APPLICATION OF SELF-EFFICACY THEORY ON ANTIRETROVIRAL DRUG ADHERENCE AMONG HIV-INFECTED/AIDS PATIENTS

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Thesis
Entitled

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Raweewan Phongphuthachat

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APPLICATION OF SELF-EFFICACY THEORY ON ANTIRETROVIRAL DRUG ADHERENCE AMONG HIV-INFECTED/AIDS PATIENTS

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ABSTRACT

Non-adherence to medication results in not only an increase in the quantity of virus load in the patient's body, but also mutations of the resistant microorganism. The main purpose of this quasi-experiment was to examine the effect of self-efficacy on the promotion of antiretroviral drugs adherence (SEPADA) program on HIV/AIDS patients attending the Nation Access AIDS Program for people living with HIV/AIDS (NAPHA) at Photharam hospital, Ratchaburi province, Thailand. They were purposively selected and equally assigned into the experimental and comparison groups [according to their medical appointment schedule]. 36 patients were assigned in each group. The experimental group received 3 sessions of the SEPADA program at 4 weekly intervals and a follow up at 12 weeks. The comparison group received routine care and advice. Data were collected 3 times: before, immediately after and three months after the intervention by using questionnaires and self-report record. Frequency, percentage, mean, standard deviation, t-test, pair t-test, RMANOVA, Chi-square test and Wilcoxon test were used for statistical analysis.

Results showed that the experimental group significantly increased their knowledge, outcome expectancies, self-efficacy beliefs, and adherence practice ($\geq$ 95 %) on antiretroviral drugs of the patients at immediately after and at three months follow up compared to before the intervention, and to the comparison group ($p<0.05$). The SEPADA program was successful on practice of adherence and sustained for over three months which was reflected in the monthly self-report which showed that the patients continuously increased their adherence behavior from the first month on. At the end of the program, the non-adherence rate was reduced from 72.2 % to 11.1 %. The live model transmitted the practice experiences, problems and barriers solving during practice adherence, and maintenance of practice. Also, the self-report record could either remind the patients about strict adherence or reinforce the patients for strict sustainability.

This SEPADA program could improve HIV/AIDS patient's self-efficacy for good adherence practice. Therefore, the SEPADA program and self-report record should be applied to HIV/AIDS patients or other patients with chronic illnesses in order to improve adherence practice on taking medications.

KEY WORDS: ADHERENCE BEHAVIOR/SELF-EFFICACY/ ANTIRETROVIRAL DRUG / INFECTED-HIV/AIDS PATIENTS

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การประยุกต์ทฤษฎีสมรรถนะแห่งตน ในการรับประทานยาต้านไวรัสเอดส์อย่างสม่ำเสมอ ของผู้ติดเชื้อ HIV และผู้ป่วยเอดส์ (APPLICATION OF SELF-EFFICACY THEORY ON ANTIRETROVIRAL DRUG ADHERENCE AMONG HIV INFECTED/AIDS PATIENTS)

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บทคัดย่อ

การรับประทานยาต้านไวรัสไม่สม่ำเสมอ มีผลทำให้ปริมาณไวรัสHIVเพิ่มขึ้นในกระแสเลือดและเกิดการดื้อยา การวิจัยกึ่งทดลองครั้งนี้จึงมีวัตถุประสงค์เพื่อศึกษาผลของการเพิ่มการรับรู้สมรรถนะแห่งตนให้ผู้ติดเชื้อ HIV และผู้ป่วยเอดส์ ที่รักษาด้วยยาต้านไวรัสเอดส์ โดยโปรแกรม SEPADA กลุ่มตัวอย่างคือผู้ป่วยติดเชื้อ HIV และผู้ป่วยเอดส์ที่มารับการรักษาในโครงการ NAPHAโรงพยาบาลโพธาราม จังหวัดราชบุรี เลือกกลุ่มตัวอย่างแบบเจาะจง กลุ่มทดลอง และกลุ่มเปรียบเทียบกลุ่มละ 36 ราย กลุ่มทดลองได้รับการพยาบาลในโปรแกรม 3 ครั้ง ห่างกัน 4 สัปดาห์ และ ติดตาม 3 เดือน กลุ่มเปรียบเทียบได้รับคำแนะนำปกติ เก็บข้อมูล 3 ครั้ง คือ ก่อนการทดลอง หลังการทดลองทันทีและติดตามหลังการทดลอง 3 เดือน โดยใช้แบบสอบถามและแบบบันทึกการรับประทานยาประจำวัน วิเคราะห์ข้อมูลโดยการแจกแจงความถี่ ร้อยละ ค่าเฉลี่ย ค่าเบี่ยงเบนมาตรฐาน t–test, pair t–test, RMANOVA, Chi-square test และWilcoxon test

