UTILIZATION OF PORT HEALTH SERVICE CENTER AMONG SAILORS AT BITUNG INTERNATIONAL SEA PORT, BITUNG CITY, NORTH SULAWESI PROVINCE, INDONESIA

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Thesis
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ABSTRACT

A cross sectional descriptive study was conducted on utilization of the port health service center among sailors at Bitung international sea port, North Sulawesi province, Indonesia. The factors were socio-demographic characteristics, attitude towards the port health center, convenience, perceived availability of health care services, and ease of relationship with health care staff and utilization of port health service center.

A quantitative approach using a structured questionnaire was undertaken among 266 sailors aged from 20 to 56 years old who use the port health center as a routine or non-routine, in the previous 6 months period, and which were on duty or off duty. For data analysis, descriptive statistical analysis techniques were used to describe the percentages and frequencies of variables. Chi-square test was used for relationships with the significance level set at 0.05.

The result revealed that 36.09 percent of the sailors were aged 30-36 years, married (62.78%), and had graduated at a secondary or high school level (63.91%). The majority of them were crew (52.26%).Of the subjects, 56.39 percent lived in a rented house-room, 58.65 percent felt pay was sufficient for family expenses but had no savings. Regarding health services 60.90 percent used services as routine and 30.10 percent as non-routine. Attitudes toward the port health center were at (55.77%) moderate attitude, 38.46 percent expected cheap costs, their financial source was making a company insurance claim (62.50%).A similar number of respondents perceived availability and human relationship as a good, moderate or poor. The requirement to visit the port health center was 59.62 percent, for a medical check up or treatment (on duty). Levels of utilization were one time (89.42%) and more than one time (10.58%).

It was found there were significant relationships between present position, type of residence, sufficiency for family expenses, cost, financial source, and requirement to visit with utilization of port health center.

The recommendation from this study is that the performance, available facilities and the range of services of the port health office needs to improve by integrating stakeholders and supervising the system properly.

KEYWORDS: UTILIZATION OF PORT HEALTH SERVICE CENTER

82 pp.

CONTENTS

CONTENTS (Cont.)

Page

LIST OF TABLES

LIST OF FIGURES

FIGURE Page

LIST OF ABBREVIATIONS

SARS	:	Severe Acute Respiratory Syndrome
HIV	:	Human Immunodeficiency Virus
AIDS	:	Acquired Immunodeficiency Syndrom
ARIs	:	Acute Respiratory Illness
IHR	:	International Health Regulation
HFA	:	Health for All
PHC	:	Primary Health Care
WHO	:	World Health Organization
WHA	:	World Health Assembly
SES	:	Socio Economic Status
CI	:	Confident Interval
SD	:	Standard Deviation

CHAPTER 1
INTRODUCTION

1.1. Rationale and Justification

In this globalization era, efficient and inexpensive transportation has left few places accessible and has helped the spread of number of new emerging and re-emerging infectious diseases including SARS, Avian Influenza, Dengue Hemorrhagic Fever, HIV/AIDS, and related Sexual Transmitted Infections. Ports serve as doors for these diseases to enter any country all over the world hence adequate healthcare system is required to mitigate the spread of these diseases.

In Indonesia, a healthcare system in ports is available and supported by government policies. Port Health Office is a technical unit of the Indonesian Health Department and responsible to mitigate the spread of quarantine diseases and other infectious diseases with potential outbreak from other countries that might be carried in through passengers and especially sailors, transportation vehicles, and cargos, without intervening the travel and trade process. The Port Health Office enforces relevant provisions of the quarantine and prevention of disease ordinance and the International Health Regulations (IHR) established by the World Health Organization (1, 2, 3).

Sailors could be the risk factor to carry the infectious diseases. There was study about The Global Spread of New Influenza Viruses. In 1997, passengers and crew on North America cruises developed acute respiratory illness (ARIs); influenza was suspected. The researcher reviewed one ship’s medical records for three cruises, and medically attended ARI was defined as any two of the following symptoms; fever (temperature ≥ 37.8 °C) or feverishness, sore throat, cough, nasal congestion, chills, myalgia, and arthralgia. The outbreak probably began among Australian passengers

on first cruise (relative risk 3.3; 95% confidence interval, 1.89-5.77). Off 1284 passengers on cruise 2,215 (17%) reported ARI, 994 (77%) were aged ≥ 65 years, and 336 (26%) had other risk factors for respiratory complications. An influenza strain not previously identified in North America was isolated. They concluded that an "off season" influenza outbreak occurred among international travelers and crew on board this cruise ship. Their findings suggest that during this outbreak, influenza cases began among Australian passengers and rapidly spread to crew who had close passenger contact. The crew probably served as a reservoir for influenza virus infection and as a source of transmission to subsequent passengers. In addition, an unknown number of passengers may also have developed ARI or serious complications of influenza after they returned home from their cruise. Therefore, respiratory illnesses reported to the ship's infirmary greatly underestimated the impact of the outbreak. This report highlights the potential role of international travel in the rapid dissemination and global spread of new influenza viruses and the need to maintain adequate surveillance and response capabilities for travel-related emerging infections (4).

The International Health Regulations (IHR) is the legally binding international instrument for preventing the international spread of diseases to ensure global health security. The IHR have undergone substantial revision to make them more responsive to the new challenge of new communicable disease threats posed by the increased volume and complexity of the international trades and travel (5, 6).

Continuous review of the established healthcare system implemented by the port health office will help to improve the provisions of the quarantine and prevention of diseases. We will be able to modify or develop new program in dealing with growing complexity of port system, particularly in regard to healthcare services (1, 2).

Bitung International Sea Port is strategically located as it is directly facing the Pacific Ocean and have access to many countries, such as in the line with the container growths; Bitung Port has been prepared to handle traffic from and to the port.

According to the data from Bitung Port Health Office, from August 2006 to August 2007(one year), there were 85,937 crew of ship who visited port health service center. So, there are a large number of sailors could be a risk factor of the infectious diseases transmission. The most important consideration to empowering the sailors realize and concern about their health. However, the utilization of health service still under of expectation. There are factors related to the utilization towards the health service. Curiosity is what attitudes and beliefs have been associated with the utilization of health center. Several studies indicate that there is a well correlation between attitudes and behavior of person. Based on this evidence several authors have concluded that attitudinal dimensions, and health beliefs in particular are determinants of initial involvement but not continued participation in utilization of health service center (7).

1.2 Research Question

1. What is the pattern of the port health service utilization among sailors who come to Bitung Sea Port, Bitung City, North Sulawesi Province, Indonesia?
2. What are the factors related to the port health service utilization among sailors who come to Bitung Sea Port, North Sulawesi Province, Indonesia?

1.3 Research Objective

1.3.1 General objective

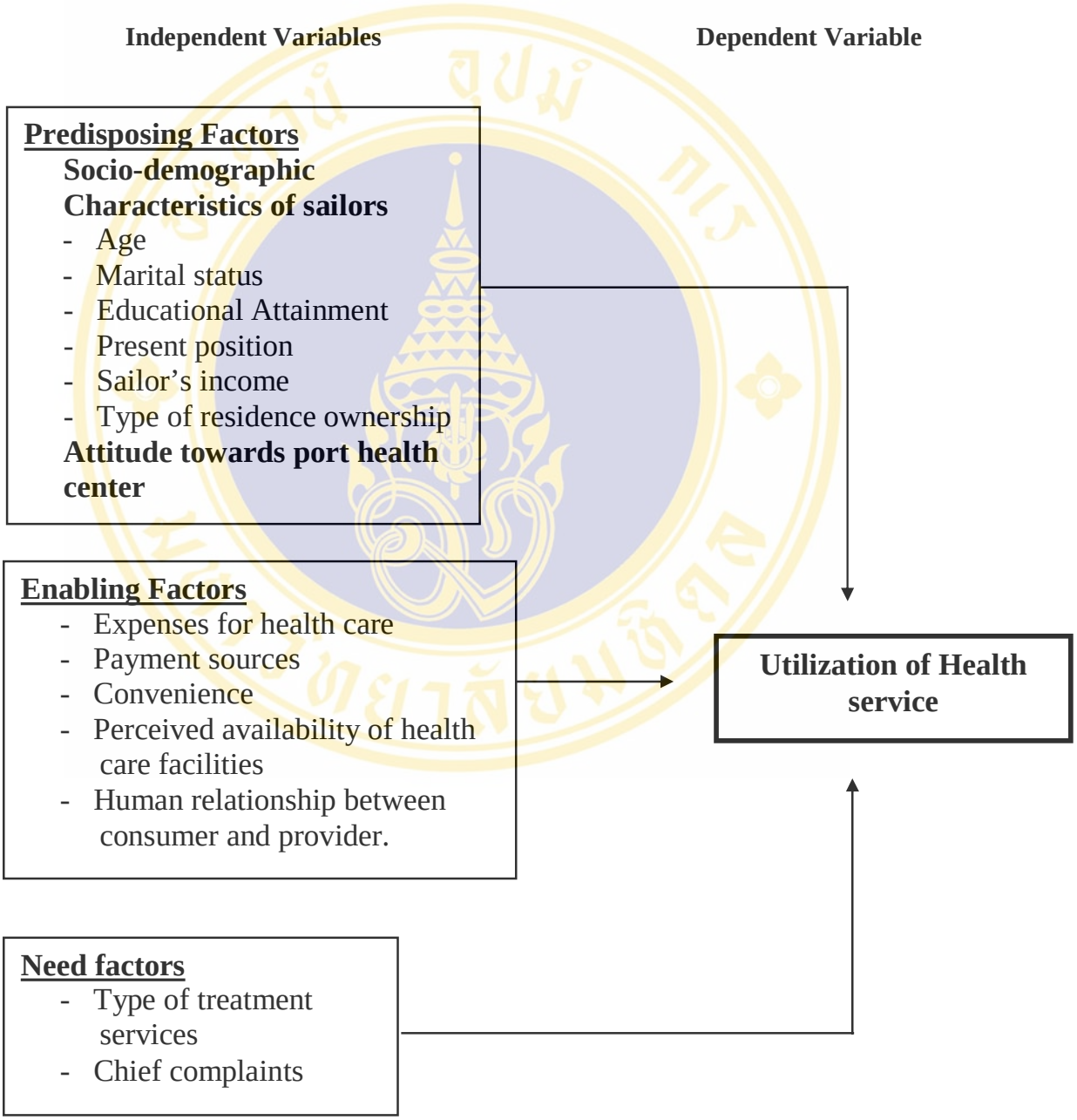
To investigate the pattern of health service utilization among the sailors who come to Bitung Sea Port.

1.3.2 Specific Objective

1. To examine socio-demographic characteristics of the sailors at Bitung Sea Port.
2. To reveal attitudes toward port health center of the sailors who use Port Health Center for medical diagnosis and treatment at Bitung Sea Port.

3. To describe the association between factors related to utilization of Port Health Service Center among the sailors.

1.4 Conceptual Framework.



1.5 Operational Definitions

Utilization of port health service center

This utilization refers to the pattern of utilization of port health center among sailors, is categorized as doing:

1. Medical check up as a routine service
2. Medical diagnosis/treatment or and medical check up with medical diagnosis or treatment, as a non routine services.

