choose, and screen the correct news that is most trustworthy.	9 (17.3)	14 (26.9)	18 (34.6)	2 (3.8)	9 (17.3)	52 (100)	3.23	1.29	Moderate

Dimension 1 Access	Online Health Media Literacy						Mean	S.D.	Meaning
	Highest	High	Moderate	Low	Lowest	Total			
6. Know quality source for online health information and which ones are not trustworthy	10 (19.2)	11 (21.2)	18 (34.6)	6 (11.5)	7 (13.5)	52 (100)	3.21	1.27	Moderate
7. Know how to check the trustworthiness of online health information	9 (17.3)	15 (28.8)	11 (21.2)	9 (17.3)	8 (15.4)	52 (100)	3.15	1.33	Moderate
8. Can search their own health privilege information from online media	10 (19.2)	13 (25.0)	12 (23.1)	4 (7.7)	13 (25.0)	52 (100)	3.06	1.46	Moderate
9. Can find information on benefits and negative effects of the health products before consumption from online channels.	5 (9.6)	18 (34.6)	12 (23.1)	8 (15.4)	9 (17.3)	52 (100)	3.04	1.27	Moderate
							3.33	**1.26**	**Moderate**

4.5.8 Online Media Health Literacy of Older Adults who believed the Health Media Lemon Soda Dimension 2 Analyze & Evaluate

Older adults analyze & evaluate at a moderate level (mean = 3.06). They usually recommend others to be careful in believing online health media (mean = 3.50) at a high level.

Older adults can discern which health information is news and which is advertising (mean = 3.21). They don't believe that celebrities in the herbal remedies or food supplements can give them good health if they actually consume the products (mean = 3.12), aware of hidden agenda in health media that they receive continuously (mean = 3.08), aware of benefits/risks of health media (mean = 3.06), can consider which health information is of interest (mean = 3.06), self question whether online health information was trustworthy or not (mean = 2.98), think that health information would have an impact in one way or another (mean = 2.96), don't believe that herbal remedies or food supplements advertised online can really treat illnesses (mean = 2.88), and observe, who is the media producer (mean = 2.79), older adults agree at a moderate level respectively as presented in Table 4.34.

Table 4.34 Percentage, Mean, and Standard Deviation of Online Health Media Literacy of Older Adults, who believed Health Media Lemon Soda Dimension 2 Analyze & Evaluate

Dimension 2 Analyze & Evaluate	Level of Agreement					Total	Mean	S.D.	Meaning
	Highest	High	Moderate	Low	Lowest				
1. They warn people around to be careful in believing online health media.	98 (24.3)	145 (35.9)	99 (24.5)	35 (8.7)	27 (6.7)	52 (100)	3.50	1.16	High
2. Can discern which information is news and which is advertising.	9 (17.3)	19 (36.5)	8 (15.4)	6 (11.5)	10 (19.2)	52 (100)	3.21	1.39	Moderate
3. Don't believe that celebrities in the herbal remedies or food supplements can give them good health if they actually consume the products	7 (13.5)	10 (19.2)	24 (46.2)	4 (7.7)	7 (13.5)	52 (100)	3.12	1.16	Moderate
4. Aware of hidden agenda in health media that they receive continuously	7 (13.5)	13 (25.0)	17 (32.7)	7 (13.5)	8 (15.4)	52 (100)	3.08	1.25	Moderate
5. Aware of the benefits/risks to health	8 (15.4)	12 (23.1)	16 (30.8)	7 (13.5)	9 (17.3)	52 (100)	3.06	1.31	Moderate
6. Can discern which health information is interesting	7 (13.5)	10 (19.2)	19 (36.5)	11 (21.2)	5 (9.6)	52 (100)	3.06	1.16	Moderate

Dimension 2 Analyze & Evaluate	Level of Agreement					Total	Mean	S.D.	Meaning
	Highest	High	Moderate	Low	Lowest				
7. Self question whether online health information was trustworthy or not	7 (13.5)	10 (19.2)	19 (36.5)	7 (13.5)	9 (17.3)	52 (100)	2.98	1.26	Moderate
8. Aware that health information would have an impact in one way or another	5 (9.6)	13 (25.0)	15 (28.8)	13 (25.0)	6 (11.5)	52 (100)	2.96	1.17	Moderate
9. Don't believe that herbal remedies or food supplements advertised online can really treat illnesses	7 (13.5)	4 (7.7)	24 (46.2)	4 (7.7)	10 (19.2)	52 (100)	2.88	1.16	Moderate
10. When exposed to health media content observing who is the producer of the content	5 (9.6)	12 (23.1)	14 (26.9)	9 (17.3)	12 (23.1)	52 (100)	2.79	1.30	Moderate
							3.06	1.23	Moderate

4.5.9 Online Health Media Literacy of Older Adults who believe Health Message Lemon Soda in Dimension 2 Use & Create

Examination of dimension 3 use & create positively, it is found that older adults have a moderate level of agreement (mean = 3.07), older adults can choose to expose themselves to online health media that is beneficial to their health (mean = 3.67), and online health information can be adapted to their health or illnesses (mean = 3.52) at a high level respectively.

They use online media to communicate about health information all the time (mean = 3.00), try the health recommendation or act based on their personal experience to disseminate information online (2.77), discuss and express their opinions when others share health information that is not trustworthy (mean = 2.73), and have the ability to create and disseminate health information that is beneficial to others online (mean = 2.71). Older adults have a moderate level of agreement respectively as presented in Table 4.35.

Table 4.35 Percentage, Mean, and Standard Deviation of the Online Health Media Literacy of Older Adults who believe Health Message Lemon Soda in Dimension 3 Use & Create

Dimension 3 Use & Create	Level of Positive Online Health Media						Mean	S.D.	Meaning
	Most	Often	Moderate	Less	Least	Total			
1. Can choose online health media that is beneficial to your health	17 (32.7)	17 (32.7)	9 (17.3)	2 (3.8)	7 (13.5)	52 (100)	3.67	1.34	Often
2. Can use health information from online media to adapt to their health or illness	14 (26.9)	15 (28.8)	11 (21.2)	8 (15.4)	4 (7.7)	52 (100)	3.52	1.26	Often
3. Use online media for communicating and exchanging health information with others regularly	10 (19.2)	6 (11.5)	19 (36.5)	8 (15.4)	9 (17.3)	52 (100)	3.00	1.33	Moderate
4. Use health information from experimentation or personal experience to disseminate online	5 (9.6)	10 (19.2)	15 (28.8)	12 (23.1)	10 (19.2)	52 (100)	2.77	1.25	Moderate
5. When others share health information from non-reliable sources, they usually speak up	3 (5.8)	10 (19.2)	19 (36.5)	10 (19.2)	10 (19.2)	52 (100)	2.73	1.26	Moderate
6. Can produce and disseminate beneficial health information to others online	7 (13.5)	6 (11.5)	20 (38.5)	3 (5.8)	16 (30.8)	52 (100)	2.71	1.38	Moderate
							3.07	**1.30**	**Moderate**

Examination of dimension 3 use & create negatively revealed that older adults have a moderate level of agreement (mean = 2.67). They often try and follow the health advice that is of interest in the social media with no hesitation (mean = 2.90). Older adults do not hesitate and are willing to follow health advise when family and friends send them the information (mean = 2.79). They disseminate health information received from family members immediately without verification of the information (mean = 2.77).at a moderate level respectively.

They have been fooled with online health information (mean = 2.21) at a low level as presented in Table 4.36.
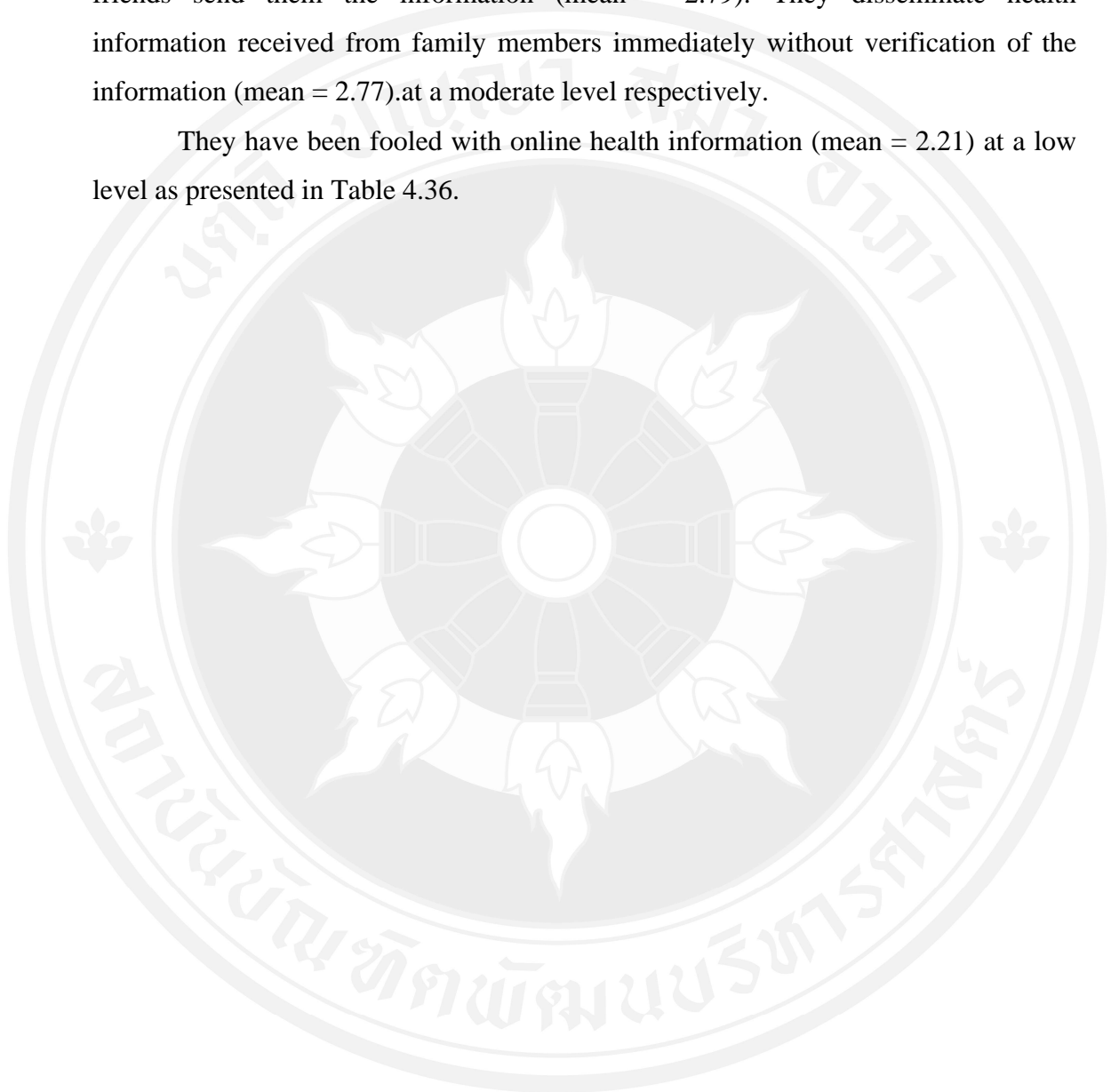
Table 4.36 Percentage, Mean, and Standard Deviation of Level of Negative Online Health Media Literacy Dimension 3 Use & Create

Dimension 3 Use & Create	Negative Online Health Media Literacy					Total	Mean	S.D.	Meaning
	Highest	High	Moderate	Low	Lowest				
1. They often try or follow the recommendation of the health information that is popular and of interest in the online media without hesitation.	3 (5.8)	16 (30.8)	14 (26.9)	11 (21.2)	8 (15.4)	52 (100)	2.90	1.18	Moderate
2. When family or friends send them health information, they are willing to follow without hesitation.	7 (13.5)	5 (9.6)	21 (40.4)	8 (15.4)	11 (21.2)	52 (100)	2.79	1.27	Moderate
3. Usually send the information they receive to their acquaintances immediately without hesitation.	2 (3.8)	12 (23.1)	19 (36.5)	10 (19.2)	9 (17.3)	52 (100)	2.77	1.11	Moderate
4. They have been fooled with online health information such as buying health products, falsifying health information.	4 (7.7)	4 (7.7)	14 (26.9)	7 (13.5)	23 (44.2)	52 (100)	2.21	1.30	Less
							2.67	**1.21**	**Moderate**

The study of online health media literacy for Thai older adults, who believed the health message lemon soda in all 3 dimensions, which are Access, Analyze & Evaluate, and Use & Create, revealed that older adults, who believed this health message have moderate level of online health media literacy (mean = 3.03) as presented in Table 4.37.

Table 4.37 Percentage, Mean, and Standard Deviation of the Online Health Media Literacy of Older Adults who believe Health Message Lemon Soda

	Total	Mean	S.D.	Meaning
Online health media literacy	52 (100)	3.03	1.25	Moderate

4.5.10 Behavior of Older Adults who are exposed to Online Health Media

When older adults are exposed to online health media of this type, most older adults (41.8%) would seek for information from other sources. This is followed by discussing with their acquaintances (35.1%), those who don't feel anything and consequently do not take any action with the information, and only 5% would follow the recommendation as presented in Table 4.38.

Table 4.38 Percentage and Mean of Behavior of Older Adults who are exposed to Online Health Media

Older Adults Behavior	Number (Respondents)	Percentage
1. Search for information from other sources	169	41.8
2. Discuss with acquaintances	142	35.1
3. Not do anything	121	30
4. Post/send it to acquaintances	61	15.1
5. Delete immediately	58	14.4
6. Save to keep	44	10.9

Older Adults Behavior	Number (Respondents)	Percentage
7. Reply express their opinions	36	8.9
8. Use emoticons, emoji	35	8.7
9. Follow the recommendation	20	5.0

4.5.11 Older Adults Checking Online Health Information

Older adults check online health information by asking doctors/friends, medical agencies, and searching online health information on their own at 20.3%, 18.6%, and 18.1% respectively as presented in Table 4.39.

Table 4.39 Percentage and Mean Older Adults Checking Online Health Information

Older Adults Checking Online Health Information	Number (Respondents)	Percentage
1. Doctor/Nurse Treating Them	158	39.1
2. Family/Friend	82	20.3
3. Medical Organization	75	18.6
4. Search online information on their own	73	18.1
5. Ask the source	9	2.2
6. News agencies webpage	7	1.7

4.6 Hypotheses Testing

The study titled, "Online Health Media Literacy for Thai Older Adults" has 3 hypotheses as explained in the following section.

4.6.1 Relationship of Lifestyle of Older Adults and Level of Online Health Media Literacy

Hypothesis 1 Lifestyle of older adults has a relationship with online health media literacy of older adults. The relationship will be tested for three components as presented in the following section.

H_0 : Lifestyle of older adults has no relationship with online health media literacy of older adults.

H_1 : Lifestyle of older adults has no relationship with online health media literacy of older adults.

Statistical Hypothesis

H_0 : $p \leq 0$

H_1 : $p \geq 0$

The analysis of the relationship between the lifestyle and online health media literacy (Table 4.40) reveal the following:

Older adults who have lifestyle type 1 Internet addicted and follow the news has a relationship with online health media literacy. The significant correlation is .482 (Sig. 2-Tailed), which is less than 0.01. The H_0 is not supported. Older adults with Lifestyle 1 Internet addicted and follow the news have a positive relationship with online health media literacy at the significant level of 0.01. The relationship is at a moderate level.

Older adults who have lifestyle type 2 use mobile phone but do not trust purchases online and spend carefully has a relationship with online health media literacy. The significant correlation is .322 (Sig. 2-Tailed), which is less than 0.01. The H_0 is not supported. Older adults with Lifestyle type 2 use mobile phone but do not trust purchases online and spend carefully have a positive relationship with online health media literacy at the significant level of 0.01. The relationship is at a moderate level.

