FACTORS ASSOCIATED WITH QUALITY OF LIFE AMONG LUNG CANCER PATIENTS

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ABSTRACT

Lung cancer is the most common cancer in the world known as the leading cause of cancer mortality in Vietnam. They have to deal with many symptoms and variety of treatment modalities which disturbing their normal daily life leading to poor quality of life. The aim of this study was to examine the factors associated with the quality of life among lung cancer patients in The Nuclear Medicine and Oncology Centrer of Bachmai hospital in Hanoi, Vietnam. This was descriptive correlational research conducted among 115 lung cancer patients. Data were collected from the patients' hospital record and interview with the patients using Hamilton Anxiety Rating Scale (HAM-A), Multidimensional Scale of Perceived Social Support, and the EORTC QLQ-LC30. Spearman‘s rho was employed to test the relationship among all variables. The results showed that most of the patients were male 74% and the average age was 58.9 (SD ± 10.0). The majority of the patients lived in rural areas (55.7%), they were farmers (34.8%) and retired (33.9%). More than half of the patients had been hospitalized for less than 2 weeks (52%). The quality of life of the lung cancer patients were low with a mean of 48.97 (± 7.94). Lung function was significantly and positively correlated with the QOL ($r = .190$, $p < .05$) while anxiety was significantly and negatively correlated with QOL ($r = -.347$, $p < .05$). In conclusion, lung function and anxiety were significantly correlated with the QOL. Therefore, in order to improve the QOL, it recommended that patients should be well managed their anxiety level to be assessed and controlled during the follow up period. A continuous program for symptom management along with anxiety management should be implemented to provide patients with comprehensive care.

KEY WORDS: QUALITY OF LIFE / LUNG FUNCTION / ANXIETY / SOCIAL SUPPORT /
LUNG CANCER.

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FEV1	Forced expiratory volume in 1 second
HRQOL	Health Related Quality of Life
NSCLC	Non-small cell lung cancer
QOL	Quality of Life
WHO	World Health Organization

CHAPTER I
INTRODUCTION

1.1 Background and significance of the study

According to Bennett & White, 2013, lung cancer was the most common disease in the world and was associated with illness and estimation of 1.59 million deaths in 2012 (Stewart & Wild, 2014). Males were the most popular for this disease with about1.2 million patients, making up 16.7% of the total. The rate of age-standardized men who get lung cancer in Central and Eastern Europe is estimated to be the highest, 53.5 per 100,000. Women was the greatest percentage in Northern America (33.8) and Northern Europe (23.7) and the lowest rates (in both of men and women) are in Western and Middle Africa (Stewart & Wild, 2014). Today, the rate of patients with early detected lung cancer when it is not metastatic, who can live 5 years or more, is 54%. Patients who were dignosis lung cancer at an early stage occupied with only 15% so it remains the disease with a obscure prognosis. If the tumors are metastatic, which means the tumors have spread to other parts of the their bodies and a half of the paitents will die within a year after diagnisis while the rate of staying alive in 5 years or more is only 4.0% (Howlader et al, 2016).

In Asia, the number of men who die of lung cancer is much bigger than that of women in all countries. There are more than 40 men out of 100,000 population in the Philippines, Singapore, and Korea who die of lung cancer, and the rate among males in the United States is 49 per 100,000. It is observed that China and Taiwan both have the same mortality rate among males, 37 per 100,000. The highest lung cancer mortality rate in females is in Singapore (18 per 100,000), then in China and Taiwan, each having the rate of 16 per 100,000 population (McDonald, Hertz, &

Lowenthal, 2008). Today, in many Western countries, lung cancer rates have fallen, but, on the contrary, the cases of lung cancer are forcasted to grow substantially in Asian contries, especially among men (Soo et al., 2012). In 2014, lung cancer in Asia is the leading killing cancer in males and the second in females. Above 50% of the world's lung cancer cases (51,4%) occur in Asia (Ferlay et al., 2015)

Vietnam is known as a country with a high rate of lung cancer. The study of Globocan (2012) described that about 1.8 million of new cases and the number of patients die due to lung cancer was 1.6 million. As shown in MOH’s statistics, in Vietnam in 2000, there were an approximately 6,905 patients of lung cancer, of which 62.5% were diagnosed at late stages. By 2013, over 20,000 people had been diagnosed with lung cancer and up to 17,000 deaths were reported, increasing fourfolds over the 13 year period. This disease was the second source of cancer mortality after liver cancer in both sexes in Vietnam till 2012 according to WHO. The ratio of people suffering from lung cancer in males is normally higher than that in females with the incidence rates in males of 51.4 per 100 000 compared to 12.2 per 100.000 in women.

Quality of life (QoL) among lung cancer patients has been proved to be quite poor. According to Montazeri and college (2003), lung cancer patients' functioning and global quality of life had declined. The explanation for this fact can be that patients who underwent or are under treatment have to suffer many serious problems due to various symptoms and disruptions, resulting from the disease itself and the treatment process (Barwal et al., 2016). The limitation of self-care ability of patients as well as the increasing level of dependency on others raises family burden and also impacts them psychologically. Patients, naturally, would be afraid of the uncertainty of the disease and therapy outcomes so they would be subjected to stress and depression, which reduces their self-esteem thus consequently impacts negatively their quality of life (Ma et al., 2014). Low QoL of lung cancer patients is normally caused by pathology of tumor and unwanted post-therapy consequences. As known, lung cancer was related to complicated symptoms such as pain, cough, having breathing difficulties or bleeding from lung and anorexia (Cooley, 2000).

The patients with serious symptoms of lung cancer had lower QoL (Gralla, 2004; Hermann & Looney, 2011). Accordingly, the severity of the disease mainly causes growing limit of ability to do daily living tasks, so has negative effects on their QoL. Also, treatment for lung cancer results in decreasing quality of life (QoL) and limited lung function. Lower levels of pulmonary functional test worsens severity of activity daily living deficit thus reduces QoL status of patients. These problematic facts led them to poor quality of life (Bennett & White, 2013). The late treatment and poor prognosis may lead to stress and depression and these frightened QoL of lung cancer patients (Sprangers, Tempelaar, van den Heuvel, & de Haes, 2002). The issues of psychological symptoms may influence on QoL of lung cancer patients and families and can interfere the successful treatments. Anxiety and depression are psychological issues that lung cancer patients often suffered. The estimation of advanced lung cancer patients were approximately 50% with the most popular psychiatric disorder, and 11%– 35% of adjustment disorder. Moreover, there were 21.8% severe depression and 17.9% severe anxiety (Mehta & Roth 2015).The level of anxiety has a strong negative relationships with QoL in lung cancer patients (Brown, Brodsky & Cataldo, 2014). So, axiety and depression are factors which leave major influence on lung cancer patients' QoL.

In addition, social support is also a major factor leaving an impact on patients' quality of life. Most studies have used scales and questionnaires to measure anxiety, social support and found that the variety of supports were correlated with QoL (Luszczynska, Pawlowska, Cieslak, Knoll, & Scholz, 2013). The late stage of lung cancer was diagnosed with severe symptoms and low self-efficacy are usually observed. General symptoms of lung cancer are, for example, persistent cough, breathing difficulties, haemoptysis, painful breathing, loss of weight, and tiredness. (Simon, Juszozyk, & Smyth, 2012). These lead to the lung cancer patients' need for more social support from family and friends. Other studies found that the Palliative Care Centre gives the lung cancer patients very good treatment as they feel much less anxious and depression and it proves to be a more effective way of treatment than that done at home that outpatients got. Therefore, social support has a strong relationship with QoL of lung cancer patients.

Despite advances in science and technology and certain improvements in patients’ symptoms, lung cancer patients’ survival is still worrying in comparison with other types of cancer. The patients have to deal with many serious symptoms and variety of intensive treatment modalities, which disturbs their normal daily life and functioning and therefore leads to poor quality of life. Accordingly, to provide quality care to patients with lung cancer along with advanced medical treatment alone is inadequate. There are, in fact, practical needs for comprehensive and holistic nursing care as well as palliative care, which are believed to make great contribution to bettering patients’ QoL. In Vietnam in general, and in Bachmai Hospital in particular, although some basic and advanced training courses on palliative care for cancer patients have been held, it has still received little attention among modern health care professionals. Health care workers are said to often lack access to palliative care medicines which are needed to treat pains and other symptoms and health caregivers and palliative care program providers are not provided with sufficient palliative care principles and practice. Indeed, quality of life assessment amongst these patients is an issue of great interest as the patients with lung cancer are in need of supportive care, including daily living tasks and psychological matters. Patients might benefit from methods and measures specific to assessing QoL for palliative and end of life care. It is also possible that palliative treatment cannot lengthen the patients’ survival, but it can dramatically help limiting symptoms, which, to some extent, helps improving the patients’ QoL (Barwal et al., 2016).

As defined by Ferrans (1996) quality of life is a person's sense of general health and happiness that is the result of contentment or discontentment with the parts of life being essential for them (Ferrans, 1996). Since 1997, The World Health Organization has recommended that several factors should be carefully examined when QoL is mentioned. Such factors as the ability to think, make decisions and have control in a person's everyday life, the physical and mental health of lung cancer patients, living arrangements, social relationships between lung cancer and their families, friends and other; and financial and economic situations (WHO, 1997). In this study, the first variable is lung function. This is an important symptom which affects quality of life. Lung function parameters improved; yet the correlation between lung function and health-related QoL (Lubbe et al., 2001). Besides, the other two variables are anxiety and social support which are also supposed to have close relation with quality of life among patients with lung cancer.

The research on QoL of lung cancer patients in Vietnam has still been rare so far particularly those done by nursing professionals. Accordingly, there are limited scientific evidences to provide good guidelines and practice in nursing service. The fact has raised a question on what can be done to help the nurse and the patient improving their QoL. Thus, it is the right and the high time to conduct studies assessing QoL and the correlation between QoL with other influential factors to discover the hidden characteristics. Afterwards, solutions and actions can be suggested to all health care teams as well as medical units to further improve the QoL for lung cancer patients. So, the researcher is interested in studying the relationship between quality of life, social support, anxieties and lung functional test which affect clinical results. The research results are expected to be used as nursing care to promote QoL of patients treated in Bach Mai Hospital. Moreover, the results can be used to improve quality of professional nursing care for patients with lung cancer.

1.2 Research questions

1.2.1 What is the quality of life among lung cancer patients?

1.2.2 Do the lung functional, anxiety, and social support, correlate with quality of life for lung cancer patients?

1.3 Objectives of the study

1. Studying the quality of life among lung cancer patients in The Nuclear Medicine and Oncology Centre.

2. Studying the factors associated with quality of life among patients with lung cancer.

1.4 Hypothesis

1.4.1 Lung function is positively correlated with QOL for lung cancer patients

1.4.2 Anxiety is negatively correlated with QOL for lung cancer patients.

1.4.3 Social support is positively correlated with quality of life for lung cancer patients.

1.5Conceptual framework

In this study, the term and conceptual model of Health Related Quality of Life Theory from Ferrans (1996) has been adopted. Ferrans' model provided the foundation for the development of a measurement tool to assess Quality of Life. This model has four domains, namely, health and functioning, psychological/spiritual, social and economic, and family developed basing on the three-steps of synthesis process. All domain of health related QoL theory cover all aspects of study. There independent variables in this study including lung function, social support and anxiety are derived three main areas of QoL. According to Siegrist and Junge (1989), any evaluation of quality of life ought to take account of three interrelated factors were physical (e.g. disability, pain); psychological (e.g. mood, level of anxiety and depression) and social (e.g. degree of isolation from the environment, opportunity to perform social roles).

As defined above, Quality of Life was a person's sense of well-being that stems from satisfaction or dissatisfaction with the areas of life that are important to him/her (Ferrans, 1996). Cancer and its treatment cause many complications with a detrimental effect on quality of life and a significant influence on health-related quality of life (HRQOL) in general (Johansson et al., 2008). Measurement of health-related quality of life was first used in oncology. The measurement took the following three dimensions into account for functional state of the patient together with general and specific symptoms; psychological dimension and social aspects, such as family, social support, economic status etc. Quality of life is an issue investigated by many researchers, some of whom have done so during chemotherapy (Baczewska et al., 2014), radiotherapy and other treatments, such bone marrow transplants (Andrykowski et al., 2005). Others referred to quality of life in specific types of cancer (breast, lung, prostate) (Lavdaniti, Tsitsis, & Chrysomallis, 2014). Patients with lung cancer have suffered from many symptoms that influence activity daily living, almost patients worry about illness, physical pain they also worry about the economic. For this study, Quality of Life Theory has been chosen because this theory provides framework, concepts and many variables to measure quality of life of patient.

There are three independent variables in this research including: Lung function, Anxiety, Social support. These variables cover aspects in quality of life theory. The relationship among independent variable and dependent variable is illustrated in the following conceptual framework (Figure 1.1).

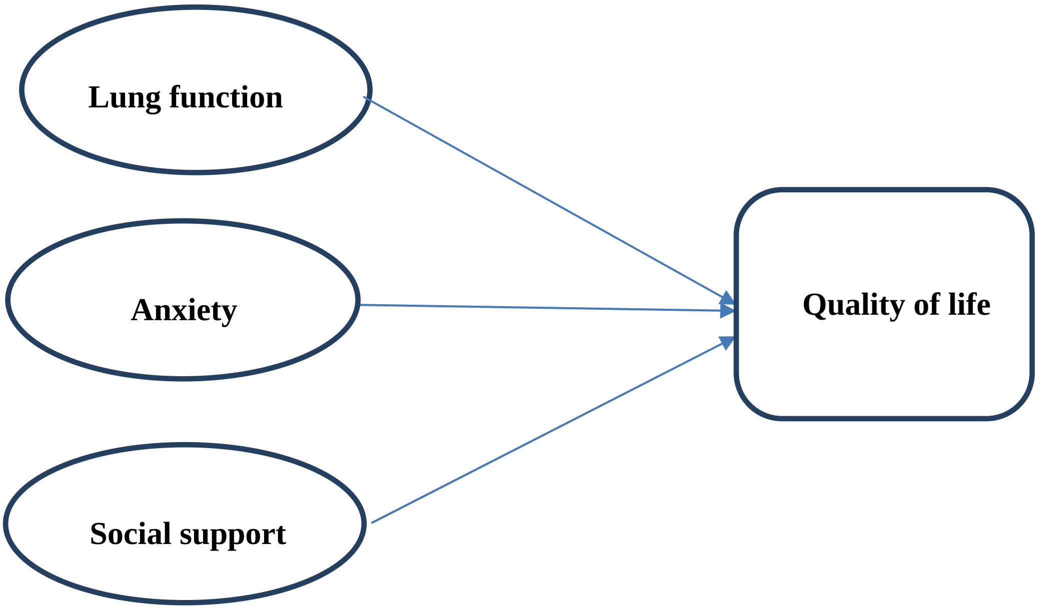

Figure 1.1: The research framework modified from Health Related Quality of Life Theory (Ferrans, 1996)

1.6 Scope of the study

This study examines the factors associated with quality of life among patients with lung cancer. They are 18 years old and above receiving treatment at the Nuclear medicine and Oncology centre in Bach Mai Hospital, from August 2015 to December 2016.

1.7 Expected outcomes and benefits

1. Nurses can use the knowledge to improve quality of life among hospitalized patients.

2. Health care teams can use this knowledge to develop effective clinical practice guidelines about QoL for the management of the anxiety, lung functional of lung cancer patients before treatment.

3. This knowledge can be used for the researchers in the other areas of lung cancer studies.

1.8 Definition of terms

Lung function refers to how well a person is breathing. To assess lung function in this study the researcher uses Forced Expiratory Volume in 1 second scale [FEV1]) from respiratory investigation unit of Bach Mai Hospital. This instrument is used effectively to evaluate air volume and airway obstruction that can associate with quality of life among lung cancer patients (Sarna et al, 2004). When the pulmonary function is tested with the FEV1 index as a percentage of the volume capacity. The evaluation for airflow limitation with FEV1 > 80% is mild obstruction, FEV1 of 50 - 79% is moderate obstruction, FEV1 of 30 - 49% is severe obstruction and FEV1 of < 30% is very severe obstruction. **(**GOLD, 2016).

Quality of life refers to a personal awareness of their life's position in the context of their living the culture and value systems as the connection to their objectives, prospects, standard and concern (WHO, 1997). In this study, the quality of life which is the result from the person's physical health, psychological state, level of independence, social relationships, personal beliefs and their relationship to the environment prominent features (Ferrans, 1996). To measure quality of life for lung cancer patients in this study, the researcher uses EORTC QLQ – C30 composed of nine multi-item scales: one global QoL scale, five functioning scales (physical, role, emotional, cognitive and social), and three symptom scales (fatigue, pain and nausea/vomiting) All other items are scored on a 4-point categorical scale, ranging from 1 (‘not at all’) to 4 (‘very much’). All scales and single items are linearly transformed to a 0–100 scale. For the five functioning scales and the global QoL scale, a higher score represents a better functioning. The reliability of this scale was reported by Mohen and colleges (2007) with the coefficient values of global QoL were 0.79.

Anxiety refers to the upsetting emotion, nervousness, apprehension or fear and the challenging situation usually make people undergo those feeling **(**Rachman, 2004**).** In this study, anxiety symptom will be measured by The HAM-A scale made by group Maier, Buller, Philipp & Heuser **(**Maier et al, 1988). This scale was translated in to Vietnamese using back translation technique. Each item is scored on a scale of 0 (not present) to 4(severe) with 0 = Not present, 1 = Mild, 2 = Moderate, 3 = Severe, 4 = Very severe. A total score range of 0–56, where < 17 indicates mild severity, 18–24 mild to moderate severity and 25–30 moderate to severe.

Social support refers to the social interaction that one group of people operation is assumed to give advantages to another group with guidance, tangible even non-directive support. (Babare & Ainlay, 1983). To assess social support in this study, the researcher used Multidimensional Scale of Perceived Social Support developed by Zimet, Dahlem, Zimet & Farley (1988). That was translated into Vietnamese using back translation technique and is composed of 12 items. The items are divided into factor groups relating to the source of the social support, namely family (Fam), friends (Fri) or significant other (SO). The score of each item is from 1 to 7 given the total scores of social supports from 12 to 84 and higher scores indicate better social support.

CHAPTER II
LITERATURE REVIEW

This chapter provides a literature review of factors in relation with quality of life among lung cancer patients. The contents enhance the understanding of phenomena of quality of life among patients with lung cancer based on health-related quality of life theory as following four issues including the conclusion.

2.1 Problems among patients lung cancer
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2.5 Conclusion

2.1 Problems among patients lung cancer

2.1.1 Incidence of lung cancer

Lung cancer is the most popular cancer expanding worldwide and has significantly increased morbidity (Bennett & White, 2013) and also led cause of death throughout the world, estimated to be 1.59 million deaths in 2012 Stewart & Wild, 2014). On global extent, this disease has been the most common among men (1.2 million, 16.7% of the total) with the highest incidence rates in Central and Eastern Europe (53.5 per 100,000). As for women, the highest estimated rates are in Northern America (33.8%) and the lowest rates (in both of men and women) are in Western and Middle Africa (Strewart & Wild, 2014). Today, lung cancer remains a disease with a dismal prognosis. The survival rate, 5 years, for lung cancer is 54% when the tumor is still in early stage however the diagnosed at an early stage is only 15% of cases. For matastasis lung cancer, the survival rate is as low as 4% and over 50%of lung cancer patientscan live only 1 year since the diagnosis (Howlader et al, 2016).

According to Globocal in 2012, lung cancer could be seen in men more frequently (the incidence about 40/100000) compared with women (the incidence about 21/100000). Especially, the trend of lung cancer have been increased quickly (Vuong, Velasco, Lai & Busse, 2010). So, these affected to the economical society like in Vietnam expensed 3,517 billion VND which composed of 73.9% (2,600 billion VND) for the medicines cost and the medical services cost only (900 billion VND). (Nguyen & Dinh, 2014).

Although there is no publication about the incidences of lung cancer of patients in Nuclear Medicine and Oncology Center, Bach Mai hospital, on average, about 5 lung cancer patients are received for treatment daily. Despite being one of the top fatal cancers, the patients, in fact, receive no-difference nursing care from nursing professionals. This is simply because of the lack of special attention in training professionalised care givers for specific diseases.

2.1.2 Pathophysiology of lung cancer

Human’s lungs described as two sponge-like organs lie in the chest cavity. The right lung has three lobes while the left has 2 lobes. During the breathing process, the air is inhaled into the mouth or the nose and then passes through bronchioles in the trachea and then into the lungs. The main functions of the lungs are taking in oxygen and passing carbon dioxide. During the respiration process, the lungs are protected by a thin lining layer called the pleura which surround the lungs. This also helps the lungs function harmonically in the chest wall. (York & Miller, 2005).

As stated, it is possible that lung cancers ignite in the cells spreading along the bronchi and other parts of the lung such as the bronchioles or alveoli. Normally, the disease starts as the pre-cancerous changes in the lung. It is the initial genetic change in the lung cells to cause them as accelerated growth. These cells, which may look quite unusual under a microscope, neither can be seen on an X-ray nor cause symptoms (York & Miller, 2005). Over the period, the gene changes may take place and compel, which causes the development to an actual carcinoma. As the cancer grows, its cells may create chemicals which form the small blood vessels in the neighboring area. The cancer cells which are nourished by these blood vessels, can continue to develop and form a tumor that is of large enough size to be seen on imaging tests such as X-rays. Unfortunately, these cancer cells separate from the primitive tumor and intrude into other parts of the body so it is considered to be a fatal disease due to its wide spreading even before being detected by a chest X-ray (Horn, Eisenberg & Gius, 2014).

Lung cancer can divided into 2 main types, small cell and non-small cell lung cancer (NSCLC). The details of these can be explained as follow; The majority of lung cancers with around 90% are NSCLC which classifies into 3 basic subtypes depend on sizes, shapes, and chemical make-up under a microscope. However, those subtypes can be treated and predicted under the same approach. Also, as many as about 30% of all cases belong to squamous cell carcinomas, which start in early versions of squamous cells, flat cells lining inside the airways. This type of lung cancer are closely connected to the habit of smoking and can be found close to the bronchus in the middle lungs (Horn, Eisenberg & Gius, 2014).

For the adenocarcinomas, there are found approximately 40% and usually observed in people who either currently or formerly smoke, however, it is also commonly encountered among non-smokers as well. Another feature of this specific type is that it normally occurs among women and younger people. Adenocarcinoma starts in outer parts of the lungs and tends to progress more slowly than other types of lung cancer. Fortunately, this type of lung cancer has a good prognosis because it has chance to be diagnosed before expanding to the other cells away from the lung (Horn et al.2014). The final subtype of NSCLC, large cell (undifferentiated) carcinoma makes up between 10% and 15%. Because of appearing in any part of the lung and seemingly developed and invaded quickly, which may complicate to treatment protocol. It is worth noting that large cell neuroendocrine carcinoma, a subtype of large cell carcinoma, is an accelerated growth cancer and perform like small cell lung cancer (Alberg, Brock, & Stuart, 2005).

Almost 15% of all lung cancers are small cell lung cancer (SCLC) commonly found among smokers is also known as oat cell cancer, oat cell carcinoma, and small cell undifferentiated carcinoma. SCLC normally begins in the bronchi close to the middle of the chest, and it is likely to overspread in the early stage (Horn, Eisenberg & Gius, 2014). As stated, a big number of carcinogens which are present in tobacco smoke or in industrial pollutants are considered initiators for bronchial or bronchiolar-alveolar epithelial cells (American Joint Committee on Cancer, 2010). These carcinogens usually leave a widespread influence on the whole bronchial tree, causing primary lesions within the same, exposed organ to occur frequently. Despite independent occurrence of histological type, the frequency and timing regarding cancer progression varies quite obviously in small cell lung carcinomas (SCLC), and non-small cell lung carcinomas (NSCLC), which is originally rooted from bronchial or alveolar epithelial cells (Horn, Eisenberg & Gius, 2014).

2.1.3 Impact of lung cancer

Lung cancer leaves an extensive burden on persons by strongly influencing their physical as well as psychological, social, economical and realistic aspects of life. Lung cancer not only kills patients, but represents a huge burden on the health care system with significant impact on human health as a matter of great concern to society in Vietnam as well as in the world.

Also, the disease leaves a dramatic impact on individual patients either physically or psychologically. A patient following a cancer treatment process suffers decreasing overall QoL and HRQOL over the treatment periods due to either clinical nature or treatment methods. Normally, the patients' physical and psychological are the ones to be most at risk. The patient has to endure the trouble physical symptoms of respiration, fatigue, hearing loss, pain, and neuropathy. For psychological distress, there are many causes conveying to depression, financial matters, and definitely troubles in complying with the protocol, especially, fear of the recurrence cancer (Vijayvergia, Shah, & Denlinger, 2015).

Also, lung cancer imposes a significant impact on the social and family's economic situation. In order to better the process of diagnosis and treatment of NSCL, it is vital that research and innovations be hugely invested. For certain cases where it is hardly possible to cure the patient, the cost for cancer care service can reach a considerably high level (Graham & Leighl, 2014). In fact the costs of cancer management, which keeps increasing has become a borderless issue. (Mariotto, Yabroff, Shao, Feuer, & Brown, 2011). Long-lasting treatment periods and patients' helplessness in both personal and occupational tasks create heavy economic loads for themselves, their families as well as the society. The disease itself places a vast impact and burden on health care system because of their high prevalence. Besides the measurable expenses, there are various immeasurable costs due to loss of productivity resulted from the treatment and care service for patients with lung cancer (Chang & Rivera, 2013).

2.2. Quality of life among patients with lung cancer

2.2.1 The concept of quality of life

Quality of life (QoL), generally can be understood as the well-being condition of individuals and societies, therefore, the term covers various contexts such as health care service, politics and employment. It is important to differentiate the concept of QoL with that of health related QoL (HRQoL). When taking into consideration the concept of HRQoL,it is vital that QoL and its relationship with health be looked into and considered. In addition, QoL is often regarded the levels of how a disease affects a patient individually. As defined by the University of Toronto's Research Unit, QoL is ‘the degree to which a person enjoys the important possibilities of his or her life". Their QoL model is based on such categories as "being", "belonging", and "becoming"; respectively who a person is, how a person is not connected to his/her environment, and whether he/she reaches his/her personal objectives, wishes, and ambitions.