ผลการวิจัยพบว่ากลุ่มทดลองมี ความรู้ ความคาดหวัง การรับรู้สมรรถนะแห่งตนและการปฏิบัติรับประทานยาต้านไวรัส(≥95%) เพิ่มขึ้นก่อนการทดลอง เมื่อหลังทดลองทันที และติดตาม 3 เดือน และยังสูงกว่ากลุ่มเปรียบเทียบที่ได้รับคำแนะนำปกติ อย่างมีนัยสำคัญทางสถิติ ($p< 0.05$) โปรแกรม SEPADA ประสบความสำเร็จ ในการทำให้ผู้ป่วยมีการปฏิบัติรับประทานยาอย่างสม่ำเสมอและยังคงพฤติกรรมได้ดีเมื่อหลังการทดลองติดตาม 3 เดือน แบบบันทึกการรับประทานยาทุกๆเดือนแสดงให้เห็นการรับประทานยาสม่ำเสมอดีขึ้นอย่างต่อเนื่องตั้งแต่เดือนแรกจนเสร็จสิ้นโปรแกรม การรับประทานยาไม่สม่ำเสมอลดลงจาก 72.2% เหลือ 11.1% ตัวแบบชีวิตจริงได้ถ่ายทอดประสบการณ์การปฏิบัติตน การแก้ปัญหาและอุปสรรค ระหว่างการรับประทานยาต้านไวรัส จนถึงการคงไว้ซึ่งพฤติกรรมการปฏิบัติตน แบบบันทึกการรับประทานยาประจำวันก็เป็นสิ่งที่ช่วยเตือนและเสริมแรงให้ผู้ป่วยมีการคงไว้ซึ่งพฤติกรรมการรับประทานยาต้านไวรัสสม่ำเสมออย่างเคร่งครัดได้นาน

ผลการศึกษาแสดงให้เห็นว่าการเพิ่มการรับรู้สมรรถนะแห่งตนในผู้ป่วยติดเชื้อ HIV และผู้ป่วยเอดส์ สามารถทำให้ผู้ป่วยมีสมรรถนะแห่งตนสูงขึ้น มีการรับประทานยาต้านไวรัสสม่ำเสมอได้ดี ดังนั้นโปรแกรมSEPADA และ แบบบันทึกการรับประทานยาประจำวัน สามารถนำมาประยุกต์ใช้กับผู้ติดเชื้อ HIV และผู้ป่วยเอดส์หรือผู้ป่วยโรคเรื้อรังอื่นๆให้มีการรับประทานยาอย่างสม่ำเสมอได้

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CHAPTER I
INTRODUCTION

Background and Significances

The Joint United Nations Program on HIV/AIDS (UNAIDS, 2004) reported that there are currently 37.8 millions HIV-infected people in the world in which approximately 95% lived in developing countries: 35.7 millions are adult; 17 millions are women; and 2.1 millions are children aged lower than 15 years old. Among these, 25 millions lived in Africa and 6.5 millions lived in South and Southeast Asia. Recent statistics show that 4.8 millions new cases occur annually in which 4.1 millions are adults and 630,000 cases are children. It is estimated that there are 14,000 new cases per day. Almost 50% of these new cases are females aged between 15 and 24 years old. The cumulative deaths from AIDS since the initial world dissemination are 21 millions people, with 15 millions children left orphaned.

In many African countries, a quarter to a third of the population is HIV-infected. Botswana, Zimbabwe, Namibia and South Africa are examples of these countries. In Zimbabwe, the life expectancy of the population decreased for 5 to 10 years. It is estimated that Zimbabwe's life expectancy will have decreased from 61 years to 39 years by the year 2010 (Gaisin, G. 2002: 7).