Older adults who have lifestyle type 3 create income for the family and believe in food supplements and herbal remedies has a relationship with online health media literacy. The significant correlation is .322 (Sig. 2-Tailed), which is less than 0.01. The H_0 is not supported. Older adults with Lifestyle type 3 create income for the family and believe in food supplements and herbal remedies have a positive relationship with online health media literacy at the significant level of 0.01. The relationship is at a moderate level.

Older adults who have lifestyle type 4 health conscious, play sports, and do activities has a relationship with online health media literacy. The significant correlation is .227 (Sig. 2-Tailed), which is less than 0.01. The H_0 is not supported.

Older adults with Lifestyle type 4 health conscious, play sports, and do activities have a positive relationship with online health media literacy at the significant level of 0.01. The relationship is at a low level.

Table 4.40 Correlation Lifestyle of Older Adults and Online Health Media Literacy

| | Online Health Media Literacy | |
Lifestyle	Correlation (r)	Sig. (2-tailed)
Lifestyle Type 1 Those who are addicted to the Internet and follow the news	.482**	.000
Lifestyle Type 2 Those who use the mobile phone but they do not believe in online purchases and tend to spend carefully	.322**	.000
Lifestyle Type 3 Those who have income to take care of their family and trust food supplements and herbal remedies	.296**	.000
Lifestyle Type 4 Health conscious, play sports, and do activities	.227**	.000

Note: **. Correlation is significant at the 0.01 level (2-tailed).

The analysis of the correlation between lifestyle of older adults and online health media literacy in the 3 dimensions as presented in Table 4.39.

Lifestyle of Older Adults has a relationship with Media Literacy Dimension 1 Access. The significant correlation is .309 (Sig. 2-Tailed), which is less than 0.01. The H_0 is not supported. Older adults with lifestyle of older adults have a relationship with online health media literacy dimension 1 Access at the significant level of 0.01. The relationship is positive at a moderate level. Upon examination based on the lifestyle the findings are presented in the following section.

Older adults who have lifestyle type 1 Internet addicted and follow the news has a positive relationship with online health media literacy dimension 1 Access at a moderate level, significance level 0.01.

Older adults who have lifestyle type 2 use mobile phone but do not trust purchases online and spend carefully has a positive relationship with online health media literacy dimension 1 Access at a moderate level at the significance level 0.01.

Older adults who have lifestyle type 3 create income for the family and believe in food supplements and herbal remedies has a positive relationship with online health media literacy dimension 1 Access at a low level at the significance level 0.01.

Older adults who have lifestyle type 4 health conscious, play sports, and do activities has a positive relationship with online health media literacy dimension 1 Access at a low level at the significance level 0.01.

Lifestyle of Older Adults has a relationship with Media Literacy Dimension 2 Analyze & Evaluate. The significant correlation is .269 (Sig. 2-Tailed), which is less than 0.01. The H_0 is not supported. Older adults with lifestyle of older adults have a relationship with online health media literacy dimension 2 Analyze & Evaluate at the significant level of 0.01. The relationship is positive at a low level. Upon examination based on the lifestyle the findings are presented in the following section.

Older adults who have lifestyle type 1 Internet addicted and follow the news has a positive relationship with online health media literacy dimension 2 Analyze & Evaluate at a moderate level, significance level 0.01.

Older adults who have lifestyle type 2 use mobile phone but do not trust purchases online and spend carefully has a positive relationship with online health media literacy dimension 2 Analyze & Evaluate at a low level at the significance level 0.01.

Older adults who have lifestyle type 3 create income for the family and believe in food supplements and herbal remedies has a positive relationship with online health media literacy dimension 2 Analyze & Evaluate at a low level at the significance level 0.01.

Older adults who have lifestyle type 4 health conscious, play sports, and do activities has a positive relationship with online health media literacy dimension 2 Analyze & Evaluate at a low level at the significance level 0.01.

Lifestyle of Older Adults has a relationship with Media Literacy Dimension 3 Use & Create. The significant correlation is .258 (Sig. 2-Tailed), which is less than 0.01. The H_0 is not supported. Older adults with lifestyle of older adults have a relationship with online health media literacy dimension 3 Use & Create at the significant level of 0.01. The relationship is positive at a low level. Upon examination based on the lifestyle the findings are presented in the following section.

Older adults who have lifestyle type 1 Internet addicted and follow the news has a positive relationship with online health media literacy dimension 3 Use & Create at a low level, significance level 0.01.

Older adults who have lifestyle type 2 use mobile phone but do not trust purchases online and spend carefully has a positive relationship with online health media literacy dimension 3 Use & Create at a low level at the significance level 0.01.

Older adults who have lifestyle type 3 create income for the family and believe in food supplements and herbal remedies has a positive relationship with online health media literacy dimension 3 Use & Create at a moderate level at the significance level 0.01.

Older adults who have lifestyle type 4 health conscious, play sports, and do activities has a positive relationship with online health media literacy dimension 3 Use & Create at a low level at the significance level 0.01.

Table 4.41 Correlation Lifestyle of Older Adults and Online Health Media Literacy (Analysis of 3 Dimensions)

Lifestyle	Online Health Media Literacy Dimension 1 Access		Online Health Media Literacy Dimension 2 Analyze & Evaluate		Online Health Media Literacy Dimension 3 Use & Create	
	Correlation (r)	Sig. (2-tailed)	Correlation (r)	Sig. (2-tailed)	Correlation (r)	Sig. (2-tailed)
Lifestyle type 1 Internet addicted and follow the news	.496**	0.000	.437**	0.000	.273**	0.000
Lifestyle type 2 use mobile phone but do not trust purchases online and spend carefully	.308**	0.000	.255**	0.000	.245**	0.000
Lifestyle type 3 create income for the family and believe in food supplements and herbal remedies	.226**	0.000	.190**	0.000	.346**	0.001
Lifestyle type 4 health conscious, play sports, and do activities	.208**	0.000	.194**	0.000	.166**	0.000
Total Lifestyle	**.464****	**0.000**	**.404****	**0.000**	**.374****	**0.000**

Note: **. Correlation is significant at the 0.01 level (2-tailed).

4.6.2 Relationship between Online Health Media Exposure Behavior of Older Adults and the Level of Online Health Media Literacy

Hypothesis 2 Online media exposure of older adults have a relationship with online health media literacy. The relationship of all three dimensions in the study are presented in the following section.

H_0 : Online media exposure of older adults has no relationship with online health media literacy.

H_1 : Online media exposure of older adults have a relationship with online health media literacy.

The analysis of the relationship between online media exposure behavior of older adults and online health media literacy (Table 4.42) reveals that online media exposure behavior of older adults has a relationship with online health media literacy. The significant correlation is .488 (Sig. 2-Tailed), which is less than 0.01. The H_0 is not supported. The online media exposure behavior of older adults has a positive relationship with online health media literacy. This means that older adults, who have more online exposure have higher online health media literacy. The older adults, who are less exposed to online media have a low level of online health media literacy. The relationship is at a moderate level.

Analysis of relationship categorized by type of online media reveals the following:

Exposure to Line of older adults has a positive relationship with online health media literacy at a low level.

Exposure to Facebook has a positive relationship with online health media literacy at a moderate level.

Exposure to Youtube has a positive relationship with online health media literacy at a moderate level.

Exposure to Website has a positive relationship with online health media literacy at a moderate level.

Table 4.42 Correlation between Exposure to Online Media and Online Health Media
Literacy

Exposure to Online Media	Media Literacy	
	Correlation (r)	Sig. (2-tailed)
Line	.205**	.000
Facebook	.325**	.000
Youtube	.350**	.000
Website	.444**	.000
Total Online Media	**.488****	**.000**

Note: **. Correlation is significant at the 0.01 level (2-tailed).

The analysis of the correlation between lifestyle of older adults and online health media literacy in the 3 dimensions as presented in Table 4.41.

Exposure to Online Media of Older Adults has a relationship with Media Literacy Dimension 1 Access. The significant correlation is .460 (Sig. 2-Tailed), which is less than 0.01. The H_0 is not supported. Older adults exposure to online media have a relationship with online health media literacy dimension 1 Access at the significant level of 0.01. The H_0 is not supported. Thus, online media exposure of older adults have a positive relationship with online media literacy dimension 1 access. This means that online media exposure of older adults is higher, they would have more access. Older adults, who have low access. The relationship is at a moderate level.

Exposure to Online Media of Older Adults has a relationship with Media Literacy Dimension 2 Analyze & Evaluate. The significant correlation is .509 (Sig. 2-Tailed), which is less than 0.01. The H_0 is not supported. Older adults exposure to online media have a relationship with online health media literacy dimension 2 Analyze & Evaluate at the significant level of 0.01. The H_0 is not supported. Thus, online media exposure of older adults have a positive relationship with online media literacy dimension 2 Analyze & Evaluate. This means that online media exposure of

older adults is higher, they would have more access. Older adults, who have low access. The relationship is at a moderate level.

Exposure to Online Media of Older Adults has a relationship with Media Literacy Dimension 3 Use & Create. The significant correlation is .261 (Sig. 2-Tailed), which is less than 0.01. The H_0 is not supported. Older adults exposure to online media have a relationship with online health media literacy dimension 3 Use & Create at the significant level of 0.01. The H_0 is not supported. Thus, online media exposure of older adults have a positive relationship with online media literacy dimension 3 Use & Create. This means that online media exposure of older adults is higher, they would have more access. Older adults, who have low access. The relationship is at a low level.

Analysis of relationship categorized by type of online media reveals the following:

Exposure to Line of older adults has a positive relationship with access at a low level.

Exposure to Line of older adults has a positive relationship with analyze & evaluate at a low level.

Exposure to Line of older adults has a positive relationship with use & create at a low level.

Exposure to Facebook of older adults has a positive relationship with access at a low level.

Exposure to Facebook of older adults has a positive relationship with analyze & evaluate at a moderate level.

Exposure to Facebook of older adults has a positive relationship with use & create at a low level.

Exposure to YouTube of older adults has a positive relationship with access at a moderate level.

Exposure to YouTube of older adults has a positive relationship with analyze & evaluate at a moderate level.

Exposure to YouTube of older adults has a positive relationship with use & create at a low level.

Exposure to Website of older adults has a positive relationship with access at a moderate level.

Exposure to Website of older adults has a positive relationship with analyze & evaluate at a moderate level.

Exposure to Website of older adults has a positive relationship with use & create at a low level.

Table 4.43 Correlation Online Media Exposure of Older Adults and Online Health Media Literacy

Online Media Exposure	Online Health Media Literacy Dimension 1 (Access)		Online Health Media Literacy Dimension 2 Analyze & Evaluate		Online Health Media Literacy Dimension 3 Use & Create	
	Correlation (r)	Sig. (2-tailed)	Correlation (r)	Sig. (2-tailed)	Correlation (r)	Sig. (2-tailed)
Line	.177	0.000	.288	0.000	0.047	0.000
Facebook	.284	0.000	.326	0.000	0.208	0.000
Youtube	.335	0.000	.358	0.000	0.182	0.000
Website	.450	0.000	.434	0.000	0.247	0.000
Total Online Media	**.460**	**0.000**	**.509**	**0.000**	**0.261**	**0.000**

Note: **. Correlation is significant at the 0.01 level (2-tailed).

4.6.3 Differences between Older Adults of Different Age Groups and
Online Health Media Literacy

Hypothesis 3 Older adults of different age groups have different levels of online health media literacy.

H_0 : Older adults of different age groups have no difference in levels of online health media literacy.

H_1 : Older adults of different age groups have different levels of online health media literacy.

Table 4.44 reveals the Sig .078 value, which is more than .05 significance level. Thus, the H_0 is not rejected. Older adults of different ages have no difference in online health media literacy. There is no difference in online health media literacy at the .05 (Sig < .05).

Table 4.44 Differences between Age groups of Older Adults and Online Health Media Literacy

	Age Range (Years)	Number	Mean	Standard Deviation	t	Sig
Online Health	50 – 59	202	3.170	.658	1.767	.078
Media Literacy	60 – 69	202	3.060	.645		

The researcher conducted the analysis between the different age groups and online health media literacy in the 3 dimensions as presented in Table 4.45.

The analysis of the differences between the age groups of older adults and online health media literacy dimension 1 access. The H_0 is not supported. Older adults of different age groups have different levels access at the significance level 0.05. Older adults aged 50-59 years have more access than those, who are aged between 60-69 years.

The analysis of the differences between the age groups of older adults and online health media literacy dimension 2 analyze & evaluate. The H_0 is supported. Older adults of different age groups have no difference in analyze & evaluate at the significance level 0.05 (Sig < .05).

The analysis of the differences between the age groups of older adults and online health media literacy dimension 3 use & create. The H_0 is supported. Older adults of different age groups have no difference in use & create at the significance level 0.05 (Sig < .05).

Table 4.45 Differences between Age Groups and Online Health Media Literacy 3
Dimensions

Online Health Media Literacy	Age range (Years)	Number	Mean	Standard Deviation	t	Sig
Dimension 1	50 – 59	202	3.395	.940	2.119	.035
	60 – 69	202	3.200	.906		
Dimension 2	50 – 59	202	3.350	.742	.983	.326
	60 – 69	202	3.278	.726		
Dimension 3	50 – 59	202	2.790	.685	.884	.377
	60 – 69	202	2.728	.673		

Hypothesis 4 Older adults who have different levels of education have different levels of online media literacy.

H_0 : Older adults who have different levels of education has no difference in levels of online media literacy.

H_1 : Older adults who have different levels of education have different levels of online media literacy.

Table 4.46 When comparing the differences between the level of education of older adults and online health media literacy, the one-way ANOVA analysis revealed that Sig .000, which is less than Sig. 05. The H_0 is not supported. Older adults of different levels of education have different levels of online health media literacy at the .05 (Sig < .05).

Table 4.46 Analysis of Variance in the Level of Education of Older Adults and
Online Health Media Literacy

	Number	Mean	Standard Deviation	F	Sig
Less than High School	112	2.7260	.80195	13.484	0.00
Middle School	23	3.3148	.57553		
High school/ Vocational School	75	3.1609	.49568		
Higher Vocational School.	51	3.2089	.53653		
Bachelor's Degree	89	3.2867	.55221		
Master's and PhD.	54	3.3806	.41063		

When paired comparisons are made using multiple comparison test using the Scheffe's method. Older adults who have less than high school education have different online health media literacy from other education levels that is higher than all groups as presented in Table 4.47.

Table 4.47 Comparison of Differences in Education Level and Online Health Media
Literacy

Education Level		Difference in Mean	Sig
Less than High School	Middle School	-.58886*	.004
	High school/ Vocational School	-.43493*	.000
	Higher Vocational School.	-.48294*	.001
	Bachelor's Degree	-.56071*	.000
	Master's and PhD.	-.65460*	.000
Middle School	Less than High School	.58886*	.004
	High school/	.15392	.000

Education Level		Difference in Mean	Sig
	Vocational School Higher Vocational School.	.10592	.001
	Bachelor's Degree	.02815	.000
	Master's and PhD.	-.06574	.000
High school/ Vocational	Less than High School	.43493*	.004
	Middle School	-.15392	.951
	Higher Vocational School.	-.04801	.993
	Bachelor's Degree	-.12578	1.000
	Master's and PhD.	-.21967	.999
Higher Vocational School	Less than High School	.48294*	.000
	Middle School	-.10592	.951
	High school/ Vocational	.04801	.999
	Bachelor's Degree	-.07777	.883
	Master's and PhD.	-.17166	.536
Bachelor's Degree	Less than High School	.56071*	.001
	Middle School	-.02815	.993
	High school/ Vocational	.12578	.999
	Higher Vocational School	.07777	.991
	Master's and PhD	-.09389	.836
Master's and PhD	Less than High School	.65460*	.000
	Middle School	.06574	1.000
	High school/ Vocational	.21967	.883
	Higher Vocational	.17166	.991

Education Level	Difference in Mean	Sig
School		
Bachelor's Degree	.09389	.977

The researcher has conducted the analysis to examine the differences between the levels of education of older adults and online health media literacy 3 dimensions (Table 4.48). The findings are presented in the following section.