2.2.2 Quality of life among patients with lung cancer

Many studies have concluded that lung cancer patients diagnosed with advanced stage have poorer QoL with various symptoms such as loss of appetite, pain, cough, dyspnea, fatigue, hemoptysis, and they definitely face high risk in life (Buchanan, Milroy, Baker, Thompson, & Levack, 2009; Siegel et al., 2013). As far as influencing aspects and factors are concerned, the list can be as brief as psychological, physical, economic and social ones. People with lung cancer are proved to have the highest or second highest level of sleep difficulties compared with other types of cancers (Palesh et al., 2010). The lung cancer patients have to endure various symptoms, which lead to low or very low level of QoL. Fatigue, loss of appetite, breathing shortness and pains leave a dramatically negative impact on patients (Iyer, Taylor-Stokes, & Roughley, 2013).

In summary, lung cancer patients' QoL is considered to be poor compared with other groups of patients. The disease itself, the treatment and the side effects from treatment bring about extremely unpleasant signs and symptoms to patients (Ferlay et al, 2015). As such, in order to better the patients' QoL, the study is needed to explore the related factors associated with QoL.

2.3. Health related QOL theory as a conceptual framework to explain Quality of life among patients with lung cancer

2.3.1 Health related QoL theory

The HRQoL theory from Ferrans (1996) is used in this study. There are four domains which are health and functioning, psychological/spiritual, social and economic, and family affected to quality of life. This conceptual model of QoL was developed based on the three steps of synthesis process. The first step was a focus on clarifying and defining the concept and meaning of quality of life. Ferrans defined Quality of Life as a person's feeling of well-being that stems from satisfaction or dissatisfaction with different aspects of life that are important to him/her (Ferrans, 1996). The QoL index used in this study was to measure QoL, taking into account the various fields in life pointed out by experts, the subjective levels of satisfaction with those fields, and the importance of them to the individual.

According to Ferrans (1996) the mentioned model included several components under each of the four major aspects. First, Health and Functioning encompasses helpfulness and usefulness to others, physical independence, ability to perform family responsibilities, pain, energy (fatigue), leisure time activities, ability to travel, sex life, health care, etc; Second, The perspective of psychological/spiritual includes life satisfaction, common delight, personal objectives fulfillment and peaceful mind. Third, Social and economic domain encompasses standard of living, financial independence, home, job/unemployment, friend, and emotional support from others; Finally, Family domain consists of family happiness, family health and children.

2.3.2 Health related QOL theory and the patients with lung cancer

The quality of life studies among patients with lung cancer by Chambers (2015) and Grant (2013) revealed that anxiety of patient, 49%, was increased; 41% were depressed and 51% had high global distress. The patients, both male and female had similar mean scores of distress levels which were remarkably lower for older one. Distress levels did not vary significantly across categories of the other sociodemographic variables. The overall mean score for quality of life as measured by FACT-L was 99.6 with standard deviation = 21.6, higher mean scores for the elderly but equal across other selected groups.

In addition, the quality of life study among lung cancer patients before and after the third cycle of chemotherapy treatment showed the decreased physical performance with the Karnofsky scale after treatment from 80 to 70 points. Moreover, there were exacerbate symptom of weary, distasteful, nausea and vomiting, constipation, alopecia and pain related to chemotherapy. However, the QOL and some symptoms were improved such as dyspnea, hemoptysis and insomnia (Oliveira, 2013). So, QOL was an essential indicator of survival in non-small cell lung cancer (Braun, 2011).

2.4. Factors associated with Quality of life among patients with lung cancer

2.4.1 Lung function and its association with QoL among patients with lung cancer

Regarding treatment process for lung cancer patients, it is said that the results have reduced QoL and terribly affected lung functions (Lubbe, Krischke, Dimeo, Forkel, & Petermann, 2001). In Ozturk and other coauthors’ study, the outcome was the close association between dyspnea and the increasing level of fatigue, pain, insomnia, and appetite loss. It contributes greatly to patients’ decreasing quality of life (Ozturk, Sarihan, Ercan, & Karadag, 2009). In their study of Sarna and his colleagues (2004) revealed that two thirds of the survivors reported at least one respiratory symptom; 25% reporting cough, 28% phlegm, 31% wheezing, and 39% dyspnea. 21% said that their majority of time was spent in bed over the last 12 months due to the problems related to their respiration system. Based on spirometry results, 36% of the respondents had a moderate or severe obstructive and/or restrictive ventilator disorder (Sarna et al., 2004).

Survivors exposed to second-hand smokers (28%) were more than three times as likely to report respiratory symptoms. Sarna also stated that respiratory symptom burden contributed to diminished QoL in several domains (Sarna et al., 2004). Most of these patients said they suffered from respiratory symptoms, more than 30% reported dyspnea and one fifth with seriously diminished lung function. Sarna also claimed that it is the symptom burden, rather than ventilator impairment, led to lower QoL (Sarna et al., 2004). Dyspnea is a common symptom of lung cancer that can impact patients’ well-being status either physically, socially, or psychologically. Patients with high dyspnea scores were proved to have lower QoL. Dyspnea in men was worse than that in women, and the elderly were more likely to report more severe dyspnea than the younger (Smith, Hann, Ahles, Furstenberg & Mitchell, 2001).

For measuring lung function, Forced Expiratory Volume in 1 second scale (FEV1) and patients’ data from respiratory investigation unit of Bach Mai Hospital were used. This instrument is used to evaluate air volume and airway obstruction that can associate with quality of life among lung cancer patients (Sarna et al, 2004). The evaluation for airflow limitation with FEV1 > 80% is mild obstruction, FEV1 of 50 - 79% is moderate obstruction, FEV1 of 30 - 49% is severe obstruction and FEV1 of < 30% is very severe obstruction. **(**GOLD, 2016).

2.4.2 Anxiety and its association with QoL among patients with lung cancer

The findings from the study of Dean and the others in the year 2013 demonstrated that a big number of lung cancer patients suffered from sleep disorder throughout their treatment process and there was a close association between these sleep disturbances and lung cancer symptoms, which also led to other psychological problems such as anxiety or depression (Dean et al., 2013). In a multivariate analysis with global QoL as the dependent variable, depression was a significant factor, which is at four out of five assessments, whereas coping capacity, anxiety, performance status, pain, and social support entered the model at one or two assessments. There are remarkably negative relationships emerged between QoL and anxiety, depression and lung cancer (Brown Johnson, Brodsky, & Cataldo, 2014).

Various studies also support the statement that patients with lung cancer have always experienced anxiety since the beginning of the diagnosis. Almost all of them felt that their future was really unguaranteed and somehow hopeless (Horn L, Eisenberg R, Gius D, et al, 2008). Such types of the treatment for the disease as radiation therapy, chemotherapy or combination of both make the patients anxious and stressed. Moreover, the expectation of the family anxiety was associated with decreased quality of life (Arrieta et al., 2013). In brief, the feeling of anxiety is truly a factor which is closely associated with quality of life among patients with lung cancer.

2.4.3 Social support and its association with QoL among lung cancer patients

The assistance which Vietnamese patients in general and those of lung cancer in particular received from the society was at a moderate level with mean equal 66.38 ± 8.45. The relationship between social support and QoL can still be observed and the variables definitely depend on the sources and kinds of support delivered to the patients. It is also true that proper and prompt interventions should be absolutely useful in initiating and reactivating as well as maintaining different sources of social support from medical professionals. Accordingly, these actions possibly booster better emotional, functional, and physical conditions among patients of lung cancer (Luszczynska, Pawlowska, Cieslak, Knoll, & Scholz, 2013). As stated, significant relations between support from medical workers and QoL were observed more frequently of 67%, compared with support from families and friends (53%). The evident statistics were found for the associations between support the patients perceived and received from family and friends and emotional aspects of QoL (Luszczynska et al., 2013).

2.5 Conclusion

Patients with lung cancer have to deal with alterations in physical functions, many unpleasant symptoms from the progression of disease as well as from the treatment. With these chronic conditions and prolonged treatment modalities, patients always experience physical, psychological as well as socioeconomic problems causing their poor quality of life. In this regard, patients as well as their families are suffering and require assistance from nurses, health care professionals who work very close to them.

The previous research supported that many factors were related to quality of life of patients with lung cancer. According to intensive literature review, these factors can be divided into 3 main groups; physical factor, social factor and emotional factor. Physical factor refers to patients’ lung function, social factor refer to social support, while emotional factor refer to patients’ level of anxiety. Accordingly, the researcher would like to explore whether these aforementioned factors are related with quality of life in patients with lung cancer or not. Findings from this study will provide scientific evidences to support the patients care standard in the Nuclear medicine and oncology center of Bach Mai hospital. It can help improve patients’ quality of life so that patients who have lung cancer can live happily with their catastrophic condition. Moreover, it will reflect the atmosphere of patient centered care.

CHAPTER III
METHODOLOGY

3.1 Research design:

The study was descriptive correlational research in order to study thefactors associated with quality of life among patients with lung cancer in The Nuclear medicine and Oncology in Bach Mai hospital.

3.2 Population and sample of the study

3.2.1 The population of this study

The population of this study included adult patients with the age of 18 or older diagnosed lung cancer admitted to the nuclear medicine and oncology center, Bach Mai Hospital.

3.2.1 Sample size:

The researcher was test the relationship among anxiety, social support, lung function and quality of life. Four parameters require including 1) the level of significance α= 0.05, 2) the power of the statistical test (Power 1- β= 0.8), 3), There was three independence variables in this study and 4) effect size for this study (f^2=.099). The sample size in this study was calculated by using G*power version 3.1.9.2 program to determine the minimum number of participants needed for co-relational design (Faul, Erdfelder, Buchner, & Lang, 2009). Based on G*power, sample size should be at 115 lung cancer patients.

3.2.3 Criteria of the sample

Sample was selected form the population according to the following criteria:

The inclusion criteria were as follow:

1) Age of 18 or older diagnosed lung cancer.

2) Able to verbally communicate with the researcher in Vietnamese language.

3) The patients already know that they were diagnosed of CA lung.

The exclusion criteria was as follow:

1) A physical or mental condition such as poor condition during the interview such as severe pain more than eight scores, dyspnea and shortness of breath, unconsciousness impeding the use of a Questionnaire**.**

2) Patients with end of life stage such as severe breathing difficulties, coma, or the patient to support breathing machine.

3) Incomplete fill out questionnaire

Termination criteria:

1) Had poor condition during the interview such as severe pain more than eight scores, dyspnea and shortness of breath, unconsciousness.

2) The patients in the final stages with severe signs, the patient could not was interviewed as severe breathing difficulties, coma, or the patient to support breathing machine.

3.3 Setting

The research was conducted at the Nuclear Medicine and Oncology center in Bach Mai Hospital from August to December 2016. Follow the inclusion criteria, participants with lung cancer were treated in the center, 200 beds capacity serving for about 800 inpatients and also for about 800 out patients at the inpatients department. Healthcare services were performed by the oncologists and nurses' daily from 7:30 in the morning to 4:30 in the afternoon. Since 7:30am to 10:30 am both of patients and the medical staff was busy. So, the researcher collected data everyday, 10.30 AM – 4.30 PM. The interview was conducted in ward.

3.4 Instruments

The instruments used for data collection included five parts as follows:

Part I: Characteristics of the individual (Appendix 1)

The researcher developed the demographic questionnaire to get data of the patients, illness history and previous treatment information by herself. The demographic questionnaire to get data of the patients had 12 items consisted of age, gender, weight,height, BMI, Province, Occupation, Marital status, Level of education, Income, Payment method for your treatment, Health Insurance. The questionnaire part illness history and previous treatment had 14 items including the name of hospital before to Bach Mai hospital, admitted date, diagnosis, history of illness, length of stay in the hospital (this admit time), history of family, complication from their illness, co-morbidity, risk and safety problem in caring these patients, rick factor, whether the patient had knowledge about their illness, What kind of support the patient need from the nurse, State of disease, Treatment method.

Part 2: Hamilton Anxiety Rating Scale (HAM-A) (Appendix 2)

Anxiety symptom was assessed by The HAM-A scale made by group Maier, Buller, Philipp & Heuser **(**Maier et al, 1988). This scale was one of the first ranking scales developed to evaluate the severity of anxiety symptoms, and was still widely used today in both clinical and research settings. There were 14 items, this scale was translated in to Vietnamese by English teacher and discuss by 5 expert: Each item was marked on a scale of 0 (not present) to 4 (severe) with 0 = Not present, 1 = Mild, 2 = Moderate, 3 = Severe, 4 = Very severe. A total score range of 0–56, where <17 indicates mild severity, 18–24 mild to moderate severity and 25–30 moderate to severe. This scale reported reliability coefficients with Cronbach’s alpha was α=0.86 (Chambers et al, 2015).

Part 3: Multidimensional Scale of Perceived Social Support (Appendix 3)

To assess social support the researcher used Multidimensional Scale of Perceived Social Support developed by Zimet and colleges (1988). That was translated into Vietnamese by English teacher. It is composed of 12 items. They divided the items into groups of factors relating to the source of the social support, namely family (Fam), friends (Fri) or significant other (SO). The score of each item was from 1 to 7 ((1) if you Very strongly disagree, (2) if you strongly disagree, (3) if you mildly disagree, (4) if you are neutral, (5) if you mildly agree, (6) if you strongly agree, (7) if you very strongly agree. Total scores of social support from 12 to 84 and high scores show better social support.

Part 4: The EORTC QLQ – LC30 (Appendix 4)

To measure quality of life for lung cancer patients the researcher used versions EORTC QLQ – LC30.

The QLQ-C30 is a 30-question questionnaire. Those 30 questions was distributed in different scales. They are:

- five scales of functionality which represent the domains of the QLRH (physical function, cognitive function, emotional function, social function and role performance);
- three scales of symptoms (tiredness, pain, nausea and vomiting);
- six more items evaluating symptoms normally associated with cancer patients (dyspnea, lack of appetite, insomnia, constipation and diarrhea);
- a scale for global quality of life and health, and a scale for evaluating the financial impact of the treatment and of the disease.

All other items was marked on a categorical scale which has 4 points, ranging from 1 (not at all) to 4 (very much). All scales and single items was linearly transformed to a 0–100 scale. For the five functioning scales and the global QOL scale, a higher score represents a better functioning. The reliability of this scale was reported by Mohan (2007) with the coefficient values were global OL 0.79.

The lung cancer-specific used module (LC30) of European Organization for this study. This scale including 30 items with score range from 1 ('not at all') to 4 ('very much') 4. Total scores ranged from 30 to 120 scores. High scores it meant low quality of life.

Part 5: Lung function test (Appendix 5)

To assess lung function, the researcher used The Forced Expiratory Volume in 1 second [FEV1]) instrument. This scale was easily and most often used index for evaluating airway obstruction, bronchoconstriction or bronchodilation. It is automatically added up during spirometry or pulmonary function testing. With FEV1 > 80% of predicted is mild obstruction; FEV1 50 -79% of predicted is moderate obstruction; FEV1 30 - 49% of predicted is severe obstruction; FEV1 < 30% of predicted very severe obstruction. FEV1 shown as a percentage of the VC is the standard index for evaluating and quantifying airflow limitation (GOLD, 2016).

3.5 Instrument Reliability and Validity

3.5.1 Instrument Reliability

The HAM-A scale will be interviewed for anxiety symptom with 30 lung cancer patients, who had the qualifications like the samples, and then the scores are analyzed for reliability using Cronbach's alpha coefficient.

The Multidimensional Scale of Perceived Social Support, will be interviewed for measurement social support with 30 lung cancer patients, who had the qualifications like the samples, and then the scores are analyzed for reliability and Cronbach's alpha coefficient

The versions EORTC QLQ – LC30 will be interviewed for QOL with 30 lung cancer patients, who had the qualifications like the samples, and then the scores are analyzed for reliability and Cronbach's alpha coefficient Test lung function was test for lung function with lung cancer patients.

The questionnaires and scale test will be interviewed out on 30 lung cancer patients at The Nuclear Medicine and Oncology Center in Bach Mai hospital. Then, the reliability is tested by Cronbach's alpha method.

Table 3.1 Reliability of scales **(**n= 30 and n=115)

Scale	**N of Items**	**Cronbach's Alpha (n = 30)**	**Cronbach's Alpha (n = 115)**
Social support	12	.867	.890
Anxiety	14	.800	.864
Quality of life	30	.952	.925

3.5.2 Instrument Validity

All of instrument were translated by two English teacher and discussed by 5 clinical experts.

Hamilton Anxiety Rating Scale (HAM-A), Multidimensional Scale of Perceived Social Support, EORTC QLQ – LC30 and test lung function. Their content validity was inspected and suggestions were made. Linguistic changes were made to them. These scales were translated into Vietnamese before being tested on 30 samples to assure their understanding of the contents.Other device tools such as weight scale, BMI, height have been routinely calibrated and inspected by the manufacturers for a quality assurance and calibrated before each application.

3.6 Data collection

1) Preparation research assistant

A Research assistant in this project was two year experienced nurse in the Nuclear Medicine and Oncology Center in Bach Mai Hospital. Researcher had trained her about objective and details of project focusing on her role for approach voluntary subject, how to include and exclude by inclusion and exclusion criteria, describing to participant with simple words for understanding also process of signing consent form.

2) Then, the researcher assistant self-introduced, made a relationship with the patients and gave the information about the objectives. For the confusion patients, the researcher assistant made a relationship with patients about the objective of study, data collection procedure, asked for the research cooperation, and introduced the researcher to the patients. After research assistant introduced researcher to voluntary subjects. To collect data, researcher met the patient at his/her bed, introduce herself, and establish a relationship with the patient also verbally explain the objective of study, data collection procedure, participant’s role and rights. In addition, the researcher asked patients to sign consent form. The patients were volunteer in the study.

3) The researcher organized private room to interview the patients and did questionnaire by themselves. Then, researcher used five questionnaires for data collection. Questionnaires were 1) Demographic data questionnaire with 20 questions, 2) Lung function test, 3) Hamilton Anxiety Rating Scale (HAM-A) with 14 items, 4) Multidimensional Scale of Perceived Social Support with 12 items, 5). EORTC QLQ-

C30 with 30 questions. The time for completing five questionnaire was about 30-45 minutes.

4) During interviewed or used questionnaire, if patients did not want to participate in this study they could stop in any conditions. The patients got the same standard care after withdraw from the study. There were no any effect for caring.

3.7 Protection of human rights

This study was conducted base on the protection human rights. The participants were asked to participate in this study by volunteer. The researcher explained the purpose of the study, the research procedure, benefit, risks, types of questionnaire, length of time for completing questionnaire, and right to refuse participation in study anytime. The participants who agreed to participate were informed and assured that the data would be kept confidentially and would be reported only as a group data. Informed consent was signed by all participants. During interviewed or used questionnaire, if patients did not want to participate in this study they could stop in any conditions. The patients would got the same standard care after withdraw from the study. There were no any effects for caring. If the patients had unstable conditions for example dyspnea, the researcher would stop to interview. The researcher would immediately contact with doctors who had response to take care the patients. The researcher would take care until patients already stable. The data from withdraw or termination would be exclude. The participants data would be keep in confidentially by using code. If relevant information arised about benefits and risks of the research project, the researcher would inform the participant immediately and without concealment.

3.8 Data analysis

-The data was analyzed by using computer program. The significant level of statistic test is set up at $\alpha = .05$.

- Frequency, percentage, mean and standard deviation were used to describe the general characteristics and medical data of the samples.

- The descriptive statistics in terms of frequency, percentage, mean, standard deviation, and range were used to describe study variables, including lung function, anxiety, social supports and quality of life in patients with lung cancer.

- Before using Pearson's Product Moment correlation, the assumption was tested. All variables were assessed for their normal distribution. The results showed that all variables were not in the form of normal distribution. So, Spearman's rho correlation was used to examine association between lung function, anxiety, social supports and quality of life in patients with lung cancer.

CHAPTER IV
RESULT

This descriptive correlational study was conducted to examine the relationship between lung function, anxiety and social support with Quality of life among lung cancer patients who aged 18 – 85 years old in The Nuclear Medicine and Oncology Centre at Bach Mai hospital from August to October, 2016. The findings were presented in descriptive statistic as follows:

1. The characteristic individual of lung cancer patients.
2. The clinical information of lung cancer patients
3. The correlation between the lung functional, anxiety, and social support, correlate with quality of life for lung cancer patients

4.1. The characteristic individual of lung cancer patients

The sample includes 115 patients with lung cancer. It can be seen from the Table 4.1 the findings illustrated that the percentage of males (73%) was more females (26%). The age of patients with lung cancer ranged from 18 to 85 years. Most of the patients lived in rural (55.79%) and only 1.7% lived in the Mountain region. The highest percentage of patients who were married with 90.4%. The educational level at secondary made up the greatest proportion (34.8%). The occupation of patients were common in famer and retired with 34.8% and 33.9%, respectively. The majority of them (99.1%) had governmental insurance while the rest did not have any kind of insurance and had to pay for the treatment expense by themselves (table 4.1).

Table 4.1: The characteristic of lung cancer patients **(**n = 115**)**

Characteristics	Number	Percentage
Gender		
Male	84	73.0
Female	31	26.0
Age (years)		
18-35 years	1	0.9
36-59 years	56	48.7
Above 60	58	50.4
Mean ± SD = 58.9 ± 10.0 (31 - 85)		
Weight (kg)		
Mean ± SD = 53.4 ± 7.7 (31 - 75)		
Height (m)		
Min = 145		
Max = 175		
Mean ± SD = 161.4 ± 6.7		
Location of resident		
City	49	42.6
Rural	64	55.7
Mountain	2	1.7
Marital status		
Married	104	90.4
Single	1	0.9
Divorce	3	2.6
Separated	7	6.1
Others	0	0.0

Table 4.1: The characteristic of lung cancer patients **(**n = 115**)** (cont.)

Characteristics	Number	Percentage
Educational Level		
Primary	10	8.7
Secondary	40	34.8
high school	29	25.2
2 years certificate	14	12.2
College	8	6.9
Bachelor	13	11.3
Others	1	0.9
Occupation		
Professional	3	2.6
Worker	12	10.4
home worker	1	0.9
Famer	40	34.8
Salesperson	12	10.4
Retire	39	33.9
Other	8	7.2
Income / month		
No income	11	9.6
1-100 USD	29	25.2
101-200 USD	43	37.4
200 USD	32	27.8
Min = 0, Max = 442.48, Mean ± SD = 6.9 ± 100.66		
Income F month		
No income	0	0
1-100 USD	6	5.2
101-200 USD	19	16.5
> 200 USD	90	78.3
Insurance		
Yes	114	99.1
No	1	0.9

4.2 The clinical information of lung cancer patients

It can be clearly that most lung cancer patients had the length of staying at hospital with less than 2 weeks occupied with the largest percentage 52.2% while those with more than 4 weeks made up the lowest 9.5%. Lung cancer patients at 4 stage was highest percentage (33%). The risk factor for lung cancer was majority smoking with 40.9%. There were 34.8% who patients with lung cancer had treatment method by chemotherapy and radiation. All patients have comorbidity, Hypertension disease made up first with 18.3%, Asthma 5.2%, Tuberculosis 2.6%, COPD 2.6 %.

Table 4.2: The clinical information of lung cancer patients (n=115)

Characteristics	Number	Percentage
Length of stay in the hospital		
Less than 2 weeks	60	52.2
2- 3 weeks	24	20.9
3- 4 weeks	11	9.5
Upper 4 weeks	20	17.4
Stage of disease		
Stage 1	10	8.7
Stage 2	32	27.8
Stage 3	38	33.0
Stage 4	35	30.5
Comorbidity		
Asthma	6	5.2
Tuberculosis	3	2.6
COPD	3	2.6
Hypertension	21	18.3
Diabetic	2	1.7
other	68	59.1

Table 4.2: The clinical information of lung cancer patients (n=115) (cont.)

Characteristics	Number	Percentage
Risk factor		
Smoking	47	40.9
Alcohol	13	11.3
Live and work in PE	26	22.6
Other	29	25.2
Treatment method		
Chemotherapy	33	28.7
Radiotherapy	5	4.4
Surgery and chemotherapy	12	10.4
Surgery and radiotherapy	3	2.6
Chemotherapy and radiotherapy	40	34.8
Others	22	19.1

4.3. The lung functional, anxiety, and social support, quality of life of lung cancer patients

It can be seen from the table that the majority of sample suffered with moderate obstruction (73%) while mild obstruction was 14.8%. Most of them reported mild to moderate anxiety (50.4%) and very severe anxiety (32.1%) (table 4.4). The Mean of social support score was 5.53 (SD ± .07) and the Mean of QoL score was 48.97% (SD ± 7.94) (table 4.5).

Table 4.3: The Frequency and Percentage of lung functional, anxiety score among lung cancer patients

	Number	**Percentage**
Lung function		
≥ 80 Mild obstruction	17	14.8
50-79 Moderate obstruction	84	73.0
30-49 Severe obstruction	14	12.2
< 30 Very severe obstruction	0	0.0
Min =50, Max=83, Mean ± SD = 72.43 ± 7.95		
HAM-A	**Number**	**Percentage**
Normal anxiety	20	17.4
Mild-moderate anxiety	58	50.4
Very severe anxiety	37	32.2
Min = 1, Max = 37, Mean ± SD = 15.4 ± 7.9		

Table 4.4: Mean, Standard deviation, Min and Max scores of social support and QoL among lung cancer patients

MSPSS subscales	**Mean**	**SD**	**Min**	**Max**
SO	5.67	0.89	20.0	7
Family	6.02	0.71	3.5	7
Friend	4.90	0.87	2.5	7
Total	5.53	0.70	3.0	7
Total (12-84)	66.38	8.45	36.0	84
Min = 36, max = 84				
QOL				
Global health status	54.06	17.29	0	100
Functional scales	51.51	21.37	5.00	96.67
Symptom scales	41.33	16.97	11.73	77.78
Total QOL	48.97	7.94	30.13	70.08

4.4 The correlation between lung functional, anxiety, and social support with quality of life of lung cancer patients

Before using Pearson's Product Moment correlation, the assumption was tested. All variables were assessed for their normal distribution. The results showed that all variables were in the form of normal distribution.

The result illustrated that lung function was positive correlate with QOL at (r = .19, p < .05). Anxiety had negative correlation with QOL (r = -.347 p < .01). However, social other, social family and social friend had no correlation with QOL (r = -.004, p = .967; r = .029, p =.757; r = -.002, p = .982), respectively (table 4.6).