First category of the utilization of health service refers to a medical Examination means the preliminary assessment of a person by an authorized health worker/port's doctor/port health officer or by a person under the direct supervision of the competent authority, to determine the person's health status and potential public health risk to others, and may include the scrutiny of health documents. And also consider about port health control means if a sailor is suspected of having an infectious disease such as SARS (or any quarantine disease) and presents with symptom during the traveling, or on arrival, port's doctor will assess the person and the necessary measures will be taken. Second category is doing medical diagnosis or treatment refers to the health problem of the sailors. When they have sickness, they will go to the port health center for get the treatment, except medical check up. In short term, the sailors who come to port health center for medical check up and get the treatment.

Level of utilization of port health center

Level of utilization refers to sailors who were in second category visited port health center or used any kind of health services in the last six months, which was available in the port health center.

They were categorized as once and more than once of level of utilization. Once is considered as one time, and more than once is considered as two times and more.

Predisposing factors

- Age

Age refers to real age of the sailors at time of the interview or completes year of age at time of interview.

- Marital status

It is refers to married, divorced or widower, and unmarried.

- Educational attainment

In this study, it refers to educational obtainment of the sailors. This variable is an ordinal variable, ranging from illiterate, primary school, secondary school, higher education.

- Current position

In this study, present position refers to present job or position on the ship. The position is categorized into captain, chief 1, chief 2, chief 3, Marconi's, engineer, deck's crew.

- Sailor's income

In this study, it is assess based on income of the sailors that they got per month.

- Attitude towards port health service

Attitudes of the sailors towards port health services center are the ways that sailors think according to beliefs and affections about the importance of port health services, health personnel, the quality of drug and medical equipments, overall environment, working hours, waiting time and the skill and competency of doctor.

Enabling factors

- Expenses for health care

Expenses for health care refer to cost of services for each facility. Not only direct price of treatment, but also other cost, such as expenses for drugs, medical consultations, tests (urinalysis or blood test).

- Payment sources for health care

It is classified as affordable include savings, making claims, health insurance, exemption fee and unaffordable, including borrow from kin, selling property or others.

- Convenience towards port health services

It is referring to the patient's perception of health care procedure whether or not convenient; according to current experiences of the sailors receive the services of port health center. It is including waiting time for health care, available working hour, complicated administrative procedure, and treatment procedure.

- Perceived availability of health care facilities in port health center

It is refer to the patient's perception of availability of health care facilities whether or not available, according to current experiences of the sailors receive the services of port health center. They include available medical equipment and available drug.

- Human relationship between consumer and provider

It is measure by asking the sailors who use port health care facilities whether health personnel have good communications or not, according to current experiences of the sailors when they receive the services.

Need factors

- Types of treatment services

In this study, types of treatment service refer to prevention, promotion, and treatment. Prevention includes vaccination, sanitation; Health promotion includes exercises. Treatment includes taking drug and first aid assessment.

- Chief complaints

It is the symptoms that lead the sailors come to get treatment in port health service within last six months, such as headache, fever, vomit, nausea, cough, and flu.

1.6 Limitation of study

This study is cross-sectional descriptive study, although there are many factors that influence health service utilization, this study only focus on factors from micro-level, which include predisposing factors, needs for health care and enabling factors of the users.

CHAPTER 2
LITERATURE REVIEW

2.1 Health Care Service Policy

Health is fundamental right of every human being without distinction of race, religion, political beliefs, economic or social condition. As consequence, health or long life expectancy is worldwide ideal which every society should devote all effort to eradicate disease and illness through creating equity of access to health and medical services. One of the major problems in the developing world is the lack of adequate and appropriate health care infrastructure. About 80 percent of the illnesses are preventable and their occurrences reflect poverty and inadequate health prevention and promotion measure (8).

Since 1978, when Alma-Ata was introduced, the networks of health service have greatly changed in health care conception, the rapid development of science lead to new challenges to health care system over the world. At the same, the government both low and high-income countries has found so many solutions to reform their health system in order to meet the goal of better health for all, increase efficiency, reduce health inequalities, protect individual, families, communities from financial loss, and enhance fairness in the financing and delivery of health care to be consistent to the rapid changes in the society (9).

Issues of health care delivery are then tied with the concepts of availability, accessibility and acceptability. The three are presumably related and occur subsequently. These concepts were regarded as the independent variables to the dependent variables of affordability, medical treatment, and good health. In fact, Tsukamoto (2005) found that in Thailand the accessibility particularly on traveling time was quite a determinant factor. However, people still have several obstacles,

such as the loss of daily wage, waiting time, traveling cost, and social barriers, seeking health care services (10).

In the present dynamic world, many things have changed for the good of mankind, while there are also retreats in other respects (Sermsri, 1999). The good thing is that world health conditions have generally improved; diseases and illness have come under control. But for a long time we have been oblivious of social factors influencing on health. People participation and involvement became an effective health policy in connecting modern health care and grass-roots people. The provision of health care also has to reach the somatic, psychological and social requirement. Pollution of the environment is for example affecting somatic health, while urbanization is affecting our mental and social health. Community participation, family support, and people involvement in health care also imperative for the 21st century of health care services (10).

The World Health Assembly laid down the main social goal of Health for All by the year 2000 (HFA) in May 1977, to achieve HFA goal, the principle and strategy of Primary Health Care (PHC) approach was guided. Every developing country is striving to achieve HFA goal through the primary health care approach according to their respective national health plan aims to fulfill basic health needs of their people.

Health for all does not mean that in the year 2000, doctors and nurses will provide medical care for everybody in the world for all their existing ailments and that nobody will be sick or disabled. It does mean that health beings and postured at home, in schools and in factories, where people live and work. People will use better approaches than they do now for preventing disease and alleviating unavoidable illness and disability, and have better way of growing up, old and dying in dignity (11).

Consideration may first be given to the relationship between studies of how health services are used and an understanding of why health services are used. Do studies of how people use services explain why people use health services? In

approaching an answer to this question, a careful distinction should be drawn between studies of utilization whose findings are intended to have immediate application, and studies of utilization which are intended to serve as means to still other research ends. In the first case, information is sought to serve as a basis for formulating and implementing public policy in the health area. Utilization data obtained for such purposes have proved invaluable in the health field.

However, studies of the use of services may also be undertaken as means to achieve the broader aim of increased understanding of why services are used. In this sense, utilization studies are intended to generate hypotheses about why services are used. Such utilization studies have generally failed to accomplish their purpose. Evidence in support of this conclusion has been drawn from studies of high and low users of free medical examinations, detection tests for cervical cancer, polio immunization, dental services, physicians' services, hospital services and from studies of the characteristics of those who do and those who do not delay in seeking diagnosis and treatment of cancer.

Analyzing the major findings of studies on the patterns of use of preventive and detection services permits certain summary generalizations about the association of personal characteristics with the use of services. In general, such services are used most by younger or middle aged people, by females, by those who are relatively better educated and have higher income (though perhaps not the very highest levels of education and income) (12).

2.2 Problem in health service utilization

Health condition is related to people’s behavior and the ecology of health services. It is the interaction of the health behavior of the people with the behavior of health workers “the user’s side and the provider’s side”. Health providers tend to concentrate on characteristics of problems of the patient, e.g., language barriers, wrong beliefs, religious beliefs, poverty and lack of education, etc. In contrast, patient focus on problems with the services, including inconvenient hours, location, lengthy

waits in unpleasant condition, attitudes of health staff, and most importantly, high cost of services.

It is important to note here that a study on health care utilization should be analyzed according to the type of illness symptom, including simple illness, accident, and pregnancy, acute or chronic diseases. With the simple illness, many still seek traditional practitioners, i.e., herbalists or spirit healers.

In the 1960's, alto the preference for modern medicine among the patients was prevailing, the use of government health care was low, a so-called "under utilization". The problem of using health centers was due to the cost of services, i.e., economic and social costs and these costs were higher in modern and government than the cost of traditional health care services. Concerning social cost, government/public health center was bound up with red-tape, making a patient pass through several steps before receiving health care diagnosis. For the economic cost of modern health care, patients are prepared several costs of assessing the services; these include medical cost, laboratory cost, treatment cost and traveling costs. Moreover, it has been often found that the weakness of government health services includes patients have difficult time to meet health personnel (10).

Socioeconomic inequalities in utilization of health care in health outcomes are large, and are even more pronounced in Uttar Pradesh and neighboring states. According to their analysis, the poorer Indian use health services much less than do the better off. Financial or cost barriers and user dissatisfaction are suggested as important reasons why the poor eschew health services.

2.3 Factors related to the health service utilization

A major policy response to this undesirable situation has been to improve the quality of health services offered at public facilities. Yet it is not known whether these efforts will benefit the poor or whether the non-poor will capture better services. There are strategies for raising utilization rates to make health services more responsive to the public. Various determinants of user perceptions of health service quality have been in the literature. They include provider behavior (Haddad and Fournier 1995); Aldana, Piechulek, and Al-Sabir 2001), respect for privacy (Aldana, Piechulek, and Al-Sabir 2001); waiting time (Aldana, Piechulek, and Al-Sabir 2001); availability of drugs (Haddad and Fournier 1995). Those indicate that user perception of quality is an important determinant of utilization when user fees are increased. However, about how user perceptions vary with socioeconomic status or whether improvements in technical quality improve quality perceptions access all or only some socioeconomic groups (10,13).

There are many well-known writers (Cartwright 1967; Freidson 1970; Freeman et al 1972; Stacey 1976), the relationship between social factors, illness and the behavior of persons who feel that they are in need of medical attention (a type of social epidemiology) is one important focus. Similarly, age and sex differences in morbidity and utilization pattern and the influence of the family and social network on attitudes to and use of, health service have been important topics of study. A recent review of health services utilization found that the proportion of persons that referred a doctor visit extremely similar woman and age associated with a higher utilization (14,15).

- Attitude Scaling Method

Attitude scale is relating crude measuring instruments and we must not expect too much from them. Their chief function is to divide people roughly into a number of broad groups, with regard to a particular attitude. Such scales can not by themselves be expected to provide us with subtle insight in an individual case. They are technique for placing people on a continuous in relation to one another, in relation and not in

absolute it is impossible to say which method is best. Each has imported desirable features but each of them is also open to criticism. If we wish to stay attitude-patterning or explore theories of attitudes then probably the likert procedure will be the most relevant.

Likert's primary concern was unidimensional making sure that all the items would measures the same thing. He also wanted to eliminate the need for judges by getting subjects in a trial sample to place themselves an attitude continuous for each statement running from "strongly agree" to "agree" "uncertain or not sure" "disagree" and "strongly disagree". These five positive were given simple weight of 5, 4, 3, 2, and 1 for scoring purposes after more complex scoring methods had been show to possess no advantages.

To produce a Likert Scale we proceed as follows; first as usual we compose an item pool. However for the Likert procedure it is best not to be have neither many neutral items nor many extremes at either end of the continuum. Next we score the record of each respondent. To do this we must decide whether we want a high scale score to mean a favorable or unfavorable attitude. If doesn't matter what we decide but from then on we must be consistent. If we decide that a high score on the scale will mean a favorable attitude, then favorable statement must be scored 5 for "strongly agree" down to 1 for "strongly disagree" and unfavorable statement must be scored 1 for "strongly agree" up to 5 for "strongly disagree". If we decide that high score will mean an unfavorable attitude then the opposite system of scoring will apply (16, 17).

A review of the previously cited data on utilization of diagnostic and treatment services provided by the physician, the dentist and the hospital, suggests a pattern quite similar to that obtained in connection with preventive and detection services. Higher socioeconomic groupings (defined in terms of educational and income level) are more likely to obtain medical, dental and hospital services, although the associations between income and utilization are becoming less marked.