Dimension 1 Access has a Sig. 000 value, which is less than 0.05. The H0 is not supported. Older adults, who have different levels of education have different levels of access to online health media at the significance level of .05 (Sig < .05).

Dimension 2 Analyze & Evaluate has a Sig. 000 value, which is less than 0.05. The H0 is not supported. Older adults, who have different levels of education have different levels of analyze & evaluate to online health media at the significance level of .05 (Sig < .05).

Dimension 3 Use & Create has a Sig. 000 value, which is more than 0.05. The H0 is supported. Older adults, who have different levels of education have no difference in levels of use & create to online health media at the significance level of .05 (Sig < .05).

Table 4.48 Analysis of Variance between Education Levels and Online Health Media Literacy (Categorized by 3 Dimensions

Education Level	Number	Mean	Standard Deviation	F	Sig
Dimension 1					
Less than High School	112	2.7946	1.07594	11.423	0.00
Middle School	23	3.6135	.89885		
High school/Vocational School	75	3.3185	.81881		
Higher Vocational	51	3.4706	.83610		

Education Level	Number	Mean	Standard Deviation	F	Sig
School.					
Bachelor's Degree	89	3.5081	.81252		
Master's and PhD.	54	3.6667	.51577		
Dimension 2					
Less than High School	112	3.2976	.92728	19.372	0.00
Middle School	23	2.8089	.76753		
High school/Vocational School	75	3.4609	.68738		
Higher Vocational School.	51	3.4387	.63414		
Bachelor's Degree	89	3.4098	.70121		
Master's and PhD.	54	3.5124	.62465		
Dimension 3					
Less than High School	112	3.7056	.43629	2.732	0.19
Middle School	23	3.3136	.73386		
High school/Vocational School	75	2.5750	.80946		
Higher Vocational School.	51	2.9087	.58923		
Bachelor's Degree	89	2.7427	.51470		
Master's and PhD.	54	2.8118	.62118		

CHAPTER 5

QUALITATIVE RESEARCH FINDING

The study titled, "Online Health Media Literacy for Thai Older Adults" used the mixed methods research methodology, which combined quantitative research methodology and qualitative research methodology. The qualitative research data was collected using the in-depth interview conducted with older adults aged between 50-69 years, who have been exposed to Online health media. The data was collected from 5 regions, which are the north, the central, the south, the northeast, and Bangkok. The researcher has the criteria in selecting the sampling based on exposure to Online health media. There is no criteria regarding the length of time of exposure. The period for the data collection was also limited, as a result the researcher used the snow ball sampling technique to connect older adults, who knew each other. This enabled data to be collected from 28 informants, which comprised of 14 males and 14 females. The researcher interviewed the informants based on the prepared question guide. During the interview the information was recorded and the researcher asked the informant to record the conversation. After that the recording was transcribed verbatim. The researcher then recorded the data based on the questions and have been categorized into three sections as presented in the following section.

5.1 General Information and Use of Online Media among Older Adults

The interviews revealed that most of the older adults are married with children. They live with their spouse. Only three of them are widowed and live alone. The researcher observed that the mobile phone of the older adults are not the expensive versions. The screen is of regular size. Only three of the informants had a tablet. Older adults used online media for more than 5 years. Some used online media 2-3 years, while some used online media for only 1 year.

Online media used by older adults include Facebook, Line, YouTube, and websites, which were accessed primarily through Google. It is found that all of the older adults use Line application. They use if everyday and use it more than any other application. This is because Line is easier to use than other applications.

I have used it for 7-8 years now because I use it contact with my children at home. My kids taught me how to use Line and Face(book). I use Line more than Facebook because Line is more convenient. I can see the feed in groups but in Facebook the feed just keeps flowing. This is why I don't use Facebook that much. (Ms.Walai, personal communication, July 28, 2018)

I have used it for 4-5 years. I use both Face(book) and Line. I use Line more because it is convenient. The messages can be answered immediately. However, some people don't read the feed. Line has a notification that comes right up. Even though the sound is turned off, the application can be accessed to see who has sent me messages. (Ms.Yada, personal communication, July 28, 2018)

Most of the older adults communicated through Line group and personal messages. Line groups include family, relatives, colleagues, school friends, and members from their clubs. In addition, members of the same group might have different groups for news and conversations. This helps them to keep order to the conversation. "Yes, in Line there is clear organization. There is a group for news and another for conversation. It is quite clear." (Mr.Tui, personal communication, March 1, 2019) "I have many groups in Line. I have friends groups, farming groups, and village health volunteer group." (Ms.Kam, personal communication, July 5, 2018) "I have about 6-7 groups. I have my high school friends, co-op group, and even my relatives." (Mr.Rong, personal communication, January 28, 2019) "I have many Line groups such as the municipality group and village health volunteer group. I have many groups including relatives. We talk all the time." (Ms.Mar, personal communication, September 26, 2018)

The online media use among older adults could start from a personal need. They realize the benefits for using media. Some people would like to use because their friends or family uses it. However, some use online media because they are

pestered by others such as their children, who might live faraway. This makes keeping in touch and keeping tabs of one another much easier. When using online media, older adults ask their children to teach them how to use it. Some learn to use it on their own through trial and error. "I want to use it myself. I saw my friends and kids using it so I want to use it too. When, I got it I learned how to use it myself. (Ms.Tip, personal communication, February 6, 2019) "My grandchildren in Bangkok used it so I want to try it too. I wanted to keep in touch with my children. Sometimes my clients send product pictures, it is very easy to do so." (Mr.Sara, personal communication, February 6, 2019) "I used Line since I retired. I am a bit outdated so I ask my children to teach me." (Ms.Napa, personal communication, February 6, 2019) "I use it because I want to be in trend. I am afraid to lag behind my friends. Many of my friends use it so I asked my daughter to teach me." (Ms.Kam, personal communication, July 5, 2018)

Most of the older adults use Line at particular times during the day. They do not use it all the time. Some of them still use traditional media to access news. They do not use online media as the primary source of information. Most of the older adults use online media after they are done with their daily chores. "When I am done making breakfast, I would use it. Then I will use it again at 8 PM to 9 PM before I go to bed. I don't watch series. I follow the news on Facebook." (Ms.Kam, personal communication, July 5, 2018) "I use it everyday. When I am done cooking, I would use Line, Facebook, and YouTube to listen to prayers. I have been using it for 5-6 years now. I have seen my friends use it so I had my kids teach me." (Ms.Noi, personal communication, July 5, 2018) "I used it because DTAC suggested it to me. I think it is really cool. I use Line at 8 AM to get through the work group and culture group. At 6 PM I turn it off." (Mr.Tai, personal communication, July 5, 2018)) "I have Line, my younger sister taught me to use it. I have been using it for 2-3 years now. I use it on the tablet. I use it in my spare time. I am now addicted to Thai series." (Ms.Miss, personal communication, July 16, 2018)

In the interview, older adults realize the benefits of online media, which enabled them communications to be more convenient. They are able to follow the news easily. Some of the informants even use online media for entertainment. Most of the older adults go through trial and error, while they learn to use online media on

their own. When compared to the quantitative study, which found that the respondents were more addicted online. They follow the news and like to use the Internet to communicate and follow what is happening in society.

It is found that older adults use Line more than other applications, which is in line with the quantitative study confirming that they used Line the most. The characteristics that make Line popular among older adults is the convenience, speed, interactive communications in real time, and various groups that can be easily used by older adults.

5.2 Online Health Media Exposure Behavior

The study titled, "Online health Media Literacy of Thai Older Adults" collected data using in-depth interviews. The question guide examined two main issues, which is interest to expose to Online health media and behavior after exposure to Online health media.

5.2.1 Interest to Expose to Online health Media

Use of online media, which is an important tool, is necessary to people of all gender and ages. Older adults also use online media to communicate with members of their family, relatives, or friends, which helps keep a good relationship among them. In addition, online media could be used for various other objectives such as for entertainment, to keep them from feeling lonely, reduce stress, and search for information based on their interest. For older adults, their interest is about taking care of their health. It is in their best interest to keep themselves safe from illness or alleviate their condition. This information could be searched online. The researcher interviewed older adults and found that most older adults do not intend to search for health information on their own. Rather they are not intentional recipients of Online health information. They are exposed to information shared from friends and members in their online media. If the information is in line with their interest at the time, they would read and follow it. On the other hand, if the issue is not of their interest, they would just scroll past it. In each day, older adults are exposed to large amounts of Online health media. Some of them are repetitive and being shared back

and forth. Some of them don't realize that the reason they see the content repeatedly is because it is advertising aimed as selling products.

I see Online health media everyday. There are many people, who share about triglyceride, heart disease, physical therapy, backache, and waist ache. Whatever is not of my interest, I would just scroll through. I look at physical therapy sometimes because my leg aches. But, I don't do so continuously. (Mr.Mood, personal communication, July 16, 2018)

I often see content about cancer, diabetes, high blood pressure, and there are a lot of products being sold. When I read it, I realize it is a fraud. They have their techniques to do that. (Mr.Tid, personal communication, July 22, 2018)

I like to read information from Line. I am interested in herbs because they are easy to find. I like to read about finger root+honey and tamarind+lemon. There are formulas suggested by Acharn Suthiwita, Acharn Herbs, Clock of Life, and Lonely Graveyard. My friends share it to me. I am not interested but sometimes I share it too. I would check it out and share it to the group that is suitable to the content. (Ms.Walai, personal communication, July 28, 2018)

I am interested about herbs. I think it is safer than modern drugs. I looked in Face(book) and found that you can boil noni leaves, bael, okra, and Chinese jujube. I alternate taking them as remedies. (Ms.Lalin, personal communication, September 28, 2018)

I am mostly interested about herbs and plants. I would read and follow the recommendations. I read that bitter leaf tree can treat diabetes and sugar in the blood. I regularly blend vegetables with passion fruit. I would make a bottle and take it for 5 days. I don't often take food supplements because it is expensive. There are some recommendations I don't read and follow, because there are costs involved. (Ms.Rai, personal communication, February 6, 2019)

From the interview, it is found that most older adults are exposed to Online health media particularly about herbs to protect and remedy their condition. Many of the older adults explained that herbs are easy to find, close to them, and not

expensive. Some of them are part of the food regularly consumed, thus it is easy to try it. They think it is safe to the body when compared to modern medicine, which is known to accumulate in the body harming the liver and kidney. Older adults are interested in food and nutrition. They tune in to YouTube to seek out recommendations on food that is suitable for their age group. In addition, some of the older adults use YouTube to create exercise videos as a means to reduce body aches.

5.2.2 Behavior after Exposure to Online Health Media

The characteristic of online media that creates quick and immediate interaction, caused the researcher to want to examine how Thai older adults, who are not digital natives, use online media. When using online media which is different to the traditional media they have always used, it would be interesting to examine the behavior of older adults. This is particularly true for health issues, which is important for people of this age. The interview findings are examined in the following section.

Older adults share health information. In their opinion it is something interesting and beneficial so they want others to know it as well. However, they usually pass on the information only to their relatives or close friends. They do not send it to just anyone. In addition to sharing information after receiving health information, some of the older adults follow the recommendation. In some cases, they go to the source of the information in order to cure their illness.

> I have read about Psoriasis. Herbs like boiled mulberry could treat Psoriasis. I have told people for 5 years now. Honey-lemon soda is also good treatment. I told my family and relatives. They have tried it but it did not work. (Ms.Mar, personal communication, September 26, 2018)

> I watch health content sometimes, but not too much. I don't read a lot. However, I have taken some of the exercise steps to help with my backache. Sometimes I share content but I only do so with close acquaintances. I don't usually post content myself. I search for information on Google or look for remedies. I don't believe everything. I often compare the facts. (Mr.Sakda, personal communication, February 6, 2019) "I like to send information to everyone because they might not know it yet." (Mr.Sitti, personal communication, September 28, 2018)

I am interested about herbs so I try to get them and boil them. Some work; some don't. I watch exercise videos on YouTube. I save them and use them for exercise. I have watched a health program featuring a monk. There was a phone number. I went there for treatment in Nonthaburi. It cost 200 baht for the treatment. I did not search for it, but the information popped up so I became interested. I think it is good and I did not think it was a fraud because I actually got better. I tried searching on Facebook but I don't usually search on Google. (Ms.Kam, personal communication, July 5, 2018)

However, there is a group of older adults, who passively receive information and do not pass along these health content to anyone. This is because they think that health information online is not trustworthy or have been certified. They believe more in modern medicine. Some of the older adults say that they don't share health information because they think no one would believe them. To them health is something person and health information of one individual might not be applicable to others. "I often see content about herbs but I don't believe any of it. I believe doctors from the hospital more. I don't share health information; I rather believe the doctors. (Mr.Rong, personal communication, January 28, 2019) "I don't usually share any information. I choose the people with whom I share information. I usually read it first, when it is good, I would pass it on." (Mr.Mitree, personal communication, June 26, 2019)

I don't know how to search on Google. I know I have to type something but I never tried it. I read about health from the books. I don't usually share because I don't think anyone would believe me. I might have the disease but the treatment might vary from person to person. I don't think the same treatment could be used. (Mr.Tai, personal communication, July 5, 2018)) "I don't share because I am afraid it might not be true. However, if it is about exercise or something that people already know, I would sometimes share it." (Ms.Prapin, personal communication, July 16, 2018)

The interviews revealed that the behavior after exposure to online health media, older adults could be divided into two groups based on their opinions. One

group likes to share health information that they receive. Another group likes to just expose to information and rather not share it with others.

5.3 Online Health Media Literacy of Older Adults

The study titled, "Online Health Media Literacy for Thai Older Adults" used in-depth interviews based on the three components as follows: 1) Component 1 Access 2) Component 2 Analyze and Evaluate 3) Component 3 Use and Create

5.3.1 Component 1 Access

Component 1 Access – the researcher interviewed informants regarding the access to health information on online media. It is found that most of the older adults searched for health information online. Only 5 of the informants don't know how to use search. For the older adults, who do know how to search use Google and YouTube. They would input the words of their choice in the search box. "I search on YouTube. I know Dr. Green. Now I try to eat bland food. I look for the information myself or sometimes my children help me." (Ms.Walai, personal communication, July 28, 2018)

I search for information about herbs, particularly the Chinese herb, Nanchaowei. It is good for treating knee aches and diabetes. Pineapple washes the colon. Lemon with warm water in the morning helps with cleaning the bowel. I watch YouTube to do exercise. The sleeping posture is also important because I don't run since my knees ache. I search for the information on Google on my own. (Mr.Kraisorn, personal communication, October 3, 2018)

At this time the herbs people search for is Nanchaowei. I don't really believe it. I need to find the information first. I search on Google. I don't really believe it. I am afraid it would turn out to be toxic. I would rather take medication from doctors. Having doctors certify the medication is more convenient than searching for YouTube to find clips on how to exercise. (Mr.Mood, personal communication, July 16, 2018))

I have second phase of uterus cancer) I use Google and read lots of information and evaluate it. I look at the name of the doctors. Sometimes the

doctors don't even say the same thing. I need to choose and consider the information. I choose to listen to the cancer experts. I don't search for information on YouTube because I think watching is slower than reading. (Mr.Tid, personal communication, July 22, 2018))

I am interested in yoga. I search for information from Google. I check the source of the information. If I am close to them, I would give them health warnings. I don't usually share information. I usually read it first, when it is good, I would pass it on. (Mr.Mitree personal communication, June 26, 2019)

However, even when older adults can search for information on online media, only a few of them would take notice of the source of the information. They do not look at where the information comes from.

Among those, who do not know how to search for information, part of the reason is low education. They do not understand English. Some of them have just started to use smart phones. They are not familiar pressing the buttons. They don't know where to access information, while some don't have the desire to search for information about this issue.