Table 4.5 Correlation between lung functional, anxiety, and social support with quality of life among lung cancer patients (n=115).

	1	**2**	**3**	**4**
1. Lung function	1.00			
2. anxiety	-.504**	1.00		
3. social support	.059	-.222*	1.00	
4. QOL	.190*	-.347**	-0.004	1.00

*p < .05, **p < .01

CHAPTER V

DISCUSSION

This chapter will present the discussion of the research findings which are based closely on the research objectives and hypotheses**.**

5.1 Quality of Life of patients with lung cancer

The average score of QoL of lung cancer patients in this study was 48.97 (SD±7.94), which indicates that lung cancer patients in this study demonstrated poor QoL. The finding is in consistent with Baker and his co-authors' who stated that lung cancer patients have been observed to experience the lowest level of life quality compared with patients with other cancers (Baker, Denniston, Haffer, & Liberatos, 2009). There are explanations on this finding.

Firstly, lung cancer led to many problems related to poor oxygenation, hypoxemia and other respiratory-related symptoms such as breath shortness or breathing troubles. In particular, among those with the advanced stage cancer, more than a half of the patients were in stage 3 (33%) and stage 4 (30.5%) which are considered as an advanced stage. Likewise, the study of Polanski and the others who found that QoL of lung cancer patients was dramatically afftected by the severity and various symptoms (Polanski et al, 2016). The participants, who got the dissease, suffered from deterioration of respiratory organs, especially their alveoli which seriously affected oxygen exchange mechanism leading to decreased oxygen level and hypoxemia. That aforementioned condition inevitably affected patients' daily life activities. On conducting the interviews during data collection process, it was revealed that most of the patients suffered from mild to severe obstruction (a total of 100%) and the majority of them were moderate obstruction (73%). In deed, as observed, many of them had problems breathing or verbally communicating with others at different levels. In addition what found in the study of Polanski and the others was that breathing-related problems can reduce psychological functioning and sleep disorder may lead to cognitive malfunctioning (Polanski et al, 2016).

Another possible explanation is that the majority of the patients had to suffer from long hospital stays from two weeks to over four weeks. They were deprived from their own hometown because 55.7% of these patients had their residency located in the rural areas. Being away from home and family might make them feel more anxiety and lonely. Receiving long treatment in the hospital resulting in burnouts and depressions. Besides those physical and psychological effects, the patients along with their families had to cover high extra expenses on the hospitalized treatments and medicines, daily living expense and traveling cost (Sharp & Timmon, 2010). All of these together with increasing stress and anxiety about their health worsened their QOL.

5.2 The correlation between lung function, anxiety, social support, and quality of life

5.2.1 The correlation between lung function and quality of life

The result shows that there is a notably positive correlation between lung function and specific QoL with r =.190 (p = .041), which means that the more seriously a patient's lung is affected, the lower QOL they have. As far as the gender concern, male is outnumbered female patients by three to one (74% VS 26%) (table 4.1). Moreover, Vietnamese men smoke more than women according to the GATT-2010's Global Survey on adult smoking, 47.4% adult male smokers compared to just 1.4% female ones, which apparently leads to the malfunction of their alveoli. This result supports the association of smoking as a threatening factor for lung cancer among 80-90% of lung carcinoma (CDC, 2016). Moreover evidences from this study supported that patients not only exposed with smoking (40.9%) but they also lived in very poor environment (22.6%). This study result was lower than the report from

GATT-2010 that all Vietnamese workers around 55.9% had been exposed to poor environment of second hand smoke in workplaces (GATS, 2010). So, these 2 factors could lead to dysfunction of their alveoli.

In fact, a patient diagnosed with lung cancer has various severe symptoms in which fatigues (98%), respiratory problems (94%) cough (93%), and are the most commonly seen (Iyer et al, 2013). In previous studies (Liao et al., 2011; Lövgren et al., 2008; Montazeri et al., 2003), the common levels of symptoms were recorded to be from mild to moderate. This probably reflected the fact that clinical symptom management patients had been provided with was working. Such symptoms as fatigue, pain, and sleep difficulties, however, still noticeably resulted in patients' QoL. That is in agreement with Tanaka, Akechi, Okuyama, Nishiwaki, and Uchitomi (2002) in that just only a low level of symptoms is severe enough to disrupt patients' daily activities. In addition, fatigue was ranked the top symptom and a major indicator of QoL, which was compliant with previous studies claiming that fatigue was one of the most prominent negative reactions (Bozcuk et al., 2006).

As found in previous studies, fatigue and respiratory problems significantly lower psychological dimension of QoL while sleeping difficulties affect patients' cognitive functioning. Thus, most of them fail to function their family and social roles (Polanski et al, 2015) and consequentially these symptoms make the patients become less independent and rely more on medical equipment, medicines, professional caregivers as well as families and friends, which definitely reduce their quality of life. In this study, Leppert and colleges (2010) found that most of the patients experienced fatigue during short and long walks, and a big number of them mostly just lay in bed or sat in armchairs throughout the day and critically needed help from family members or caregivers in basic routine tasks. Almost all of the participants frequently complained about limited ability in acting occupational roles or their hobbies as well as performing family and social life. All of the studied subjects reported the feeling of tiredness and depression. This study found the decrease of cognitive functions and social dimension of QOL all hospitalized patients during their treatment that support the study of Leppert and colleges (2010). Accordingly, these comply with the findings in other studies showing that if the patients have lots of symptoms, their quality of life tended to be lower (Hermann & Looney, 2011; Gralla, 2004; Henoch et al, 2007).

Also, residence location is one of influential factors contributing to the weakened function of the surveyed people's lungs. As seen, the majority of them lived and worked in cities (42.6%) and rural areas (55.7%). This is consistent with another study indicating that urban air pollution increases lung cancer risks (Nyberg & Fredrik, 2000). Being farmers or working in the rural area led them to be overexploiting with farming chemicals, which definitely resulted in damaged respiratory tract and respiratory functions and eventually could lead to high risk on developing lung cancer. This is consistent with the National Cancer Institute's researchers' statement that farmers or farm workers, and other members of the families may be frequently exposed to substances such as wood smoke, farming chemicals, pesticides, solvents, animal viruses, dusts, fertilizers, fuels, and specific microbes that may account for these increasingly threatening cancer rates (Alavanja et al, 2004; Field & Withers, 2012).

In this study, Lung function (FEV 1) scores of the patients meant that the majority of patients suffered with moderate obstruction (73%) follow with mild and severe obstruction (14.8% and 12.2%), respectively while very severe obstruction was 0%. These problems were found generally in lung cancer patient and related to their longevity so FEV1 was one of the essential marker of prognosis of the patients (Xu et al, 2013) In addition, poor lung function was close association with the increasing level of fatigue, pain, insomnia, and appetite loss. It contributes greatly to patients' decreasing quality of life (Ozturk, Sarihan, Ercan, & Karadag, 2009). According to study of Sarna and colleagues (2004) revealed that two thirds of the survivors reported at least one respiratory symptom; 25% reporting cough, 28% phlegm, 31% wheezing, and 39% dyspnea. Moreover, 21% of the patients said that their majority of time was spent in bed over the last 12 months due to the problems related to their respiration system. However, FEV1 in this study were higher than the report of Sarna and colleges (2004) showed that 36% of the patients had a moderate or severe obstructive and/or restrictive ventilator disorder (Sarna et al., 2004).

Overall, it can be summarized that there is a close association between lung function and QoL. While patients' lung failed to work properly, oxygen exchange between pulmonary capillaries and alveoli declined leading to low oxygenation in blood stream. Accordingly, patients would become easily tired and fatigue and would become easily exhausted even during their light daily tasks. These might lead them to be deprived from usual social functions and affected their QoL.

5.2.2 The correlation between anxiety and quality of life

The level of depression and anxiety is another indicator to measure QoL. According to the collected figures 50.4% of the subject were reported to experience mild-moderate anxiety compared to 32.2% of very severe anxiety. Research has pointed out that patients of lung cancer often suffer from psychological disorder during and after cancer treatment therapy. The previous studies made a comparison of the stress level among patients with 14 types of cancer and that among patients with lung cancer was the highest (Zabora, et al., 2001). The studies showed that one in every four participants had depression or other psychological troubles while they were under treatment. Depression is reported to influence around 23%–40% of lung cancer patients, while fear and anxiety do 16%–23% of them. The study by Polanski J and others also claimed that anxiety and depression closely related to the cancer patients' QoL. The anxiety level often went up during therapy, which greatly contributed to the decrease in QoL (Polanski et al, 2016). Additionally, the severity of depression symptoms is associated with the reduction in ability to proper functioning (Hopwood & Stephens, 2000). Similarly, as reported in table 4.6, anxiety had significantly negative correlation with quality of life with r=-.347 (p=0.00). The result shows that the more anxious a patient became, the lower quality of life they had. The statistics show 27.8% of the patients had stage 2 lung cancer compared with 33% and 30.5% in their stage 3 and 4 respectively. On the one hand, it is well-understood that the worldwide leading causes of death of cancer is lung cancer according to World Health Organization's report in 2014. On the other hand, for advanced lung cancer patients, the combination of various treatments is the only way to prolong patient survival. However, almost every one of the samples was observed to have been suffering from various bad effects namely sleeplessness, appetite loss, hair loss, nausea, pain and exhaustion, and so on. Evidences show that the patients experienced the highest level of symptoms among different types of cancer patients (Barbera et al., 2010). Again, pain, fatigue, appetite loss, dyspnea, and sleep difficulties have been reported in various studies as the most severe symptoms (Brown, Cooley, Chernecky, &Sarna, 2011; Larsson, Ljung, & Johansson, 2012; Liao et al., 2011; Lövgren et al., 2008). It is, therefore, severity of advance lung cancer itself and the subsequent treatment-related side effects were probably the major causes to overwhelming stress and depression, which ultimately put their QOL at risk during the trajectory of disease (Sprangers, Tempelaar, van den Heuvel, & De Haes, 2002). Also, there are various common clinical issues impacting QOL and survival in cancer patients namely diminished appetite, frailty, fatigue and diminished activity, weakness, and nausea and these interrelatedly contributes toward cancer cachexia, which is a skeletal muscle mass loss syndrome that nutritional support cannot be fully reverse their symptoms and conveys to progressive functional impairment (Fearon et al, 2011). It is also associated with impaired mental and emotional status, loss of strength and weight, and chronic diseases (Baracos, Kazemi-Bajestani, 2013; Prado et al, 2009). Continuous frailty means independence loss, and great or even total reliance on supporters and caregivers.

Along with the above sufferings, the heavy loads of costs are another source of distress and depressions among the patients with lung cancer in the study. Although most participants had health insurance, which gave them complete financial support for medical treatments, they and their families had to shoulder a great deal of other expenses such as the rent, traveling, basic cost of living for the accompanying family members. As the matter of income level was quite sensitive to be open during in the interview and thus there were insignificant differences between the income levels among the in the socio-demographic data (78.3% >200 USD/ month) and the quality of life among the patients. However, it can still be concluded that worries about financial matters would count considerably for decreasing their quality of life. The higher income level certainly leads to better QOL, meaning that the sample would have high standard of living with better lifestyle, accommodation, and support and fewer burdens of household chores (Eng et al, 2011). Once the stress about finance is released, the patients can be more relaxed to focus on their treatments and follow-up activities and accordingly upgrade their life quality.

Moreover, age as an influential factor accounted for a remarkable percentage in the association between anxiety and quality of life among patients with lung cancer. As reported, more than 50% were aged over 60. It is easily understood that the elderly are quite fragile and they have limited capability in fighting against the disease and the post-treatment side effects. The studies of Karczmarek-Borowska et al (2014) also revealed a negative correlation between the duration of chemotherapy and QoLwithin patient aged over 65. Moreover, these patients had problems performing occupational and family roles as well as doing simple daily duties. People aged below 65 had more limitations in psychological functioning, while those aged over 65 indicated more limitations regarding physical, social, and occupational functioning (Karczmarek-Borowska et al., 2014).

Overall, negative emotions, pessimism and anxiety about health situation and finance are another major source causing the poor QoL among the studied patients.

5.2.3 The correlation between social support and quality of life

According to the studied results, it revealed that social support did not associate with QoL (r = -.0004). Social support was identified as practical help and emotional encouragement from family, friends and others. However, as revealed in Luszczynska et al's review, when considering professional care workers as a support source, they found evident associations between received support and assistance and all aspects of QoL, apart from social ones. Overall, as observed there exist significant relations between support from healthcare personnel and QoL (67%), in comparison with support from family members and friends (53%). Corroborating evidence was also found for the relationships between perceived and received support from family and friends and aspects of emotion of QOL (Luszczynska, Pawlowska, Cieslak, Knoll, & Scholz, 2013).

Indeed, as observed in the interview, many patients said that they did feel solely lonely and hopeless in the fighting against the disease and it seemed that they lost all belief in life. They also stated that their illnesses which were in advanced stage gave huge burden to their family members. More than 35% of the studied patients had monthly incomes of less than 100 USD which considered as low income so that they would receive less tangible and in tangible support or received in adequate resources in their lives. This finding according to the study of Gia DiNicola et al, 2013 found that person who received inadequate instrumental support demonstrated feeling of hopelessness, being left behind or invisible, hence it led to poor QOL (Gia DiNicola et al, 2013).

Up to this point, it can be summarized that patients with lung cancer who obtained less support from others were more likely to showed poor QOL comparing with ones who received good support. However, the support among these patients were relatively low so that it led to poor QOL.

5.3 Conclusion

In conclusion, it can be stated from the results of this study that lung functions, levels of anxiety and social support greatly influenced lung cancer patients' QOL. The disease itself along with severe symptoms and other external factors resulted in obvious decrease in QOL among the studied patients. Accordingly, to improve their QOL, nurses should take into serious consideration the influential determinants to enhance patients' health status either physically or emotionally so as to help the patients step by step gain more independence and confidence to deal with and to manage arising symptoms during and after treatment. Above all, nurses need to improve their knowledge of the impact of influential factors as well as available treatments on patient QOL to perform their support patients diagnosed with lung cancer in their recovery and survival.

CHAPTER VI
CONCLUSION

6.1 Conclusion of study

This was descriptive correlation research which aimed to study the relationship between lung function, anxiety, social support with quality of life among lung cancer patients. The patients had ages ranging from 18 to 85 in The Nuclear Medicine and Oncology Center from August to October, 2016. Health related quality of life Theory was utilized as a framework in this study. The sample size in this study was calculated by using G*power version 3.1.9.2 program to determine the minimum number of participants needed for co-relational design .The sample calculation yielded 115 samples. The research setting was conducted in Oncology Center, Bach Mai Hospital.

After study obtained approval from Institutional Review Board of Nursing faculty, Mahidol University and Institutional of Review Board of SMP, Vietnam National University, Hanoi, Vietnam .The researcher used 5 instrumentsT (1 :he demographic data questionnaire, 2) FEV1; 3) EORTC QLQ – C30, 4) HAM-A, 5) The MSPSS to collected data.

All instruments were tested for their validity and reliability as clearly explained in chapter 3 .Cronbach‘s alpha coefficient of MSPSS(was 0.89; EORTC QLQ – C304 was 0.92; HAM-A was 0.86. The 115 samples were selected according to the inclusion criteria .The researcher collected data by herself from 11.00 am to 5.00 pm from Mondays to Fridays until the sample reached the target of the studied sample size .For each sample, the researcher spent 30 to 40 minutes on interviewing and collected some data from their patients’ record. During the time of data collection, there was no adverse event among the samples. All samples recruited in the study remained throughout the study process with no attrition.

Data analysis was conducted by using computer program .The statistics were used to describe general information and study variables, including lung function, anxiety, social support, and quality of life .The assumption of Pearson’s Product Moment Correlation was tested and it was found that the variables were not in normal distribution .Accordingly, Spearman‘s Rho was used to examine correlation lung function, anxiety, social support, quality of life among lung cancer patients.

The findings are summarized as follows :

1. As regards demographic characteristics of 115 lung cancer patients with the majority of patients were male (73%). The age range from 18 to 85 years. Most of the patients lived in rural (55.79%) and only 1.7% lived in the Mountain region. The highest percentage of patients who were married with 90.4%. The educational level at secondary made up the greatest proportion (34.8%). The occupation of patients was common in famer and retired with 34.8% and 33.9, respectively. The majority of them (99.1%) had governmental insurance.

2. The most of lung cancer patients had the length of staying at hospital with less than 2 weeks occupied with the largest percentage 52.2% while those with more than 4 weeks made up the lowest 9,5%. Lung cancer patients at 4 stage was highest percentage (33%). The risk factor for lung cancer was majority smoking with 40.9%. There were 34.8% who patients with lung cancer had treatment method by chemotherapy and radiation. All patients have comorbidity, hypertension disease made up first with 18.3%, Asthma 5.2%, Tuberculosis 2.6%, COPD 2.6 %.

3. The majority of sample suffered with moderate obstruction was highest (73%) follow with mild lung function (14.8%), and severe obstruction (12.2%) while very severe obstruction was 0% (table 4.3).

4. Most of them reported mild to moderate anxiety (50.4%) and very severe anxiety (32.1%) and normal anxiety was lowest (17.4) (table 4.4).

5. Social support cover 3 subscales with result the mean from family 6.02 (SD ± 0.71); from friend 4.90 (SD ± 0.87), from other significant 5.67 (SD ± 0.89). The Mean of social support score was 5.53 (SD ± .07)

6. The QoL of lung cancer patients had the highest of mean was Global health status (54.06); following Functional scales (51.51) and lowest in Symptom scales (41.33). The mean of total QoL was 48.97% (SD ± 7.94) (table 4.5).

7. The result illustrated that lung function was significant low positive correlate with QOL at ($r = .19$, $p < .05$). Anxiety had significantly low negative correlation with QOL ($r = -.347$ $p < .01$). However, social other, social family and social friend had no correlation with QOL.

6.2 Recommendations

This descriptive study reported that not only the physical but also the psychological side of the patients were seriously affected once they were diagnosed with lung cancer and while they were being treated and these gradually worsened their QoL. The study leaves important implications for both nursing team and medical units as well as further studies.

Implication to nursing practice

1. Healthcare professionals should apply specific measures to help the patients improve the situation, then accordingly help the patients to improve their QoL. In addition, nurses should upgrade their knowledge of symptom assessment to identify lung cancer patients with specific comorbidities for appropriate managements and treatments.

2. Typically common symptoms such as fatigue, breathlessness, sleeplessness anxiety or appetite loss have to be controlled, managed and coped with by different ways through different channels. Nurses should be equipped with understanding of proper exercising skills, physical activities, appropriate diet and medicines, etc. so as to be able to give the patients the best support whenever needed. Also, nurses should be well aware of a systematic and frequent assessment of changes in QoL, functioning, and symptoms for patients with advanced lung cancer during their treatment process.

3. Training courses on comprehensive intervention skills, incorporating information provision, self-efficacy, for example, searching for social support and affective regulation, symptom management either pharmacologically or nonpharmacologically to reduce interferences from symptoms and side effects from medicines, and routine counseling had better be organized for the nurses as well as

those feeling concerned. The knowledge and the skills they gain will surely be valuable to assist patients in dealing with the problems effectively even during the most threatening phase.

4. Symptom management program has to be tailored suiting individual patients problems to various subgroups basing on demographic characteristics to meet their unique needs. Training seminars for patients, family members and others are also advisable to share and update information on the disease itself as well the medical treatment and nonmedical treatment. Better understanding of their situation will bring the patients more positive behavior and optimistic reaction to life, and finally better their QoL during the treatment process.

5. Continuous program for symptom management along with anxiety management should be implemented to provide patients with comprehensive care and The program should be distribute to other hospital settings all over Hanoi and Vietnam.

Implication to further research

1. More sample should be added in further study to cover other variables and explore more on variables affecting QOL among patients with lung cancer.

2. The Vietnamese version on QOL for lung cancer patients should be tested for its psychometric property using Factor Analysis.

3. Multi -site research should be conduct to cover the whole phenomena of Vietnamese lung cancer patients.

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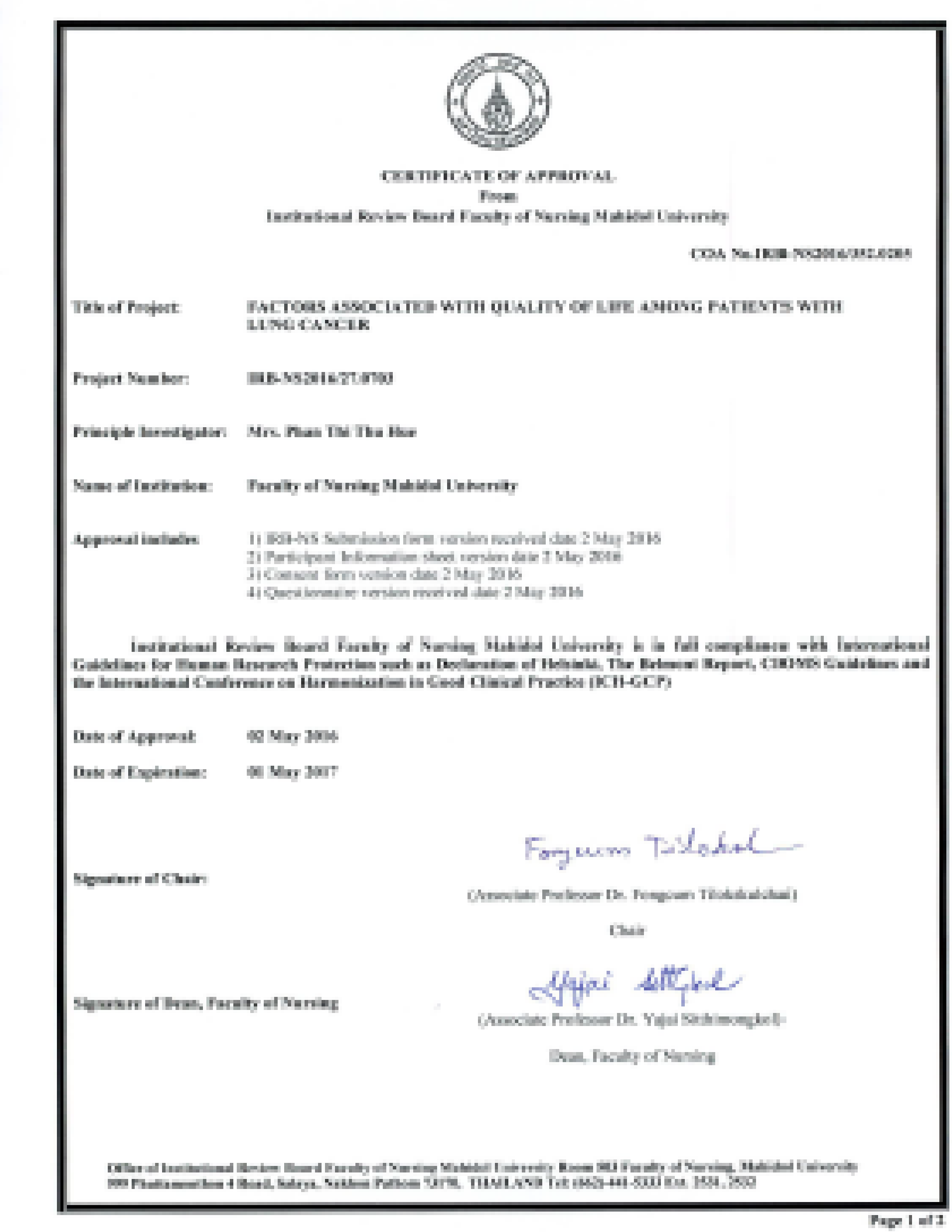
APPENDICES

APPENDIX A
LIST OF EXPERT

1. Prof Dr. Mai Trong Khoa , MD, PhD
   Vice Director Bach Mai hospital.
   Director of the Medical nuclear and Oncology center in Bach Mai hospital
2. Prof Dr. Truong Viet Dung, MD, PhD.
   Chairman of Independent Ethic Committee, Ministry of Health, Vietnam
   Dean of School of Medicine and Pharmacy, Vietnam National University, Vietnam.
3. Assoc. Prof Dr Tran Dinh Ha, MD, PhD.
   Vice director of the Medical nuclear and Oncology center in Bach Mai hospital.
4. PhD Pham Cam Phuong, MD, PhD.
   Vice director of the Medical nuclear and Oncology center in Bach Mai hospital.
5. Bachelor Bui Minh Thu heard of nurse department Bach Mai hospital
6. Bachelor Le Thi Hien, Dinh Thu Thuy
   Nurse of the Medical nuclear and Oncology center in Bach Mai hospital.