The nature of the association between age and utilization of treatment services is generally different from that found between age and seeking preventive and detection services, probably reflecting the effect of objective medical and dental need.

With respect to characteristics of those who delay in seeking diagnosis and treatment of cancer, similar patterns emerge. In general, persons who delay are older, of low educational status and, at least in some studies, males. Although most studies of utilization do not throw light on why people use health services, one area of research can be identified in which quite sophisticated efforts have been made to understand health and illness behavior as a function of personal characteristics; an area described by Kasl and Cobb as "variables affecting the perception of symptoms." Several other workers attempt to link personal and sub cultural variables to the individual's likelihood of perceiving an event as a symptom or to his mode of responding to a symptom. For instance, Koos found a social class gradient in terms of the likelihood of interpreting a particular sign as a symptom. Stoeckle, Zola, and Davidson studied the effects of ethnic values upon the specific decision to seek medical attention and on the differential interpretation of objectively similar symptoms. Freidson illustrated the different processes through which members of different social groups move in obtaining diagnosis (lay and professional) and in seeking care. Suchman attempted an interesting and promising approach which links demographic factors to social structure, both of these to medical orientation and in turn to health and medical care (12).

Barrier to the utilization of these services by the poor may be present at one or more levels in the path leading to the actual use of preventive health services. Poorer people may be less aware of the benefit of the program. Furthermore, given their harsh living conditions, they may assign less importance than the better off to preventive care. Even if the poor perceive a need for preventive care, they may fail to seek it because of personal barriers such as lack of money or transportation or a negative perception of health services. Finally, obtaining access to the desired program or service may be limited by service-related deficiencies such as already fully booked service rosters, long waits, and difficulties in obtaining laboratory

exams. Negative perceptions of the quality of public health services could potentially reduce utilization, but studies consistently show high levels of user satisfaction with both public and private health services (13).

They study was found high access to and high satisfaction with public health services, there is strong association between economic level and type of service used. Important differences in the use of public sector primary health care according to health insurance coverage were found. In all health quintiles, insured individuals were less than half as likely as the uninsured to use government services. Using a Poisson regression model with utilization of primary health care as the outcome, they assessed the effects of health insurance coverage after adjustment for the effect of wealth (Barros and Hirakata 2003). Having private health insurance reduced the use of primary health care by 63 percent (adjusted relative risk = 0.37; 95 percent confidence interval = 0.26 – 0.52) (13).

Defining needs as rational drives implies a corresponding conception of health. Being a critical concept supporting (or subverting) practical judgment about health care practice and health policy, the concept of “health” is a contested as the concept of “needs”. Most accounts of “needs” and “health” link these concepts with both prudential and moral judgments. This point towards a prudential definition of health as the bodily state which a person needs. Initially it is necessary to explain the general conception of health, defined in terms of needs, which underlines both the mental and the non-mental aspects of health and the corresponding health care needs (Ramsay 1992). Changes that typically redefine what types of health care will be available and often ration access to it. When health care needs are invoked, policy debates, technical problems in health care management, epidemiology and health care ethics meet wider. Yet with a few honorable exceptions these interfaces around the concept of the need for health care are under analyzed.

Needs for health care have, it transpires, to be analyzed within a general theory of needs and a general theory of needs has to be based upon a theory of drives. The needs also basic in the sense of being motivationally. We become spontaneously

conscious and not the outcome of other conscious processes. Through habit, reinforcement and over determination our natural drives tend to focus upon quite specific kinds of satisfier, sometimes for particular individual satisfier (15, 18).

2.4 Previous studies that related to the health service utilization

Jones and Hall and Murphy and Topel assume that health and consumption display complementarities over all ranges of consumption and health. Because this assumption is so central to their conclusions, Smith said, empirical evidence is important to substantiate that theory. Smith cited two studies that provide information about the relationship between health and consumption.

The first study that presents such empirical evidence is a 2006 stated-preference study by University of Oregon Economics Professor Trudy Cameron and UCLA Professor of Public Policy J.R. DeShazo. The study offers individuals a profile of illnesses and asks them to choose the illness they most want to avoid (keeping in mind the annual cost of avoiding that illness).

Cameron and DeShazo model the survey results taking into account the actual health conditions experienced by their survey respondents. By comparing the illness that they were being asked about hypothetically to conditions they had and were currently experiencing it was possible to gauge how their willingness to spend on activities to prolong life or reduce the risks of poor health related to their current health status. The results indicate that individuals who had experienced the illness that was presented to them would be likely to pay more, nearly double, to avoid that disease than a healthy person with no prior experience with the illness. Their results also indicate that individuals who had not experienced the particular disease that was presented them but were ill with other diseases would pay less to avoid a life-threatening disease presented to them than either the healthy person without prior experience or the person who had experienced the particular disease. "The quality of their lives was lower, so they were less willing to pay to prolong their lives than those with higher qualities of life," Smith said.

The second set of empirical evidence comes from a revealed-preference study that Smith conducted with University of Tennessee Assistant Economics Professor Mary Evans based on a panel of older adults interviewed as part of the Health and Retirement Study. Evans and Smith considered the labor market choices of these adults in 1994.

Smith said that one could use a person's willingness to accept wage compensation in exchange for increased risk on the job to evaluate the complementarities relationship between health and consumption. The study revealed that respondent between the ages of 51 and 55 who were in excellent health required twice as high compensation to accept serious risks as those in the same age group with poorer health. But he doubts that healthy individuals' willingness to pay to avoid illness will increase without limit as income increases. At some price point individuals will no longer be willing to pay to avoid the “marginal” illness he suggested.

As in the Cameron and DeShazo study, the bottom line is that people who are healthy (those who have a high quality of life) are more willing to pay more to avoid serious illness than people who are not healthy (those who don't have a high quality of life).

"The question of a limit to complementarities between health and consumption is likely to influence a significant amount of research that we do in health economics. We can only hope to improve our descriptions of people’s preferences through developing a better understanding of how the information and incentives that we provide people influence their choices," Smith said (19).

There are study about the public-private mix of the Greek health system, the purpose of that study was to assess whether variations in the utilization of the health service, both primary and inpatient care, were associated with underlying health care needs and/or various socio-economic factors. This study has demonstrated a positive relationship between health need and the utilization of health services under a mixed

public-private funded health care system. Health need, defined by self-perceived health status, was the most important determinant for visiting public or private sector physicians, emergency departments and admissions to the hospitals. Moreover, health need and low income were the main factors influencing subsequent visits to public sector physicians. Concerning the use of public versus private services, we observed that socio-economic characteristics of individuals were the main determinants. People with higher education and income levels used more private sector services, although they were not the exclusive users, since low-income groups used private services as well. In Greece, it seems that access into the health system is relatively easy. However the aim is to access a complete, uniform and satisfying public health system with respect to the quality and the extent of provided services (20).

Another study was talked about potential barriers to the use of health services among ethnic minorities. The objectives of this study are to present an overview of the potential barriers and the factors, which may restrict ethnic minority patients from using health services. The findings were potential barriers occurred at three different levels; patient level, provider level and system level. The barriers at patient level were related to the patient characteristics; demographic variables, social structure variables, health beliefs and attitudes, personal enabling resources, community enabling resources, perceived illness and personal health practices. The barriers at provider level were related to the provider characteristics; skills and attitudes. The barriers at system level were related to the system characteristics; the organization of the health care system (21).

2.5 International Health Regulation (IHR) 2005

International Health Regulation (IHR) seeks to protect against, control and provide a mechanism to initiate a public health response to the threat of international spread of disease of biological, chemical or radio nuclear origin, or as a **"**public health emergency of international concern**"** means an extraordinary event which is determined, as provided in these Regulations:

(a) To constitute a public health risk to other States through the international spread of disease, and

(b) To potentially require a coordinated international response.

Member States endorsed, during the 58th session of the World Health Assembly in 2005, a legally binding international agreement.

The Implementation of International Health Regulation shall be guided by the goal of their universal application for their protection of all people of the world from the international spread of diseases and States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to legislate and to implement legislations in pursuance of their health policies. In doing so they should uphold the purpose of these regulations.

The purpose and scope of these regulations are to prevent, protect against, control and provide a public health response to the international spread of disease in ways that are commensurate with and restricted to public health risks, and which avoid unnecessary interference with international traffic, in the case of a conveyance, a voyage between points of entry in the territories of more than one State, or a voyage between points of entry in the territory or territories of the same State if the conveyance has contacts with the territory of any other State on its voyage but only as regards those contacts; in the case of a traveler, a voyage involving entry into the territory of a State other than the territory of the State in which that traveler commences the voyage; and trade.

There are some recommendations issued by WHO to States Parties with respect to persons may include the following advice , among others, review proof or medical examination and any laboratory analysis, require medical examinations, require vaccination or other prophylaxis, place suspect persons under public health observation, also refuse entry of suspect and affected persons (5,6).

2.6 Port Health Office

Port Health Office is a competent authority in port has main task to prevent and manage quarantine diseases, communicable diseases with outbreak potential, new emerging and re-emerging diseases. This task is in accordance with the International Health Regulation.

Port health office is a technical unit of the Indonesian health department which responsible and reporting to general director of Environment, Prevention and Disease Control. Port health office functions as to prevent entry of quarantine diseases and communicable diseases which have potential of outbreak and expected to manage health risk from other countries without interfering with trades and travels.

Port Health Office consist of: health quarantine section, environmental risk control, and port healthcare service. Port healthcare service programs including outpatient department, referral system, emergency care and medical assessment of port community, aims to support the health quarantine program (1, 2, 22).

2.7 Concepts and Framework of Health Service Utilization

The Behavioral Model of Health Service Utilization was initially develop in the late 1960s to assists the understanding of why families use health services; to define and measure equitable access to health care; to assist in developing policies to promote equitable access.

Ronald M. Andersen intents to review the development of a model of health services' use. He wanted to stress that the model was initially designed to explain the use of normal personal health services rather than to focus on the important interactions that take place as people receive care, or on health outcomes. This model suggests that people's use of health services is a function of their predisposition to use services, factors which enable or impede use, and their need for care. On the one hand, each component might be conceived of as making an independent contribution

to predicting use. On the other, the model suggests an explanatory process or causal ordering where the predisposing factors might be exogenous (especially the demographic and social structure), some enabling resources are necessary but not sufficient conditions for use, and some need must be defined for use to actually take place (23).

2.7.1 Predisposing factors

Among the predisposing characteristics, demographic factors such as age and gender represent biological imperatives suggesting the likelihood that people will need health services (Hulka and Wheat 1985). Social structure is measured by a broad array of factors that determine the status of a person in the community, his or her ability to cope with presenting problems and commanding resources to deal with these problems, and how healthy or unhealthy by the physical environment is likely to be. Traditional measures used to assess social structure include education, occupation, and ethnicity. The model has been criticized for not paying enough attention to social networks, social interactions, and culture (Bass and Noelker 1987; Guendelman 1991; Portes, Kyle, and Eaton 1992).

Health beliefs are attitudes, values, and knowledge that people have about health and health services that might influence their subsequent perceptions of need and use of health services. Some efforts have been made to integrate elements of the behavioral model with elements of the well-known health beliefs model to explain use and especially preventive health behavior (Green et al. 1980). If we examine beliefs about a particular disease, measure need associated with the disease, the relationship will probably be much stronger than if we try to relate general health beliefs to global measures of need and a summary measure of all services received in a given period of time (23).