The researcher examined the knowledge about basic medical terminology with the question about what it means to take medication before meals. Most of the older adults could correctly answer that it means that taking the medication 30 minutes before meals. Only a few of them answered that it meant taking the medication and then eating right away. Another question was about taking one teaspoon of medication. When asked what this meant, only 4 of the older adults said that it was taking the medication the size of the spoon given. However, most of them answered that it was the size of the coffee spoon. This is a misconception because the coffee spoon holds less than 5 cc, which is 1 teaspoon.

5.3.2 Component 2 Analyze and Evaluate

The examination of component 2, analyze and evaluate required having the informants watch health news and advertising of health products on online media. These include information about exercising by swinging the arms and advertising for a specific brand food supplement, which has a family of celebrities as the presenters.

The researcher provided both printed brochures and a tablet, which is similar to the visuals they would see in online media. From then, the researcher examined various issues so that the informants can analyze and evaluate.

5.3.2.1 Analyze and Evaluate Food Supplements Advertising

The researcher had the informants watch food supplements advertising, wherein a family of celebrities are presenters, who are an elderly couple. They are familiar with the presenters through their work. The mother, who is the presenter, during the time of the advertising was suffering from partial paralysis, and her condition improved. From the interview, it is found that older adults were able to discern that is was advertising for food supplements. Most of them believed that the presenters were paid for the advertising. Some thought that it was not a good idea to take this food supplement because it was just an advertising to make money. However, there were some older adults, who believed that the presenter must have taken the food supplements. They would not lie to the public.

The researcher asked about the credibility of the presenters, who are celebrities compared to regular consumers. Most of the older adults think that there is no impact on credibility. However, some think using regular consumers, they know would increase the credibility. "I have seen this advertising before. I think the celebrity was hired. In regards to the use of presenters, it does not matter whether they use celebrities or regular consumers because I don't believe people easily." (Ms.Mar, personal communication, September 26, 2018)

I have seen this advertising before. I think if it was a regular consumer, it would be more credible. There are news about celebrities being caught because they have been hired to promote food supplements. They don't really take those supplements. (Mr.Theera, personal communication, July 30, 2018)

Settha also advertises for life insurance. I need to see the price. If it is more than 5,000 baht, I won't buy it. I don't believe that they really take those supplements. If it was my friend, who told me I would believe it more than this. I don't dare to try it, maybe it is dangerous. (Ms.Noi, personal communication, July 5, 2018) "They are the presenter so I think they must take it too as well as getting paid." (Ms.Walai, personal communication, July 28, 2018) "I think they get paid. Celebrities won't lie to us. I think they take it

too. It is her good merit that helped her recover." (Ms.Sai, personal communication, September 5, 2018) "Settha advertised insurance. He said it was not necessary to get a health check but when my husband tried to buy the insurance, we found it was not true. Now I know they get paid for advertising. I don't believe them anymore. …If celebrities are presenters, I don't believe them. If it is regular consumers, I also don't believe them if I don't know them." (Ms.Rai, personal communication, February 6, 2019) "I think they really take the supplements. People with such status won't just make baseless claims." (Mr.Tai, personal communication, July 5, 2018)

Upon further investigation, the informants were asked if the food supplements could cure the symptoms and if they were given this food supplement for free would they try it. The interviews revealed that none of the older adults were confident that the food supplements were capable of curing the illness. There were some older adults, who did not want to take food supplements in the first place. Some considered treating their illness with such supplements. However, the advertising that seemed to suggest results that could cure a broad range of illnesses appear to be less credible. This is why the group of informants do not want to try this food supplement.

It is advertising so they choose the presenter that is suitable. Maybe they really take the supplements. However, advertising usually hires celebrities. They don't take food supplements anyway. I believe that my health is good enough. The natural way is the best. The doctor said that the more supplements taken would mean it would be easier for me to die. I have given food supplements for free but I did not even try it. (Ms.Prapin, personal communication, July 16, 2018)

It is persuasive advertising. I would believe them if a doctor came out and said that the patients were treated. If you don't believe the doctor, who would you believe? Celebrities get money from advertising. I don't believe they take the supplements. Most people believe celebrities more than just regular people. If I was given it for trial, I would ask the doctors opinion before I try it. (Mr.Mood, personal communication, July 16, 2018)

They are hired to appear in the advertising. Settha is in many advertising. I have seen him. Celebrities are paid. If the presenter is a regular person, it would depend if I know them or not. If I know the regular person, I would not take it even if I was given it for free. I would prefer to see the doctor.

…Food supplements are chemicals that have been synthesized. If you eat vegetables and eat the proper nutrition of the five food groups, which is enough. For instance, Metta Rungrat advertised medication even though she is not sick. …I have a friend who died from taking food supplements. He had cancer but refused to see the doctor." (Mr.Tid, personal communication, July 22, 2018) "I am not sure but this is too much. It offers universal treatment." (Ms.Walai, personal communication, July 28, 2018)

While some of the older adults would consider the ingredients in the food supplement. They believe that if the ingredients were nature, it would not be dangerous and might even have real health benefits. They want to try it. They also consider the price of the food supplements. It appears that the more expensive the supplement the more it is believed to have curing benefits. However, only one older adult said that before taking the supplements, he/she would consult the doctor. In addition, it is found that older adults think that presenters for food supplements make the products more interesting particularly if they are given the supplements for free. "I have seen this advertising before. I think he really took the supplements. I don't think he would be lying. He is rich. It is his job. The food supplement must be really beneficial. If I get it for free, I would certainly try it. …If the presenter is a regular person, it would also be trustworthy. If someone took the supplements and got cured, I am sure they would like to share the information." (Mr.Sitti, personal communication, September 28, 2018)

It has been observed that some of the older adults think that if they had the same symptoms as the presenter in the advertising, they would try to take these food supplements as well. When people are not sick, they don't feel compelled to be interested. But if they got a free trial, they would consider it.

5.3.2.2 Analyze and Evaluate Information about Exercising by
Swinging the Arms

In the examination of component 2, analyze and evaluate, the researcher had the informants watch health news that have been disseminated online about exercising by swinging their arms. The researcher had the informants look at the poster that provided information about exercising by swinging arms from the Thai Health Foundation, which was heavily publicized. After seeing the poster, the researcher had the older adults read the news about the negative effects of swinging their arm, which could be dangerous. The interview results reveal that older adults know about exercising by swinging their arms. Some of them knew this exercise from online media, while some read the newspaper, or others have been told by friends. However, most said that they have tried it before. They know how to do it but they differed in the number of times of did the exercise or the duration. This difference is based on the information they have received. Most of them believed that exercise was good for their health. However, most of the informants revealed that most of them did not exercise regularly.

When the older adults were given the health news about exercising by swinging arms, most of them do not believe that it would be really dangerous. They believed the danger results from doing exercise the wrong way or doing it in excess. When asked about the reference from a Siriraj doctor, most of the older adults informants were not sure if the warning was real. "I do it sometimes. If it rains and I cannot go on a run, I swing my arms. I believe it is good. It was even written in the book of Phra Jaran. …Muscle damage does not happen easily. I think it depends on the individual. Don't over do it, about a hundred times is enough." (Mr.Tai, personal communication, July 5, 2018) "I heard this from my friend, who said doing it about 100-300 times would make breathing easier. I do it every morning. I don't believe this news because from my experience I have no problems at all." (Mr.Cha, personal communication, July 17, 2018) "I have tried doing it about 200 times by my arms ached so I only do it 50 times. I believe it improves my health. I don't look at the sponsoring organization. The lettering is so small so I don't usually read it. …I don't believe the news. I think the person overdid it. You just have to try it and you will know it is good." (Ms.Miss, personal communication, July 16, 2018) "Swinging the

arms was recommended by the health volunteer, who organized the training I attended. You can search for it on Google…. I think the damaged muscle was the result of not doing it right." (Ms.Mar, personal communication, September 26, 2018) "I have seen information about this but in animation form. I do it every morning. I swing my arms about 1,000 times and I am fine. I don't believe this news. I think the person did too much exercise." (Ms.Tip, personal communication, February 6, 2019) "Swinging my arms helps with the circulation…I don't believe this news. I think they have over done it. Is the Siriraj doctor for real? Siriraj said that we should watch television for more information." (Mr.Tid, personal communication, July 22, 2018)

It has been observed that most of the older adults use their own experience in swinging their arms to judge the credibility of the news. Older adults also see the health benefits of swinging their arms. However, they do not do it continuously.

5.3.3 Component 3 Use and Create

For the examination of component 3 use and create, the researcher examined the sharing of health information and dissemination of information from the researcher's own experience. The interviews reveal that most of the older adults share information sometimes. Most of the information they share is about exercising and herbs. Some only share information with their close friends. They share what they think is beneficial and trustworthy. When they find people sharing false health information, most of them would not pay any interest and not do anything. They don't tell and warn others. There are only a few, who would warn their friends. They would choose to tell the person personally so as not to shame them.

The dissemination of health information from the personal experience of older adults, reveal that most of them are not confident in their own credibility. In addition, they think that health is a personal issue. Each person might have different illness and symptoms, which might differ, therefore the treatment would be different. It is better to go to the doctor or talk to someone face to face. This is why older adults don't want to publicize their health. "Usually I share only two types, which are warning and beneficial… I think some people don't believe us. Doctors can tell us the information, but it should be done face to face." (Mr.Sitti, personal communication, September 28, 2018)

I don't share anything. A hundred people have a hundred different symptoms. This is why I don't share information. I prefer to go to the doctor. If my friend shares wrong information, I would tell them in the inbox to check the news and not to share. I need to care about their feelings and save their face. (Mr.Tid, personal communication, July 22, 2018) "Most of the time I pose exercise clips but I won't film my own. I am ashamed to do so." (Ms.Prapin, personal communication, July 16, 2018)

When I share I would checkout the organization certifying the message or I would try it out. I would post about it. Most of the time I post it in Line. However, I don't guarantee that I would post about myself. (Mr.Mood, personal communication, July 16, 2018) "I don't usually share about this. I don't think anyone would believe me. I talk to my friends so I would rather tell them. I want to use online media but I don't want to create content." (Mr.Tai, personal communication, July 5, 2018) "Most of the time I share some information because I am the community leader. When I find something interesting, I share it." (Mr.Theera, personal communication, July 30, 2018) "I don't usually like to share. I prefer to talk. I don't like to share." (Ms.Napa personal communication, February 6, 2019) "I don't share much. I share about herbs a bit. The ones that are credible like Aphaiphubet. I am not very good with words. I don't have a way with words so I prefer having a conversation." (Ms.Lalin, personal communication, September 28, 2018)

Most of the older adults make use of health media to serve their needs. Some people like to exercise and watch exercising clips. Some like to search for herbal food supplements to prevent and alleviate certain symptoms. They would try to follow the health advice and share information. It is found that most older adults like to tell others through interpersonal communications or through face-to-face communications rather than online media.

CHAPTER 6

SUMMARY, DISCUSSION AND RECOMMENDATION

The study titled, "Online Health Media Literacy for Thai Older Adults" is a mixed methods research. The first part is a qualitative research method using survey methodology for data collection utilizing a questionnaire. The second part is a qualitative research using in-depth interview methodology to collect data from informants aged between 50-69 years, who have been exposed to online health media from five regions which are the north region, the central region, the south region, northeast region, and Bangkok. The objectives are stated as follows:

1) To study the lifestyle of older adults.

2) To study the behavior of exposure to online media and online health media of older adults.

3) To study the skills and level of online health media literacy of older adults.

4) To study the relationship between the lifestyle of older adults, online media exposure, and level of online health media literacy of older adults.

5) To study the difference between older adults of different age groups and education level with their level of online health media literacy.

6.1 Summary of the Research Findings

In this study the quantitative research method utilizing the survey and a questionnaire for data collection. The sample size is 404 respondents. They are aged between 50 to 69 years old, who have been exposed to online media. There are equal numbers of male and female respondents aged between 52 to 59 years and 60 to 69 years.

The research findings indicate that most of the respondents have married marital status (62.6%). This is followed by divorce or widowed (23.8%) and single at 13.6%.

Most of the older adults have the education level or less than high school at 27.7%. This is followed by having a bachelors degree at 22% and vocational school and masters degree have a similar percentage at 12.6% and 12.1% respectively.

Most of the respondents live in the northern region at 32.4%. This is followed by living in the central region 24.6% and the northeast region at 20.6%.

Most older adults are still employed at 64.4%. There are 35.6% who are unemployed. Most of them have their own business or are engage in commerce the most at 33.9%. This is followed by employed and government officials at 29.7% and 17.8% respectively. They have an average expenditure per month between 1 to 10,000 Baht. Most (46.1%) have an expenditure between 10,001 to 20,000 Baht at 23.4%. This is followed by 20,001 to 30,000 Baht at 12%. Most of the older adults have an average expenditure of 29,247.52 Baht. The highest expenditure is 1.2 million Baht and the lowest is 2000 Baht.

Most of the older adults live with their spouse and children at 56.2% and 50.5% respectively. This is followed by older adults who live with their parents at 9.9%. In addition, some of them live alone at 7.4% and stay with their friends the least at 0.5%.

The older adults, who have chronic illness and non chronic illness, are approximately similar in number at 53.7% and 46.3% respectively. The chronic illness found in most adults are diabetes, high blood pressure, and cholesterol.

6.1.1 Lifestyle of Older Adults

The researcher has collected data nationwide about activities, interests, and opinions in the way older adults live their lives. It is found that the activities that most older adults do is to clean their house, tend to the garden, surf the Internet, exercise, and join other activities at a high-level.

In terms of interest most of the older adults are interested in caring for the children, grandchildren, family members, taking care of their health, food and nutrition, as well as following the news in society. They join the activities within the community including those that are organized by various agencies at a high-level.

In terms of opinions most of the older adults are of the opinion that older people should save money and not spend too much at a high-level. This is followed by

the opinion that they can use their mobile phone or the Internet to make them appear more modern. They believe there should be no retirement as long as they can still work.

After that the researcher had used this line of inquiry in conjunction with questions regarding the activities, interests, and opinions regarding the lifestyle of older adults in order to categorize them into groups. The analysis of the findings were subject to factor analysis using varimax rotation in order to find the relationship between the variables and categorize the lifestyle of the older adults into four groups as follows:

1) Those who are addicted to the Internet and follow the news

2) Those who use the mobile phone but they do not believe in online purchases and tend to spend carefully

3) Those who have income to take care of their family and trust food supplements and herbal remedies

4) Health conscious, play sports, and do activities

6.1.2 Online Media and Online Health Media Exposure in Older Adults

On a weekly basis older adults mostly use online media, which is Line. This is followed by Facebook and YouTube. It is found that most older adults like to read or watch video clips the most. This is followed by sharing, posting status, and making comments by expressing their feelings using emoticons. Sharing their opinions using their own content is found the least.

Most of the older adults use online media in order to follow the news. This is followed by using it to follow other people, for entertainment and relaxation, and finding new information. From the study it is found that older adults use online media to buy products and services the least.

Most of the old adults use online media when they are have free time. There are only 13.4% who report that they use online media all the time. It is found that older adults are online on average 3.17 hours a day. The least amount of time that older adults spend online is 20 minutes. The longest time that older adults are online is about 16 hours per day. Most of the older adults access the Internet through mobile

phones. In their access to most of the media, most of the older adults prefer to read. This is followed by looking at images and watching videos.

Most of the older adults report that they themselves are the most influential in terms of using health media. This is followed by friends, doctors, nurses, and family members. On the part of actors, singers, and emcees, they are influential in accessing online health media the least.

The most important factor impacting the exposure to online health media is the desire to protect and maintain their good health. This is followed by accessing online health media because of illness and issues in the news.

Most of the older adults access online health information regarding knowledge and treatment of illnesses that they have. They also access online health media for exercise or sports, information about food and nutrition, and medicines for treatment respectively.