APPENDIX B

CERTIFICATE OF APPROVAL



CERTIFICATE OF APPROVAL
From
Institutional Review Board Faculty of Nursing Mahidol University

COA No.IRB-NS2016/352.0205

Title of Project:	**FACTORS ASSOCIATED WITH QUALITY OF LIFE AMONG PATIENTS WITH LUNG CANCER**
Project Number:	**IRB-NS2016/27.0703**
Principle Investigator:	**Mrs. Phan Thi Thu Hue**
Name of Institution:	**Faculty of Nursing Mahidol University**
Approval includes:	1) IRB-NS Submission form version received date 2 May 2016 2) Participant Information sheet version date 2 May 2016 3) Consent form version date 2 May 2016 4) Questionnaire version received date 2 May 2016

Institutional Review Board Faculty of Nursing Mahidol University is in full compliance with International Guidelines for Human Research Protection such as Declaration of Helsinki, The Belmont Report, CIOMS Guidelines and the International Conference on Harmonization in Good Clinical Practice (ICH-GCP)

Date of Approval: **02 May 2016**

Date of Expiration: **01 May 2017**

Signature of Chair:

(Associate Professor Dr. Fongcum Tilokskulchai)
Chair

Signature of Dean, Faculty of Nursing

(Associate Professor Dr. Yajai Sitthimongkol)
Dean, Faculty of Nursing

Office of Institutional Review Board Faculty of Nursing Mahidol University Room 503 Faculty of Nursing, Mahidol University
999 Phuttamonthon 4 Road, Salaya, Nakhon Pathom 73170, THAILAND Tel: (662)-441-5333 Ext. 2531, 2532

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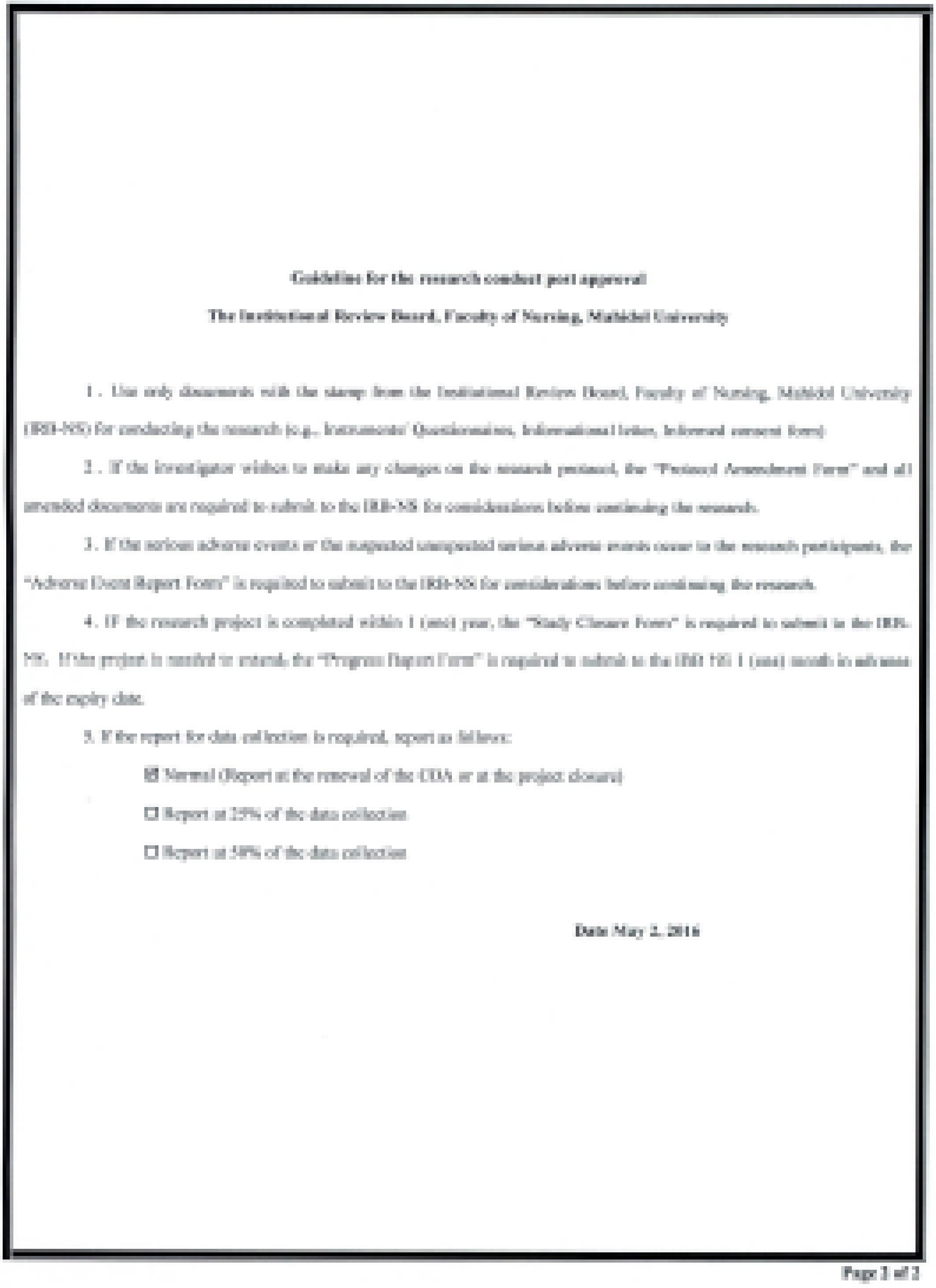


Guideline for the research conduct post approval

The Institutional Review Board, Faculty of Nursing, Mahidol University

1 . Use only documents with the stamp from the Institutional Review Board, Faculty of Nursing, Mahidol University (IRB-NS) for conducting the research (e.g., Instruments/ Questionnaires, Informational letter, Informed consent form)

2 . If the investigator wishes to make any changes on the research protocol, the "Protocol Amendment Form" and all amended documents are required to submit to the IRB-NS for considerations before continuing the research.

3 . If the serious adverse events or the suspected unexpected serious adverse events occur to the research participants, the "Adverse Event Report Form" is required to submit to the IRB-NS for considerations before continuing the research.

4 . If the research project is completed within 1 (one) year, the "Study Closure Form" is required to submit to the IRB-NS. If the project is needed to extend, the "Progress Report Form" is required to submit to the IRB-NS 1 (one) month in advance of the expiry date.

5. If the report for data collection is required, report as follows:

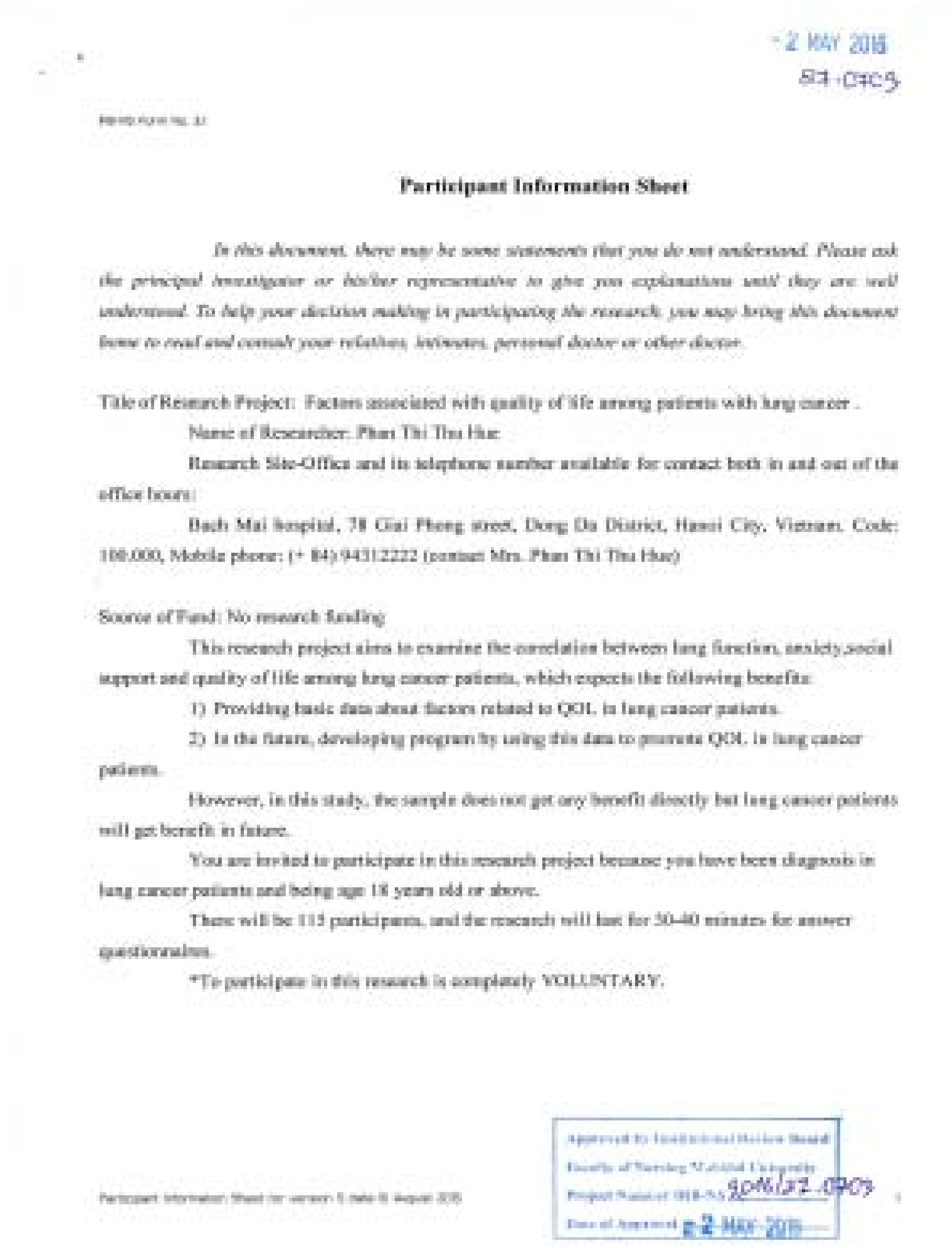
☒ Normal (Report at the renewal of the COA or at the project closure)
☐ Report at 25% of the data collection
☐ Report at 50% of the data collection

Date May 2, 2016

Page 2 of 2

APPENDIX C

PARTICIPANT INFORMATION SHEET (ENGLISH VERSION)



- 2 MAY 2016
57-0905

Participant Information Sheet

In this document, there may be some statements that you do not understand. Please ask the principal investigator or his/her representative to give you explanations until they are well understood. To help your decision making in participating the research, you may bring this document home to read and consult your relatives, intimates, personal doctor or other doctor.

Title of Research Project: Factors associated with quality of life among patients with lung cancer .

Name of Researcher: Phan Thi Thu Hue

Research Site-Office and its telephone number available for contact both in and out of the office hours:

Bach Mai hospital, 78 Giai Phong street, Dong Da District, Hanoi City, Vietnam. Code: 100,000, Mobile phone: (+ 84) 94312222 (contact Mrs. Phan Thi Thu Hue)

Source of Fund: No research funding

This research project aims to examine the correlation between lung function, anxiety,social support and quality of life among lung cancer patients, which expects the following benefits:

1) Providing basic data about factors related to QOL in lung cancer patients.

2) In the future, developing program by using this data to promote QOL in lung cancer patients.

However, in this study, the sample does not get any benefit directly but lung cancer patients will get benefit in future.

You are invited to participate in this research project because you have been diagnosis in lung cancer patients and being age 18 years old or above.

There will be 115 participants, and the research will last for 30-40 minutes for answer questionnaires.

*To participate in this research is completely VOLUNTARY.

Approved by Institutional Review Board
Faculty of Nursing Mahidol University
Project Number IRB-NS 2016/57.0905
Date of Approval - 2 MAY 2016

If you decide to participate the research project, you will go through the following procedure.

1. The researcher will organize private room to interview you or do questionnaires by yourself. Then, researcher uses five questionnaires for data collection. Questionnaires are:
1) Questionnaire demographic – 12 items 2) Lung function test 3) Hamilton Anxiety Rating Scale (HAM-A) – 14 items, 4) Multidimensional Scale of Perceived Social Support – 12 items, 5). EORTC QLQ-C30 and EORTC QLQ- C13 – 30 questions. The used time is about 30-40 minutes. During you answer questionnaires, if there are any questions that are unpleasant or discomfort you have rights not to reply the question.

2. During interviewing or doing questionnaire, you may feel discomfort. You can stop and rest for a while until you feel comfort to continue. If you want to stop participation to this study, you can withdraw from the study at any time.

3. During data collection, you may have unexpected conditions from stage of disease for example dyspnea, or unstable vital signs. The researcher will stop interviewing or doing questionnaire and will immediately contact with doctors who have responsibility to take care of you. The researcher will take care until you already stable.

If you do not participate in this research project, you will receive a standard assessment and treatment.

If you have any questions about this research project please feel free to contact the researcher, Mrs. Phan Thu Hue, via Telephone: (+ 84) 943122-22

You do not get any money or payment for participating in this research.

If relevant information arises about benefits and risks of the research project, the researcher will inform the participant immediately and without concealment.

Your information will be kept confidential, it will not be subject to an individual disclosure, but will be included in the research report as part of the overall results. Individual information may be examined by a researcher, the ethics committee, etc.

You have the right to withdraw from the project at anytime without prior notice. And the refusal to participate or the withdrawal from the research project will not at all affect the proper service or treatment that he/she will receive.

This research project is approved by The Institutional Reviews Boards,

1) Faculty of Nursing (IRB-NS) at the office of IRB-NS room 503 5th floor, Faculty of Nursing, Mahidol University, 999 Phuttamonthon 4 Road, Salaya, Nakhon Pathom 73170 Thailand Tel 66 2 441 5333 ext 2531, 2532 Fax 0066 2 441 5333 ext 2531, Email: nsirbnursing@mahidol.ac.th, ns.irbnursing@gmail.com

Approved by Institutional Review Board
Faculty of Nursing Mahidol University
Project Number IRB-NS 2016/157.0709
Date of Approval - 2 MAY 2016

2) IRB Chair - SMP: Associate Professor Le Thi Luyen, MD, PhD
Address: Y1 Building, No.144 Xuan Thuy street, Cau Giay district, Hanoi, Vietnam.
Code: 100000. Telephone number: (+84)437450118. Fax: +84-4-37450146
Mobile Phone number of IRB: (+84)983297654 (Contact Mr. Nguyen Hoang Long)

On the condition that I am not treated as indicated in the information sheet distributed to the subjects, I can contact the Chair, or the representative of the IRB-NS at the contact address presenting above.

I thoroughly read the details in this document.

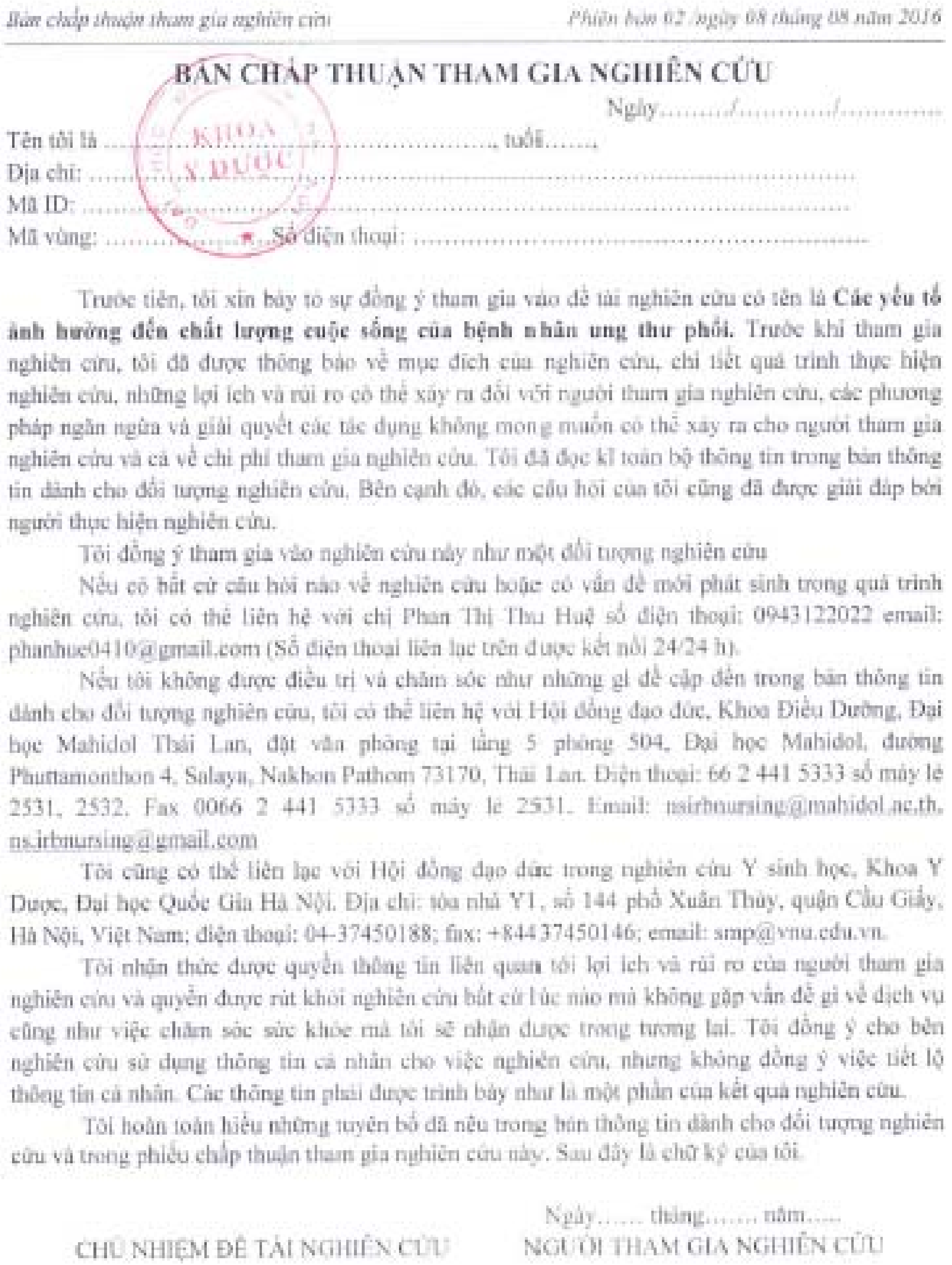
Signature.. Participant

(...)

Date............................

Approved by Institutional Review Board
Faculty of Nursing Mahidol University
Project Number IRB-NS 2016/27.0805
Date of Approval - 2 MAY 2016

(VIETNAMESE VERSION)



BẢN CHẤP THUẬN THAM GIA NGHIÊN CỨU

KHOA Y DƯỢC

Ngày………/…………/…………

Tên tôi là ………………………………………………., tuổi……,
Địa chỉ: ……………………………………………………………………………………
Mã ID: ……………………………………………………………………………………
Mã vùng: ……………………… Số điện thoại: …………………………………………………

Trước tiên, tôi xin bày tỏ sự đồng ý tham gia vào đề tài nghiên cứu có tên là **Các yếu tố ảnh hưởng đến chất lượng cuộc sống của bệnh nhân ung thư phổi.** Trước khi tham gia nghiên cứu, tôi đã được thông báo về mục đích của nghiên cứu, chi tiết quá trình thực hiện nghiên cứu, những lợi ích và rủi ro có thể xảy ra đối với người tham gia nghiên cứu, các phương pháp ngăn ngừa và giải quyết các tác dụng không mong muốn có thể xảy ra cho người tham gia nghiên cứu và cả về chi phí tham gia nghiên cứu. Tôi đã đọc kĩ toàn bộ thông tin trong bản thông tin dành cho đối tượng nghiên cứu. Bên cạnh đó, các câu hỏi của tôi cũng đã được giải đáp bởi người thực hiện nghiên cứu.

Tôi đồng ý tham gia vào nghiên cứu này như một đối tượng nghiên cứu

Nếu có bất cứ câu hỏi nào về nghiên cứu hoặc có vấn đề mới phát sinh trong quá trình nghiên cứu, tôi có thể liên hệ với chị Phan Thị Thu Huệ số điện thoại: 0943122022 email: phanhue0410@gmail.com (Số điện thoại liên lạc trên được kết nối 24/24 h).

Nếu tôi không được điều trị và chăm sóc như những gì đề cập đến trong bản thông tin dành cho đối tượng nghiên cứu, tôi có thể liên hệ với Hội đồng đạo đức, Khoa Điều Dưỡng, Đại học Mahidol Thái Lan, đặt văn phòng tại tầng 5 phòng 504, Đại học Mahidol, đường Phuttamonthon 4, Salaya, Nakhon Pathom 73170, Thái Lan. Điện thoại: 66 2 441 5333 số máy lẻ 2531, 2532. Fax 0066 2 441 5333 số máy lẻ 2531. Email: nsirbnursing@mahidol.ac.th, ns.irbnursing@gmail.com

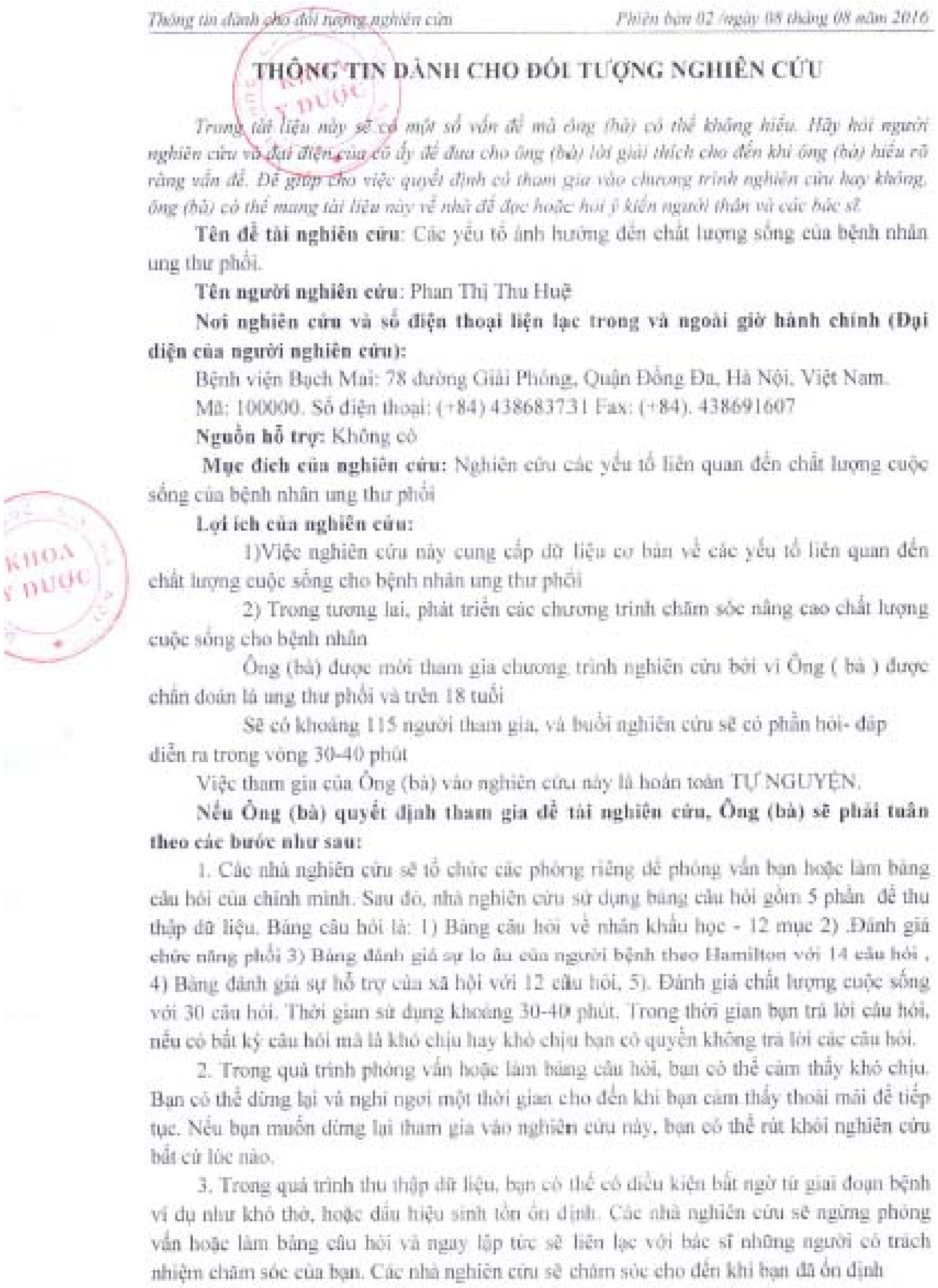
Tôi cũng có thể liên lạc với Hội đồng đạo đức trong nghiên cứu Y sinh học, Khoa Y Dược, Đại học Quốc Gia Hà Nội. Địa chỉ: tòa nhà Y1, số 144 phố Xuân Thủy, quận Cầu Giấy, Hà Nội, Việt Nam; điện thoại: 04-37450188; fax: +84437450146; email: smp@vnu.edu.vn.

Tôi nhận thức được quyền thông tin liên quan tới lợi ích và rủi ro của người tham gia nghiên cứu và quyền được rút khỏi nghiên cứu bất cứ lúc nào mà không gặp vấn đề gì về dịch vụ cũng như việc chăm sóc sức khỏe mà tôi sẽ nhận được trong tương lai. Tôi đồng ý cho bên nghiên cứu sử dụng thông tin cá nhân cho việc nghiên cứu, nhưng không đồng ý việc tiết lộ thông tin cá nhân. Các thông tin phải được trình bày như là một phần của kết quả nghiên cứu.

Tôi hoàn toàn hiểu những tuyên bố đã nêu trong bản thông tin dành cho đối tượng nghiên cứu và trong phiếu chấp thuận tham gia nghiên cứu này. Sau đây là chữ ký của tôi.

Ngày…… tháng……. năm…..

CHỦ NHIỆM ĐỀ TÀI NGHIÊN CỨU NGƯỜI THAM GIA NGHIÊN CỨU



Thông tin dành cho đối tượng nghiên cứu *Phiên bản 02 /ngày 08 tháng 08 năm 2016*

THÔNG TIN DÀNH CHO ĐỐI TƯỢNG NGHIÊN CỨU

Trong tài liệu này sẽ có một số vấn đề mà ông (bà) có thể không hiểu. Hãy hỏi người nghiên cứu và đại diện của cô ấy để đưa cho ông (bà) lời giải thích cho đến khi ông (bà) hiểu rõ ràng vấn đề. Để giúp cho việc quyết định có tham gia vào chương trình nghiên cứu hay không, ông (bà) có thể mang tài liệu này về nhà để đọc hoặc hỏi ý kiến người thân và các bác sĩ.

Tên đề tài nghiên cứu: Các yếu tố ảnh hưởng đến chất lượng sống của bệnh nhân ung thư phổi.