South-East Asia Situation, epidemic in Cambodia currently has the highest adult HIV prevalence rate in Asia, and more than 2.5 % of the world epidemic. Thailand's rate the second is in line of 1.5 % of the world epidemic. Although prevalence is well below 1% in Vietnam and Indonesia, those monitoring of the situation have expressed concern about high HIV infection rates among some groups of injecting drug users and sex works in both countries. UNAID reported that there are 6.5 millions HIV-infected adult and children in this region (15-49 year old) in which 6.3 millions are adult (15-49 year old), 1.8 million are women (15-49 year old), 160,000 cases are children (0-14 year old) (UNAID, 2004).

In Thailand, the Department of Communicable Disease Control (Thai CDC), Ministry of Public Health (MOPH), reported that there are 1.07 millions HIV-infected

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people within Thai population and 700,000 AIDS patients with 289,000 deaths from AIDS (Thai CDC, 2004). Annually, there were 19,000 new cases reported with 70 new cases per day, or 3 new cases per hour. The incidence of mother to child transmission (MTCT) in the year 2002 was 15,000 cases per year. There are now totally 50,000 Thai children infected from HIV. The Thai CDC (2004) estimated that by the year 2006, the number of HIV-infected people will be as many as 1.1 millions and 600,600 HIV-infected people will die from AIDS; and from this number, there will be 53,400 HIV infected children, and 508,300 AIDS patients are going to need care in hospitals.

Most of HIV-infected people are 20–39 years old, which means that they are important and main income generators for their families (Thai CDC, MOPH, 2001:2). This age group is very important to the Thai economy; if their numbers are depleted, it will greatly impact on the stability of Thailand's economy. The impact of AIDS killing 20-39 years old will be greater than simply destabilizing the economy. There will be 512,000 children left orphaned in Thailand. The tragedy continues with the likelihood that these orphans will be rejected from enrolling in school. This is a problem for Thai society that left the question for thought of who will be responsible for. Therefore, HIV/AIDS are still important issues/problems in Thailand that urgent for solution among the health personnel and other disciplines.

HIV/AIDS have spread through all over the countries in Thailand very quickly. The numbers are presented orderly from the greatest to the least as Bangkok (26,147 cases), Chiangmai (17,911 cases), and Chiangrai (16,204 cases). This study focuses especially in Ratchaburi Province, situated in the Central part of Thailand, the eleventh on the list, where there are 4,089 cases that are too much burden for the only available 4 main hospitals in the province. Photharam is an amphur in Ratchaburi province which it is in the third rank of infection (536 cases) of the province, where the second rank is Amphur Maung (790 cases), and the first rank is Banpong (1,561 cases) (Thai CDC of AIDS and STDs, the Department of Public Health of Ratchaburi Provincial Office, 2004:1). Therefore, Amphor Photaram is still facing the AIDS problems as many other places in Thailand.

AIDS is able to transmit and spread through the contact and exchange of blood and other body fluids mostly during sexual intercourse, mother-to-child transmission,

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and other direct with opened skin contacts. The fact that AIDS spreads so rapidly has caused a great impact all around the world. The illness often strikes those who are most poor or low socio-economic status so that they have less ability to help themselves in seeking health or less chance to get access to the health care services. These patients will be able to receive proper care when they are really ill which is too late for any effective treatments or prevention. Therefore, it becomes a burden for the country on health expenditure and social capital in caring for these patients and their families.

Worldwidely, several countries have successfully conducted research with a particular method of treating HIV or AIDS patients. Such method uses antiretroviral drug therapy, which prescribes a cocktail of three well known drugs that have already been effectively used to treat HIV/AIDS infected patients (Gray, et al.,1998; abstract). The mortality rate of these AIDS patients who took this cocktail went down, and their quality of life (well-being) was increased (Chiasson and Berensonl,1996; abstract). However, strict adherence to a medication schedule for these antiretroviral drugs is imperative for HIV-infected and AIDS patients for the highly effectiveness of the treatment that also reflect the highly successful of the quality of life. These patients must take their medications on time (no later than 5 minutes off their regular schedule). Patients are not allow to forget, and nevertheless, they must continue their regimen for their whole life (Friedland, 1995:4).

From a study of non-adherence in antiretroviral therapy patients, it was found that the efficacy of antiretroviral drugs decreased when the drugs were not taken right on schedule. The non-adherence results in not only the increment of the quantity of virus load in the patient's body, but also the mutations of the resistant microorganism (Havlir and Rchmann, 1996: 984). Consequently, the non-adhering patients can be the causes of a widespread of the transmission of the resistant antiretroviral therapy HIV to other risk populations (Boden, et al., 1999:1140; Hecht, et al. 1998:308).