Upon accessing online health media most older adults follow the recommendation that they receive from the online health media. This includes exercise and consumption of food. They also criticize and discuss the information with their family and friends. In addition, they seek for more health information from other media and post status or share information about health that they have received at a moderate level.

In terms of sharing health information with others, expressing their opinions through comments on the posts, purchasing products or services about health that they have read or watch, and sending direct messages to the producer in order to request information, it is found that older adults engage in such behaviors at a low level.

6.1.3 Online Health Media Literacy of Thai Older Adults

In the study, the researcher has categorize the findings on online health media among Thai older adults into three dimensions which are access, analyze and evaluate, and use and create.

The research findings of the study titled, "Online Health Media Literacy for Thai Older Adults" show that there are three dimensions of access, analyze and evaluate, and use and create. The findings revealed that they have moderate online health media literacy.

Dimension 1 Older adults can access media at the moderate level.

Dimension 2 Older adults can analyze and evaluate at a moderate level.

Dimension 3 Older adults can use and create positively at a moderate level.

Dimension 3 Older adults can use and create negatively at a moderate level.

6.1.4 Analyze and Evaluate Online Health Media of Older Adults

In this study the researcher further examined the analyze and evaluate dimension of online health information among older adults. The researcher selected the health topic about lemon soda curing cancer, which was found on various social media sites. It has been widely shared and many people believe it. Some even actually act based on the recommendation. This issue was a big social topic for a period of time to the point that the main media in particular television programs had to create new scoops to inform the public not to believe this health tip. The research findings indicate that most of the older adults at about 60.4% have been exposed to this particular health information. The findings indicate that they have been exposed through Line. This is followed by Facebook and YouTube. Most of the older adults are not sure regarding the trustworthiness of this information about lemon soda at about 63.9%. This is followed by older adults who don't believe this information at 23.2% and those who believe this information at 12.9%.

When asking older adults about the trust and those, who are not sure about this particular lemon soda health information, it is found that most of the older adults reason that this information was trustworthy. This is because there was the name of a doctor on the information. They explained that information from medical profession is trustworthy.

Furthermore, older adults were asked if the information about lemon soda was not true what do they think will be the most impact. They said that the cancer patients may not recover and might lose their lives. This is followed by negative impact on the reputation of the doctor from alternative medicine who was used as a reference and WHO causing the misunderstanding. Moreover about 27% of all the adults believe that if this information is not true there is no impact. Meanwhile 19.6% said that if it wasn't true and they shared the information, it would be a sin.

To further investigate the research findings that older adults, who believe this particular lemon soda health message (12.9% or 52 people from 440 respondents), the researcher conducted additional analysis. The results and conclusions are explained in the following section.

Older adults who believe the lemon soda information are 53.8% male and 46.2% female. In terms of age 48.1% they aged between 50 to 59 years. Those aged between 60 to 69 years make up 51.9%. Most of the older adults have less than high school education at 48.1%. This is followed by high school or vocational school education at 19.2%, bachelors degree, masters degree, middle school and vocational school at about the same number at 11.5%, 7.7%, 7.7%, and 5.8% respectively. Older adults who believe the lemon soda news information mostly live in the northern region at 36.5%. This is followed by those in the northeast and central region at 30.8% and 23.1% respectively. The rest of them live in the south region and Bangkok among those who believe in the lemon soda news information at 5.8% and 3.8% respectively. Older adults who have chronic illness and do not have similar numbers at 51.9% and 48.1% respectively.

Older adults who believe the lemon soda health information spent 2.74 hours online. It is found that the least time spent on online media is 30 minutes while the most is about 15 hours per day.

In each week older adults, who believe the lemon soda information, have a moderate level of usage of online media of 3 to 4 days per week. Most of them use Line followed by YouTube at about 3 to 4 days per week and Facebook at 3 to 4 days a week.

In the study older adults, who believe the lemon soda news information, were analyzed based on the three dimensions of access, analyze and evaluate, and use and create. The analysis revealed that older adults who believe this content have a moderate level of digital literacy in all dimensions.

In dimension 1 older adults, who believe the lemon soda content, have access to media in terms of online health media literacy at the moderate level.

In dimension 2 older adults, who believe the lemon soda content, have analyze and evaluate at the moderate level.

In dimension 3 older adults, who believe the lemon soda content, can use and create positively at the moderate level.

In dimension 3 older adults, who believe the lemon soda content, can use and create negatively at the moderate level.

The study continues to analyze the behavior of older adults in exposing to online health media. It is found that 41.8% of older adults will look for information from other sources. This is followed by discussing the health information with their acquaintances at 35.1%, about 30% don't do anything, and only 5% would follow this type of health recommendation.

In examining online health information, older adults would consult doctors or nurses the most. This is followed by asking family and friends, medical agencies, and searching for online information on their own respectively.

6.1.5 Hypotheses Testing

The study, has set four hypotheses as follows:

1) Hypothesis 1 Lifestyle of older adults has a relationship with online health media literacy of older adults. The relationship will be tested for three components as presented in the following section.

Older adults who have the lifestyle type 1 Internet addicted and follow the news, have a positive relationship with online health media literacy at a moderate level add the significance level of 0.01.

Older adults who have lifestyle type 2 use mobile phone but do not trust purchases online and spend carefully have a positive relationship with online health media literacy at a moderate level at the significance level of 0.01.

Older adults who have lifestyle type 3 create income for the family and believe in food supplements and herbal remedies have a positive relationship with online health media literacy at a moderate level at the significance level of 0.01.

Older adults who have lifestyle type 4 health conscious, play sports, and do activities have a positive relationship with online digital health media literacy at a low level at the significance level of 0.01.

The analysis of the relationship between lifestyle of older adults and online health media literacy in all three dimensions reveal the following:

Lifestyle of older adults has a positive relationship with online health media literacy dimension 1 access at the moderate level at significance level of 0.01.

When the analysis is conducted based on the lifestyle of older adults the findings are presented in the following section.

Older adults, who have lifestyle type 1 Internet addicted and follow the news have a positive relationship with online health media literacy dimension 1 access at the moderate level at the significance level of 0.01.

All the adults who have lifestyle type 2 use mobile phone but do not trust online and spend carefully have a positive relationship with online health media literacy dimension 1 access at a moderate level at significance level of 0.01.

Older adults who have lifestyle type 3 create income for the family and believe in food supplements and herbal remedies have a positive relationship with online health literacy dimension 1 access at a low level at the significant level of 0.01.

Older adults who have lifestyle type 4 health-conscious play sports and do activities have a positive relationship with did online health media literacy dimension 1 access at a low level at the significance level of 0.01.

Lifestyle of older adults have a positive relationship with online health media literacy dimension 2 analyze and evaluate at a moderate level add a significance level of 0.01.

Older adults who have lifestyle type 1 Internet addicted and follow the news have a positive relationship with online health media literacy dimension 2 analyze and evaluate at a moderate level at the significance level of 0.01.

Older adults who have lifestyle type 2 use mobile phone but do not trust online and spend carefully have a positive relationship with online health media literacy dimension 2 analyze and evaluate and access at a low level add a significance level of 0.01.

Older adults who have lifestyle type 3 create income for the family and believe in food supplements and herbal remedies have a relationship with online health media literacy dimension 2 analyze and evaluate at a low level at a significance level 0.01.

Older adults who have lifestyle type 4 health-conscious play sports and do activities have a relationship with online help media literacy dimension 2 analyze and evaluate at a low level at the significance level of 0.01.

Lifestyle of older adults have a positive relationship with online health media literacy dimension 3 used to create at a lower level at the significance level of 0.01.

Older adults who have lifestyle type 1 Internet addicted and follow the news have a positive relationship with online health media literacy dimension 3 use and create at a low level at the significance level of 0.01.

Older adults who have lifestyle type 2 use mobile phone but do not trust online and spend carefully have a positive relationship with online health media literacy dimension 3 use and create at a low level at the significance level of 0.01.

Older adults who have lifestyle type 3 create income for the family and believe in food supplements and herbal remedies have a relationship with online health media literacy dimension 3 use and create at a low level at the moderate level 0.01.

Older adults who have lifestyle type 4 health-conscious play sports and do activities have a relationship with online help media literacy dimension 3 use and create at a low level at the significance level of 0.01.

2) Hypothesis 2 Online media exposure of older adults have a relationship with online health media literacy. The relationship of all three dimensions in the study are presented in the following section.

The analysis of the relationship between online media exposure of older adults and online health media literacy of older adults reveal the following:

Exposure to online health media among older adults have a positive relationship with online health media literacy at the moderate level at the significance level of 0.01.

The analysis of online media categories reveal the following:

Access to Line of older adults have a positive relationship with online health media literacy at a low level.

Access to Facebook of older adults have a positive relationship with online health media literacy at the moderate level.

Access to Website of older adults have a positive relationship with online health media literacy at the moderate level.

The analysis of the relationship of online media exposure of older adults and online media literacy in all three dimensions revealed the following:

Exposure to online media of older adults has a positive relationship with online health media literacy, dimension 1, access at the moderate level at the significance level 0.01.

Exposure to online media among older adults has a positive relationship with online health media literacy dimension 2, analyze and evaluate at the moderate level at the significance level 0.01.

Exposure to online media among older adults has a positive relationship with online health media literacy dimension 3, use and create at the low level at the significance level 0.01.

3) Hypothesis 3 Older adults of different age groups have different levels of online health media literacy.

The research findings indicate that older adults of different age groups have no difference in online health media literacy at the significance level .05 (Sig < .05).

Analysis of the differences in the three dimensions are presented in the following section.

Dimension 1 Access – Older adults aged between 50-59 years have more access than those aged between 60-69 years.

Dimension 2 Analyze and Evaluate – Older adults in different age groups have no difference in the ability to analyze and evaluate at the significance level .05 (Sig < .05).

Dimension 3 Use and Create – Older adults in different age groups have no difference in the ability to use and create at the significance level .05 (Sig < .05).

4) Hypothesis 4 Older adults who have different levels of education have different levels of online media literacy.

The research findings indicate that older adults who have different levels of education have no difference in the level of media literacy at the significance level .05 (Sig < .05).

Analysis of the differences in the three dimensions are presented in the following section.

Dimension 1 Access – Older adults, who have different levels of education have different levels of access at the significance level .05 (Sig < .05).

Dimension 2 Analyze and Evaluate – Older adults, who have different levels of education have different levels of analyze and evaluate at the significance level .05 (Sig < .05).

Dimension 3 Use and Create – Older adults, who have different levels of education have no difference in levels of use and create at the significance level .05 (Sig < .05).

6.1.6 Summary of Qualitative Research Findings

The qualitative research method utilized the in-depth interview for data collection from 28 older adults. There were both male and female informants of equal numbers. The older adults are age between 50 to 59 years and 60 to 69 years. Both groups have 14 informants.

Older adults prefer to use Line application more than others. In using online social media older adults have gone through trial and error themselves. They usually go online after they have completed their daily responsibilities.

Older adults realize the benefit from online media. It is convenient for communications, following news is also easy. Some of them use it for entertainment. Based on the research findings of the quantitative study, this group of older adults can be classified as those who are addicted to the Internet and follow the news. They like to use the Internet to communicate and follow about the news that's happening in society.

It can be observed that older adults prefer Line more than other applications. This is in line with the quantitative research findings that found that all the adults prefer to use Line application the most. The characteristic of Line that makes older adults prefer to use it is the convenience, speed, and interactivity off the communications that happens in real time. Older adults can learn to use it easily because it is not complex.

The study utilized in-depth interview for data collection. The researcher had categorize the interview into two main topics which are interest in accessing online health information and behavior after accessing online health media.

6.1.6.1 Interest in Accessing Online Health Media of Thai Older Adults

Most of the older adults prefer to access online health media about herbal remedies. This is to prevent and treat the symptoms that they have. Many of the older adults revealed that health remedies are easy to find. It is in their environment and it's not expensive. Some of the types of herbal remedies are found in food that are eaten regularly therefore it is easy to try using it. They believe that it is safer to the body than modern medicine. They believe that taking too much modern medicine will accumulate and become dangerous for the kidney. Older adults are also interested in food and nutrition. They watch YouTube to find recommendations about food that is suitable for their health. In addition, all the adults use YouTube to create clips of exercise for health and clips for managing their body to reduce pain and aches as well. Some older adults believe that when they are sick food supplements should be taken. However, if they are not sick they are not particularly interested in food supplements.

6.1.6.2 Behavior after Exposure to Online Health Media

Opinion of older adults can be categorized into two groups. One group likes to share health information that they receive, while the other group tends to just access the information. They do not pass on this information to others.

Older adults who share information to others explain that if it is something interesting and beneficial they would like others to know it as well. They usually pass on the information to their relatives and close friends only. They do not spread it to others indiscriminately. In addition to sharing information after they receive online health information. Some older adults also try to act upon the recommendation or some even go to the source of that information in order to treat their illness.

The other older adult group, which only access is the information and do not pass along the health information to anyone, do so because they believe that online health media information is not trustworthy or has not been certified. They

trust modern medicine more. Some of the older adults gave the opinion that they do not share health information because they think others won't believe them. They think that health is a personal matter and cannot use their own health information with others.

6.1.6.3 Online Health Media Literacy Thai Older Adults

1) Dimension 1 Access

Most of the older adults know how to search for online health information. Only five of them do not know how to do so. Older adults search for online health information for the most part through Google and YouTube. They input the desired keyword in the search box. There are only a few old adults who observe health information to find the source, which could either be from an individual or organization.

2) Dimension 2 Analyze and Evaluate

Older adults can determine which content is news and which is advertising.

For advertising, it is found that most older adults understand that the presenter is a celebrity, who has been hired. This has no impact on the trust that they have in consuming supplementary foods. The interview revealed that eating food supplements depends on their condition of illness, ingredient of the food supplement, and price.

It can be observed that older adults believe that if they are sick in the same way as the presenter in the advertising, the food supplement should be taken as well. However if they are not sick they do not feel the need or interest in trying the product even if it was free. They would have to think about it first.

When asked about the health information of exercising by swinging the arms, the interview revealed that older adults know this type of exercise. Some of them know it from online media. Some of them read about it while others heard about it from other people. Most of them have tried it before and know how to do it. However the number of times that they swing the arms are different. They spent the duration all the time in swinging their arms differently. This was based on the information they have received. Most of them believe that this is a good exercise for

their health. From the interview it is found that most of them do not do this regularly and continuously.

When older adults were given the news about the danger of swinging their arms it is found that some of the older adults analyze that they do not believe this. They do not believe that swinging their arms could be dangerous. They believe that this danger comes from swinging arms the wrong way or doing too much of it. Regarding the reference from the doctor from Siriraj Hospital they are not sure that this is a true warning from the doctor.

It can be observed that older adults use their experience in having swinging their arms before to judge the trustworthiness of this health information as well.

3) Dimension 3 Use and Create

The researcher studied the issue of sharing health information and disseminating information about health from their own experience on social media. The interview revealed that most older adults sometimes share health information. Most of them will be about exercise and various herbs. Some of them said that they share the information only with their close friends. They share what they believe is beneficial and trustworthy. If they find that others are sharing false health information they would not do anything about it. They won't be interested to warn other people about it. Only some older adults who have seen false health information would warn their friends. They would only tell about it personally so that it will not offend the person in public.

In sharing health information from their own experience on social media, it is found that most of the older adults are not confident in their own information. They are uncertain that it will be trustworthy. They also believe that health is a personal issue. Each person has different illnesses and symptoms therefore the means of treatment would also not be the same. They believe that people should go to the doctor or talk to others individually. Therefore most of the older adults do not want to disseminate their own health information.

In addition, it is found at most older adults like to tell others information using interpersonal communications or group communications in the face to face form more than online.

6.2 Discussion of Research Findings

The research findings can be categorized into sections to be discussed.