Tên người nghiên cứu: Phan Thị Thu Huệ

Nơi nghiên cứu và số điện thoại liện lạc trong và ngoài giờ hành chính (Đại diện của người nghiên cứu):

Bệnh viện Bạch Mai: 78 đường Giải Phóng, Quận Đống Đa, Hà Nội, Việt Nam.
Mã: 100000. Số điện thoại: (+84) 438683731 Fax: (+84). 438691607

Nguồn hỗ trợ: Không có

Mục đích của nghiên cứu: Nghiên cứu các yếu tố liên quan đến chất lượng cuộc sống của bệnh nhân ung thư phổi

Lợi ích của nghiên cứu:

1)Việc nghiên cứu này cung cấp dữ liệu cơ bản về các yếu tố liên quan đến chất lượng cuộc sống cho bệnh nhân ung thư phổi

2) Trong tương lai, phát triển các chương trình chăm sóc nâng cao chất lượng cuộc sống cho bệnh nhân

Ông (bà) được mời tham gia chương trình nghiên cứu bởi vì Ông (bà) được chẩn đoán là ung thư phổi và trên 18 tuổi

Sẽ có khoảng 115 người tham gia, và buổi nghiên cứu sẽ có phần hỏi- đáp diễn ra trong vòng 30-40 phút

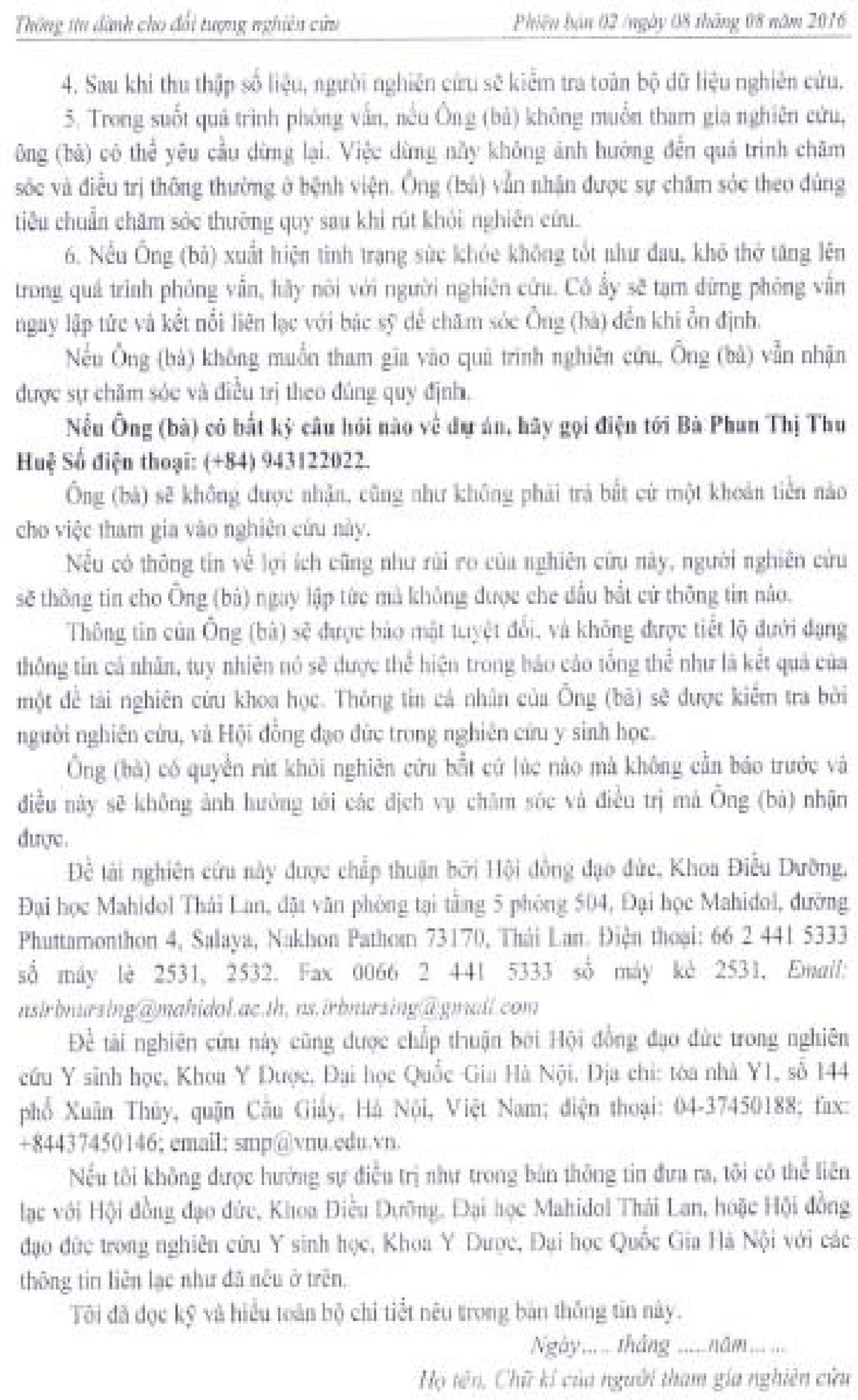
Việc tham gia của Ông (bà) vào nghiên cứu này là hoàn toàn TỰ NGUYỆN.

Nếu Ông (bà) quyết định tham gia đề tài nghiên cứu, Ông (bà) sẽ phải tuân theo các bước như sau:

1. Các nhà nghiên cứu sẽ tổ chức các phòng riêng để phỏng vấn bạn hoặc làm bảng câu hỏi của chính mình. Sau đó, nhà nghiên cứu sử dụng bảng câu hỏi gồm 5 phần để thu thập dữ liệu. Bảng câu hỏi là: 1) Bảng câu hỏi về nhân khẩu học - 12 mục 2) .Đánh giá chức năng phổi 3) Bảng đánh giá sự lo âu của người bệnh theo Hamilton với 14 câu hỏi , 4) Bảng đánh giá sự hỗ trợ của xã hội với 12 câu hỏi, 5). Đánh giá chất lượng cuộc sống với 30 câu hỏi. Thời gian sử dụng khoảng 30-40 phút. Trong thời gian bạn trả lời câu hỏi, nếu có bất kỳ câu hỏi mà là khó chịu hay khó chịu bạn có quyền không trả lời các câu hỏi.

2. Trong quá trình phỏng vấn hoặc làm bảng câu hỏi, bạn có thể cảm thấy khó chịu. Bạn có thể dừng lại và nghỉ ngơi một thời gian cho đến khi bạn cảm thấy thoải mái để tiếp tục. Nếu bạn muốn dừng lại tham gia vào nghiên cứu này, bạn có thể rút khỏi nghiên cứu bất cứ lúc nào.

3. Trong quá trình thu thập dữ liệu, bạn có thể có điều kiện bất ngờ từ giai đoạn bệnh ví dụ như khó thở, hoặc dấu hiệu sinh tồn ổn định. Các nhà nghiên cứu sẽ ngừng phỏng vấn hoặc làm bảng câu hỏi và ngay lập tức sẽ liên lạc với bác sĩ những người có trách nhiệm chăm sóc của bạn. Các nhà nghiên cứu sẽ chăm sóc cho đến khi bạn đã ổn định



4. Sau khi thu thập số liệu, người nghiên cứu sẽ kiểm tra toàn bộ dữ liệu nghiên cứu.

5. Trong suốt quá trình phỏng vấn, nếu Ông (bà) không muốn tham gia nghiên cứu, ông (bà) có thể yêu cầu dừng lại. Việc dừng này không ảnh hưởng đến quá trình chăm sóc và điều trị thông thường ở bệnh viện. Ông (bà) vẫn nhận được sự chăm sóc theo đúng tiêu chuẩn chăm sóc thường quy sau khi rút khỏi nghiên cứu.

6. Nếu Ông (bà) xuất hiện tình trạng sức khỏe không tốt như đau, khó thở tăng lên trong quá trình phỏng vấn, hãy nói với người nghiên cứu. Cô ấy sẽ tạm dừng phỏng vấn ngay lập tức và kết nối liên lạc với bác sỹ để chăm sóc Ông (bà) đến khi ổn định.

Nếu Ông (bà) không muốn tham gia vào quá trình nghiên cứu, Ông (bà) vẫn nhận được sự chăm sóc và điều trị theo đúng quy định.

Nếu Ông (bà) có bất kỳ câu hỏi nào về dự án, hãy gọi điện tới Bà Phan Thị Thu Huệ Số điện thoại: (+84) 943122022.

Ông (bà) sẽ không được nhận, cũng như không phải trả bất cứ một khoản tiền nào cho việc tham gia vào nghiên cứu này.

Nếu có thông tin về lợi ích cũng như rủi ro của nghiên cứu này, người nghiên cứu sẽ thông tin cho Ông (bà) ngay lập tức mà không được che dấu bất cứ thông tin nào.

Thông tin của Ông (bà) sẽ được bảo mật tuyệt đối, và không được tiết lộ dưới dạng thông tin cá nhân, tuy nhiên nó sẽ được thể hiện trong báo cáo tổng thể như là kết quả của một đề tài nghiên cứu khoa học. Thông tin cá nhân của Ông (bà) sẽ được kiểm tra bởi người nghiên cứu, và Hội đồng đạo đức trong nghiên cứu y sinh học.

Ông (bà) có quyền rút khỏi nghiên cứu bất cứ lúc nào mà không cần báo trước và điều này sẽ không ảnh hưởng tới các dịch vụ chăm sóc và điều trị mà Ông (bà) nhận được.

Đề tài nghiên cứu này được chấp thuận bởi Hội đồng đạo đức, Khoa Điều Dưỡng, Đại học Mahidol Thái Lan, đặt văn phòng tại tầng 5 phòng 504, Đại học Mahidol, đường Phuttamonthon 4, Salaya, Nakhon Pathom 73170, Thái Lan. Điện thoại: 66 2 441 5333 số máy lẻ 2531, 2532. Fax 0066 2 441 5333 số máy kẻ 2531, *Email: nsirbnursing@mahidol.ac.th, ns.irbnursing@gmail.com*

Đề tài nghiên cứu này cũng được chấp thuận bởi Hội đồng đạo đức trong nghiên cứu Y sinh học, Khoa Y Dược, Đại học Quốc Gia Hà Nội. Địa chỉ: tòa nhà Y1, số 144 phố Xuân Thủy, quận Cầu Giấy, Hà Nội, Việt Nam; điện thoại: 04-37450188; fax: +84437450146; email: smp@vnu.edu.vn.

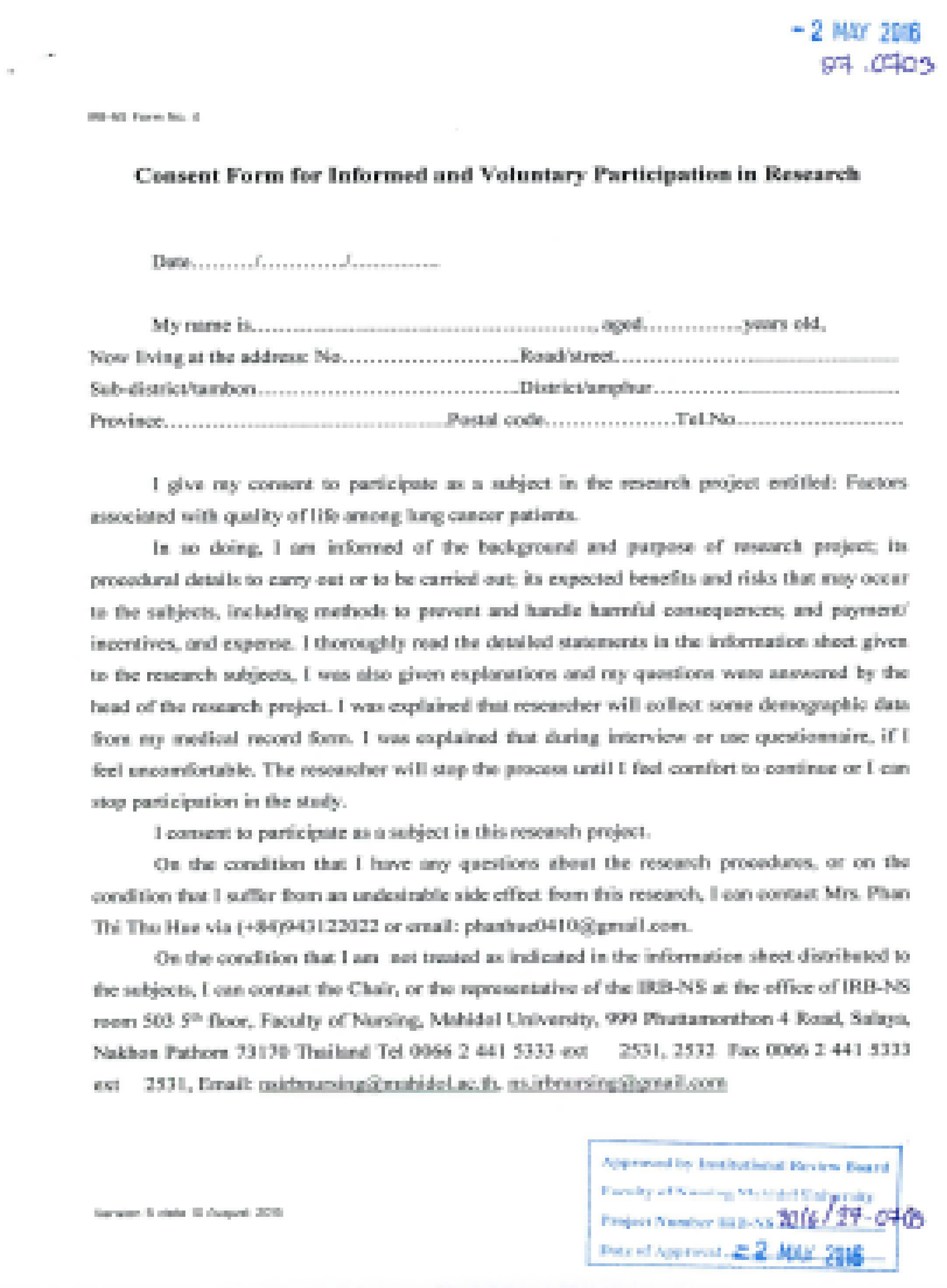
Nếu tôi không được hưởng sự điều trị như trong bản thông tin đưa ra, tôi có thể liên lạc với Hội đồng đạo đức, Khoa Điều Dưỡng, Đại học Mahidol Thái Lan, hoặc Hội đồng đạo đức trong nghiên cứu Y sinh học, Khoa Y Dược, Đại học Quốc Gia Hà Nội với các thông tin liên lạc như đã nêu ở trên.

Tôi đã đọc kỹ và hiểu toàn bộ chi tiết nêu trong bản thông tin này.

Ngày..... tháng .....năm... ...

Họ tên, Chữ kí của người tham gia nghiên cứu

APPENDIX D
INFORMED CONSENT FORM
(ENGLISH VERSION)



-2 MAY 2016
97 .0403

Consent Form for Informed and Voluntary Participation in Research

Date........./............/.............

My name is..., aged..............years old,
Now living at the address: No.........................Road/street.......................................
Sub-district/tambon....................................District/amphur...
Province...Postal code..................Tel.No.........................

I give my consent to participate as a subject in the research project entitled: Factors associated with quality of life among lung cancer patients.

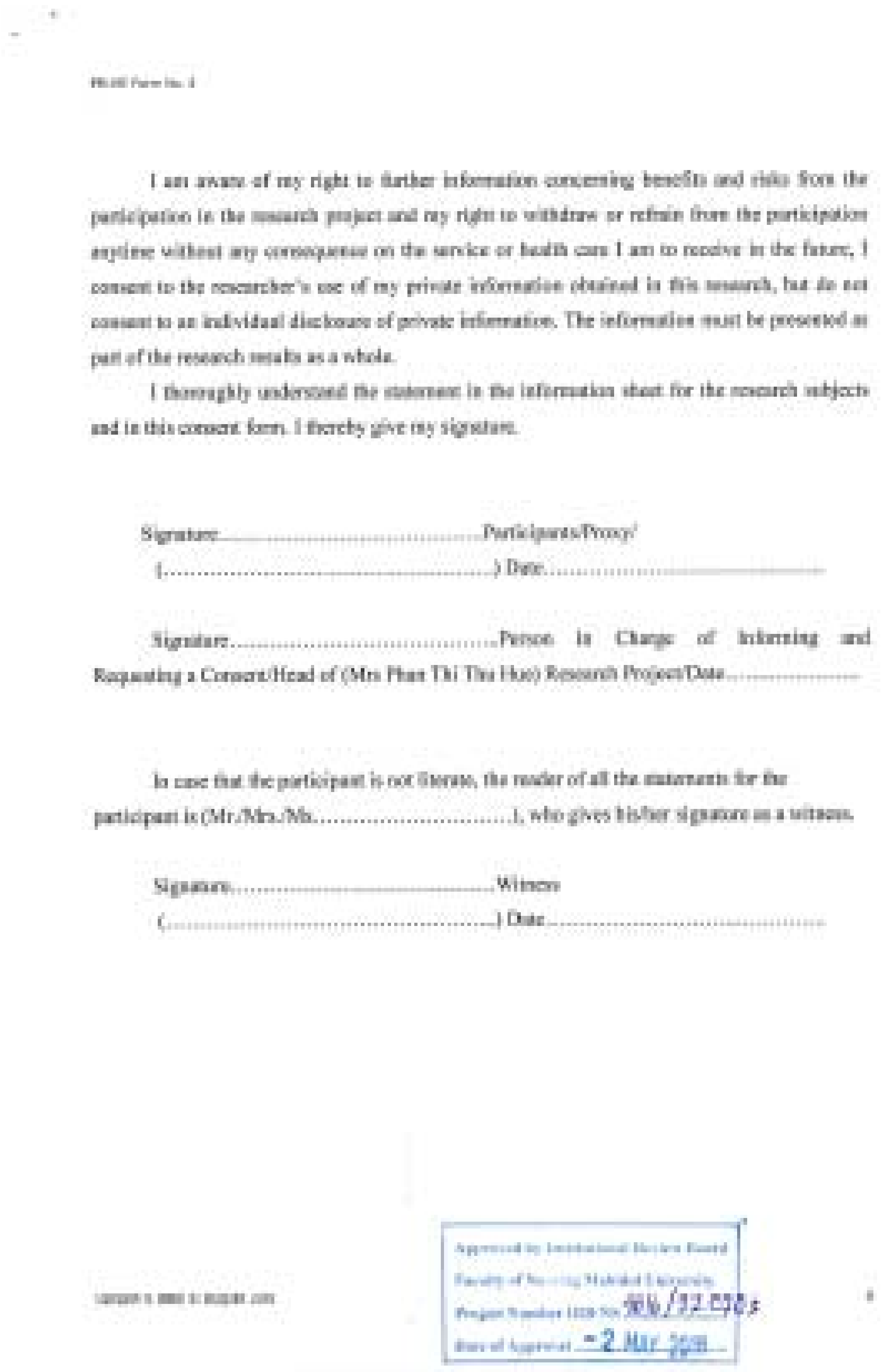
In so doing, I am informed of the background and purpose of research project; its procedural details to carry out or to be carried out; its expected benefits and risks that may occur to the subjects, including methods to prevent and handle harmful consequences; and payment/ incentives, and expense. I thoroughly read the detailed statements in the information sheet given to the research subjects, I was also given explanations and my questions were answered by the head of the research project. I was explained that researcher will collect some demographic data from my medical record form. I was explained that during interview or use questionnaire, if I feel uncomfortable. The researcher will stop the process until I feel comfort to continue or I can stop participation in the study.

I consent to participate as a subject in this research project.

On the condition that I have any questions about the research procedures, or on the condition that I suffer from an undesirable side effect from this research, I can contact Mrs. Phan Thi Thu Hue via (+84)943122022 or email: phanhue0410@gmail.com.

On the condition that I am not treated as indicated in the information sheet distributed to the subjects, I can contact the Chair, or the representative of the IRB-NS at the office of IRB-NS room 503 5th floor, Faculty of Nursing, Mahidol University, 999 Phuttamonthon 4 Road, Salaya, Nakhon Pathom 73170 Thailand Tel 0066 2 441 5333 ext 2531, 2532 Fax 0066 2 441 5333 ext 2531, Email: nsirbnursing@mahidol.ac.th, ns.irbnursing@gmail.com

Approved by Institutional Review Board
Faculty of Nursing, Mahidol University
Project Number IRB-NS 2016/29-0403
Date of Approval -2 MAY 2016



[illegible] Form No. [illegible]

I am aware of my right to further information concerning benefits and risks from the participation in the research project and my right to withdraw or refrain from the participation anytime without any consequence on the service or health care I am to receive in the future, I consent to the researcher's use of my private information obtained in this research, but do not consent to an individual disclosure of private information. The information must be presented as part of the research results as a whole.

I thoroughly understand the statement in the information sheet for the research subjects and in this consent form. I thereby give my signature.

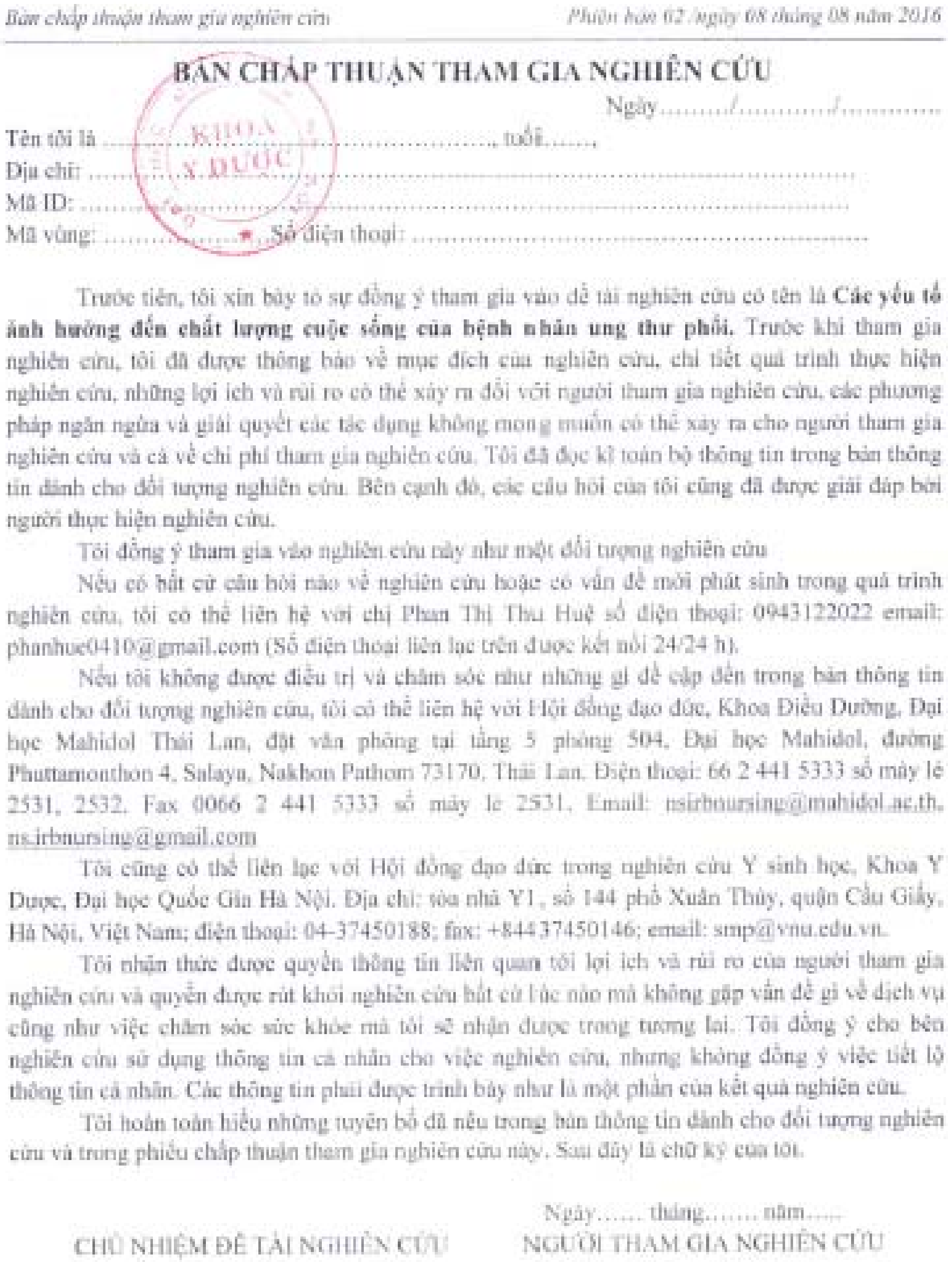
Signature...Participants/Proxy/
(..) Date...

Signature...Person in Charge of Informing and Requesting a Consent/Head of (Mrs Phan Thi Thu Hue) Research Project/Date......................

In case that the participant is not literate, the reader of all the statements for the participant is (Mr./Mrs./Ms..............................), who gives his/her signature as a witness.

Signature...Witness
(..) Date...

Approved by Institutional Review Board
Faculty of Nursing Mahidol University
Project Number (IRB No.) [illegible]
Date of Approval – 2 Mar [illegible]



Bản chấp thuận tham gia nghiên cứu *Phiên bản 02 ngày 08 tháng 08 năm 2016*

BẢN CHẤP THUẬN THAM GIA NGHIÊN CỨU

Ngày........./.........../............

Tên tôi là ...., tuổi.......,
Địa chỉ: ....
Mã ID: ....
Mã vùng: .... Số điện thoại: ....

KHOA Y DƯỢC

Trước tiên, tôi xin bày tỏ sự đồng ý tham gia vào đề tài nghiên cứu có tên là **Các yếu tố ảnh hưởng đến chất lượng cuộc sống của bệnh nhân ung thư phổi.** Trước khi tham gia nghiên cứu, tôi đã được thông báo về mục đích của nghiên cứu, chi tiết quá trình thực hiện nghiên cứu, những lợi ích và rủi ro có thể xảy ra đối với người tham gia nghiên cứu, các phương pháp ngăn ngừa và giải quyết các tác dụng không mong muốn có thể xảy ra cho người tham gia nghiên cứu và cả về chi phí tham gia nghiên cứu. Tôi đã đọc kĩ toàn bộ thông tin trong bản thông tin dành cho đối tượng nghiên cứu. Bên cạnh đó, các câu hỏi của tôi cũng đã được giải đáp bởi người thực hiện nghiên cứu.

Tôi đồng ý tham gia vào nghiên cứu này như một đối tượng nghiên cứu

Nếu có bất cứ câu hỏi nào về nghiên cứu hoặc có vấn đề mới phát sinh trong quá trình nghiên cứu, tôi có thể liên hệ với chị Phan Thị Thu Huệ số điện thoại: 0943122022 email: phanhue0410@gmail.com (Số điện thoại liên lạc trên được kết nối 24/24 h).