2.7.2 Enabling and Need factors

Both community and personal enabling resources must be present for use to take place. First, health personnel and facilities must be available where people live and work. Then people must have the means and know-how to get to those services

and make use of them. Income, health insurance, a regular source of care, and travel and waiting times are some of the measures that can be important here. One concern about the enabling resources is that organizational factors are not given enough attention. Another expressed concern is that more precise measures of health insurance benefits that have often been used with this model are necessary to do justice to the potential importance of the personal enabling resources (Mechanic 1979).

Indeed, perceived need is largely a social phenomenon which, when appropriately model, should itself be largely explained by social structure and health beliefs. However, within rather broad limits established by predisposing and enabling factors, there is a biological imperative that accounts for some of people's help seeking and consumption of health services (Hulka and Wheat 1985). The biological imperative is better represented by the evaluated component of need (Andersen, Kravits, and Anderson 1975). Evaluated need represent professional judgments about people's health status and their need for medical care. Logical expectation of the model are that perceived need will better help us to understand care-seeking and adherence to a medical regimen, while evaluated need will be more closely related to the kind and amount of treatment that will be provided after a patient has presented to a medical care provider. The predisposing factors, enabling and need factors would have differential ability to explain use, depending on what type of service was examined (Andersen 1968). The outcomes measures have been critized as too gross (Penchansky 1976). More specific measures should relate to a particular condition, type of service or practitioner, or should be linked in an episode of illness (23).

2.7.3 Characteristics of health care utilization

The utilization of health service can be viewed as a type of individual behavior. In general the behavioral sciences have attempted to explain individual behavior as a function of characteristics of the individual himself, characteristics of the environment in which he lives, and/or some interaction of these individual and societal forces (Moore, 1969).

Characteristics of health care utilization are an important because the configuration of the other components of the framework varies considerably, depending on special characteristics of the unit analyzed. With respect to type of health service will subsequently argue that societal determinants have resulted in very different long-term trends for physician, hospital, and dental service. Utilization can also be characterized by purpose. Primary care has to do with stopping illness before it begins. Secondary care refers to the process of treatment which returns an individual to his previous state of functioning. Tertiary care provides stabilization for long-term irreversible illnesses such as heart disease or diabetes. Custodial care essentially provides for the personal needs of the patient but makes no effort to treat his underlying illness condition. The determinants of each type of care vary considerably. For example, factors related to use of preventive services such as general checkups, immunization and vaccinations differ from those related to diagnosis and treatment (National Center for Health Statistics, 1965a: 8-10, 25-26). A final characteristic describing the utilization to be studied is the unit of analysis. It makes considerable difference whether we are studying initial contact with a physician during a given period of time or whether we are studying the number of services received in a given period of time. For example, the characteristics of the individual might be of primary importance in explaining whether or not any services are received. However, characteristics of the physician and, indeed, of the total health service system in which the individual enters, might be expected to be decisive in determining the overall volume of services. The episode approach is necessary if one is interested in studying important questions such as care associated with specific diagnoses, reasons for delay in seeking care, continuity of care received, level of patient compliance, and patterns of referral (24).

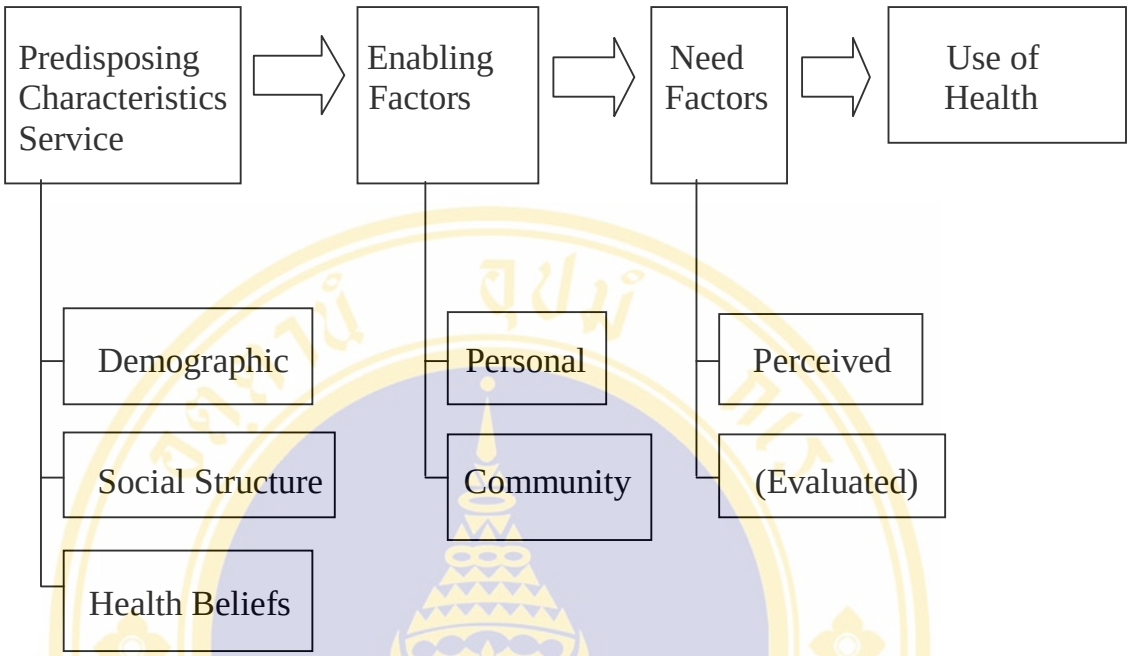


Figure 2 The initial behavioral model by ronald m. andersen (1960s)

CHAPTER 3
RESEARCH METHODOLOGY

3.1 Study design

This study is a descriptive cross-sectional study or prevalence study that attempts to find out the relationship of health center among sailors who come to Port Health Service Center in Bitung sea port, Bitung City, North Sulawesi Province, Indonesia.

3.2 Study population

Target population in this study were sailors whose their ship and were to dock at Bitung Sea Port, at the second time, in last six months, from January 2008 to February 2008, in Bitung City, North Sulawesi Province, Indonesia. The port health center is a health service center in Port Health Office, which located in Bitung Sea Port area.

3.3 Sample size

The area of this study was in Bitung Sea Port, Bitung City of North Sulawesi Province and sample size was based on calculation from the following formula : (25)

$$n = \frac{Z^2_{\alpha/2} PQ}{d^2}$$

With :

n = Number of sample size

Z = Standard normal variation (95 % confidence interval, z = 1.96);

P = Estimated proportion of utilization of port health center. (0,5)

Q = 1 – P

d = Degree of accuracy (0.06)

Sample Size (n) = 266

3.4 Sample selection

In this study, sailors are in on duty or off duty in Bitung seaport. The sailors who on duty whose their ship and were to dock at Bitung Sea Port. The sailors who are off duty are those who stay near the port. Both groups visited Bitung port at the second time, in last six months. They were interviewed in port health center, and the sailors who did not come to port health center, researcher will interview them on the ships. There are 266 sailors included age group 20 and > 40 years old. For the number of the sample size, we calculated the proportion of respondents by estimated proportion of utilization of port health center was 0.5 and multiplied by 100% in order to make the proportion to percentage. The data was collected from January, 8th to February, 9th 2008. According to the population of the sailors, the researcher had plan for sampling selection by using formula of k interval. Sailors were selected one with in k interval will calculate by using this formula:

$$k = \frac{a}{n} \times d$$

Where,

k = sampling interval k

a = average actual number of patients consumed services at the Health center per day.

d = total number of days planned for data collection.

n = required number of patients consumed services at the Health center (24)

In this research, a = 26, d = 30, n = 266, and k = 3.

In the fact, the researcher could not have used the k interval, because of the limitation of the time during data collection. At the last moment, the researcher decided to interview every sailor who came in the port health center and the sailors who were met on the ship or who are in port area, as in criteria fulfillment of this research.

3.5 Research instrument

Data were collected with a constructed questionnaire. Most of the questions in the questionnaire consisted of closed questions, but some were open ended. English questionnaire was translated to Indonesia language. The structured questionnaire consisted of 4 parts as the following :

Part 1 : Socio-demographic characteristics

The questions in this part included socio-demographic characteristics of the respondents. They were composed of age, marital status, educational attainment, present position and the sailor's income. The questions are closed and open-ended.

Part 2 : Attitudes towards health service

The attitude questions were concerned towards Port health service center. Data were collected from sailors who used port health center. From 266 sample size defined 104 sailors using port health center and the rest, 162 sailors have never used port health center when they had health problem. They eventually had medical check up as required. The sailor's perception and affection about the services of Port health service center was examined. The questions ask the opinion of the respondents and measure by giving degree of agreement. The attitude of the respondents towards health service center had 5 answers for each question, it would be given the score according to the degree of attitude (5=strongly agree, 4=agree, 3=don't know/not sure, 2=disagree, 1=strongly disagree). The overall attitude was classified into: levels of low, moderate, and high.

Part 3 : Enabling Factors

There were 4 variables supporting enabling factors. Those variables were expectation of cost treatment, financial sources, convenience towards health center, perceived availability, and human relationship between consumer and provider.

For each respondent, the information got on amount of money that they pay for every kind of treatment at health center. The expenses for health care are categorized into free, cheap, reasonable and expensive.

The sources for this amount of money were from saving, making claim, health insurance, exemption fee, borrow, and selling property.

Concerning the convenience, the respondents had interviewed whether or not they were delighted with waiting time for health care available working hours, administrative procedure, and treatment procedure. The perceived availability of health care facilities, and human relationship between consumer and provider, those were interviewed about available medical equipment and drug, health care provider's skill and how good the relationship between consumer or patient and provider, in this case is port health center, according to current experience of the sailors who had been received the port health services.

For last three variables (convenience, perceived availability, and human relationship), the answers had given by 5 responses: 1 for response of very poor, 2 for poor, 3 for moderate, 4 for good, and 5 for very good.

Part 4 : Need factors

Type of treatment service is categorized to Prevention (vaccination), Health Promotion, and Curative (taking drug, medical intervention and basic first aid management). Structured interview was carry out using questionnaires covering information on reported kinds of chief complaint of respondents in the last six months and the health service facility they use for health care.

3.6 Pre-Test

The questionnaires had pre-tested for the reliability test of the attitude part for 30 cases. The respondents were purposively select from the sailors which their ship to dock at Bitung Sea Port. The pre-test was doing on January 2008 in Manado Sea Port, Manado City, and North Sulawesi Province by trained interviewers. According to the reliability test of the attitude scale, by using α-coefficient method, it revealed that the α-coefficient of the attitude scale was 0.8720.

3.7 Data Collection

The Data were collected by interviewing the sailors in port health center and who did not come; the interviewer visited the sailors on the ship, and in port area. After interview, the interviewers had to check all of the questionnaire items, they had to be complete filling. The interviewers were trained clearly and correctly understand the questionnaire in order to complete all the questions. They also have to practice in asking the questions before going to interview the sailors.

Data were collected by using an interview questionnaire after asking permission and explaining the purpose of the study. All study samples were taken from sailors who came to port health center and who stayed on the ship or on port area during research period. The researcher had plan before collecting the data according to k interval sampling. After 10 days had collected, the researcher realized, that was not possible to cover all sample size. At the last moment, the interview had taken for all sailors who came to the port health center and who stayed on the ship or in port area.

3.8 Data Analyses

Data were code analyzed by using a computer, with Minitab program. The Data was analyzed according to each objective of the research. To describe each variable included in the study, percentages, mean and perquantile are applied based on type of

variables. The analysis of whether there had association between independent and dependent variable were analyzed by Chi-square test.