6.2.1 Lifestyle of Older Adults

From the analysis of activities, interest, and opinions in the lifestyle of older adults, it is found that there are four types of activities that older adults prefer to do at a high level. This includes cleaning the house and tending to the garden, surfing the Internet, exercise, and joining various activities, which are related to the daily life of the older adults. Most of the older adults do not go out of their home therefore caring for the house and the garden is a popular activity. When they have free time older adults would use it to surf the Internet. All the adults are at the age where they care about their health therefore they do activities such as exercising regularly. In terms of interest older adults are interested in taking care of their children and grandchildren in the family, care about their health, food, and nutrition. They are interested in these topics because it is the basis about themselves and their family. In addition, older adults are interested to follow the news in society and join various activities in the community, which are organized by other organizations. This is a way to use their free time in a beneficial manner and reduce their feeling of being lonely. This is in line with the Activity Theory (Havighurst, 1960, as cited in Lertwanlop Srisaphonphusitti & Thamonphat Srisaphonphusitti, 2018, p. 259). The theory explained that the social status of all the adults which emphasizes the positive relationship between the activities and satisfaction in the life of older adults. It can be said that when people get older their status and roles in society will be reduced. However, the individual still wants to be needed by society like people in the middle age. This theory believes that older adults have the need to join activities for their happiness and having a good life. This is the same for older adults. They want to join activities that they're interested in. In terms of opinion most older adults believe they should save money and not to spend it without thinking. This is because of their age and physical condition. They are already old therefore going out to work is not easy and effective like when they were young. They need to save money and not spend too

much. This is one way that older adults spend their last years so that they will not bother anyone.

The aforementioned research findings could be used to categorize older adults based on their lifestyle into four groups as follows:

6.2.1.1 Group 1 Internet Addicted

It is the characteristic of this group of old adults who have accepted The new technology. This is in line with the Diffusion and Adoption of Innovation Theory proposed by Rogers and Shoemaker. This explains how the target excepts, considers, and finally practive/adopts innovation. This group of all the adults have excepted Internet and use it to follow news and information in society.

6.2.1.2 Group 2 People who use mobile phone but do not trust online purchase and spend wisely

This group of older adults believe that people at their age should not spend too much. They also believe that using the mobile phone and spending time online makes them appear more modern. However they do not trust the Internet particularly making purchases of products online. This is because they believe there is risk of fraud or cheating. This group realizes the benefit of technology. However they also realize that there are two sides to the technology both positive and negative.

6.2.1.3 Group 3 Older adults who make a living taking care of their family and believe in food supplements and herbal remedies

This group can be divided into two sub groups. First is the group of those who still want to work. They might have their own business and do not want to retire. Another group are those who have the necessity to make a living to support their family or help as another means of income to reduce the family burden. However these older adults are the people who view the benefit in order to make more income. This is in line with the group of older adults who want to prepare for the future. Based on the research analysis, it is revealed that older adults in this group make plans in advance. They view that taking food supplements for good health is a necessity. They believe that there should be no retirement age.

6.2.1.4 Group 4 Health conscious, play sports, and do activities

This group of older adults have retired from their regular work. They have sufficient income to live their later years. They spend their time doing activities

such as taking care of their home, the garden, play sports, and join various activities, which help to reduce their loneliness. This is in line with the research findings indicating that health-conscious older adults take care of themselves both internally and externally. They also like to join activities that help society.

These four older adult groups reflect the lifestyle of older adults Thailand. In terms of health these four groups of older adults have their own different way to take care of their health.

6.2.2 Online Media and Online Health Media Access Behavior

6.2.2.1 Frequency in Using Online Media of Older Adults

The research findings indicate that in each week most of the older adults use Line the most. This is followed by Facebook and YouTube. This is in line with the research from the Marketing Department, College of Management, Mahidol University. This research is conducted with respondents age between 55 to 70 years. The sample size was 600 for respondents. It is found that the media used most by this group in the first three ranks are number one line. OK the research findings of the Electronic Commerce Department revealed Internet users media usage trend in Thailand in 2020. It is found that baby boomers born between 1946 to 1964 age between 56 to 74 years used social media. First rank is Facebook, Line, and YouTube at 95.3%, 93.1%, at 88.4%, respectively. The research findings indicate that older adults prefer to use these online social media at a similar level of frequency. The qualitative research findings indicate that older adults reason that Line is frequently used because it is easy to use.

6.2.2.2 Characteristic of Online Media Usage

In using online media older adults prefer to read or watch videos the most. This is followed by share, post status, and making comments by using emoticons or using expression buttons. This is in line with the research findings of Manassinee Boonmeesrisa-nga and Mintra Sodchuen, Social Media Usage Yypology of Older Adults in Thai Society, Case Study Bangkok Metropolitan Area. The research finding indicates that social media is used primarily in two forms that is audio visual and video more than typing messages. This is because sending images or video is a lot easier and not complicated. The expression of feelings by pressing

emotion buttons or emoticons is also easier and faster than typing which might result in errors easily and takes more time. This research also found that older adults prefer to express their opinions with the shortest possible message. This is because of the aforementioned reasons together with the physical condition of the old adults such as poor eyesight, cannot see clearly so they do not want to type. This is in line with the aforementioned study (Manassinee Boonmeesrisa-nga & Mintra Sodchuen, 2017), which stated that typing messages are easy to make mistakes and difficult to read. Most of the images that they sent are quotes and information.

6.2.2.3 Objective in Using Online Media

Most of the older adults use online media in order to follow the news. This is followed by connecting with other people, entertainment, relaxation, and fighting for knowledge. This is in line with the research titled, "Thai Elderly Behavior of Internet Use" (Samarn Loipha, 2014) which revealed that the main objective in using the Internet of older adults in Thailand is for entertainment. This is followed by access to information.

In addition, this research found that older adults use online media in order to buy products and services the least. From the interview of the respondents it is found that the reason for not using online media to make purchases of products and services is because they do not know how to use it. They do not know how to make orders online. There are also some older adults who are afraid to be cheated because they have heard it on the radio or television. However if they do want to buy products they would tell their family members to help them make the purchase. If they want to buy health products they buy those heard about on the radio or are sold directly to their home. This is because they are worried and not confident in the use of real technology. Lee and Maher (2021) explained that technophobia reduces the opportunity all the adults have. On this issue Peek, Wouters, Van Hoof, Luijkx, Boeije, and Vrijhoef (2014) explained that technophobia is normal among those who did not grow in an environment where there is digital technology. Changing the mindset that impacts the behavior is not something that can be done quickly.

6.2.2.4 Daily Usage of Online Media

Most older adults use online social media after they have finish their daily routines. It can be observed that 13.4% of older adults use online media all the

time. This is because of their changes in physiology such as eyesight problems or hearing problems. If they used too much online media, health problems will follow. This is in line with Pew Research 2018 which indicated that the behavior of Americans age over 65 years in 2016 revealed that only 8% use the Internet all the time. This might result from the physical factors indicated in the previous section.

6.2.2.5 Amount of Time Spent on Online Media Daily

Older adults use online media on average 3.17 hours per day. This is different from the research findings of the Electronic Business Development Department, which reported that Internet users in Thailand in 2020 particularly older adults use the Internet on average 8 hours 41 minutes.

The least time spent online is 20 minutes. The most time spent online is 16 hours per day.

6.2.2.6 Influencers of Interest in Online Health Information

Most of the older adults view themselves as the most influential person impacting the exposure to online health information. This is followed by friend, doctor, nurse, and family members at almost the same proportion. It can be observed that all the adults are confident in their own thinking. From the interview of the respondents it is found that most of the older adults are confident in their ideas and experiences. This is in line with Social Cognitive Theory (Bandura 1986). The theory explains that there are three factors that affect the individual including cognition that affects behavior and the environment. Therefore interest in online health information influenced by the self, results from the belief and illness both physically and mentally. This might have an impact on the behavior of interest in online health information. This is in line with information from the interview. It is found that some of the older adults believe that if they are sick they need food supplements. However if they are not sick they would not be interested in this product. Even if it was given for a free trial they would have to think before they will take it. Therefore it is of interest that online health communications should support the behavior and environment that would make all the adults interested in online health information that is beneficial to their own health.

However, it is found that most older adults still believe advice about health from the doctor or nurses involved in their care. They also ask family members

and friends. In terms of celebrities, singers, emcees, they have influence on the older adults in accessing online health behavior the least. From the interview it is found that older adults reason that celebrities or singers who advertise they do it for a living. Therefore it is not trustworthy and has an impact on their access to health information that is beneficial for themselves.

6.2.2.7 Exposure to Online Health Information

Most older adults exposure to online health information regarding knowledge and treatment of the illnesses, exercise or play sports, food or nutrition information, and treatment for various illnesses are at a higher level respectively. This is in line with the research titled, "Information Search Behavior for Online Health Information and Social Media of Older Adults based on Their Health Knowledge (Kitsanaporn Tipkanjanaraykha et al., 2017). The research findings indicated that the content of health information that all the adults look for from online or social media the most top three are information about medicine to treat the illness, lifestyle to have a good happy healthy life, and methodology to treat illness. They would consider the issue to expose to information based on the major factors or the relevant factors regarding the physical and mental health.

6.2.2.8 Post Exposure Behavior to Online Health Information

After exposure to online health information, most older adults follow the recommendation that they have received from online health information. This includes exercising and eating proper foods, discuss or criticize the information with family members or friends, search for additional information about health from other sources, and post status or share health information that they have received at the moderate level.

6.2.3 Online Health Media Literacy of Thai Older Adults

The study examined older adults health media literacy that could be categorized in three dimensions which are access, analyze and evaluate, and use and create. Research results indicate that older adults have moderate online health media literacy.

Detailed analysis of each dimension revealed that three dimensions. Dimension 1 access, older adults have the ability in understanding the meaning of

basic medical terms. They are able to find health information sources at a high-level. However it must be considered that access to online health information is only at the point of access to the information. However it is not capable to indicate the benefit or harm or cannot check the credibility of that information. These issues are more worrisome because older adult market is growing continuously. This is because they are more older adults as reported by IPSOS Thailand. The company revealed in their research "Getting Older Our Aging World 2019" that in 2018 older adults aged over 60 years old in Thailand numbered 1.2 million people, who could access the Internet. This use of online has grown from 2008 by 100%. At that time the level of Internet usage among older adults was only 1%. Also most of the older adults (90%) were ready to pay for food. 70% is ready to pay for clothing for themselves. Today future technology "connected healthcare" is the technology that would help older adults that are increasing all over the world including Thailand into the same direction. The value that they spend will happen online. In the past people view that it is the new generation that will be going online more. However, it is not just the new generation. There is another group, which are older adults. They will become major shoppers online. This is because they have the time and money. It is found at 43% of older adults in the UK made a purchase all products online. As a result shopping online is a major activity for older adults. This research indicates that older adults do not like to shop online products. This is because of the social trend and their adaptation that is quickly happening. The researcher believes that it is a possibility for older adults in Thailand to buy more products online. This is because online products and services particularly about both physical and mental health. Older adults cannot determine the benefit or harm or cannot check the credibility of the health information. This will result in negative consequences.

Another interesting aspect is that one out of three older adults cannot access information about their own health benefits online. This is because they lack the knowledge and understanding in using technology. This is in line with the research on health information search behavior and social media usage of older adults based on health benefits awareness. It is found that in terms of health information of older adults, they have never search for such information online or in social media. These include legal information, regulations, and requirements regarding their health

situation. Older adults should have the right to access information about their health privileges. This is because as their age increases their health will deteriorate. Therefore they have to rely on the health information and Social Security provided by the government. The goal is to protect, facilitate, and support older adults to have benefits in various dimensions such as financial benefits. Being unable to access their health benefits will result in inequality. For instance in the case that is viral about an old lady and her daughter who was sitting in front of one bank. They were feeding each other while they were waiting in front of the bank to register for government privileges. They had left their home at 4 AM without any money with the hopes in receiving government compensation for the COVID-19 under the government project. This is because they do not have a smart phone or do not know how to register that enables them to do the registration online. As a result of the lack of knowledge and understanding in technology usage, they cannot access their own health privileges.

In Dimension 2 it is found that older adults can analyze and evaluate at a moderate level. It is found that older adults can discern which health information is news and which are advertising with the objective to sell products or services. When older adults in-depth analysis in terms of the content of the health media, it is found that about half of the older adults are not sure about the health information they receive. This is particularly true when older adults analyze fake news. There are about 13% of older adults who believe in fake news because they lack appropriate skills in analysis.

Both the qualitative and quantitative results indicate that most of the older adults take for granted and do not look at the source or the producer of the health content that they receive. Therefore it is worrisome. Although older adults are able to seek out health information, without appropriate ability to critically analyze the source of information, they might receive health information that is distorted or incorrect.

Another interesting aspect in the research findings indicate that analysis and evaluation of health information of older adults is that they use their own experience in judging whether something is trustworthy or not. For instance when older adults read news about the dangers of swinging their arms, it is found that most of the older adults do not believe that swinging their arms could really cause danger. They believe that the danger might result from swinging the arms the wrong way or doing too

much. This is because all adults use the experience that they have done this before and never were endangered in anyway in order to analyze and evaluate the information. Thus, they do not believe this information or in the case of lemon soda curing cancer. Older adults use their experience in order to evaluate this news as well. Some of the older adults believe that this information is true although they have no experience in treating cancer. They believe this and try to drink lemon soda then found that they do not have cancer. They believe that the mixture can really prevent cancer. Some of the older adults do not expect prevention of cancer but believe that drinking lemon soda would help their health in other ways. They think that even cancer can disappear so other diseases can disappear as well. Although the researcher had presented the facts about this, some older adults still have the same attitude. On this issue it is in line with the research findings that the self is the strongest influencer in receiving health information online. Based on the third person effect it can be explained that most people evaluate media having impact on others more than themselves (Davison, 1983). This is the basis of perceptual bias manifest happens in two distinct processes, the self and others. On one hand people think and evaluate media as affecting themselves through complex situations with conditions. On the other hand they believe that the impact of media or others is more through easy concepts such as the magic bullet theory of media affects or the exposure is a fact. The factor of situation and complexity in evaluation is not considered when evaluating the impact of media on others (Yang & Tian, 2021). Based on this concept exposure and belief in online health information of older adults who are exposed to health information that is beneficial will not have any problems. However if older adults are exposed to false information or fake news and believe consequently that it is their own thought, it would be hard to change their beliefs. This will be compounded in the case of those who lack digital literacy skill resulting in inappropriate healthcare behavior resulting in health problems in the future.

In dimension 3 older adults use and create at a moderate level. It is found that older adults benefit from online health media by selecting information that is beneficial to their health and using the health information they receive online to adapt to their health or illnesses. This is in line with the theory of Uses and Gratifications. (Kanjana Kaewthep, 2001). It is the analysis in terms of psychology and sociology in

terms of beliefs and opinions of individuals. It is found that individuals select to use media types in order to communicate and fulfill their own needs.

However the study found that older adults do not prefer to use online media in communicating and exchanging health information with others. The interview reveal that most older adults still like to tell others through personal communications or group communications that emphasize face-to-face meeting rather than through online. This might be resulting from the fact that most older adults cannot type very well or have eye problems. Therefore communicating in terms of information that requires a lot of explanation citing examples or needing a lot of time is not suitable. Therefore older adults prefer to meet face-to-face and discuss with one another.

In addition older adults do not like to argue and express their feelings when others share health information from untrustworthy sources. This might be because older adults do not prefer to exchange their opinions through text because they do not want to argue. Another reason is because they might not be able to type very well due to physical constraints. Also, most older adults are not interested. They prefer to stay quiet without telling or warning about the health information that is incorrect. Interview of older adults revealed that some of them when they see false health information they would tell their friends. They choose to use personal communications because they do not want to humiliate others in public. It can be said that most all the adults do not want to create conflict even if they are not agreeing with that certain topic. They would rather not express any behavior.