Nếu tôi không được điều trị và chăm sóc như những gì đề cập đến trong bản thông tin dành cho đối tượng nghiên cứu, tôi có thể liên hệ với Hội đồng đạo đức, Khoa Điều Dưỡng, Đại học Mahidol Thái Lan, đặt văn phòng tại tầng 5 phòng 504, Đại học Mahidol, đường Phuttamonthon 4, Salaya, Nakhon Pathom 73170, Thái Lan. Điện thoại: 66 2 441 5333 số máy lẻ 2531, 2532. Fax 0066 2 441 5333 số máy lẻ 2531. Email: nsirbnursing@mahidol.ac.th, ns.irbnursing@gmail.com

Tôi cũng có thể liên lạc với Hội đồng đạo đức trong nghiên cứu Y sinh học, Khoa Y Dược, Đại học Quốc Gia Hà Nội. Địa chỉ: tòa nhà Y1, số 144 phố Xuân Thủy, quận Cầu Giấy, Hà Nội, Việt Nam; điện thoại: 04-37450188; fax: +84437450146; email: smp@vnu.edu.vn.

Tôi nhận thức được quyền thông tin liên quan tới lợi ích và rủi ro của người tham gia nghiên cứu và quyền được rút khỏi nghiên cứu bất cứ lúc nào mà không gặp vấn đề gì về dịch vụ cũng như việc chăm sóc sức khỏe mà tôi sẽ nhận được trong tương lai. Tôi đồng ý cho bên nghiên cứu sử dụng thông tin cá nhân cho việc nghiên cứu, nhưng không đồng ý việc tiết lộ thông tin cá nhân. Các thông tin phải được trình bày như là một phần của kết quả nghiên cứu.

Tôi hoàn toàn hiểu những tuyên bố đã nêu trong bản thông tin dành cho đối tượng nghiên cứu và trong phiếu chấp thuận tham gia nghiên cứu này. Sau đây là chữ ký của tôi.

	Ngày...... tháng....... năm.....
CHỦ NHIỆM ĐỀ TÀI NGHIÊN CỨU	NGƯỜI THAM GIA NGHIÊN CỨU

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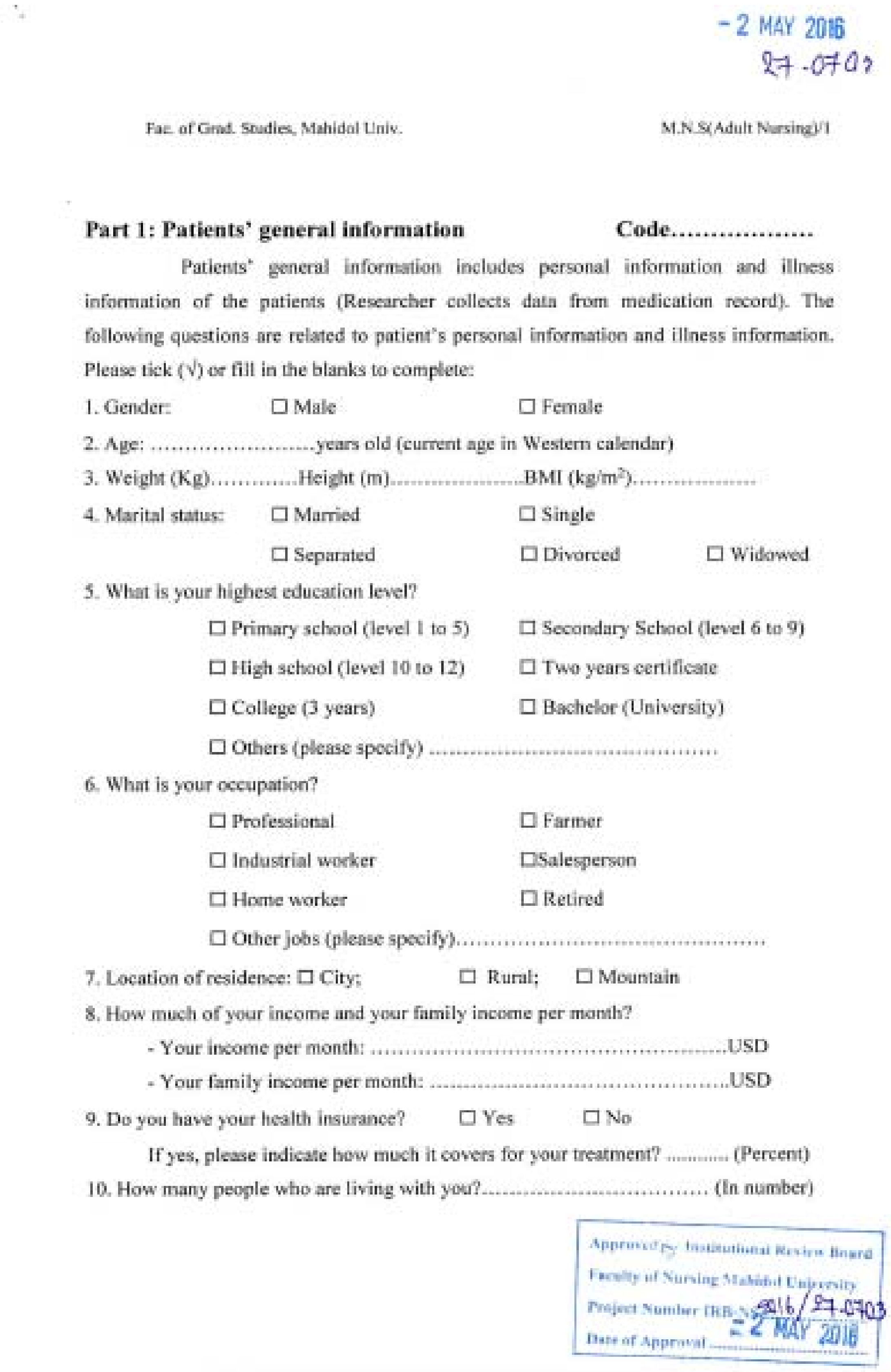

- 2 MAY 2016
27-0703

Part 1: Patients' general information **Code..................**

Patients' general information includes personal information and illness information of the patients (Researcher collects data from medication record). The following questions are related to patient's personal information and illness information. Please tick (√) or fill in the blanks to complete:

1. Gender: ☐ Male ☐ Female

2. Age: ....years old (current age in Western calendar)

3. Weight (Kg)............Height (m)....................BMI (kg/m^2)..................

4. Marital status: ☐ Married ☐ Single
☐ Separated ☐ Divorced ☐ Widowed

5. What is your highest education level?
☐ Primary school (level 1 to 5) ☐ Secondary School (level 6 to 9)
☐ High school (level 10 to 12) ☐ Two years certificate
☐ College (3 years) ☐ Bachelor (University)
☐ Others (please specify) ....

6. What is your occupation?
☐ Professional ☐ Farmer
☐ Industrial worker ☐Salesperson
☐ Home worker ☐ Retired
☐ Other jobs (please specify)..

7. Location of residence: ☐ City; ☐ Rural; ☐ Mountain

8. How much of your income and your family income per month?
- Your income per month: ....USD
- Your family income per month: ....USD

9. Do you have your health insurance? ☐ Yes ☐ No
If yes, please indicate how much it covers for your treatment? .... (Percent)

10. How many people who are living with you?.................................. (In number)

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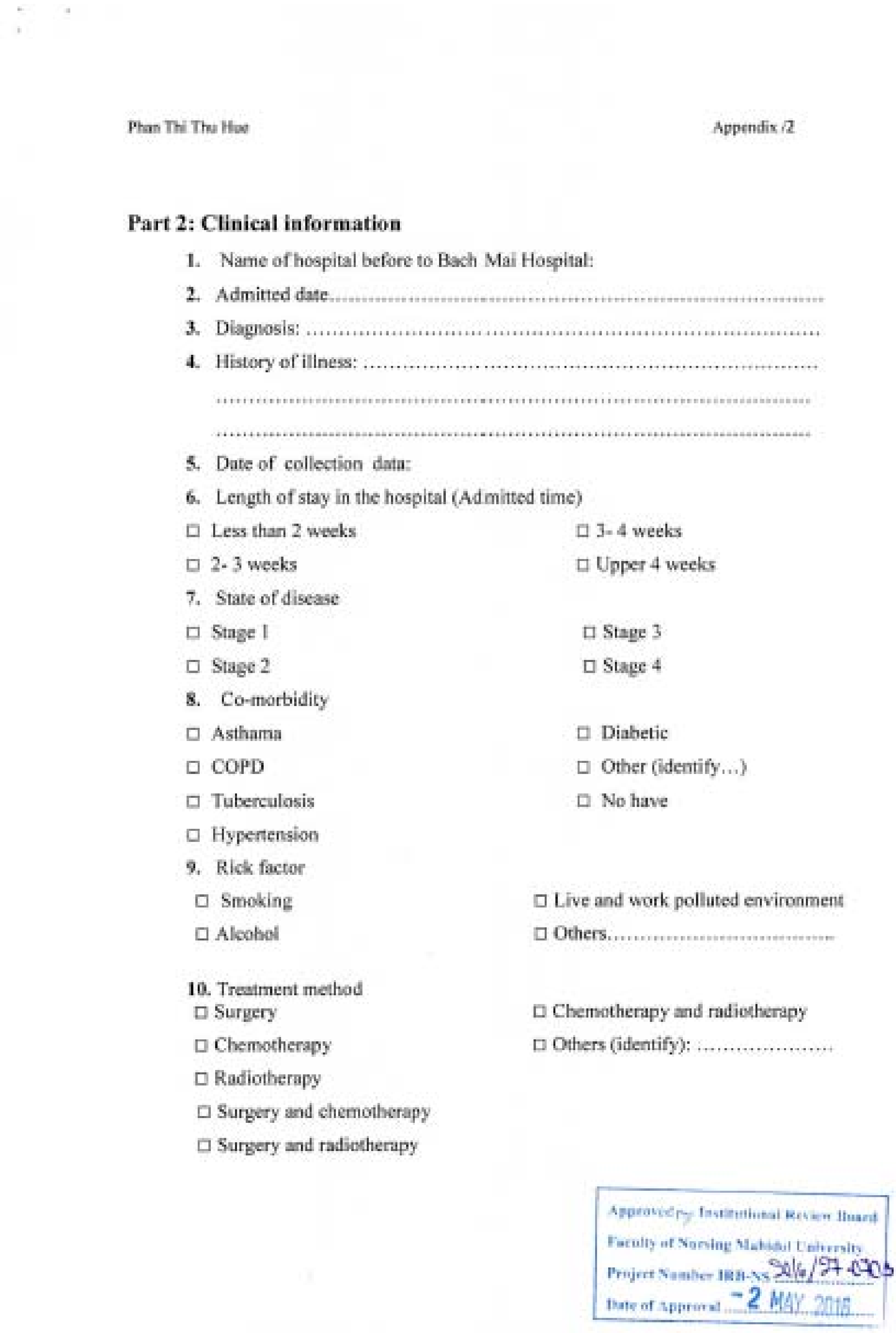
Faculty of Nursing Mahidol University
Project Number IRB-NS2016/27.0703
Date of Approval - 2 MAY 2016



Part 2: Clinical information

1. Name of hospital before to Bach Mai Hospital:
2. Admitted date...
3. Diagnosis: ....
4. History of illness: ....
....
....
5. Date of collection data:
6. Length of stay in the hospital (Admitted time)

☐ Less than 2 weeks
☐ 2- 3 weeks
☐ 3- 4 weeks
☐ Upper 4 weeks

7. State of disease

☐ Stage 1
☐ Stage 2
☐ Stage 3
☐ Stage 4

8. Co-morbidity

☐ Asthama
☐ COPD
☐ Tuberculosis
☐ Hypertension
☐ Diabetic
☐ Other (identify…)
☐ No have

9. Rick factor

☐ Smoking
☐ Alcohol
☐ Live and work polluted environment
☐ Others...

10. Treatment method

☐ Surgery
☐ Chemotherapy
☐ Radiotherapy
☐ Surgery and chemotherapy
☐ Surgery and radiotherapy
☐ Chemotherapy and radiotherapy
☐ Others (identify): ....

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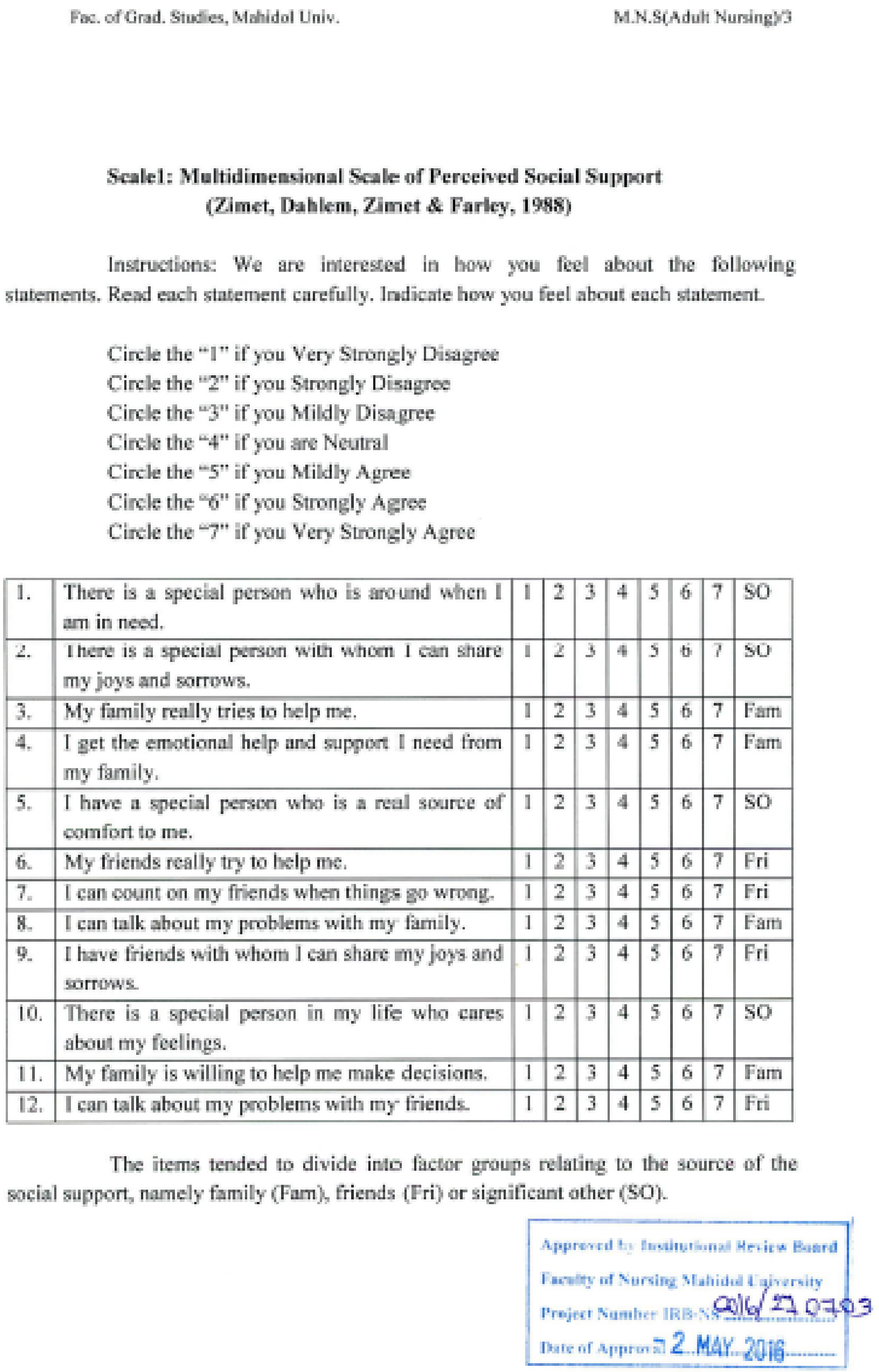
Faculty of Nursing Mahidol University
Project Number IRB-NS 2016/97.0905
Date of Approval - 2 MAY 2016



Scale1: Multidimensional Scale of Perceived Social Support
(Zimet, Dahlem, Zimet & Farley, 1988)

Instructions: We are interested in how you feel about the following statements. Read each statement carefully. Indicate how you feel about each statement.

Circle the "1" if you Very Strongly Disagree
Circle the "2" if you Strongly Disagree
Circle the "3" if you Mildly Disagree
Circle the "4" if you are Neutral
Circle the "5" if you Mildly Agree
Circle the "6" if you Strongly Agree
Circle the "7" if you Very Strongly Agree

1.	There is a special person who is around when I am in need.	1	2	3	4	5	6	7	SO
2.	There is a special person with whom I can share my joys and sorrows.	1	2	3	4	5	6	7	SO
3.	My family really tries to help me.	1	2	3	4	5	6	7	Fam
4.	I get the emotional help and support I need from my family.	1	2	3	4	5	6	7	Fam
5.	I have a special person who is a real source of comfort to me.	1	2	3	4	5	6	7	SO
6.	My friends really try to help me.	1	2	3	4	5	6	7	Fri
7.	I can count on my friends when things go wrong.	1	2	3	4	5	6	7	Fri
8.	I can talk about my problems with my family.	1	2	3	4	5	6	7	Fam
9.	I have friends with whom I can share my joys and sorrows.	1	2	3	4	5	6	7	Fri
10.	There is a special person in my life who cares about my feelings.	1	2	3	4	5	6	7	SO
11.	My family is willing to help me make decisions.	1	2	3	4	5	6	7	Fam
12.	I can talk about my problems with my friends.	1	2	3	4	5	6	7	Fri

The items tended to divide into factor groups relating to the source of the social support, namely family (Fam), friends (Fri) or significant other (SO).

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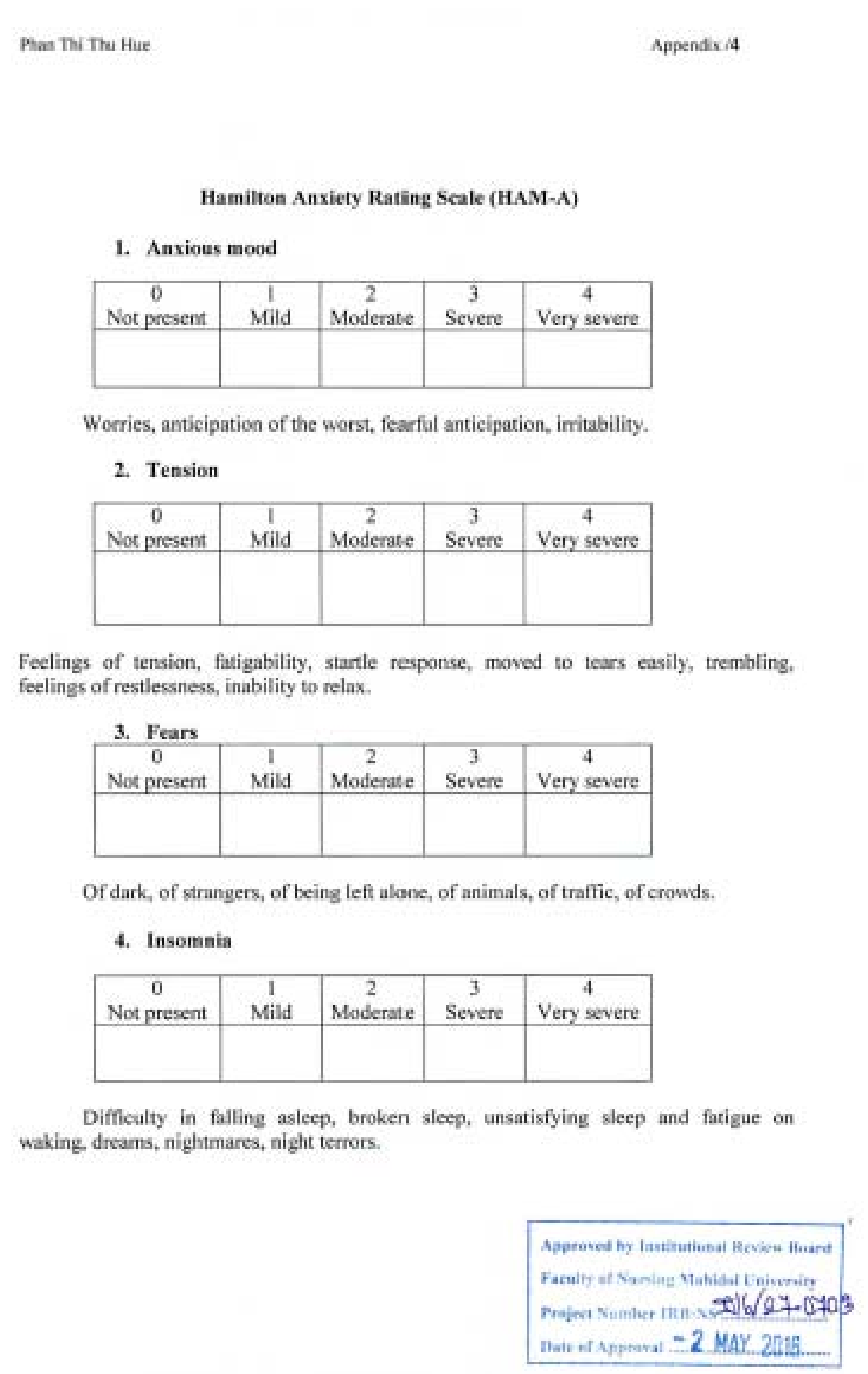

Hamilton Anxiety Rating Scale (HAM-A)

1. Anxious mood

0 Not present	1 Mild	2 Moderate	3 Severe	4 Very severe

Worries, anticipation of the worst, fearful anticipation, irritability.

2. Tension

0 Not present	1 Mild	2 Moderate	3 Severe	4 Very severe

Feelings of tension, fatigability, startle response, moved to tears easily, trembling, feelings of restlessness, inability to relax.

3. Fears

0 Not present	1 Mild	2 Moderate	3 Severe	4 Very severe

Of dark, of strangers, of being left alone, of animals, of traffic, of crowds.

4. Insomnia

0 Not present	1 Mild	2 Moderate	3 Severe	4 Very severe

Difficulty in falling asleep, broken sleep, unsatisfying sleep and fatigue on waking, dreams, nightmares, night terrors.

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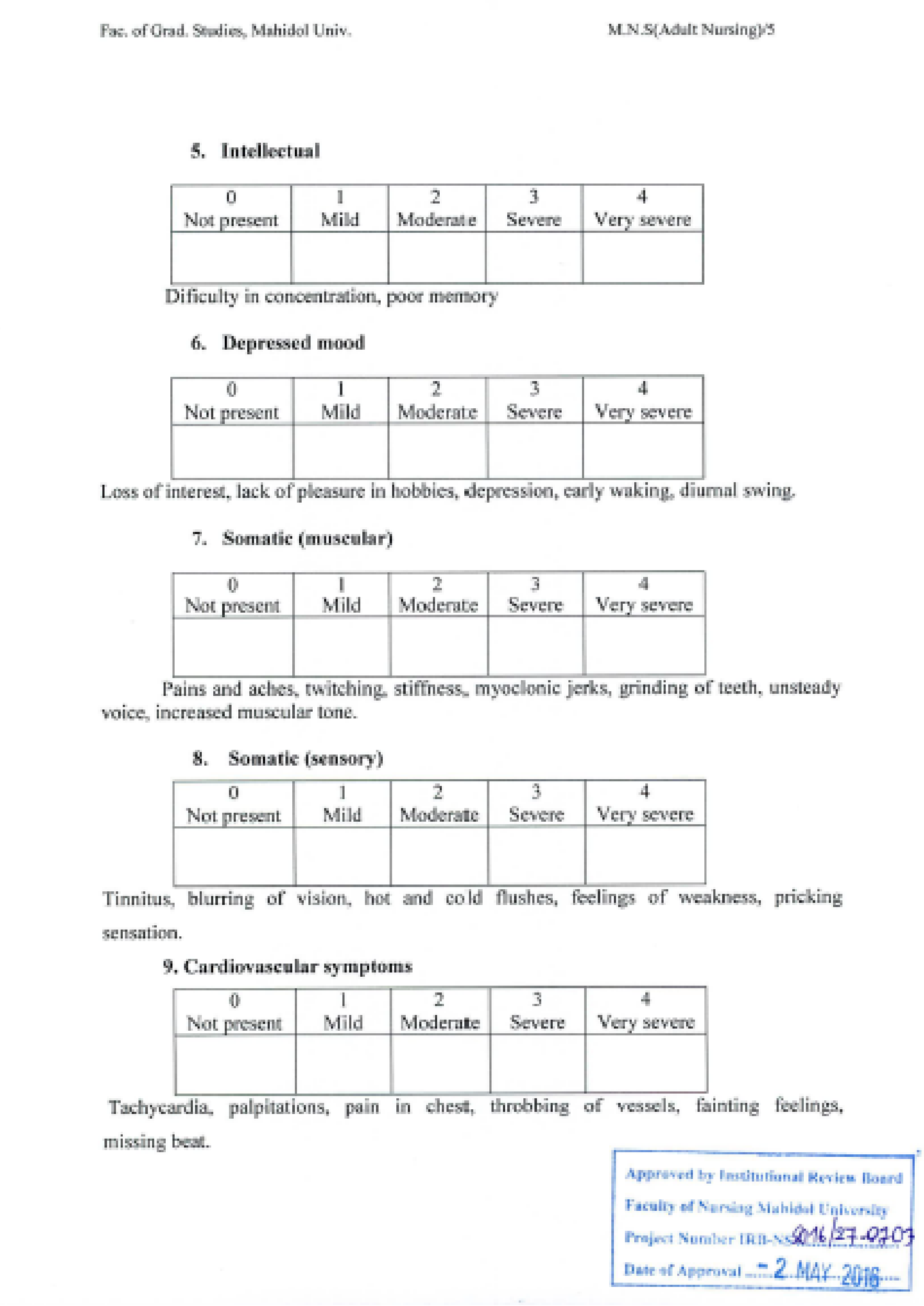


5. Intellectual

0 Not present	1 Mild	2 Moderate	3 Severe	4 Very severe

Dificulty in concentration, poor memory

6. Depressed mood

0 Not present	1 Mild	2 Moderate	3 Severe	4 Very severe

Loss of interest, lack of pleasure in hobbies, depression, early waking, diurnal swing.

7. Somatic (muscular)

0 Not present	1 Mild	2 Moderate	3 Severe	4 Very severe

Pains and aches, twitching, stiffness, myoclonic jerks, grinding of teeth, unsteady voice, increased muscular tone.