The patients maybe defined as non-adherence to taking antiretroviral drugs for many reasons. For example they may forget to take their medicine on a maximum of three times per month before the aforementioned dangers become a reality; and they must always take their doses at exactly on time everyday (or no later than 5 minutes). Adherence has been rightly called the Achilles heel of antiretroviral therapy. The

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consequences of low adherence are serious for the individual, for public health, and for the optimal use of limited health care resources. For the individual, lower levels of adherence are associated with the development of viral resistance, treatment failure, and increased risk of disease progression. Upon such treatment failure, current treatment guidelines recommend switching to a new combination regimen which may include more agents to be more complex and be associated with new or unknown toxicity. The prognosis for individuals who have experienced on multiple treatment failures is uncertain in future. From a public health perspective, there was an increase in prevalence of resistant virus that will result in an increase in transmission of resistant virus to newly infected individuals. From a health economic perspective, low adherence will result in an increase in use of second-line and salvage regimens, which are in general more expensive than initial regimens. In addition, since low adherence is associated with an increased risk of disease progression, the cost of treating opportunistic complications will have a negative impact on the established cost-benefit of Highly Active Antiretroviral Therapy (HAART) (Davidson, et al., 2002: 2).

Adherence to a medication schedule is best achieved through a process that facilitates acceptance and integration of a strict regimen into an individual's daily life. The most important characteristic of good adherence is the act or quality of devotion to their medication schedule among HIV-infected people on antiretroviral therapy (MOPH, 2002: 176).

This research conducted a pilot study of 20 cases of HIV/AIDS infected patients participating in The Project of Access to Care (ATC) at Photharam Hospital during January of 2003 and found that there were 18 cases (90%) of non-adherence to the HAART medication regimen. The causes of non–adherence were: (1) forgot due to very busy in doing own business (15%); (2) away from home without carrying medicine at hand at the scheduled time (20%); (3) felt asleep/slept through the dose time (5%); (4) could not find medicine at the scheduled time (15%); and (5) missed taking all doses of medicine for three days per month (10%). This reflected that these patients seemed to lack of efficacy on self management to adhere on strictly medication taking. These problems can be solved if nurses can help HIV/AIDS-infected patients to manage on their own adherence to their strictly medicine regimens. The strategies that the nurses use to help these patients are through applying the Self-

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Efficacy Theory of Bandura, developed in 1997. The theory stated that "unless people believe that they can produce desired effects by their action, they have little incentive to act" (Bandura, 1997: 20). Efficacy belief; therefore, is a major basis of action. People guide their lives by their beliefs of personal efficacy. Perceived self–efficacy refers to beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments (Bandura, 1997: 21). Therefore, the theory of Self-Efficacy is needed to guide on promoting adherence to HAART on these patients.

This research is purposed to use the Theory of Self–Efficacy to promote medication adherence behaviors on taking antiretroviral drugs among infected HIV/AIDS patients. The goals of this study were be aimed toward the quality of life of the patients and their families, prevent antiretroviral drug-resistant strains of HIV from developing, and therefore, prevent the spread of antiretroviral drug resistant strains to other people. This means that the antiretroviral therapy could continue to provide hope for HIV/AIDS patients.

Research Problem

Whether or not the Self-efficacy on promotion of antiretroviral drugs adherence (SEPADA) program can promote strictly antiretroviral drugs adherence behaviors of HIV/AIDS-infected patients?

Research Objectives

General objective

To examine the effect of the self-efficacy on promotion of antiretroviral drugs adherence (SEPADA) program on adherence behaviors to antiretroviral drugs of HIV/AIDS-infected patients.

Specific objectives

To examine the impact of the SEPADA program on:

1. the patient's knowledge on: AIDS disease, antiretroviral drugs, and self-care practice on health
2. the efficacy beliefs on adherence to antiretroviral drug therapy: level, generality, and strength
3. the outcome expectancies of physical, social, and self-evaluation

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4. the patients' behavioral adherences of: on time, not forgetting of any medicine at any time, adherence rate of ≥ 95%

Research Hypotheses

There were eight hypotheses as follows:

1) The mean scores of knowledge, outcome expectancies, self-efficacy belief in the experimental group would be greater than the comparison group at immediately after the intervention.