The assessments of socio-demographic characteristics use mean to interpret the results. The attitudes measurement give score 5 = “strongly agree”, 4 = “agree”, 3 = “don’t know”/”not sure”, 2 = “disagree”, 1 = “strongly disagree”. The attitudes are classified into: low, moderate, and high attitude scores.

CHAPTER 4
RESULTS

The data were collected from 266 sailors in Bitung international sea Port. The sailors, who had interviewed, ever came to Bitung port in last six months.

The results are described into 2 parts, descriptive part and analytic part. The descriptive part presented in 3 sections. There are, predisposing factors (socio-demographic characteristics, attitude towards port health center), enabling factors (convenience towards port health center, perceived availability and human relationship between consumer and provider), and need factors (type of treatment services and health complaint). The analytic part presents the relationship between utilization of the port health center and socio-demographic characteristics, attitudes towards health center, enabling factors, and need factors.

Part I Descriptive of all independent variables

4.1 Socio-demographic characteristics of the sailors

Socio-demographic characteristics of the sailors were identified by age, marital status, educational attainment, present job/current position, sailor's income and sailor's attitude. The distribution of the sailor characteristics presented in table 1. Higher age group of the sailors (36 percent) is concentrated in 30 to 36 years old. There was only small fraction (13 percent) in 37 to 40 years old group. According to marital status, most of the sailors were married (62.78%). The result of sailors educational attainment showed only 2 sailors finished primary school graduated (0.75%). but 170 sailors were in secondary or high school graduate (63.91%), 15 sailors were in university graduates (5.64 %), and 79 sailors were vocational school graduated (29.70%). For working situation, the present job or current position, 30

sailors were in the highest job as master or captain (11.28%), 42 sailors as chiefs (chief 1, chief 2, chief 3), 55 sailors as technicians (machine engineer and Marconi's) (20.68%). Most of sailors (52.26%) were deck's crew. The sailor's monthly income average ranges from 700,000 Rupiah to 5,000,000 Rupiah. Most of them (47.74%) had income 850,000 Rupiah to 1,850,000 Rupiah. The range from 700,000 to 850,000 Rupiah was 28.95 percent. Only 23.31 percent sailors got salary from 1,850,000 to 5,000,000 Rupiah. 58.65 percent felt sufficient but no saving, 29.70 percent sufficient and still have saving, but 11.65 percent sailors stated that their income could not sufficient for family's expenses. 43.61 percent sailors have own house and 56.39 percent sailors living in rental house, rental room and live with friends. A majority of the sailors (97.37%) thought that they have moderate level of economic status, and 2.63 percent sailors thought they were in poor level. Of 266 sailors, 62.03% are the third and more visiting to Bitung Port.

Table 1 Percentage distribution of sailors classified by socio-demographic factors

Socio-demographic characteristics	**Percent (%)**	**Number n = 266**
Age		
20-29	27.44	73
30-36	36.09	96
37-40	13.91	37
41 + years	22.56	60
(Mean=35.6, Median=35, Q1=29, Q3=40, Min=23, Max=56)		
Marital status		
Married	62.78	167
Unmarried	22.56	60
Other (divorced, widower, separate)	14.66	39

Table 1 Percentage distribution of sailors classified by socio-demographic factors (cont.)

	Percent (%)	Number n = 266
Educational attainment		
Primary school	0.75	2
Secondary/high school	63.91	170
University	5.64	15
Vocational	29.70	79
Present job/Position		
Master/Captain	11.28	30
Chiefs	15.79	42
Machine eng/Marconi's	20.68	55
Deck's crew	52.26	139
Income/Salary		
700,000-850,000 Rupiah	28.95	77
850,001-1,850,000 Rupiah	47.74	127
1,850,001-5,000,000 Rupiah	23.31	62
(Mean =1.523, 872, Median= 1,500,000, Q1=850,000, Q3=1,850,000, Min=700,000, Max=5,000,000)		
Family member		
1 – 2 persons	28.95	77
3 – 5 persons	68.80	183
6 – 7 persons	2.26	6
(Mean=3, Median=3, Q1=2, Q3=5, Min=1, Max=7)		

Table 1 Percentage distribution of sailors classified by socio-demographic factors (cont.)

	Percent (%)	Number n = 266
Type of residence ownership		
Own house	43.61	116
Others (live with kinds)	56.39	150
How sufficient for family's expenses		
Sufficient and have saving	29.70	79
Sufficient and no saving	58.65	156
Not sufficient	11.65	31
Economic status		
Moderate	97.37	259
Poor	2.63	7

4.2 Distribution of the pattern of health service utilization among sailors

There were 266 sailors who came to Bitung sea port in the last 6 months. From table 3, in their opinion, when they have health complaint, most of them (52.26%) would take medicine by themselves, 20.3 percent will go to port health center, 4.89 percent go to government hospital, 1.13 percent go to private clinic, and 1.5 percent go to private hospital, 9.77 percent sailors just ignore their health complaint, and other (traditional healer) 10.15 percent. If the health complaint still remain, 33.08 percent sailors will take step to go to port health center, 25.56 percent go to government hospital, 15.41 percent take medicine by themselves, 3.38 percent go to private clinic, and 3.01 percent go to private hospital, and 19.55 percent will go to other (traditional

healer). There are no sailors just want to ignore their health complaint. Of 266 sailors who ever come to Bitung Sea Port. Table 2 shows, there are 33.08 percent will go to port health center as a last choice when their health complaint still remain.

Based on the real situation, from data has collected, there were 60.9 percent sailors have used port health center just for medical check up, and 39.1 percent sailors ever used port health center, when they need to get health services. The frequency of using port health center of 104 sailors, 34.96 percent sailors used port health center only 1 time, 2.26 percent used 2 times, and 1.88 used more than 2 times. (Table 4)

Table 2 Percentage distribution of places of utilization among sailors, when they have health complaint

	Percent (%)	**Number n=266**
Choose health center if sailors have health complaint		
ignore	9.77	26
take medicine by myself	52.26	139
go to government hospital	4.89	13
go to private clinic	1.13	3
go to private hospital	1.50	4
go to port health center	20.30	54
other (traditional healer)	10.15	27

Table 3 Percentage distribution of places of utilization among sailors, when their health complaints still remain

	Percent (%)	Number n=266
Choose health center if the health complaint still remain		
Ignore	0	0
take medicine by myself	15.41	41
go to government hospital	25.56	68
go to private clinic	3.38	9
go to private hospital	3.01	8
go to port health center	33.08	88
other (traditional healer)	19.55	52

Table 4 Percentage distribution of the pattern of port health center utilization among sailors in last six months

	Percent (%)	Number n=266
The pattern of port health center utilization among sailors		
medical check up	60.90	162
med check up+treat 1 time for health condition	34.96	93
med check up+treat 2 times for health condition	2.26	6
med check up+treat > 2 times for health condition	1.88	5

4.3 Reasons for not using port health services center

The Data in table 4 shows the proportion of reasons for not using port health service center. Among 162 sailors who did not use port health center when they had health complaints (used as a routine service only), the number of reporting of the common reasons (72.84%) was other reason (including sailors did not know that in Bitung port have health services and some of them have their own health facility). 9.26 percent indicated that was inconvenient to go to the port health center, and 16.67% sailors stated that they didn't go because their relatives or friend or captain suggest them to go to other health service facility, including private clinic or private hospital outside of the port area.

Table 5 Percentage distribution of sailors who used as routine, classified by reasons for not used health center

Reasons for not use port health center	Percent (%)	Number n=162
Don't trust treatment from health personnel	1.23	2
It is inconvenient go to port health center	9.26	15
Relatives/friends/captain go to others	16.67	27
don't know the presence of PHC	72.84	118

According to Data on table 3, there were 104 sailors (39.1%) ever used port health center due to their health condition. The utilization of port health center is then classified into 2 groups. 89.42 percent sailors who used 1 time (once) and 10.58 sailors who used more than 1 time (more than once).

Table 6 Percentage of sailors who used port health center as non-routine, classified by level of utilization

	Percent (%)	**Number n=104**
Level of utilization		
Once (1 time)	89.42	93
More than 1 time	10.58	11

4.4 Attitude towards port health services center

In this part there are 16 questions about the attitude towards port health center (11 positive and 5 negative questions). There are 2 kinds of statement, positive and negative statements, the questions 2, 4, 6, 8, 9, 11, 12, 13, 14, 15, and 16 in table 3 are positive statements and the rest are negative statements. The answers for this part is arranged from strongly agree, agree, not sure, disagree, and strongly disagree for the respondents to choose. The score of the positive answer can be scored as 5 for strongly agree, 4 for agree, 3 for not sure, 2 for disagree, and 1 for strongly disagree. Negative statements can be scored as 1 for strongly agree, 2 for agree, 3 for not sure, 4 for disagree, and 5 strongly disagree, which is the opposite way with the positive answer. Overall attitude score is 69. The average attitude score is 58.35, minimum score is 49, and the maximum score is 69. The level of attitude divided into 3 groups as low attitude, moderate, and high attitude by using quantile ranks as the cut point. The score of respondent had low attitude 23.08% (49 – 57), moderate attitude 55.77% (58 – 60), and high attitude 21.15% (61 -69) towards port health center.

From table 6, as the criteria mentioned above, the majority of sailors, 55 percent, are moderate attitude towards port health center. 21 and 23 percent are in high and low attitude groups.

Table 7 Percentage distribution of sailors who used port health center as non-routine, classified by level of attitudes towards port health center

Attitude's level	**Percent (%)**	**Number n=104**
Low attitude (49 – 57)	23.08	24
Moderate attitude (58 – 60)	55.77	58
High attitude (61 – 69)	21.15	22
(Mean=58.35, Min=49, Max=69, Q1=57, Q3=60)		

According to the details of attitude questionnaires from table 1, a majority (87.5%) of the sailors gave agree with the following aspects that the friendliness and courtesy of health personnel in Bitung port health center is good, (86.54%) sailors stated that the health personnel of Bitung port health center pay attention and listen about their health problems. Bitung port health center has good environment and overall cleanliness (86.54%).

Table 8 Percentage distribution of attitude level with port health center

Statement	Percentage (n=104)		
	Agree	DK/NS	Disagree
1. Medicine in The public health service in Bitung port is more effective than private health service	38.47	47.12	14.42
2. Bitung Port health care provide some free service	8.65	43.27	48.08
3. Bitung port health service give long waiting time more than private health service	50.96	36.54	12.5
3. Personnel of port health service in Bitung city pay attention and listen to you about your health problems	86.54	13.46	0
5. When you go to Bitung port health service the health personnel always absent	75.96	18.27	5.77
6. Friendliness and courtesy of the health personnel in Bitung port health center	87.5	8.65	3.85
7. The quality of drugs in private health service better than port health service in Bitung	32.69	49.04	18.27
8. Port health service in Bitung has good Environment	86.54	13.46	0
9. Overall cleanliness of the Bitung Health center	84.62	15.38	0
10. Bitung Port health service's medical equipments are modern	35.58	57.69	6.73
11. Bitung Port health service has drug enough for Treatment	34.62	56.73	8.65
12. Bitung Port health service has medical equipment enough for treatment	65.38	26.92	7.69
13. You can trust diagnosis from health personnel of Port health service	67.23	27.88	2.88

Table 8 Percentage distribution of attitude level with port health center (cont.)