8. Somatic (sensory)

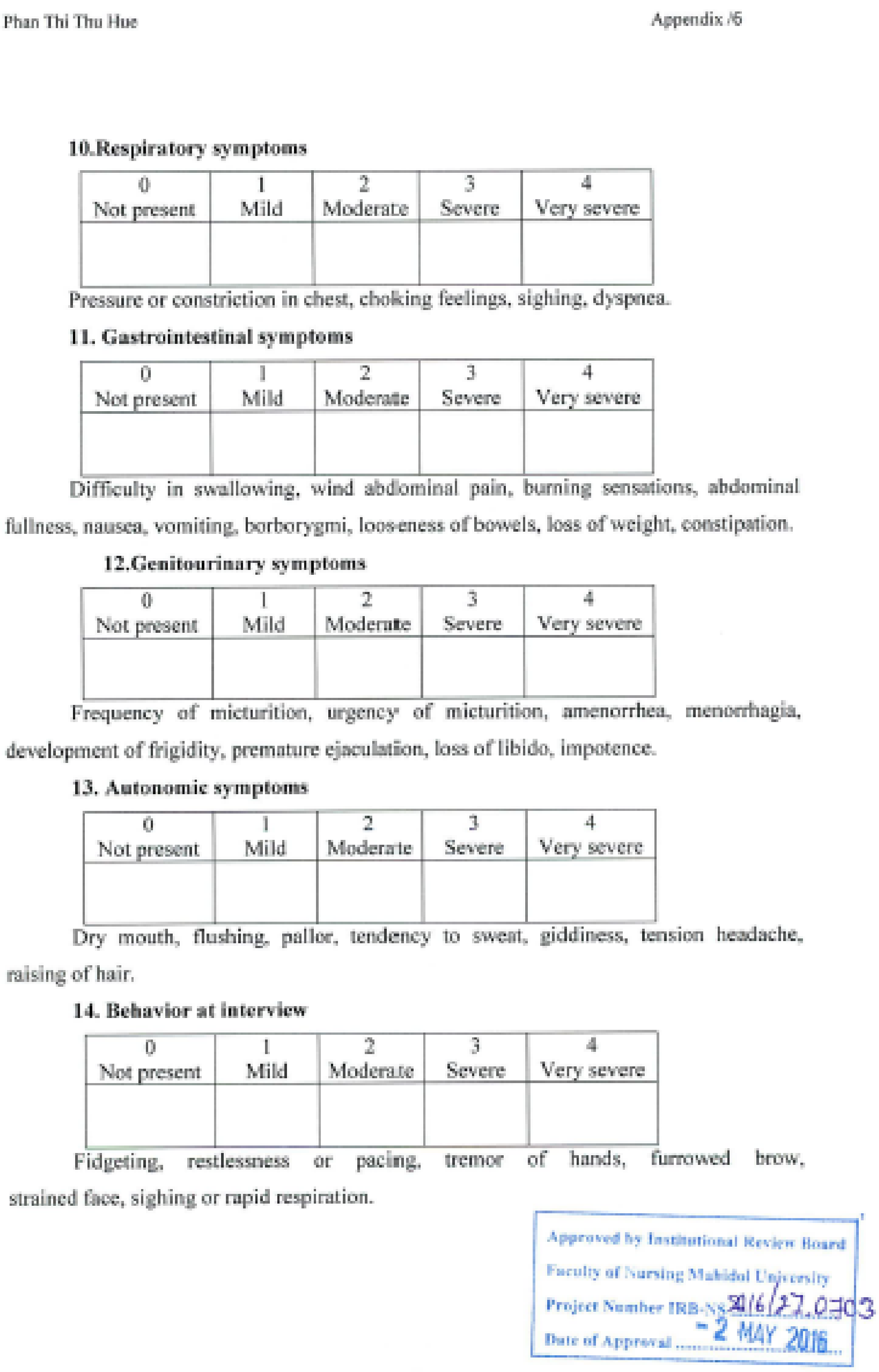
0 Not present	1 Mild	2 Moderate	3 Severe	4 Very severe

Tinnitus, blurring of vision, hot and cold flushes, feelings of weakness, pricking sensation.

9. Cardiovascular symptoms

0 Not present	1 Mild	2 Moderate	3 Severe	4 Very severe

Tachycardia, palpitations, pain in chest, throbbing of vessels, fainting feelings, missing beat.



10.Respiratory symptoms

0 Not present	1 Mild	2 Moderate	3 Severe	4 Very severe

Pressure or constriction in chest, choking feelings, sighing, dyspnea.

11. Gastrointestinal symptoms

0 Not present	1 Mild	2 Moderate	3 Severe	4 Very severe

Difficulty in swallowing, wind abdominal pain, burning sensations, abdominal fullness, nausea, vomiting, borborygmi, looseness of bowels, loss of weight, constipation.

12.Genitourinary symptoms

0 Not present	1 Mild	2 Moderate	3 Severe	4 Very severe

Frequency of micturition, urgency of micturition, amenorrhea, menorrhagia, development of frigidity, premature ejaculation, loss of libido, impotence.

13. Autonomic symptoms

0 Not present	1 Mild	2 Moderate	3 Severe	4 Very severe

Dry mouth, flushing, pallor, tendency to sweat, giddiness, tension headache, raising of hair.

14. Behavior at interview

0 Not present	1 Mild	2 Moderate	3 Severe	4 Very severe

Fidgeting, restlessness or pacing, tremor of hands, furrowed brow, strained face, sighing or rapid respiration.

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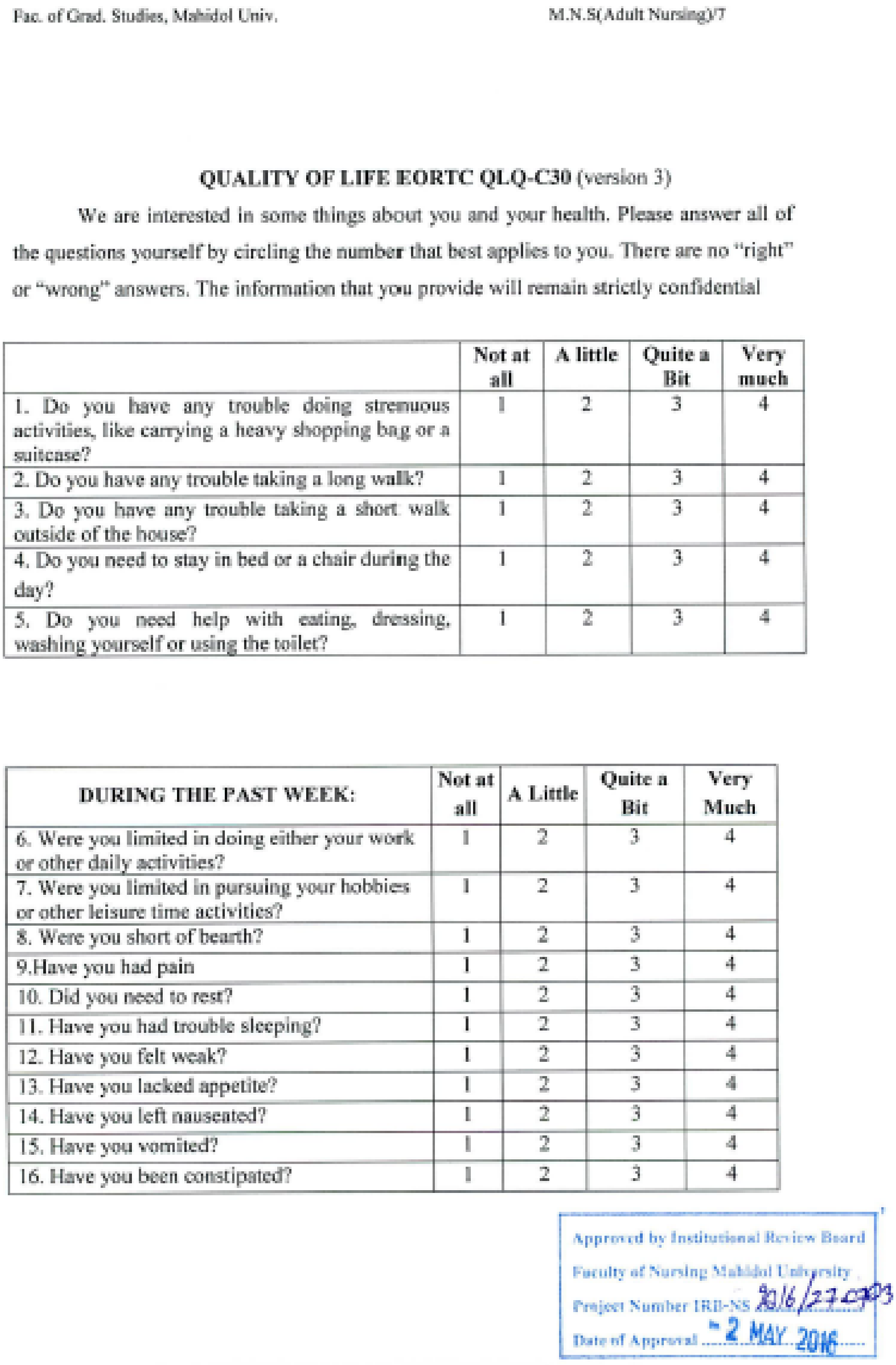

QUALITY OF LIFE EORTC QLQ-C30 (version 3)

We are interested in some things about you and your health. Please answer all of the questions yourself by circling the number that best applies to you. There are no "right" or "wrong" answers. The information that you provide will remain strictly confidential

	Not at all	**A little**	**Quite a Bit**	**Very much**
1. Do you have any trouble doing strenuous activities, like carrying a heavy shopping bag or a suitcase?	1	2	3	4
2. Do you have any trouble taking a long walk?	1	2	3	4
3. Do you have any trouble taking a short walk outside of the house?	1	2	3	4
4. Do you need to stay in bed or a chair during the day?	1	2	3	4
5. Do you need help with eating, dressing, washing yourself or using the toilet?	1	2	3	4

DURING THE PAST WEEK:	**Not at all**	**A Little**	**Quite a Bit**	**Very Much**
6. Were you limited in doing either your work or other daily activities?	1	2	3	4
7. Were you limited in pursuing your hobbies or other leisure time activities?	1	2	3	4
8. Were you short of bearth?	1	2	3	4
9.Have you had pain	1	2	3	4
10. Did you need to rest?	1	2	3	4
11. Have you had trouble sleeping?	1	2	3	4
12. Have you felt weak?	1	2	3	4
13. Have you lacked appetite?	1	2	3	4
14. Have you left nauseated?	1	2	3	4
15. Have you vomited?	1	2	3	4
16. Have you been constipated?	1	2	3	4

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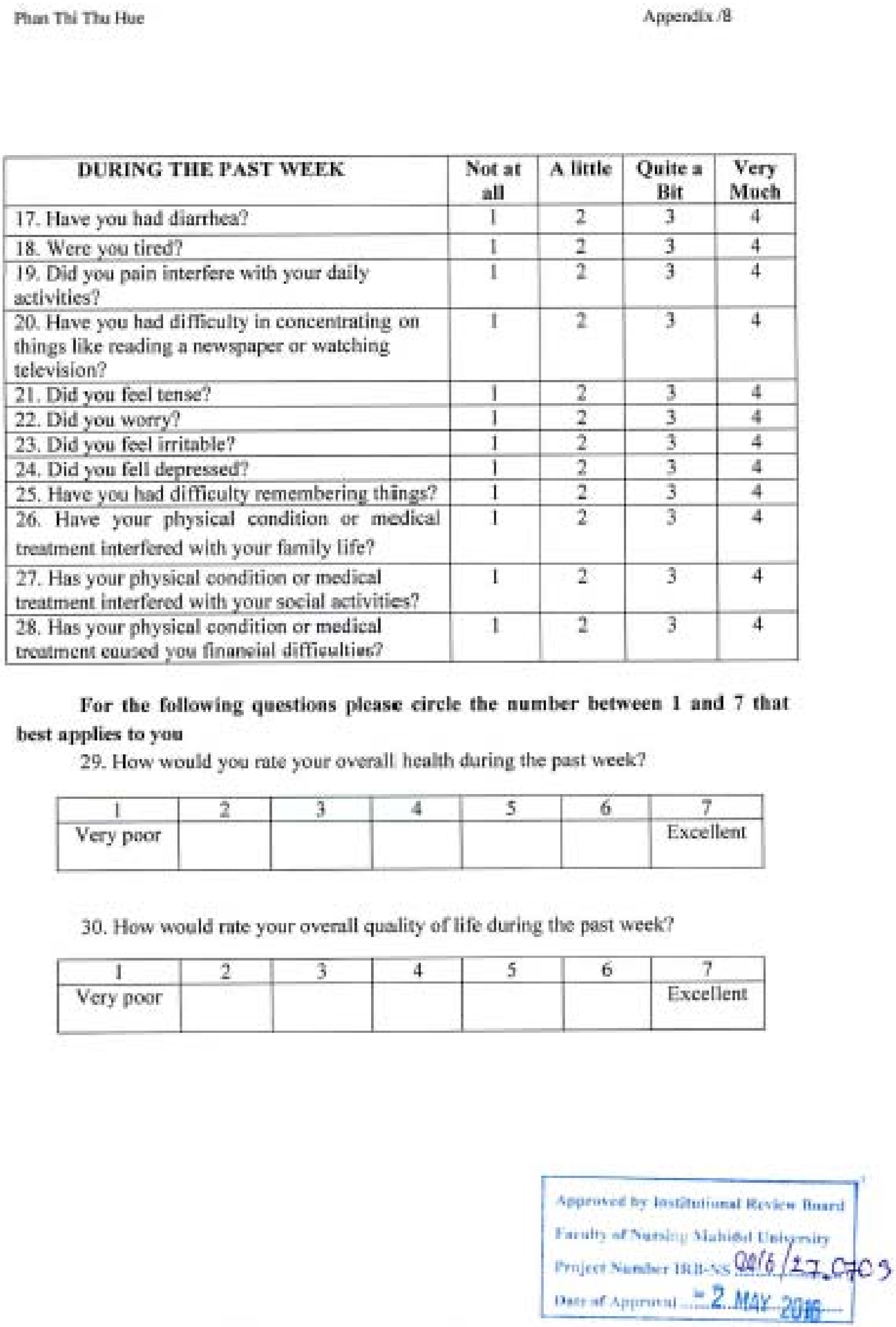

DURING THE PAST WEEK	Not at all	A little	Quite a Bit	Very Much
17. Have you had diarrhea?	1	2	3	4
18. Were you tired?	1	2	3	4
19. Did you pain interfere with your daily activities?	1	2	3	4
20. Have you had difficulty in concentrating on things like reading a newspaper or watching television?	1	2	3	4
21. Did you feel tense?	1	2	3	4
22. Did you worry?	1	2	3	4
23. Did you feel irritable?	1	2	3	4
24. Did you fell depressed?	1	2	3	4
25. Have you had difficulty remembering things?	1	2	3	4
26. Have your physical condition or medical treatment interfered with your family life?	1	2	3	4
27. Has your physical condition or medical treatment interfered with your social activities?	1	2	3	4
28. Has your physical condition or medical treatment caused you financial difficulties?	1	2	3	4

For the following questions please circle the number between 1 and 7 that best applies to you

29. How would you rate your overall health during the past week?

1	2	3	4	5	6	7
Very poor						Excellent

30. How would rate your overall quality of life during the past week?

1	2	3	4	5	6	7
Very poor						Excellent

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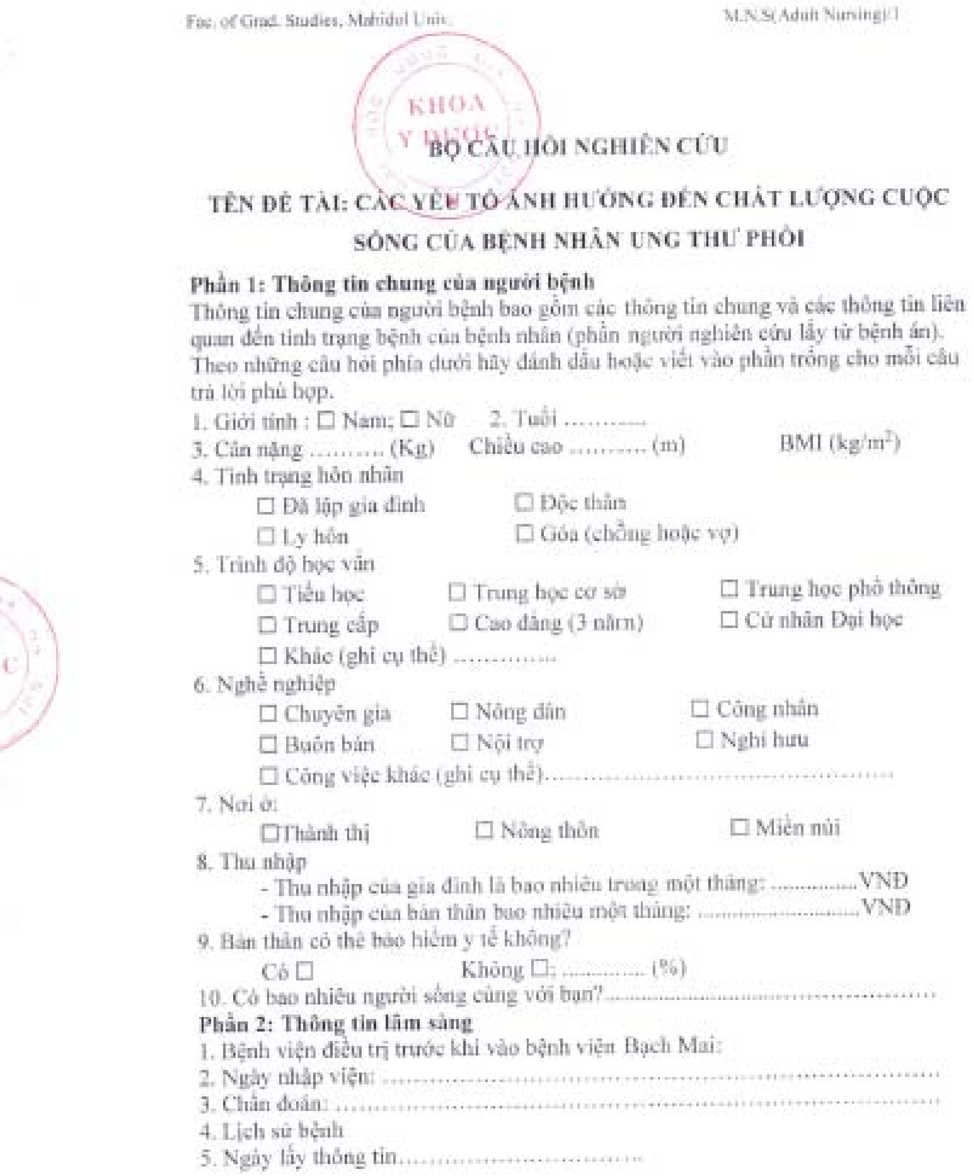

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BỘ CÂU HỎI NGHIÊN CỨU

TÊN ĐỀ TÀI: CÁC YẾU TỐ ẢNH HƯỞNG ĐẾN CHẤT LƯỢNG CUỘC SỐNG CỦA BỆNH NHÂN UNG THƯ PHỔI

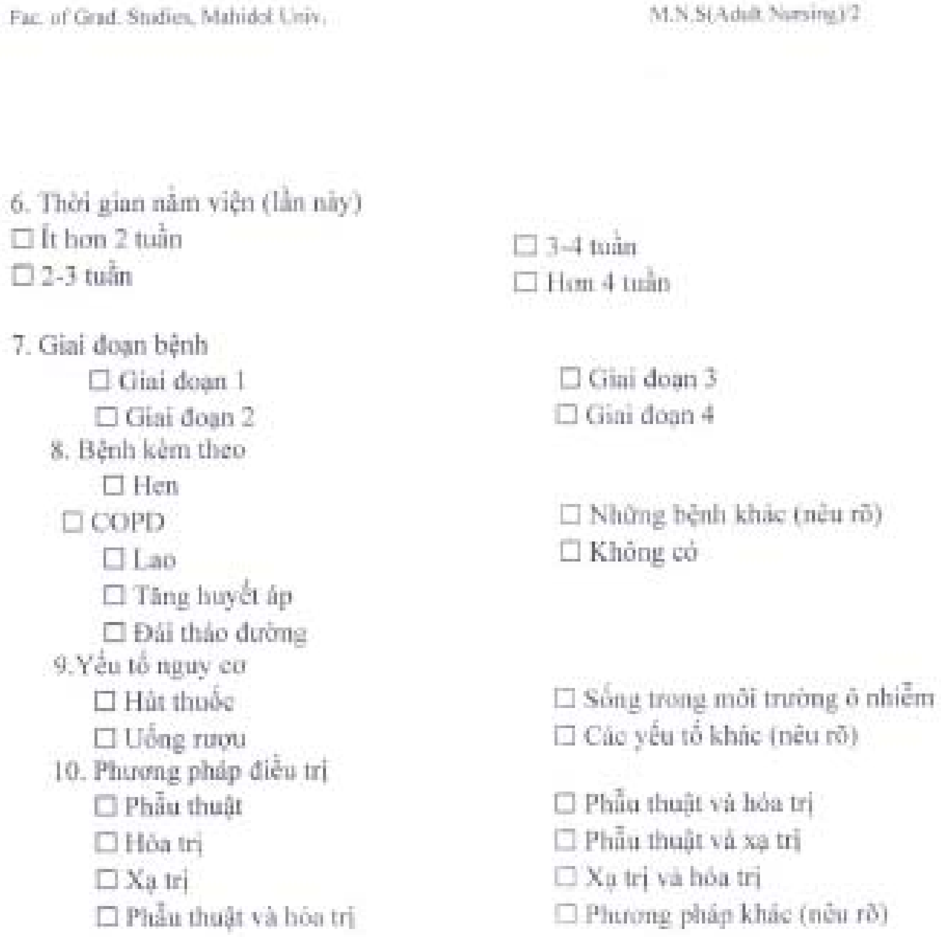
Phần 1: Thông tin chung của người bệnh

Thông tin chung của người bệnh bao gồm các thông tin chung và các thông tin liên quan đến tình trạng bệnh của bệnh nhân (phần người nghiên cứu lấy từ bệnh án). Theo những câu hỏi phía dưới hãy đánh dấu hoặc viết vào phần trống cho mỗi câu trả lời phù hợp.

1. Giới tính : ☐ Nam; ☐ Nữ 2. Tuổi ………..
3. Cân nặng ………. (Kg) Chiều cao ………. (m) BMI (kg/m²)
4. Tình trạng hôn nhân
    ☐ Đã lập gia đình ☐ Độc thân
    ☐ Ly hôn ☐ Góa (chồng hoặc vợ)
5. Trình độ học vấn
    ☐ Tiểu học ☐ Trung học cơ sở ☐ Trung học phổ thông
    ☐ Trung cấp ☐ Cao đẳng (3 năm) ☐ Cử nhân Đại học
    ☐ Khác (ghi cụ thể) …………..
6. Nghề nghiệp
    ☐ Chuyên gia ☐ Nông dân ☐ Công nhân
    ☐ Buôn bán ☐ Nội trợ ☐ Nghỉ hưu
    ☐ Công việc khác (ghi cụ thể)…………………………………………
7. Nơi ở:
    ☐Thành thị ☐ Nông thôn ☐ Miền núi
8. Thu nhập
    - Thu nhập của gia đình là bao nhiêu trong một tháng: ……………VNĐ
    - Thu nhập của bản thân bao nhiêu một tháng: ………………………VNĐ
9. Bản thân có thẻ bảo hiểm y tế không?
    Có ☐ Không ☐; ………….. (%)
10. Có bao nhiêu người sống cùng với bạn?…………………………………………

Phần 2: Thông tin lâm sàng

1. Bệnh viện điều trị trước khi vào bệnh viện Bạch Mai:
2. Ngày nhập viện: ………………………………………………………………………
3. Chẩn đoán: ……………………………………………………………………………
4. Lịch sử bệnh
5. Ngày lấy thông tin………………………………



6. Thời gian nằm viện (lần này)
- ☐ Ít hơn 2 tuần
- ☐ 2-3 tuần
- ☐ 3-4 tuần
- ☐ Hơn 4 tuần

7. Giai đoạn bệnh
- ☐ Giai đoạn 1
- ☐ Giai đoạn 2
- ☐ Giai đoạn 3
- ☐ Giai đoạn 4

8. Bệnh kèm theo
- ☐ Hen
- ☐ COPD
- ☐ Lao
- ☐ Tăng huyết áp
- ☐ Đái tháo đường
- ☐ Những bệnh khác (nêu rõ)
- ☐ Không có

9.Yếu tố nguy cơ
- ☐ Hút thuốc
- ☐ Uống rượu
- ☐ Sống trong môi trường ô nhiễm
- ☐ Các yếu tố khác (nêu rõ)

10. Phương pháp điều trị
- ☐ Phẫu thuật
- ☐ Hóa trị
- ☐ Xạ trị
- ☐ Phẫu thuật và hóa trị
- ☐ Phẫu thuật và hóa trị
- ☐ Phẫu thuật và xạ trị
- ☐ Xạ trị và hóa trị
- ☐ Phương pháp khác (nêu rõ)

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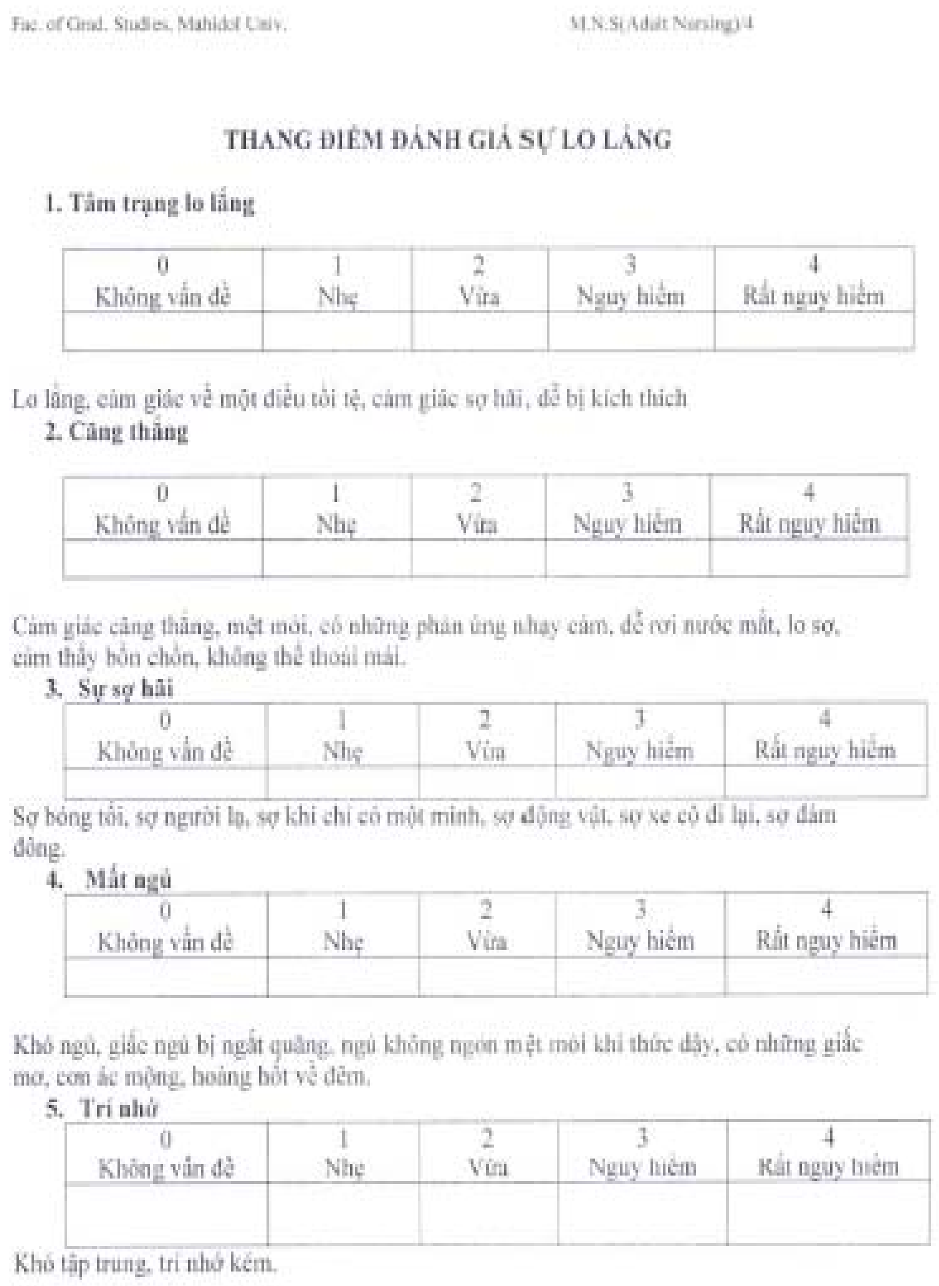
Thang đo đa khía cạnh về Nhận thức hỗ trợ xã hội (MSPSS)

(Zimet et al., 1988)

Hướng dẫn: Chúng tôi quan tâm đến việc bạn cảm nhận như thế nào về các câu sau. Đọc các câu sau cẩn thận. Đưa ra nhận định về suy nghĩ của bạn với mỗi câu sau.