Most older adults do not want to create or disseminate health information online. Using health information from their own experiments or their own experiences to disseminate online. Most of them are of the opinion that they are not confident that the health information is trust worthy. They believe that health is a personal issue and each person has their own illness with different symptoms. It is the reason that the treatment should not be the same. It is better to go to a doctor for treatment. They prefer to talk to each other face-to-face. Thus, most older adults prefer not to disseminate health information about themselves. It is found that the behavior of all the adults are in line with their interests in the environment that result in satisfaction when it is in line with their personal interest only. Therefore exposure to media and the choice to disseminate the information result from the satisfaction of the older

adults. If it is possible to make all the adults see the benefit of disseminating health information that is a good experience to others they might want to share information.

6.2.4 Research Hypotheses Testing

6.2.4.1 Hypothesis 1 Relationship between Lifestyle of Older Adults and Online Health Media Literacy

The research findings revealed that older adults, who have lifestyle four, health conscious, play sports, and do activities have media literacy it all three dimensions at a lower level. This might be because these people do not often use online media. Therefore they are less exposed to health information. This is because they need less online health media literacy. This is interesting because this group of older adults use other media or do not access health information since they love their health and play sports so they should have interest in seeking out health information anyway.

In addition, it is found that older adults, who have the four type of lifestyles have a relationship with media literacy in terms of use and create online health media at a low level. It can be said that no matter what type of lifestyle older adults have, they have the skill in using and creating media at a low level. This might be because older adults did not grow up with communications technology. From the interview it is found that older adults are not confident and afraid in using technology. Also, they are not confident in terms of the health information. Therefore, they do not want to disseminate such information to the public. On this issue Peek et al. (2014) explained that this type of technophobia is normal for those who did not grow up in an environment that is digital and changing their mindsets would not happen quickly.

6.2.4.2 Hypothesis 2

Exposure to online health information of older adults has a positive relationship with online health media literacy at a moderate level.

Analysis of the relationship based on the type of online media reveals that all the adults prefer to use Line. It has a positive relationship with online health literacy in all dimensions at a low level. It can be said that older adults, who use Line more have less media literacy than older adults who use other online media. This might be because in Line health information is provided as both fake news and

advertising in large numbers. Most of them do not pass any form of screening. The sharing done in Line is personal and can be done in groups. This is different from other applications such as Facebook where posting and sharing of information shows the individual and topic in the post clearly. The discussion to express opinions happen only on the particular issue. This allows older adults to compartmentalize and organize the information they receive and their mindset is better than using Line to filter and interpret. Therefore with more systematic management of information media literacy will also be higher.

        6.2.4.3 Hypothesis 3 Older Adults who have Different Age Groups have Different Levels of Online Health Media Literacy

The research findings indicate that older adults of different age groups have no difference in the level of online health media literacy. This might be because older adults age between 50 to 59 years and 62 to 69 years have grown up in the environment without digital media. As a result, the experience and behavior in using media is quite similar. They use print media therefore their online media literacy is not different.

        6.2.4.4 Hypothesis 4 Older Adults who have Different Levels of Education have Different Levels of Online Health Media Literacy

The research findings indicate that older adults, who have different levels of education have different levels of online health media literacy. It is found that older adults of different levels of education were compared using Multiple Comparison Test followed by Scheffe's method. The results indicated older adults who have less than high school education have different levels of online health media literacy when compared to those of higher education groups. This is in line with Buckingham et al. (2005) and Livingstone and Helsper (2007). The authors explained that education plays an important role to critical thinking in media literacy. In addition, the research by Lee, Kim and Beum (2020) revealed the factors that impact eHealth include education and confidence in using ICT.

6.3 Recommendations from the Research Findings

6.3.1 Guideline in Promoting Online Health Media Literacy among Thai Older Adults

The research findings indicate that Thai older adults have online health media literacy at a moderate level. Therefore to encourage Thai older Adults to have more online health media literacy, the researcher would like to present guidelines in promoting online help media literacy among Thai older adults. This research emphasizes the examination of the receiver. Therefore, the development of the guideline for online health media literacy needs to emphasize on attitude and behavior of older adults through the 5Ts Older Adults' Online Health Media Literacy Model Figure 6.1. The details would be explained in the following section.

1) Try: To access and understand technology and health information

Older adults have to try to access and understand online media technology. This is because the research findings found that older adults can access at the moderate level. Older adults are still not confident in using online media that has many choices for them to choose from. Consequently, older adults only use one channel of online communication to receive health information, which is not enough. Therefore when they want any health information, older adults have to try to find information from many sources in order to get a variety of health information for analysis and evaluation to make decisions in the future.

The research findings indicate that 86.4% of older adults do not know how to search for their own health privileges. This is a very important issue for older adults today. The government manages public health and health insurance online. Therefore, they should promote older adults to access and understand communication technology in order to use it to access their privileges for their own medical treatment. In addition to having older adults try to access, they should also try to analyze the health information they receive. This is because the research findings indicate that older adults lack observation of the data. They do not know, who produced the health content they are interested in following. They do not know if there is a hidden agenda in various issues that have accessed. Older adults have to make an effort in trying to

understand health information that day receive. They should analyze the information from health media to a higher degree, which will lead to analysis or think.

2) Think: Analyze

Research findings indicate that older adults analyze and evaluate health information at a moderate level. The skill to analyze and evaluate media has to come from the thought process. The research findings indicate that older adults failed to look at who is the producer of the media. They lacked the care to attention about the hidden agenda in health information that they receive. They are not much aware about the benefits or harm of health media. This are important aspects of media literacy skills. These issues are very important, therefore whenever they access media older adults should think critically. This critical thinking of all the adults as suggested by Thoman and Jolls (2003, p. 9) indicated that media literacy is an important skill for citizens in a democratic society in the 21st-century. Citizens have to have the ability for critical thinking together with the ability for self-expression to present their opinions. These two skills are the core of media literacy. As a result, the researcher presents the guideline for older adults to analyze and evaluate health media. There are questions that older adults must answer every time they access health information as follows:

(1) Who is the source of the information?

Older adults have to clearly see who is the source or producer of the health information that they are accessing. They need to know if the producer or writer is credible or not. If the content does not indicate the producer or writer of the health information, older adults should consider if the health information is credible or not. They should also consider how they can search for additional information.

(2) What is the objective of the writer?

Older adults have to be able to analyze the objective of the health information they are accessing. They need to consider if it is an informative piece in order to invite people to think or they want people to follow the recommendations. In addition, older adults need to consider if it is news or advertising that has the objective to sell products or services.

(3) Is the health content reasonable or not?

Older adults have to interpret. They need to try to understand and seek for the reason of the health information that they are accessing. They need to observe the way it is being written or presented. The presentation of examples might have a hidden agenda. Also, they need to consider if it is trustworthy or not. Older adults need to understand both the media and have to be knowledgeable about themselves such as how they think when they receive certain health information.

Think can be used by older adults for digital literacy dimension two or analyze and evaluate online health information and dimension tree use and create online health information. Upon passing the analytical process older adults can use the information in a more beneficial manner for their health physically and mentally as well as for others in their close social circle in a better manner. They can also pass along or share the health information online. If older adults can analyze systematically they would know if they should know whether to pass on the information, which is beneficial. They can discern if the information has a positive impact or negative impact on other people.

3) Talk : Conversation

The conversation of older adults regarding online health information might be relevant to dimension two, analyze and evaluate, and dimension three, use and create, as follows:

The research findings indicate that older adults see themselves as being the most influential person in accessing online health information. It is certain that in accessing health information and interpretation of the content, there would be differences depending on the knowledge and experience of the individual older adults. Therefore, the researcher would like to present the guideline for accessing health media among older adults in order to develop an awareness regarding the impact that might occur from the interpretation of health information in a inappropriate manner. Older adults should have a conversation about the health information that they have received with other people such as family members or grandchildren, who may have access to more information, as well as discussions with doctors or medical practitioners, who are knowledgeable about healthcare.

In addition, the research findings indicate that older adults do not usually use online media to discuss and exchange knowledge about health with others. Older adults should be encouraged to use online media in order to benefit their health as well. Presently conversations with medical professionals or doctors can be done through many applications that have been developed for convenience and speed in service. One example is the Raksa application where doctors who are experts can provide advice to about 800 patients. Chiiwii application can provide health consultation with specialist doctors in real time. Ooca application can provide mental health recommendation through video call. Therefore, older adults need to get the information from the conversation to consider the positive and negative impact before using benefits from the health information.

4) Take : Usage

When older adults access health information and have been subjected to critical thinking resulting in interpretation and evaluation, older adults can use the information in a beneficial manner. This is involved with media literacy dimension three use and create. It could be beneficial use for oneself or family members. They can use the health information to guide their actions such as exercise workouts, beneficial nutritional foods for the health, or selecting medicine. The research findings found that older adults have to use the benefit from health media at a high-level. Older adults have passed a try, think, and talk, stages. They would know how to discern and analyze the information in a systematic manner. This would result in higher media literacy.

5) Tell : Pass it forward

In addition to using the health information in a beneficial manner for both physical and mental health of oneself and family, they can use the health information to tell or disseminate the information about health that is beneficial. They can reiterate to others to be careful about health information in the online world as well. This is related to media literacy dimension three use and create. If older adults have the media literacy dimension of analyze and evaluate at a good level, it should result in older adults becoming a communicator about health in order to help in reducing bad media and create good media. From the analysis of the researcher most older adults do not want to be the source of online health information. This is because

they do not have the confidence in using media or have a very high individualistic personality. However, such issue should not be ignored since older adults who have good media literacy can benefit more by creating resistance for other older adults in their social circle in order to have better awareness and health media literacy.

The 5Ts guideline for older adults online health media literacy was developed by the researcher. In addition, it is found that there are three major dimensions that enable Thai older adults to have better online health media literacy as explained in the following section.

1) Family is an important dimension that helps older adults develop media literacy. The research findings indicate that the start for older adults to use communication technology such a smart phone was from their children and grandchildren. They help to troubleshoot problems in using the technology. This enables fostering of close relations in the family. In using online media, they have family groups to communicate with one another more effectively. Older adults are supported by people in their family to use online media, which is an important starting point.

2) Media organization are the producers of media both in terms of the media and content regarding health. They should give importance in providing health information for older adults. This is because health information is something important to older adults whose bodies are starting to deteriorate. They are starting to be sick and may have chronic illnesses. The presentation of health information should be beneficial and should not be having a hidden agenda. They should have ethics in the presentation of information. In addition, there should be regulations to help get rid of fake news that is found easily in the online world through helping to present truthful information so that older adults can know it.

3) Health literate organization is an organization about health that has been approved by the government and announced in the Royal Gazette by the Office of the Prime Minister on April 6, 2018. It is the plan to drive health knowledge for 10 years. The goal is to make Thai society a health literate society. The driving mechanisms are as follows: (1) Communication (2) Capacity Building (3) Engagement (4) Empowerment

The researcher believed that health literate organizations should be categorized into two major types, which are government and private organizations.

    1) Government organizations could be further categorized as follows:

       (1) Health related organizations such as the Ministry of Health, which has the main responsibility to take care of the health of the elderly developing policies at the macro to the micro level such as

       (1.1) Village Health Volunteers can reach older adults at the village level. They should be supported to access and understand health media for older adults so they would have online health media literacy. Consequently, the government should train so that they would have better understanding in online health media together with providing knowledge about health.

       (1.2) District Health Hospitals are the first line of health service. They control diseases and promote health of the members of the public in the areas of their responsibility. However, the hospitals should have information about the health of the older adults and evaluate the health needs of older adults living in the area. They should promote knowledge in that aspect to older adults.

       (1.3) Elderly Affairs Department, Ministry of Social Development and Human Security, that emphasizes the good quality of life for older adults. They should be given knowledge about online health media. It should be an integrated program that is ready to support the needs of older adults based on the fiscal year.

       (1.4) Thai Health Foundation is another organization that has the role in promoting the potential of older adults. They have regular projects for older adults.

       (2) Organizations that are not related to health such as

       (2.1) Ministry of Digital Economy and Society have the role in monitoring and evaluating to solve the problems that occur on online media. This is particularly true for fake news that are related to health because older adults might believe these fake health information. This might cause them to get more sick resulting in more burden for the hospital.

       (2.2) School for the Elderly is an important mechanism in the ability to promote and train the knowledge about online health media for older adults.

The research findings indicate that older adults have less access to media. This partially comes from the fact that they have less education. They don't understand English and some have just started to use the smartphone. They are not used to the various buttons. They don't know how to use it therefore, there should be training in the use of communication technology regularly. This would increase their skills in accessing and understanding communication technology.

   2) Private organizations

      (1) Business Organizations – These organizations should be aware about the production of health information. This is particularly true for health information used in advertising. However, if it is propaganda or exaggeration, in addition to being illegal it might cause social problems as well.

      (2) Non-profit Organizations – These organizations are like the opposite of business organizations. The goal is to create online health media literacy such as the Foundation for Consumers.

   Through the online health media literacy guideline for older adults using the 5Ts: Older Adults' Online Health Media Literacy Model. The researcher believes that it is beneficial to various organizations that work with older adults. This would allow older adults to have more understanding about online health media resulting in the use of benefits from health media to protect and maintain mental and physical health of older adults. Consequently, they would have media literacy and can live in society with good quality of life.
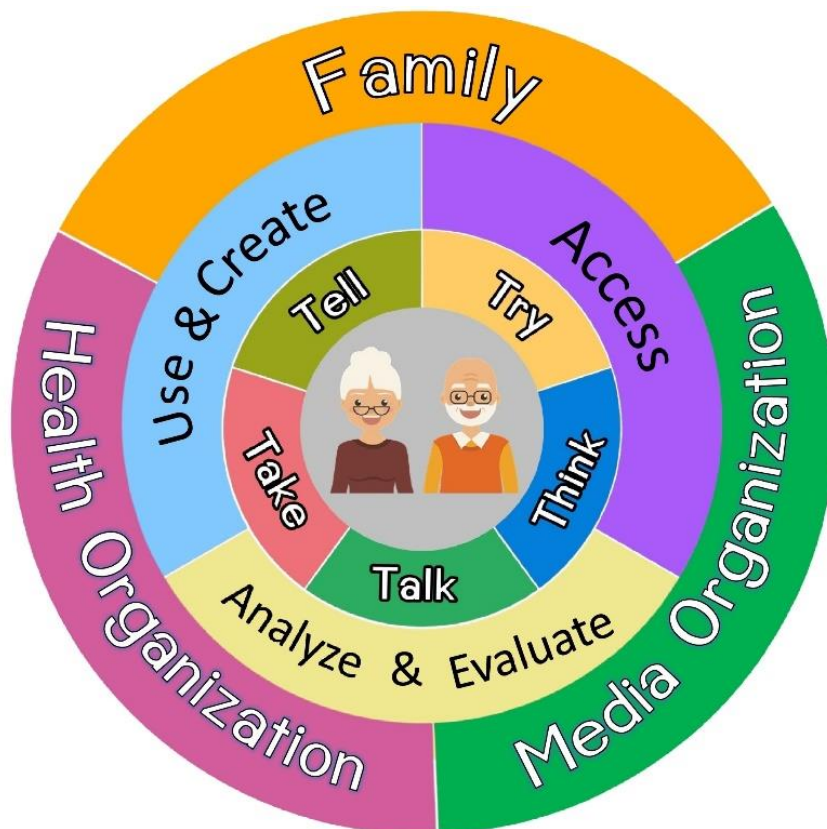
Figure 6.1 The 5Ts: Older Adults' Online Health Media Literacy Model

6.3.2 Create and Disseminate Health Media that is Credible

Research findings indicate that Thai older adults have online health media literacy at the moderate level. Most older adults prefer to access online health information about knowledge and treating the illness that they have, exercise/play sports, nutrition/food value information, and medicine to treat various illnesses. Therefore, relevant authorities both on the side of the government and private organizations, need to create correct and suitable information for older adults in order to reduce access to media that comes from untrustworthy sources. This includes monitoring health media that is not credible through various networks such as Foundation for Consumers, Thai Health Foundation, and cooperation with pages that provide health information to the public, which are highly popular such as Mor Lab Panda and Sure Before Share. They need to help publicize information that is correct in order to help those, who have misunderstood to come to the right understanding. This can be done by making Infographics that are easy for older adults to understand.