Statement	Percentage (n=104)		
	Agree	DK/NS	Disagree
14. You can trust treatment from health personnel of port health service in Bitung	84.61	14.42	0.96
15. Bitung Port health service can provide only treatment for simple illness and injury	52.88	38.46	8.65
16. Doctor in port health service of Bitung has skill and competency	78.85	18.27	2.88

4.5 Convenience towards port health center

Table 8 shows their opinion about the cost they had to expense when they get treatment from port health center. Of 104 sailors who used port health center as non-routine, 35.58 percent stated that they did not pay or free for get the treatment service, 38.46 percent stated the cost is cheap, and 25.96 percent sailors were agree about the cost because reasonable. There was no sailor who thinks that to get treatment from port health center is expensive.

Table 9 Percentage distribution of expectation in getting the services

	Percent (%)	Number n=104
Cost of treatment		
Free	35.58	37
Cheap	38.46	40
Reasonable	25.96	27

In table 9 shows about financial sources to support the sailors to getting treatment. Of 104 sailors 62.50 percent making claims to their company when they get treatment from port health center, 17.31 percent from health insurance, and 20.19 percent got exemption fee. There was no sailors take money from their saving as financial source to getting the treatment.

Table 10 Percentage distribution of financial source for getting treatment

	Percent (%)	Number n=104
Financial source		
Making claims	62.50	65
Health insurance	17.31	18
Exemption fee	20.19	21

The Data in table 10, each sailor has given answers in 5 rankings about their feeling of convenience towards port health center. 1 is very poor, 2 is poor, 3 is moderate, 4 is good, and 5 is very good. Convenience towards port health center,

including the waiting time, working hour per day, administrative procedure, and treatment procedure. The maximum score the sailors can give is 20, and minimum score is 4. By using percentile, the category is classified into 3 rankings. Ranking 1 is Poor (11 – 12), there were 27.88 percent sailors. 46.15 percent are in ranking 2 (13 - 14), and for Good (15 -16) 25.96 percent.

Table 11 Percentage distribution of convenience towards port health center

	Percent (%)	**Number n=104**
Convenience		
Good	25.96	27
Moderate	46.15	48
Poor	27.88	29
(Mean =13.54, Med=14, Min=11, Max=16, Q1=12, Q3=15)		

4.6 Perceived availability and relationship between consumer and provider

Table 11 shows about perceived availability among sailors who used port health center as non-routine, exclude medical check up for sailors who are off duty, and for getting treatment. The perceived availability about medical equipment, drug available, health care provider's skill, feel comfortably with providers, and communication are good for 32.69 percent sailors. 33.65 percent have moderate rank, and another 33.63 percent felt poor.

Table 12 Percentage distribution of perceived availability and relationship between consumer and provider

	Percent (%)	Number n=104
Perceived availability and human relationship		
Good	32.69	34
Moderate	33.65	35
Poor	33.63	35
(Mean=17.36, Med=18, Min=14, Max=21, Q1=16, Q3=19)		

4.7 Requirement to visit port health center

The percentage of requirement to visit port health shows in table 12. Based on the data had collected, 13.46 percent sailors who were off duty doing medical check up and get treatment. 26.92 percent sailors who were off duty came to port health center for getting treatment based on their health complaint, and 59.62 percent sailors who were on duty said that they go to port health center to doing medical check up and getting treatment. According to their health complaint, mostly of sailors who used port health center as non-routine, went to port health center because of fever, 7.69 percent got headache, 14.42 percent cough, 23.08 percent because of injury. 11.54 percent sailors gave answer that they go to port health center for consultation (7 sailors), and 5 sailors do the vaccination.

Table 13 Percentage distribution of requirement to visit port health center

	Percent (%)	Number n=104
Type of treatment service		
Medical check up+treat (off duty)	13.46	14
Medical treatment (off duty)	26.92	28
Medical check up + treatment (on duty)	59.62	62
Health complaint		
Headache	7.69	8
Fever	43.27	45
Cough	14.42	15
Injury	23.08	24
Other (consultation 7, vaccination 5)	11.54	12

Part II Factors associated to utilization of port health center

In this part, the aspects of socio-demographic factors, attitudes, enabling factors, and need factors are examined to relate with utilization of port health center. Those will present in this part by using statistical method of Chi-square test.

4.8 Association between socio-demographic characteristics factors and utilization of port health center

Table 13 shows the association between socio-demographic characteristics factors and utilization of port health center. There is association between current position factor, and utilization of port health center. Explicitly, about 35.25 percent sailors who are Deck's crew was less likely to use port health center than those who are Captain or Master. That is 63.33 percent of Captain or Master use port health center. For type of residence, there is association to utilization of port health center. It

found significantly associated with utilization (p-value 0.003), and sufficient for family expenses had also significantly associated with utilization (p-value 0.039). There is no association between age factor, marital status, educational attainment, and income per month, related to the utilization of port health center.

Table 14 Association between socio-demographic characteristics factors and utilization of port health center

Characteristics	**Routine n=162**	**Non-routine n=104**	**X2 (df)**	**p-value**	**n=266**
Age (age group)			**1.383**	**0.71**	
20 – 29 years	(63.01)	(36.99)	(3)		73
30 – 36 years	(59.38)	(40.63)			96
37 + years	(60.82)	(39.18)			97
Marital status			**1.842**	**0.398**	
Married	(58.08)	(41.92)	(2)		167
Unmarried	(63.33)	(36.67)			60
Others	(69.23)	(30.77)			39
Educational attainment			**0.729**	**0.393**	
Primary school +high	(62.79)	(37.21)	(1)		172
Vocational+University	(57.45)	(42.55)			94

Table 14 Association between socio-demographic characteristics factors and utilization of port health center (cont.)

Characteristics	**Routine n=162**	**Non-routine n=104**	**X2 (df)**	**p-value**	**n=266**
Present job/position			**8.776**	**0.032**	
Captain/Master	(36.67)	(63.33)	(3)		30
Chief (1,2,3)	(59.52)	(40.48)			42
Machine eng+Marconi's	(65.45)	(34.55)			55
Deck's crew	(64.75)	(35.25)			139
Income			**3.755**	**0.153**	
700,000 – 850,000 Rupiah	(59.74)	(40.26)	(2)		77
850,001 – 1,850,000 Rupiah	(66.14)	(33.86)			127
1,850,000 – 5,000,000 Rupiah	(51.61)	(48.39)			62
Family member			**0.74**	**0.390**	
≤ 2 persons	(64.94)	(35.06)	(1)		77
> 2 persons	(42.1)	(57.9)			189
Type of residence ownership			**11.38**	**0.003**	
Own house	(50.00)	(50.00)	(2)		116
Others (live with kinds)	(69.33)	(30.67)			150
Sufficient for family expenses			**6.492**	**0.039**	
Sufficient and have saving	(54.43)	(45.57)	(2)		79
Sufficient and no saving	(60.26)	(39.74)			156
Not sufficient	(80.65)	(19.35)			31

Table 14 Association between socio-demographic characteristics factors and utilization of port health center (cont.)

Characteristics	**Routine n=162**	**Non-routine n=104**	**X2 (df)**	**p-value**	**n=266**
Sufficient for family expenses			**6.492**	**0.039**	
Sufficient and have saving	(54.43)	(45.57)	(2)		79
Sufficient and no saving	(60.26)	(39.74)			156
Not sufficient	(80.65)	(19.35)			31
Economic status			**4.615**	**1.00**	
Moderate	(59.85)	(40.15)	(1)		259
Poor	(100.00)	0			7

Note: significant at p-value < 0.05

4.9 Association between attitude towards health center and level of utilization of port health center

Table 14 shows the association between attitude toward port health center and level of utilization of port health center. It was found that there is no association between attitude and level of utilization.

Table 15 Association between attitude towards health center and level of utilization of port health center

	(Level of utilization) more than once n=11	once n=93	X^2	p-value	n=104
Level of attitude			**0.276**	**0.422**	
Low	(12.50)	(87.50)	(1)		24
Moderate	(8.62)	(91.38)			58
High	(13.64)	(86.36)			22

4.10 Association between enabling factors and level of utilization

Table 15 shows the association between enabling factors and level of utilization among sailors who used port health center not only to doing medical check up (as non-routine). It found that treatment cost is significantly associated with level of utilization of port health center (p-value 0.000). Another important factor is financial source. That factor is significantly associated with level of utilization of port health center too. There is no association between convenience, perceived availability and human relationship toward level of utilization of port health center.

Table 16 Association between enabling factors and level of utilization

	(Level of utilization)				
	more than once n=11	**Once n=93**	**X^2**	**p-value**	**n=104**
Treatment cost			**16.432**	**0.000**	
Free	(27.02)	(72.98)	(1)		37
Cheap + reasonable	(1.49)	(98.51)			67
Financial source			**14.971**	**0.000**	
Making claims	(1.54)	(98.46)	(1)		65
Health insurance +exemption fee	(25.64)	(74.36)			39
Convenience			**0.002**	**0.962**	
Good + Moderate	(10.67)	(89.33)	(1)		75
Poor	(10.34)	(89.65)			29
Perceived availability+human relationship			**0.224**	**0.458**	
Good + Moderate	(11.59)	(88.41)	(1)		69
Poor	(8.57)	(91.43)			35

Note: significant at p-value < 0.05

4.11 Association between need factors and level of utilization.

Table 16 shows the association between need factors, in this case are requirement to visit port health center and heath complaint of the sailors. Requirement to visit factor is significantly associated with level of utilization of port health center (p-value 0.003). There is no association between health complaint and level of utilization.

Table 17 Association between need factors and level of utilization

	(Level of utilization)				
	more than once n=11	**once n=93**	**X^2**	**p-value**	**n=104**
Requirement to visit			**8.771**	**0.003**	
Medical check up+treat (off duty) + Medical treatment (off duty)	(21.42)	(78.57)	(1)		42
Med check up + treatment (on duty)	(3.26)	(96.74)			62
Health complaint			**0.017**	**0.897**	
Headache+fever +cough	(10.30)	(89.70)	(1)		68
Injury+other	(11.11)	(88.89)			36

Note: significant at p-value < 0.05

CHAPTER 5
DISCUSSION

This study was a cross sectional study. Its main objective was to study the pattern of using the port health service facilities by the sailors at Bitung international sea port in north Sulawesi province Indonesia. However in this study the sample is evaluated in two major categories, (1) Sailors who require medical report for embarkation by regulations (2) Sailors who seeks medical services for health problems, either they were on or off duty.

The Bitung sea port was selected for this study because the researcher works at the Bitung port health office and need to know the quality of services. As planed by the Indonesian government, it is been developed for major commercial and tourist city in the north Sulawesi. Hence this study will be helpful to fulfill future requirements of the health center in the port for better service. Health center in Bitung sea port is a polyclinic which provides not only health service for sailors but also variety of other services in curative and preventive aspects.

According to the conceptual framework, there are three factors comprised of predisposing factors (socio-demographic characteristics, attitude towards health centre) enabling factors and need factors. The results was divided to two parts, 1) Descriptive part describe all the variables by describing frequency, percentage, mean, SD 2) Analytical part presented by Chi-square and p-value to show the relationship between dependent and independent variables (during analytical process α is consider as 0.05)

5.1 Utilization of health service center and socio-demographic characteristics

The socio-demographic characteristics of respondents, the results showed in age with mean age 35.6years and SD 7.67 years. This was categorize in to three groups, 20-29 years 27.44 percent, 30-36 years 36.09 percent, 37-40 years 13.91 percent and over 41 years group 22.56 percent although all of those were utilized the health center for one or other reason the level of utilization among various age groups are different. And there is no significant association between age of respondents and utilization or level of utilization of the port health center, whereas of the National Population Health Survey, on Indian and Canadian (The atlas of Canada), age is clearly on of the strongest determinants of healthcare utilization (26).