2) The mean scores of knowledge, outcome expectancies, self-efficacy belief the experimental group would be greater than the comparison group at three months follow up after the intervention.

3) The mean scores of knowledge, outcome expectancies, self-efficacy belief within the experimental group at immediately after the intervention would be greater than before the intervention.

4) The mean scores of knowledge, outcome expectancies, self-efficacy belief within the experimental group at three months follow up after the intervention would be greater than before the intervention.

5) The experimental group would have better adherence practice (≥ 95 %) on antiretroviral drug than the comparison group at immediately after the intervention.

6) The experimental group would have better adherence practice (≥ 95 %) on antiretroviral drug than the comparison group at three months follow up after the intervention.

7) At immediately after the intervention, the experimental group would have better adherence practice (≥ 95 %) on antiretroviral drug than at before the intervention.

8) At three months follow up after the intervention, the experimental group would have better adherence practice (≥ 95 %) on antiretroviral drug than at before the intervention.

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Research Variables

Independent variable was "The SEPADA program"

Dependent variables were:

1. Knowledge
2. Efficacy Beliefs
3. Outcome Expectancies
4. Adherence Behaviors

Scope of the Study

This research was conducted especially on the HIV/AIDS-infected patients who received the treatment on antiretroviral drugs in the National Access to Antiretroviral Program to improve patient's adherence in the Nation Access AIDS Program for people living with HIV/AIDS (NAPHA) at Photharam Hospital, Ratchaburi province, Thailand to better adhere and maintain this behavior. The subjects were 72 patients who volunteered for this quasi experimental study. These were 36 subjects in the experimental group and 36 subjects in the comparison group. The study period was 16 weeks (on June3, 2004 - October 31, 2004).

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Operational Definitions

The SEPADA program refers to the program that aims to increase the positive perceptions of the HIV/AIDS-infected patients of their own abilities to keep an antiretroviral drug regimen without any missing dosages. This program was derived based on Bandura's Self-efficacy Theory (Bandura, 1997). These developed perceptions of HIV/AIDS-infected patients were from receiving, supporting and promoting in 4 processes: (1) Vicarious experience, in this study vicarious experience was used for successful training skills from a role-model. A role-model, a person who was successful on adherence behavior to antiretroviral drugs; (2) Enactive mastery experience, antiretroviral drugs enactive mastery experience was self successful training experience with pill boxes was used for patients to keep, prepare and memory in adherence to antiretroviral drugs; (3) Verbal persuasion, in this study verbal persuasion was used by individual counseling in many problems of patients; such as

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non adherence on medication, mental and social problem; and (4) Physiological and affective states, in this study used the muscle relaxation technique for patients practiced.

Knowledge refers to the information that the patients must have about HIV/AIDS disease, antiretroviral drugs, and about practicing on self-care for their own health. The researcher developed the questionnaires for testing on the patient's cognition and memory on the knowledge of antiretroviral drugs and healthy behaviors.

Outcome expectancies mean the increase of the self-confidence of the patients in their abilities on adherence to an antiretroviral drug schedule which should affect on their better health. Outcome expectancies can be analyzed in three components: physical, social and self-evaluation. The researcher developed this questionnaire to test the patients on these three components.

Self-efficacy beliefs refers to the patients' own beliefs in their capability on adherence to their antiretroviral drug regimen. Efficacy beliefs in this study have three components: level, generality, and strength. The researcher developed the questionnaire to test the patients on efficacy beliefs in these three components

Adherence behaviors refer to the patients' adherence to their antiretroviral drug regimen in the following ways: taking medicine with correct dosage, on time, and not forgetting any dosages at anytime, (it is absolutely not allowing to forgetting any dosages at any more than three times/month the patients must adhere ≥ 95%). These adherence behaviors were measured by: the answered questionnaires, developed by the researcher; self-report on their adherence on medicine taking in the self-report form that the patients reported times of taking medicine at every dose and every day. In addition, they would report of their delayed or missing doses with explanation if it had happened