It should have big letters so that older adults can read it clearly. This includes using speech that is not too fast. In this research, it is found that most of the older adults see that celebrities have no direct impact on the belief levels of older adults. However, from observation during the interview, older adults are interested in celebrities that they know. They have information about the celebrities and know about their works as well as life stories. At this point the use of celebrities can create interest for older adults so they can listen to correct health information.

6.3.3 Promote Older Adults to Access their Own Health Privileges

Today the government has used ICT to process health care for the public to register for medical health privileges such as "More Prompt" registration so they can have Covid-19 vaccination. However, the research findings indicate that about 1 out of 3 older adults do not know how to look up their own health privileges online. The fact that older adults cannot access this information results in inequality in accessing privileges. The government should have communications about medical privileges starting from accessing website information or applications. This can be done in the form of a tutorial video providing information about means in to search for medical privileges so that older adults can follow the instructions. In addition, the government should quickly promote the understanding in using communications technology among older adults such as training village health volunteers or district health hospitals so that they can pass this information to older adults in the community. They can also organize training in the School for the Elderly nationwide.

6.3.4 Cognitive Skills Development

The research findings indicate that older adults, who have less than high school education have less online health media literacy than those, who have other levels of education. Therefore, this group of older adults should be assisted to have higher levels of online health media literacy. They need to develop the skills for older adults to analyze health media information so that the receiver can evaluate and make decisions to use health information for their physical and mental benefits.

The development of critical thinking skills for online health media literacy can be done in many ways such as health media literacy handbook, which should explain

the main characteristics of media literacy. There should also be a self-administered questionnaire for assessing health media literacy as well as anecdotes in using various health media such as using health information in a beneficial way, impact from using false health information, or being fooled into buying health products that have an impact on the body or mind.

6.4 Future Research Recommendations

1) This research assessed the level of online health media literacy in the group of older adults only. There should be comparative studies of online health media literacy among other age groups in order to corroborate the data to solve the problem of health information dissemination. In addition, it could be used as the guideline to develop online health media literacy in other age groups.

2) This study investigates the content of online health information such as content analysis so that they can better understand the source of the belief that receivers have regarding online health media. This can be done to improve the health of people in this age group.

3) The research findings indicate that older adults who have less than high school education have less media literacy than those who have other levels of education. Thus, this group of older adults need to be studied in order to find the guideline for improving health media literacy.

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APPENDIX

"Online Health Media Literacy for Thai Older Adults"

This research is part of a data collection for a PhD. dissertation,

Communication Arts and Innovation Management, National Institute of Development Administration

==

Instructions

Please provide truthful information. The data collected would be used only for educational purposes only.

The questionnaire has three parts.

Part 1 General information and lifestyle of respondents

Part 2 Online media exposure behavior and online health media

Part 3 Online health media literacy

Part 1 General information and lifestyle of respondents

<u>Part 1 Instructions</u> Mark ✓ in ☐ or fill in the blank with the appropriate answer

1. Gender

☐ 1. Male   ☐ 2. Female   ☐ 3. Alternative Gender

2. Age...............…………years

3. Marital Status

1. ☐ Single   2. ☐ Married   3. ☐ Divorced

4. Level of Education

1. ☐ Less than high school   2. ☐ Middle School/ Vocational School

3. ☐ High School/

Higher Vocational   4. ☐ Bachelor's Degree

5. ☐ Masters' Degree   6. ☐ PhD.

5. Which province are you from? ....

6. Are you still employed?

1. ☐ Yes

2. ☐ No (No longer employed)

7. What is/was your occupation?

    1. ☐ Employed   2. ☐ Own business/ Commerce

    3. ☐ Government official/ employee   4. ☐ State Enterprise

    5. ☐ Private company employee   6. ☐ Others (Please indicate)………………………

8. What is your monthly expense? ………………………………. Baht

9. (Can answer more than 1 question) Who do you live with?

    1. ☐ Spouse   2. ☐ Children

    3. ☐ Parents   4. ☐ Relatives

    5. ☐ Living alone   6. ☐ Others (Please indicate)………………………

10. Do you have a chronic disease?

    1. ☐ No chronic disease

    2. ☐ Have chronic disease (Please indicate) ....

Part 2 Instructions Mark ✔ in the box that fits your feelings/opinions the most

How often do you do these activities	Level of doing activities				
	Highest	High	Moderate	Low	Never
1. House cleaning and gardening					
2. Hobbies such as crafts					
3. Surfing the Internet					
4. Join activities such as temple Communities					
5.Exercise/Play Sports					

Part 3 Instructions Mark ✔ in the box that fits your feelings/opinions the most

How interested are you in the following activities?	Level of Interest				
	Highest	High	Moderate	Low	Lowest
1. Take care of family members					
2. Do business for income					
3. Follow news on social media					
4. Join community and organization activities					
5. Take care of health and nutrition					

Part 4 Instructions Mark ✔ in the box that fits your feelings/opinions the most

How much do you agree about the following issues?	Level of agreement				
	Highest	High	Moderate	Low	Lowest
1. Older adults should save money and not spend too much					
2. Making purchase online has a risk of fraud					
3. There should be no retirement age as long people can work					
4. Using the mobile phone or Internet creates a modern look					
5. Herbs or food supplements improve health					

Part 2 Exposure to Online Media and Health Media

Part 1 Instructions Mark ✔ in ☐ or fill in the blank with the appropriate answer

1. In a week how often do you use the following online media ?

In a week how often do you use the following online media ?	Frequency per Week				
	Everday	5-6 days	3-4 days	1-2 days	Never
1. Facebook					
2. Line					
3. Youtube					
4. Website					
5. Others (Please indicate)………………………					

2. (Can answer more than 1) When you use online media what do you do?

   1. ☐ Post status/image   2. ☐ Share

   3. ☐ Read or watch   4. ☐ Express opinion in the form of text

   5. ☐ Express opinion using emoji or emotion

   6. ☐ Others (Please indicate)………………………… ………………………………..

3. (Can answer more than 1) What is the objective of using online media?

   1. ☐ Keep up with the news and situation   2. ☐ Post, share other information

   3. ☐ Work, business   4. ☐ Contact other people

5. ☐ purchase products or services   6. ☐ For entertainment and relaxation

7. ☐ Search for new information   8. ☐ Others (Please indicate)..........................

4. (Can answer more than 1) In each day what time of the day do you go online.

   1. ☐ Almost all the time   2. ☐ After waking up

   3. ☐ Before bedtime   4. ☐ Free time for work

   5. ☐ Others please indicate...

5.How many hours do you spend online? .... hours............minutes

6. Which is the channel you access online media the most?

   1. ☐ Mobile phone   2. ☐ Tablet

   3. ☐ Notebook   4. ☐ Desktop computer

7. What is your most preferred means of exposure to online media the most?

   1. ☐ Read content   2. ☐ Listen to sounds

   3. ☐ Look at images   4. ☐ Watch videos

8. Who are the influencers who influence you in terms of online health information the most?

   1. ☐ Own self   2. ☐ Family members (Please indicate)...........

   3. ☐ Friends   4. ☐ Doctors, nurses

   5. ☐ Celebrities, singers, emcees   6. ☐ Others (Please indicate)..................

9. (Can answer more than 1) Factors that motivate you to be interested in accessing online health media

   1. ☐ Own illness   2. ☐ Take care of their own health

   3. ☐ Have family members who are ill 4. ☐ News and situations

   5. ☐ Convenience of online media   6. ☐ Others (Please indicate)...............

10. How much are you interested in accessing information about health online?

How much are you interested in accessing information about health online?	Level of activity				
	Everyday	Often 5 – 6 days per week	Occasionall y 3 – 4 days per week	Rarely 1 – 2 days per week	Never
1. Knowledge and treatment of illness that they have					
2. Medical remedies					
3. Information about nutrition/ food					
4. Food supplements					
5. Herbal remedies					
6. Beauty products					
7. Health equipment or technology such as massage, walking stick, glasses, blood pressure test, diabetes test kit, electric wheel chair					
8. Exercise/ play sports					
9. Hospital/ medical facility					

Older Adults Behavior After Exposure to Online Health Media

After exposure to online health media how much do you engage with the following behaviors?	Level of activity				
	Regularly every time	Quite often	Occasionall y	Rarely	Never
1. Post status or share health information received					
2. Write comments in the post					
3. Send Direct Messages to producer of content					
4. Seek for additional health information from other media					
5. Pass on information received to others					
Follow the recommendation from online health media such as exercise, eating good food					
6. Buy products and services tied to the health information read or watched					
7. Discuss and make comments about health information received with family members or friends					

Part 3 Online Health Media Literacy

Dimension 1

<u>Instructions</u> Mark ✓ in the box that fits your feelings/opinions the most

What is your opinion regarding on the following statements? ***Only opinion on online media***	Level of activity				
	Highest	High	Moderate	Low	Lowest
1. Can access desired health information through online media					
2. Know how to find health answers online quickly					
3. Can search for health information from many online media channels					
4. Can find information on benefits and negative effects of the health products before consumption from online channels.					
5. Know quality source for online health information and which ones are not trustworthy					
6. Know how to check the trustworthiness of online health information					
7. Understand basic medical terminology such as taking medication before meals, which means 30 minutes prior to eating or taking 1 teaspoon means 5 cc, which is not the coffee spoon.					
8. Search for online health information both in Thai and other languages to know, choose, and screen the correct news that is most trustworthy.					
9. Can search their own health privilege information from online media					

Dimension 2

<u>Instructions</u> Mark ✓ in the box that fits your feelings/opinions the most

What is your opinion regarding on the following statements? ***Only opinion on online media***	Level of activity				
	Highest	High	Moderate	Low	Lowest
1. Self questioning when asking whether online health information was trustworthy or not					
2. When exposed to health media content observing who is the producer of the content					
3. Consider if the health information is interesting					
4. Aware of hidden agenda in health media that they receive continuously					
5. Can discern which information is news and which is advertising					

What is your opinion regarding on the following statements? ***Only opinion on online media***	Level of activity				
	Highest	High	Moderate	Low	Lowest
6. Don't believe that herbal remedies or food supplements advertised online can really treat illnesses					
7. Don't believe that celebrities in the herbal remedies or food supplements can give them good health if they actually consume the products					
8. Aware of the benefits/ danger of health media received					
9. Aware that health information would have an impact in one way or another					
10. They warn people around to be careful in believing online health media					

Dimension 3

Instructions Mark ✓ in the box that fits your feelings/opinions the most

What is your opinion regarding on the following statements? ***Only opinion on online media***	Level of activity				
	Highest	High	Moderate	Low	Lowest
1. Can choose online health media that is beneficial to your health					
2. You try or follow the health information that is in trend or of interest in the social media with no hesitation.					
3. Can use health information from online media to adapt to your health or illness					
4. When others share health information from non-reliable sources, they usually speak up					
5. Use online media for communicating and exchanging health information with others regularly					
6. Try and follow health information that is in trend or of interest on social media with no hesitation					
7. Pass along health information received to family members immediately without verification					
8. Use health information from experimentation or personal experience to disseminate online					
9. Can produce and disseminate beneficial health information to others online					
10. Have been fooled by online health information such as sales of products, inform of false health information					

Instructions Please read the following messages and answer questions 1 – 7, as closely to your opinion as possible.

มะนาว+ โซดา....
มะนาว 2 ลูก + โซดา 1 ขวด
ดื่มเพื่อฆ่าเซลล์มะเร็ง

เป็นวิทยาทาน จากหมอปรียาภา
แพทย์ทางเลือก

บอกต่อ...ได้บุญนะครับ

มะนาว สองลูก ต่อ โซดา หนึ่งขวด ผสมกันกินเช้าเย็น หรือ กินกลางวันด้วยก็ดี กรดของมะนาวจะฆ่าเซล มะเร็งโดยตรง **องค์กรณ์อนามัยโลก** ปิดเรื่องนี้ไว้ เป็นความลับ เพื่อขายยาและคีโม ให้คนที่เป็นมะเร็ง ลองไปทำกินดู มันช่วยได้โดยไม่ต้องกินยา หรือ คีโม อาหารที่กิน **สำหรับคนเป็นมะเร็ง** เน้นผักเป็นหลัก เพราะเนื้อสัตว์เป็นอาหารของมะเร็ง หลายคนตาย เพราะโรคมะเร็ง เพิ่งรู้ว่ามะนาว โซดา รักษามะเร็งได้ อ่านแล้วช่วยส่งต่อ หรือ แชร์ก็ได้ เป็นวิทยาทาน

benz mongkhon

1. Have you seen this health information before?

    1. ☐ Yes (Go to question 2)   2. ☐ No (Go to question 3)

2. (Can answer more than 1) In which online media have you seen it?

    1. ☐ Line   2. ☐ Facebook

    3. ☐ YouTube   4. ☐ Website

    5. ☐ Others (Please indicate)……………………………………………

3. From the aforementioned content do you believe the health information?

    1. ☐ Trust (Go to question 4)   2. ☐ Not sure (Go to question 5)

    3. ☐ Not Trust (Go to question 5)

4. How credible is the following health message?

How credible is the following health message?	Level of Trust				
	Highest	High	Moderate	Low	Lowest
1. Name of the physician (Dr. Preeyapha, Alternative Medicine)					
2. ป Reference to global organization (World Health Organization)					
3. Have name of writer (benz monkhon)					
4. Have credible medical information (lemon acid can directly kill cancer cells)					

5. (Can answer more than 1) If the health information is not true, what do you think is the negative impact and who would be affected?

    1. ☐ Cancer patients won't be cured and might die

    2. ☐ World Health Organization would be misunderstood

    3. ☐ Dr. Preeyapha, alternative medicine doctor, who was used as reference would have her reputation damaged

    4. ☐ Passing on this information is a sin

    5. ☐ No impact

6. (Can answer more than 1) When you see this type of health information online, what do you do?

1. ☐ Save to keep
2. ☐ Delete immediately

3. ☐ Post/send it to acquaintances
4. ☐ Search for information from other sources

5. ☐ Use emoticons, emoji
6. ☐ Reply express their opinions

7. ☐ Discuss with acquaintances
8. ☐ Follow the recommendation

9. ☐ Not do anything
10. ☐ Others Please indicate.............................

7. If you want to check if the health information is true or not, you would ask or search for additional information, which is the first source?

1. ☐ Doctor/Nurse Treating Them
2. ☐ Family/Friend

3. ☐ News agencies webpage
4. ☐ Medical Organization

5. ☐ Ask the source
6. ☐ Search online information on their own

7. ☐ Others (Please indicate)……………………………………………

Any additional opinions or recommendations after answering this questionnaire?

………………………………………………………………………………..

………………………………………………………………………………..

………………………………………………………………………………..

BIOGRAPHY

Name-Surname   Mrs. Mantana Pharksuwan

Academic Background Bachelor of Sciences (Radiological Technology)
         Chiang Mai University, Chiang Mai in 1997
         Bachelor of Arts (General Management)
         Chiang Mai Rajabhat University, Chiang Mai in 2000
         Master of Arts (Communication Arts)
         Maejo University, Chiang Mai in 2005

Experience   1997-2001
         Radiologic Technologist
         Chiang Mai Neurological Hospital, Chiang Mai
         2001-2007
         Deputy Managing Director
         Suvarnabhumi Mass Communication Co. Ltd., Bangkok
         2007-2009
         Faculty Member, Communication Arts Department
         Faculty of Management Sciences, Rajabhat Chiang Mai
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         2009-Present
         Faculty Member, Digital Communications Department
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