Khoanh tròn "1" nếu bạn hoàn toàn không đồng ý
Khoanh tròn "2" nếu bạn rất không đồng ý
Khoanh tròn "3" nếu bạn không đồng ý
Khoanh tròn "4" nếu bạn không có ý kiến
Khoanh tròn "5" nếu bạn đồng ý
Khoanh tròn "6" nếu bạn rất đồng ý
Khoanh tròn "7" nếu bạn hoàn toàn đồng ý

1. Luôn có một người đặc biệt ở bên cạnh tôi mỗi khi tôi cần.	1	2	3	4	5	6	7
2. Luôn có một người đặc biệt ở bên cạnh tôi, người tôi có thể chia sẻ buồn vui.	1	2	3	4	5	6	7
3. Gia đình tôi luôn cố gắng giúp tôi	1	2	3	4	5	6	7
4. Tôi nhận được sự giúp đỡ và hỗ trợ về mặt tình cảm từ gia đình tôi mỗi khi tôi cần.	1	2	3	4	5	6	7
5. Luôn có một người đặc biệt làm cho tôi thấy thoải mái.	1	2	3	4	5	6	7
6. Những người bạn của tôi luôn cố gắng giúp tôi.	1	2	3	4	5	6	7
7. Tôi có thể tin tưởng vào những người bạn của tôi khi tôi có những hướng đi sai lầm	1	2	3	4	5	6	7
8. Tôi có thể nói chuyện với gia đình về các vấn đề của tôi.	1	2	3	4	5	6	7
9. Luôn có những người bạn ở bên cạnh tôi, người tôi có thể chia sẻ buồn vui.	1	2	3	4	5	6	7
10. Luôn có một người đặc biệt trong cuộc đời tôi, luôn quan tâm đến cảm xúc của tôi.	1	2	3	4	5	6	7
11. Gia đình tôi luôn sẵn sàng giúp tôi đưa ra quyết định.	1	2	3	4	5	6	7
12. Tôi có thể nói chuyện với những người bạn về các vấn đề của tôi.	1	2	3	4	5	6	7



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THANG ĐIỂM ĐÁNH GIÁ SỰ LO LẮNG

1. Tâm trạng lo lắng

0 Không vấn đề	1 Nhẹ	2 Vừa	3 Nguy hiểm	4 Rất nguy hiểm

Lo lắng, cảm giác về một điều tồi tệ, cảm giác sợ hãi, dễ bị kích thích

2. Căng thẳng

0 Không vấn đề	1 Nhẹ	2 Vừa	3 Nguy hiểm	4 Rất nguy hiểm

Cảm giác căng thẳng, mệt mỏi, có những phản ứng nhạy cảm, dễ rơi nước mắt, lo sợ, cảm thấy bồn chồn, không thể thoải mái.

3. Sự sợ hãi

0 Không vấn đề	1 Nhẹ	2 Vừa	3 Nguy hiểm	4 Rất nguy hiểm

Sợ bóng tối, sợ người lạ, sợ khi chỉ có một mình, sợ động vật, sợ xe cộ đi lại, sợ đám đông.

4. Mất ngủ

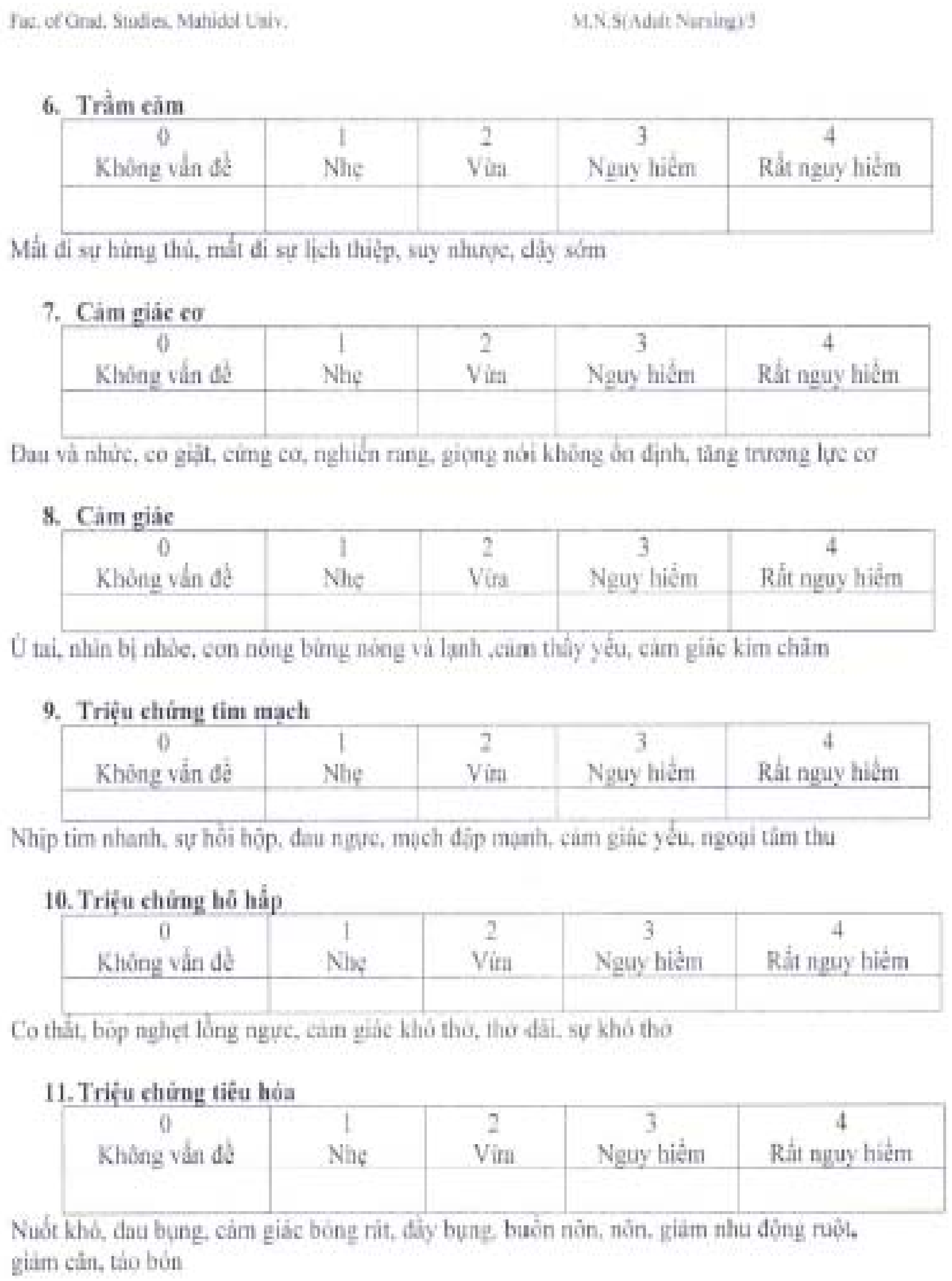
0 Không vấn đề	1 Nhẹ	2 Vừa	3 Nguy hiểm	4 Rất nguy hiểm

Khó ngủ, giấc ngủ bị ngắt quãng, ngủ không ngon mệt mỏi khi thức dậy, có những giấc mơ, cơn ác mộng, hoảng hốt về đêm.

5. Trí nhớ

0 Không vấn đề	1 Nhẹ	2 Vừa	3 Nguy hiểm	4 Rất nguy hiểm

Khó tập trung, trí nhớ kém.



6. Trầm cảm

0 Không vấn đề	1 Nhẹ	2 Vừa	3 Nguy hiểm	4 Rất nguy hiểm

Mất đi sự hứng thú, mất đi sự lịch thiệp, suy nhược, dậy sớm

7. Cảm giác cơ

0 Không vấn đề	1 Nhẹ	2 Vừa	3 Nguy hiểm	4 Rất nguy hiểm

Đau và nhức, co giật, cứng cơ, nghiến rang, giọng nói không ổn định, tăng trương lực cơ

8. Cảm giác

0 Không vấn đề	1 Nhẹ	2 Vừa	3 Nguy hiểm	4 Rất nguy hiểm

Ù tai, nhìn bị nhòe, cơn nóng bừng nóng và lạnh ,cảm thấy yếu, cảm giác kim châm

9. Triệu chứng tim mạch

0 Không vấn đề	1 Nhẹ	2 Vừa	3 Nguy hiểm	4 Rất nguy hiểm

Nhịp tim nhanh, sự hồi hộp, đau ngực, mạch đập mạnh, cảm giác yếu, ngoại tâm thu

10. Triệu chứng hô hấp

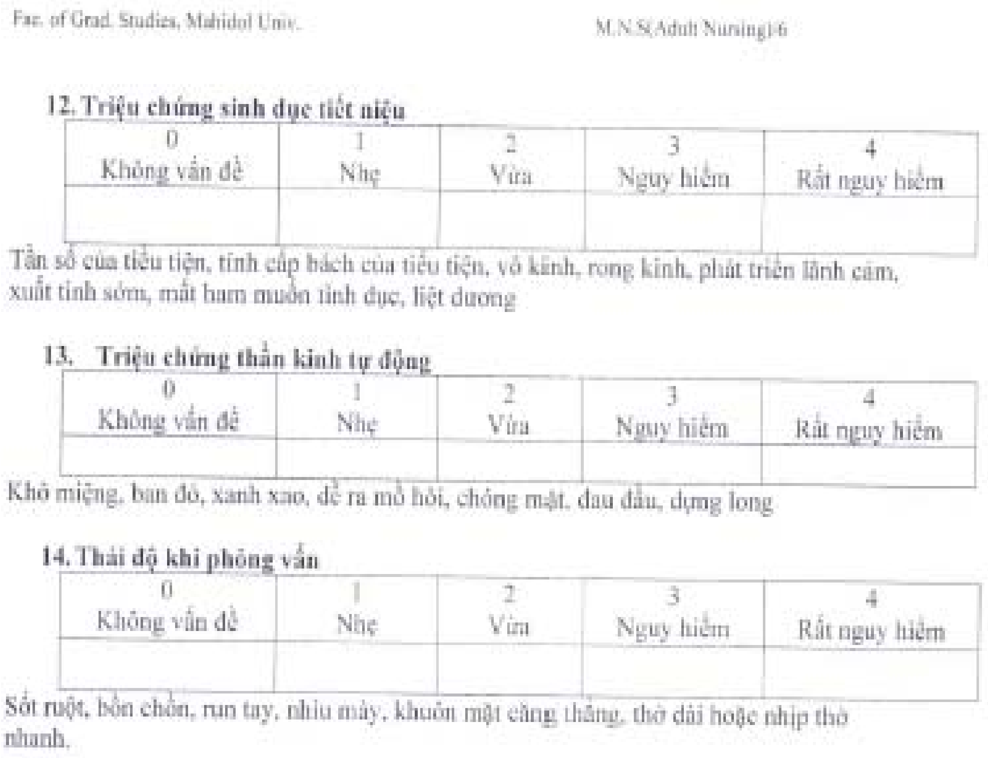
0 Không vấn đề	1 Nhẹ	2 Vừa	3 Nguy hiểm	4 Rất nguy hiểm

Co thắt, bóp nghẹt lồng ngực, cảm giác khó thở, thở dài, sự khó thở

11. Triệu chứng tiêu hóa

0 Không vấn đề	1 Nhẹ	2 Vừa	3 Nguy hiểm	4 Rất nguy hiểm

Nuốt khó, đau bụng, cảm giác bỏng rát, đầy bụng, buồn nôn, nôn, giảm nhu động ruột, giảm cân, táo bón



12. Triệu chứng sinh dục tiết niệu

0 Không vấn đề	1 Nhẹ	2 Vừa	3 Nguy hiểm	4 Rất nguy hiểm

Tần số của tiểu tiện, tính cấp bách của tiểu tiện, vô kinh, rong kinh, phát triển lãnh cảm, xuất tinh sớm, mất ham muốn tình dục, liệt dương

13. Triệu chứng thần kinh tự động

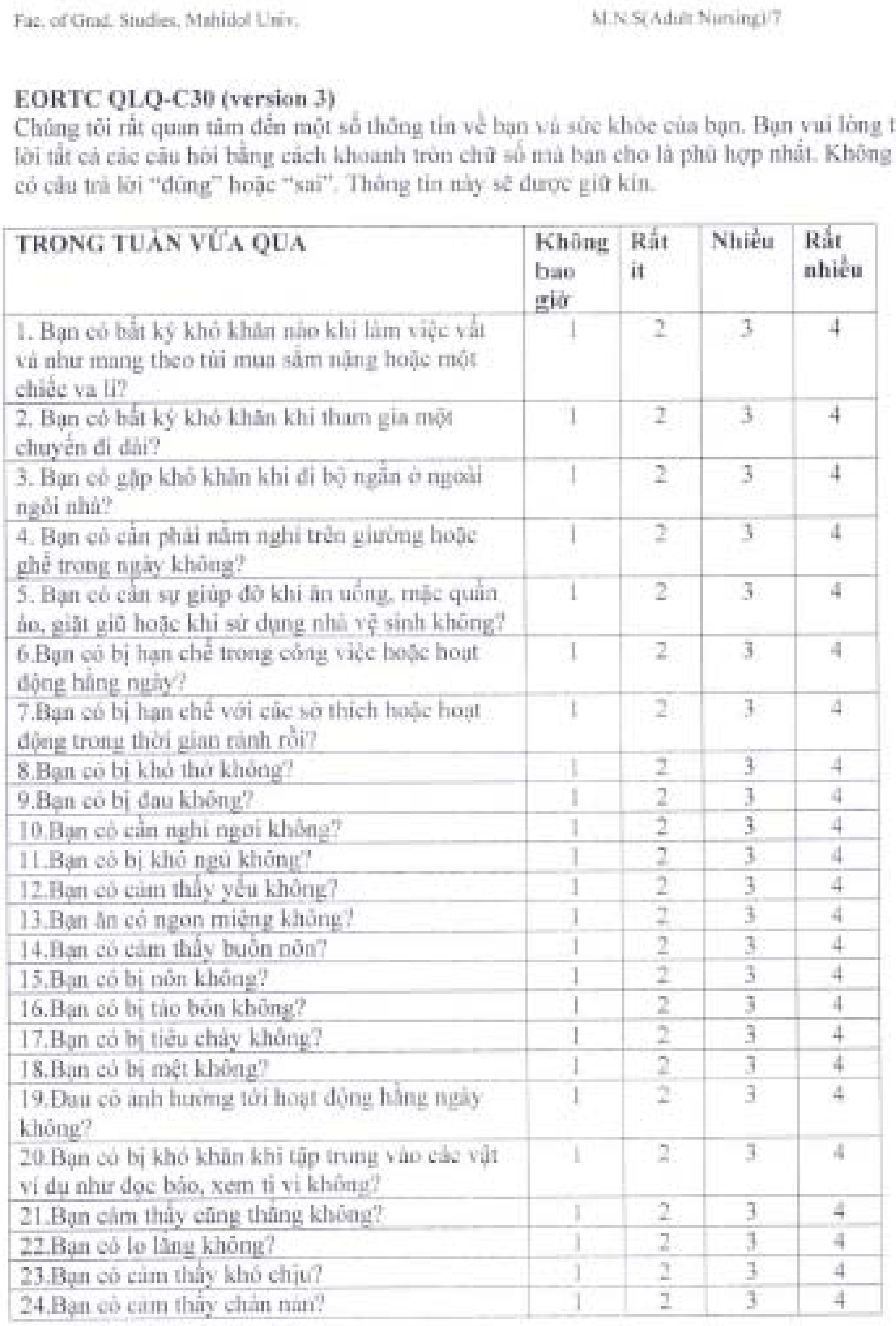
0 Không vấn đề	1 Nhẹ	2 Vừa	3 Nguy hiểm	4 Rất nguy hiểm

Khô miệng, ban đỏ, xanh xao, dễ ra mồ hôi, chóng mặt, đau đầu, dựng long

14. Thái độ khi phỏng vấn

0 Không vấn đề	1 Nhẹ	2 Vừa	3 Nguy hiểm	4 Rất nguy hiểm

Sốt ruột, bồn chồn, run tay, nhíu mày, khuôn mặt căng thẳng, thở dài hoặc nhịp thở nhanh.



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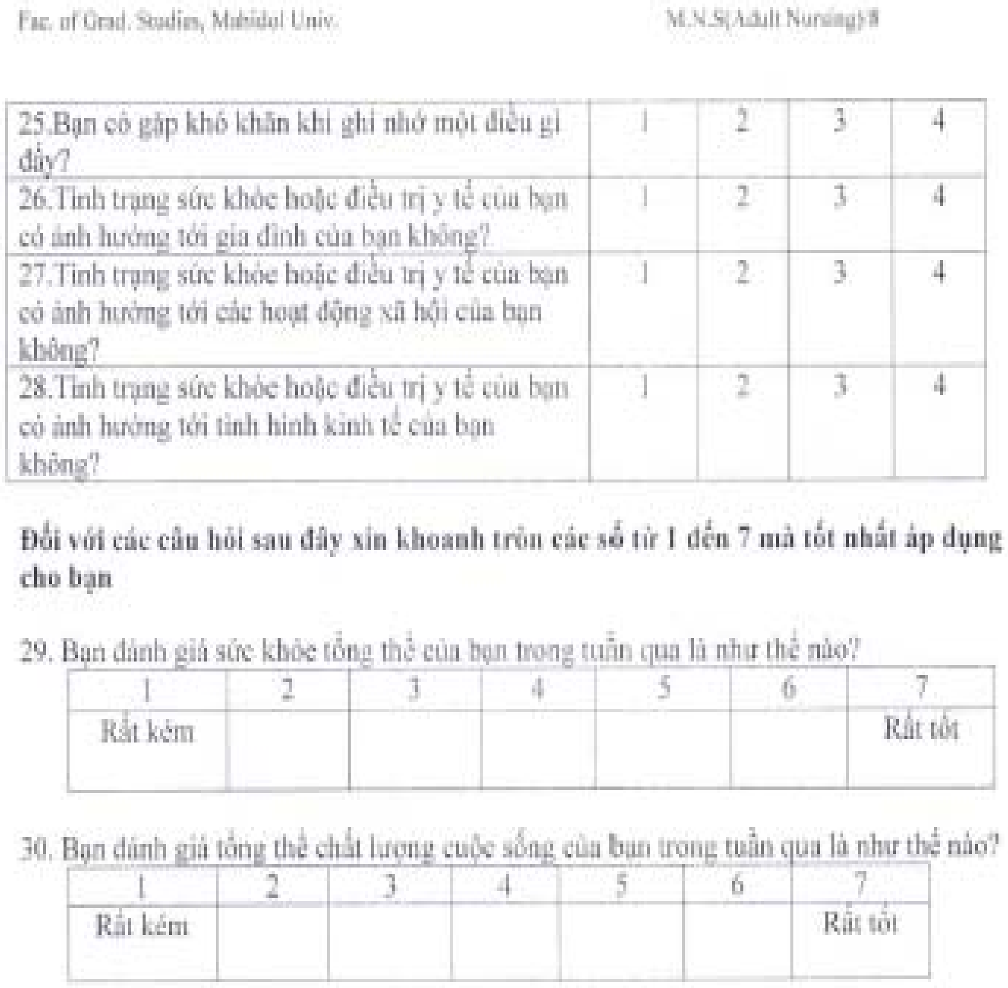
EORTC QLQ-C30 (version 3)

Chúng tôi rất quan tâm đến một số thông tin về bạn và sức khỏe của bạn. Bạn vui lòng trả lời tất cả các câu hỏi bằng cách khoanh tròn chữ số mà bạn cho là phù hợp nhất. Không có câu trả lời "đúng" hoặc "sai". Thông tin này sẽ được giữ kín.

TRONG TUẦN VỪA QUA	**Không bao giờ**	**Rất ít**	**Nhiều**	**Rất nhiều**
1. Bạn có bất kỳ khó khăn nào khi làm việc vất vả như mang theo túi mua sắm nặng hoặc một chiếc va li?	1	2	3	4
2. Bạn có bất kỳ khó khăn khi tham gia một chuyến đi dài?	1	2	3	4
3. Bạn có gặp khó khăn khi đi bộ ngắn ở ngoài ngôi nhà?	1	2	3	4
4. Bạn có cần phải nằm nghỉ trên giường hoặc ghế trong ngày không?	1	2	3	4
5. Bạn có cần sự giúp đỡ khi ăn uống, mặc quần áo, giặt giũ hoặc khi sử dụng nhà vệ sinh không?	1	2	3	4
6.Bạn có bị hạn chế trong công việc hoặc hoạt động hằng ngày?	1	2	3	4
7.Bạn có bị hạn chế với các sở thích hoặc hoạt động trong thời gian rảnh rỗi?	1	2	3	4
8.Bạn có bị khó thở không?	1	2	3	4
9.Bạn có bị đau không?	1	2	3	4
10.Bạn có cần nghỉ ngơi không?	1	2	3	4
11.Bạn có bị khó ngủ không?	1	2	3	4
12.Bạn có cảm thấy yếu không?	1	2	3	4
13.Bạn ăn có ngon miệng không?	1	2	3	4
14.Bạn có cảm thấy buồn nôn?	1	2	3	4
15.Bạn có bị nôn không?	1	2	3	4
16.Bạn có bị táo bón không?	1	2	3	4
17.Bạn có bị tiêu chảy không?	1	2	3	4
18.Bạn có bị mệt không?	1	2	3	4
19.Đau có ảnh hưởng tới hoạt động hằng ngày không?	1	2	3	4
20.Bạn có bị khó khăn khi tập trung vào các vật ví dụ như đọc báo, xem ti vi không?	1	2	3	4
21.Bạn cảm thấy căng thẳng không?	1	2	3	4
22.Bạn có lo lắng không?	1	2	3	4
23.Bạn có cảm thấy khó chịu?	1	2	3	4
24.Bạn có cảm thấy chán nản?	1	2	3	4



25.Bạn có gặp khó khăn khi ghi nhớ một điều gì đây?	1	2	3	4
26.Tình trạng sức khỏe hoặc điều trị y tế của bạn có ảnh hưởng tới gia đình của bạn không?	1	2	3	4
27.Tình trạng sức khỏe hoặc điều trị y tế của bạn có ảnh hưởng tới các hoạt động xã hội của bạn không?	1	2	3	4
28.Tình trạng sức khỏe hoặc điều trị y tế của bạn có ảnh hưởng tới tình hình kinh tế của bạn không?	1	2	3	4

Đối với các câu hỏi sau đây xin khoanh tròn các số từ 1 đến 7 mà tốt nhất áp dụng cho bạn

29. Bạn đánh giá sức khỏe tổng thể của bạn trong tuần qua là như thế nào?

1	2	3	4	5	6	7
Rất kém						Rất tốt

30. Bạn đánh giá tổng thể chất lượng cuộc sống của bạn trong tuần qua là như thế nào?

1	2	3	4	5	6	7
Rất kém						Rất tốt

APPENDIX F

ADDITIONAL STATISTICAL ANALYSIS

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Statistic	df	Statistic	df
Social support	.065	115	.200*	.979	115	.067
Anxiety	.085	115	.042	.976	115	.038
Lung func	.169	115	.000	.871	115	.000
QOL	.078	115	.080	.969	115	.008

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

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