Out of 266 respondents, 167 were married 60 were unmarried and others were divorced, widower or separated and there is no cleared relationship of utilization with the marital status of the sailors at Bitung international sea port (p-value was 0.398 at 95% confident interval)

The great majority of sailors were had secondary or high school level education (educational attainment). It was 63.91 percent. No significant association between level of education and utilization of port health center. Ironically from previous study of National Population Health Survey (1998 – 1999), of their discussion on health indicators, it has been shown that education and income significantly impact to health outcomes. The relationship between lower educational attainment and worse health outcomes occurs throughout the life course (12, 26, 27).

In the social sciences, socio-economic status has been measured by three different indicators, taken either separately or in combination: educational attainment, income, and occupational status. Although three measures are moderately correlated, each captures distinctive aspects of social position (27). Even though it was expected to have a relationship between economical independents variable such as income and economic status and utilization of the port health center, it is not so. But it is shown significant level of association between “type of residence ownership”, “present job or

position" and "how sufficient for family expenses" with utilization of the port health center. Among the positions of the sailors as obviously more were deck's crew (52.26%) who represent the most of the man power of the any vessel. Higher the position lowers the number as it is, represented by captains and masters who are 11.28 percent. It was showed chi-square value 8.776 (p-value 0.032). Regarding sufficient of family expenses, the majority (58.65%) said "sufficient but no savings" out of them major fraction, 60.26 percent did not use the port health facilities. Majority of the respondents lived not in their own house but they prefer to use other health facilities not the port health center (in their opinion when they have health problem), but who lived in their own house (43.61%) showed no difference, 50 percent preferred to use port health facilities and other 50 percent go to other health care providers.

5.2 Distribution of health service utilization among sailors

The choices of medical facilities among sailors were changed in vast range of options in case of illness. The majority of sailors willing to treat them by themselves (52.26%) but 37.97 percent willing to take treatment from any kind of health care providers. Only 20.3 percent wish to seek the care from port health center.

5.3 Reasons for not using the port health center and level of utilization

It is mandatory a sailor to get medical clearance while embarkation at any international port and one of the main duties of port health centre staff is to make sure no communicable diseases enter to the country via the particular port. Hence routine medical examination and issuing of medical report for declaration of good health of the crew is the utmost priority. Other than this general procedure any sailor who is sick can get the treatment from port health center.

For evaluation of level of utilization all sailors divided in to main two groups, (1) who no need to come to port health center, (2) who need to come to port health center.

Who no need to come: This is the crew on a ship who need only medical report for embarkation, for this purpose they no need to come to port health center though the services been utilized.

Who need to come: If any sailor need medical treatment during dock period they need to report port health center otherwise sailors who are off duty may need to get medical report before debarkation or medical treatment for any illness need to report port health center.

The level of utilization was measured by the frequency of visit to the port health service center, either once or more. 89.42 percent had used once and 10.58 percent more than once. The main objective of this study is to find out the factors affecting the level of utilization of port health center by the sailors, so main factors considered in this research were attitude towards the port health center, enabling factors and need factors. In following, those will be discussed separately.

5.4 Utilization of port health center and attitude towards the port health center

The all respondents (266) as mentioned above utilized the port health center for two main reasons either to take health document or medical treatment. Health document is required for embarkation or upgrade their health record by who had already embarked. That shows they could be either on duty or off duty. As regular practice health document for embarkation is issued at the deck so those who need only document and on duty have no reason to come to the health centre unless they fall sick. Out of those who responded for this research 162 sailors categorize in to this group. Others who truly come to the port health centre for either health document purposes (who were off duty) or to get treatment either they were on duty or off duty. Attitude about the health centre was measured by using those who truly came to the port health facilities.

The attitude of respondents towards the health centre had 3 answers for each statement, ‘Agree” (A), “not sure” (NS) and “disagree” (DA) according to whether

the sentence negative or positive the score for each statement differs. For positive statement “agree” carries 3 points, “not sure” 2 points and “disagree” 1 point. For negative statement “agree” carries 1 point, “not sure” 2 points and “disagree” 3 points. To measure the overall attitude, sum up the total score for each respondent. As this total score showed not normal distribution (Mean = 58.35, Min = 49, Max = 69, Q1=57, Q3=60) who gets score between minimum and Q1 (49-57) considered as having low attitude level and who gets score in range between Q1 to Q3 (58-60) considered as having moderate attitude level, and who gets score more than Q3 to maximum (61-69) considered as having high attitude. There is a great majority in the moderate attitude level about the health center as 56 percent and 22 percent had high attitude about the service and facilities. The rest 24 percent had low attitude. There is no significant association between the level of attitude and level of utilization (X^2 = 0.276, p-value = 0.422). In another situation, according to previous study, there was significantly relationship between attitudes and the health services utilization (28).

Attitude scales are relating crude measuring instruments and we can not expect too much from that. Their main function is to divide people roughly in to a number of broad groups with regard to particular attitude. Such scales can not be themselves been expected to provide us with sublet insight in an individual case. They are technical in placing people in a continued relation to one another and absolutely impossible to say which method is best. Each has important described features but each of them also opened to criticism. If we wish to say attitude patterning or explore theories of attitudes than probably the Likert’s procedure will be the most relevant (16, 17).

5.5 Utilization of port health center and enabling factors

Following were concerned as enabling factors, cost of treatment, financial source, convenience and perceived availability and human relationship. As Indonesian governmental health care facility is not totally free, according to the wealth of the subject it will be charged. Majority (38.46%) of the sailors who seek the treatment from health service from port health center consider as it is cheap service

comparatively although 35.58 percent get the facilities for free of cost as those were holding free health care card. Treatment cost showed a strong association with utilization as $X^2 = 16.432$ and p-value = 0.000.

Major financial source of the respondents was the claiming system from their company or organization, 62.5 percent could claim their bills. 20.19 percent had a method of exemption their fee of health charges up to some extent. Only 17.31 percent had their own health insurance scheme to cover up the health care needs. Based on that number on using health insurance, there are less likely to be having health insurance. People buy insurance to protect themselves against possible financial loss in the future. For patients, financial loses may result form the use of medical services. The negative consequences of uninsurance are well documented. Persons and families without health coverage are more likely than those with coverage to forget needed health care, which often leads to worse health outcomes and the need for expensive medical treatment. Since uninsured persons are more likely to be poor than insured persons, the uninsured are less able to afford the health care they need (29). There were significant association between utilization and financial source as $X^2 = 14.971$ and p-value = 0.000.

Convenient was measured by using Likert's criteria and the responds were "very poor", "poor", "moderate", "good" and "very good" respectively 1,2,3,4 and 5 points were given. Total score was ranged from 4 (minimum) to 20 (maximum) as this scores were not normally distributed by using percentiles the convenient was categorize in to three groups good (15-16), moderate (13-14) and poor (11-12). This has no significant association with the utilization as $X^2 = 0.002$ and p-value = 0.962.

Another enabling factor, perceived availability and human relationship between the provider and consumer (in this case, health personnel of port health office), was evaluated to measure the perception of sailors towards availability of medical staff, medicine and equipments at the port health center and the perception about human relationship built between sailors and medical staff at the port health center. This evaluation was done by using Likert's criteria and the responds were

"very poor", "poor", "moderate", "good" and "very good" respectively 1,2,3,4 and 5 points were given. Perception was classified into three groups as "good", "moderate" and "poor". Almost 33 percent of respondents was included in each group ("Good" = 32.69%, "Moderate" = 33.65%, "Poor" =33.63%). The association between perceived availability and relationship and utilization of port health center was measured by using chi-squire test, X^2 =0.224 and p-value = 0.458 so there is no significant association between these factors. But oppositely, according to the study in Tamil Nadu, India, there was significant association between the health service utilization and quality of health care. The health services utilization among villagers due to the quality of health care services. It can be seen as a function of two broad categories of factors. First is the quality of facilities, equipment and drug available. The writer stated that public facility utilizing poorer equipment, and stocking less effective, slower acting drugs, and long waiting time for services (30, 31).

5.6 Utilization of port health center and need factors

Out of total respondents 162 sailors utilize the port health service only for routine medical check up and report purpose. 104 sailors who truly reported to port health center for either reason, to getting treatment based on their health complaint or any others of services which available in port health center. Need factors were evaluated among those who actually visit to the port health center.

Requirement of visit was considered as described above, 59.62 percent who did visit health center were crew already docked and they came for medical treatment other than the routine medical check up. Sailors who were off duty (40.38%) utilized the port health services for only medical check up and treatment (13.46%), and medical treatment only (26.92%). There is significant association between the requirement of visit and utilization of the port health facilities as X^2 = 8.771 and p-value 0.003 at confidence level (α) = 0.05.

Among those who did seek medical treatment the main complains were headache, fever, cough, acute injuries and chronic illnesses as diabetic mellitus,

hypertension, muscular-skeletal pain, and others reason have given as health consultation and vaccination. There is no significant association between the illnesses and the utilization of port health facilities as X2 = 0.017 and p-value 0.897 at confidence level (α) = 0.05.

CHAPTER 6
CONCLUSION AND RECOMMENDATION

6.1 Conclusion

The study was carried out at the Bitung international sea port in north Sulawesi province, Indonesia with an aim of exploring the factors affecting the level of utilization of port health center by the sailors. Data were collected by the researcher and trained interviewers by using interview questionnaire. Sailors were given the questionnaire at the ships or at the port health center. They were asked about basic socio-demographic characteristics which were thought to have an influence on the level of utilization, pattern of using health care facilities as an overall view, attitude, enabling factors and need factors among those who utilized the port health facilities.

In addition to descriptive statistics, analytical statistics were used to find out the factors affecting the level of utilization on port health service center. Association was estimated by using chi-squire test (α was set as 0.05).

From the result it was found that mean age of sailor who come to Bitung sea port is 36 years and majority of them is married 62.78%. More than 60 percent graduated their secondary or high school. About half of the sailors have been working as deck's crew, 52.26%, with salary from 850,000 to 1,850,000 Rupiah per month. 58.65 percent stated that they felt sufficient for family expenses but no saving. Almost 70 percent of sailors have family member about 3 to 5 persons. There was no much different of sailors who have their own house (43.61%), and who stayed in rental house or rented room otherwise stay with friend was 56.39 percent. Anyway they stated that they were in moderate level of economic status (97.37%).

1. Even though there is a medical health facilities at Bitung Sea port, because of the work burden, it is easy for them to choose the main

method of encountering the illnesses among sailors at Bitung sea port, is treat by them.

2. Among those who seek medical treatment the more preferred institute is port health center then other government hospitals, private hospitals, private clinics and traditional healers. They concerned when the symptom is not cured, they need to find health center as a competent institution, whether under government or private practitioners.

3. The main reason for sailors to not utilized port health center in case of illness is they are not aware about the presence of the port health center. The misinterpretation that port health office just for administrative purposes, in case of quarantine necessity need to clarify among sailors. This is perception of 72.84 percent of total number of respondents.

4. Out of 104 sailors who utilized the port health facilities, the high number of sailors had moderate level (55.77%), and quite similar numbers are high and low level of attitude towards the health center. This shows there is no significant different in the attitude either as good or as bad.