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Conceptual Framework

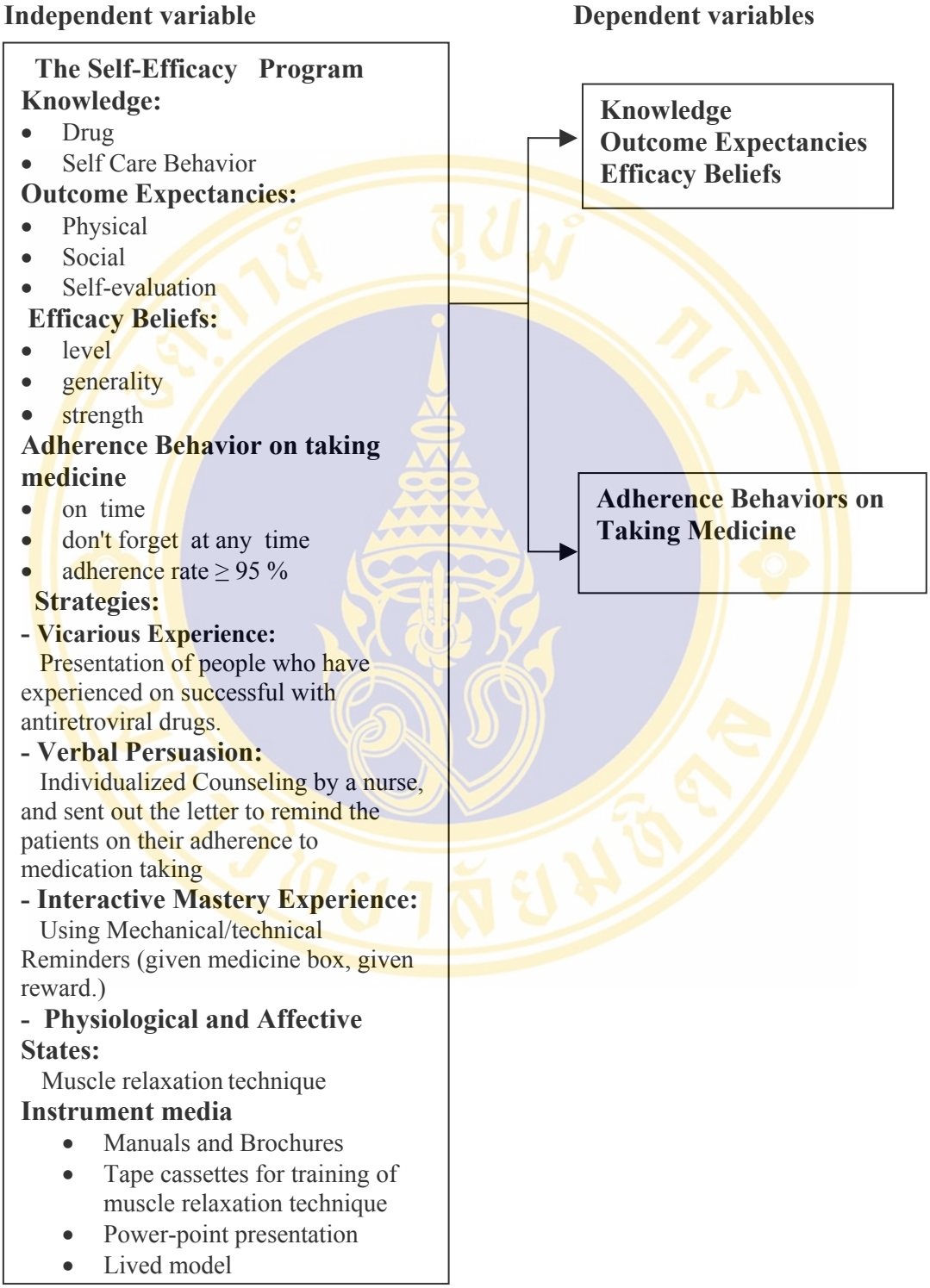

Figure 1: Conceptual Framework

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CHAPTER II
LITERATURE REVIEW

This research is the studying of adherence on antiretroviral of infected HIV patients on the program applying from the Self-efficacy theory of Bandura. The researcher conducted the studying by reviewing the following concepts, theories, and research.

1. Knowledge of AIDS disease.
2. Knowledge of antiretroviral drugs and practices health behavior.
3. Adherence
4. Providing counseling support to patients who have antiretroviral drugs therapy.
5. Perception of self-efficacy.
6. Self-efficacy to improve adherence on antiretroviral drugs among infectious HIV patients program.