5. There are few major enabling factors for sailors to get the port health service. The treatment cost at the center is more favorable either it is considered as free, cheap or reasonable. Possibility of reimbursement of the charges, overall better convenience due to less waiting time, good administrative and treatment procedures and availability of the service.

6. Mainly for simple illnesses or acute injuries the sailors preferred to come to the port health center.

6.2 Recommendation

From the result of this study there are some recommendations for implementation for higher utilization of port health center at Bitung sea port. These might be beneficial for the sailors in the future in context of benefiting a quality health service. And for the researches who will be willing to explore this issue more over.

Recommendations for implementation

1. The sailors who do not know about the presence of the port health center and types of services can be received must be informed properly. This can be done at the point of medical examination for health report. A leaflet or a handbill can be used to acknowledge them about the port health center location and facilities could be received.

2. Improve the available facilities by number of staff, equipments and medicine. As an international port there are so many international personals who visit Bitung port as a part of the crew so definitely there will be a comparison between the service provided by the port health center and service at their own countries.

3. Improve the capacity of range of services. This will help to handle verity of cases with adequate facilities and drugs. Rather asking the patient party to buy those medicine and other materials from out side drug stores.

Recommendation for future study

1. The research should not be specified only attitudes and enabling or need factors but also practice of people on the use of health center services and the management and the supervision system should be included to identify the real influencing factors for utilization of health center.

2. The study should be clearly about sample selection and research instruments before go to data collection.

3. The range of enabling and need factors should be increased for better evaluation.

4. To improve overall services of Bitung port health center, the level of utilization by general people also must be evaluated specially this clinic is functioning as a poly clinic which provide the services not only for sailors but also others.

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APPENDIX

APPENDIX A
INTERVIEW QUESTIONNAIRE

Utilization of port health services center among sailors at Bitung International Sea Port at Bitung City, North Sulawesi Province, Indonesia

This questionnaire is prepared for thesis writing for MPHM course at the ASEAN Institute for Health Development, Mahidol University. Your answer will be kept in secret and not exposed to any other purpose.

Date of interview ----------

Name of interviewee ----------

Sailor number ----------

Name of ship ----------

Origin place ----------

Inclusion criteria:

- *Sailors who come in last six months.*
- *Sailors who come at the second time or more*

PART A. Socio-demographic characteristics

Please put a tick (√) in the appropriate box to mark your answer the question (choose the most appropriate answer)

A.1. How old are you?---------- years old (completed year)

A.2. How many times you come to Bitung port?

- ☐ 2 times
- ☐ 3 times
- ☐ more than 3 times

A.3. Marital status

- □ Married
- □ Divorced
- □ Widower
- □ Unmarried
- □ Others (specify)…….
  (Married but separate)

A.4. How many persons do you have presently in your family now? ……... persons

A.5.What is your present position (job) in the ship?

- □ Captain/Master
- □ Chief 1
- □ Chief 2
- □ Chief 3
- □ Marconi's
- □ Machine engineer
- □ Deck's crew
- □ others (specify)…….

A.6. How much your monthly income ……. Rupiah/month

A.7.What is your educational attainment?

- □ No education
- □ Primary school
- □ Secondary school/High school
- □ Vocational
- □ University
- □ Others (specify)……

A.8.Your monthly income is sufficient for family's expense?

- □ Sufficient and having saving
- □ Sufficient and no saving
- □ not sufficient

A.9.What is your type of residence?

- ☐ Own house
- ☐ rental house
- ☐ Others (specify)…….

(Apartment or rented room or live with friend)

A.10. What do you think about your economic status when compared with your neighbors?

- ☐ rich
- ☐ moderate
- ☐ poor

A.11. In general, please give your own idea, just idea, if you have health complaint (headache, fever, cough, or injury), what would you do? (During dock period)

- ☐ ignore
- ☐ take medicine by myself
- ☐ go to port health center
- ☐ go to private clinic
- ☐ go to government hospital
- ☐ go to private hospital
- ☐ other (specify)……..

A.12. If that health complaint still remains what would you do next?

- ☐ ignore
- ☐ take medicine by myself
- ☐ go to port health center
- ☐ go to private clinic
- ☐ go to government hospital
- ☐ go to private hospital
- ☐ others (specify)……..

A.13. How many times you have used this Bitung port health center, for medical diagnosis and treatment, in the last 6 months?

- Never use (use only medical check up) ……(go to question A.13.)
- Ever use 1 time
- Ever use 2 times
- More than 2 times

A.14. If you choose “never use” (1) or not go for getting treatment , why?

- don’t trust treatment from health personnel
- It is inconvenient to go to the port health center
- your relatives or friend or captain go to other health center
- others (please specify)……..

(go to A.16)

A.15.If you choose “ever use”, what is your health complaint?

- Headache
- Fever
- Cough
- Injury
- Other illness (specify)…….

A.16. In your opinion, is there a wide different in performance between the available health service center in this area?

- no
- yes

A.17. Do you have a favorite health center in this area?

- no
- yes

A.18.In your opinion, is it important to you to get information about health from port health center when your ship dock in Bitung port?

☐ no

☐ yes

A.19.Do you receive considerable amount of pressure from other friends or your supervisor/superior to get health care problems taken care of promptly?

☐ no

☐ yes (STOP)

PART B. Attitudes toward port health services

Please put a tick (√) in the answer which it is appropriate in your opinion

No	Question	Strongly Agree	Agree	Don't Know/ Not sure	Disagree	Strongly agree
B.1	Medicine in The port health service in Bitung city is more effective than private health service					
B.2	Bitung Port health care provide some free service					
B.3	Bitung Port health service give long waiting time more than private health service					
B.4	Personnel of port health service in Bitung city pay attention and listen to you about your health problems					

B.5	When you go to Bitung port health service the health personnel always absent					
B.6	Friendliness and courtesy of the health personnel in Bitung port center is good					
B.7	The quality of drugs in private health service better than port health service in Bitung					
B.8	Port health service center in Bitung has good environment					
B.9	Overall cleanliness of the Bitung port health center is good					
B.10	Bitung Port health service's medical equipments are modern					
B.11	Bitung Port health service has drug enough for treatment					
B.12	Bitung Port health service has medical equipment enough for treatment					
B.13	You can trust diagnosis from health personnel of bitung health service					

B.14	You can trust treatment from health personnel of port health service in Bitung					
B.15	Bitung Port health service can provide only treatment for simple illness and injury					
B.16	Doctor in port health service of Bitung has skill and competency					

PART C. Enabling factors

Please put a tick (√) in the answer which it is appropriate in your opinion

C.1. How about your opinion to expect for getting treatment in Bitung health center?

- ☐ Free
- ☐ Cheap
- ☐ Reasonable
- ☐ Expensive
- ☐ others (specify)……

C.2. What is your main financial source to support you for getting treatment in this visit?

- ☐ saving
- ☐ making claims
- ☐ health insurance
- ☐ exemption fee
- ☐ borrow

- selling property
- others (specify)……..

C.3. Convenience towards health services

Please identify your perception/feeling for each action/activity by ranking following degree. 1. very poor; 2. poor; 3. moderate; 4.good; 5. very good.

		1	2	3	4	5
1	Waiting time					
2	Working hour					
3	Administrative procedure					
4	Treatment procedure					

C.4. Perceived availability and human relationship between you and health facilities

Please identify your perception/feeling for each action by ranking following degree. 1. very poor; 2. poor; 3. moderate; 4.good; 5. very good.

		1	2	3	4	5
1	Medical equipment					
2	Drugs available					
3	Health care provider’s skill					
4	Feel comfortably with providers					
5	Good communication					

PART D. Need Factors

Please put a tick (√) in the answer which it is appropriate in your opinion

D.1.What is your requirement to visit port health center? (On this visit of Bitung Port)

- ☐ Medical check up only (off duty)
- ☐ Medical diagnosis/ treatment (headache, fever, cough or injury) (off duty) Specify ……
- ☐ 1 + 2 (on duty)

Thank you!

APPENDIX C

TABLES

Table 17 Percentage distribution of sailors by age groups

Age	Routine n=162	Non-routine n=104	Total number n = 266
20-29	63.01	36.99	73
30-36	59.37	40.63	96
37-40	54.05	45.95	37
41+years	65.00	35.00	60
(Mean=35.6, Med=35, Min=23, Max=56, Q1=29, Q3=40)			

Table 18 Percentage distribution of sailors by marital status

Marital status	Routine n=162	Non-routine n=104	Total number n = 266
Married	58.08	41.92	167
Unmarried	63.33	36.67	60
Other	69.23	30.77	39

Table 19 Percentage distribution of sailors by educational attainment

Educational attainment	**Routine n=162**	**Non-routine n=104**	**Total number n = 266**
Primary school	100	0	2
Secondary/High school	62.35	37.65	170
Vocational	54.43	45.57	79
University	73.33	26.67	15

Table 20 Percentage distribution of sailors by present job/position

Present job/position	**Routine n=162**	**Non-routine n=104**	**Total number n = 266**
Master /Captain	36.66	63.34	30
Chiefs	59.52	40.48	42
Machine eng/Marconi’s	65.45	34.55	55
Deck’s crew	64.75	35.25	139

Table 21 Percentage distribution of sailors by income/salary

Income/salary	**Routine n=162**	**Non-routine n=104**	**Total number n = 266**
700,000-850,000 Rp	59.74	40.26	77
850,001-1,850,000 Rp	40.16	59.84	127
1,850,001-5,000,000 Rp	51.61	48.39	62
(Mean= 1,523,872, Med=1,500,000, Min=700,000, Max=5,000,000, Q1=850,000, Q3=1,850,000)			

Table 22 Percentage distribution of sailors by family member

Family member	**Routine n=162**	**Non-routine n=104**	**Total number n = 266**
1-2 persons	64.94	35.06	77
3-5 persons	60.65	39.35	183
6-7 persons	16.66	83.34	6
(Mean=3, Med=3, Min=1, Max=7, Q1=2, Q3=5)			

Table 23 Percentage distribution of sailors by type of residence

Type of residence	**Routine n=162**	**Non-routine n=104**	**Total number n = 266**
Own house	50.00	50.00	116
Others (live with kinds)	69.33	30.67	150

Table 24 Percentage distribution of sailors by sufficient for family's expenses

How sufficient for Family's expenses	**Routine n=162**	**Non-routine n=104**	**Total number n = 266**
Sufficient and have saving	54.43	45.57	79
Sufficient and no saving	60.26	39.74	156
Not sufficient	80.65	19.35	31

Table 25 Percentage distribution of sailors by economic status

Economic status	**Routine n=162**	**Non-routine n=104**	**Total number n = 266**
Moderate	59.84	40.16	259
Poor	100	0	7

BIOGRAPHY

NAME	Pingkan Maria Pijoh
DATE OF BIRTH	February 8th, 1971
PLACE OF BIRTH	Manado city, North Sulawesi province Indonesia
INSTITUTION ATTENDED	Sam Ratulangi University Manado, Indonesia Medical Faculty Medical doctor, 1990 - 1998 Mahidol University, Thailand ASEAN Institute for Health Development Master of Primary Health Care Management, 2007-2008
FELLOWSHIP/RESEARCH GRANT	Asian Development Bank (ADB)
PRESENT POSITION	Port doctor Epidemiological Surveillance, Quarantine and Health Services Section Port Health Office of Bitung, North Sulawesi Indonesia