1. Knowledge of AIDS Disease

Acquired Immune Deficiency Syndrome (AIDS) is the signs and symptoms of a disease caused by Human Immunodeficiency Virus (HIV) which can destroy the body immune system. There are two species of HIV: HIV-1 and HIV-2 (Wormser, 1997: 257).

HIV-1 spreads worldwide, especially in Middle Africa, USA, Europe, Western Pacific and Asia. The most prevalence of HIV-2 is in Western Africa. HIV is in retroviridae family, retroviridae come from “retro” (Latin language). Every virus in this family has reversed transcriptase enzyme in which its function produces RNA template (Puthawattana, P. 1998: 2.1).

The first reports of AIDS in the USA was in 1981 and was mostly found in homosexuals, in later years reports found that the patients of hemophilia, blood transfusion and intradrug-user were living in big towns. Since 1983, the reporting of

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HIV patient's infections in women is an intercourse with infected men who were injected drug-user. The first report of AIDS in Thailand was in 1984 and the first AIDS patient was found in 1985. For nearly 3-4 years, AIDS could spread to almost all gay men. In 1988, AIDS has spread to people who were intradrug-users and female sex worker. Later in 1990, there was a big increase of infected HIV patients in men using the services of female sex worker. Finally in 1991, AIDS had spreaded to the normal family system, husbands who were infected with HIV gave this disease to their wife; mothers passed the virus to their child through her pregnancy. This caused HIV to spread worldwide even faster (Puthawattana, P. 1998: 2.7).

Mechanism of disease

Infection with human immunodeficiency virus initiates an intricate and fascinating series of host-virus interactions. The ultimate consequence of which is profound impairment of the host immune system in which cells infected with HIV are CD4+ helper T lymphocytes. The result from HIV infection is characterized by numerous immunologic abnormalities. Life cycle of HIV is presented as follows (Puthawattana, P. 1998: 2.4-2.5).

1. HIV attaches to middle attachment site or legend of virus with cell receptor of CD4.
2. Penetration or entry, after HIV envelopes itself fusion with cell membrane, then the core of HIV is going to enter inner cytoplasm of the cell.
3. Production of DNA, by using RNA genome is template, and it uses reverse transcriptase enzymes which occurred inside cytoplasm.
4. DNA virus moves itself to nucleus of CD4 cell.
5. The first DNA virus integration with chromozones, the DNA virus in this phase is called provirus.
6. Provirus DNA is transcripted. The result of this is the RNA virus, in addition by using RNA polymerase II of cells.
7. RNA virus is transcripted by process; it becomes a viral genome and mRNA of HIV.
8. This mRNA of HIV is a translation of protein in cytoplasm.
9. Viruses join together and start budding itself out of a cell membrane, but

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it is an immature particle virus.

10. Immature particle viruses are maturing by using viral protease, for cutting protein into suitable parts; therefore, it will become a mature particle virus.

Window period

The first stage, HIV enters the blood circulation, blood examination for anti-HIV and is non-reactive until 3 months has passed, resulting of reactive anti-HIV.

Disseminating of HIV

HIV disseminate enters the patient's body fluid; and spreads to other people by three of the following ways (Maneesriwongkul, W. 2002:13-14).

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1**. Sexual intercourse**: HIV enters the body by contaminating with infected fluid secretion which often occurs by sexual-intercourse with an HIV-infected patient. HIV is in the semen or fluid secretion in the vagina and enters the body by an abrasion wound. It also occurs by male to male contact via the rectum-intercourse or by oral sex with a mouth wound.

2. **Blood**: HIV spreads through the blood circulation by using of infected equipment for injection through skin, solid equipment. HIV also can get through transfusion or organ exchange if the donor is infected.

3. **Mother-to-child (MTC) HIV transmission**: this MTC happens in pregnancy, during labour, and when newborn receive breast-feeding from the mother.

There is no reporting of HIV spreading by respiratory, meal, toilet use, telephone, or clothes. Moreover no report that mosquitoes or insects are carriers of HIV.

Signs and symptoms

People who receive HIV into their blood circulation will not be ill immediately, but there are gradually symptoms, severity of the disease depends on more numerous HIV, types of HIV and the immune system of the person.

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AIDS' Phases

AIDS has three periods of disease:

The First Period: Asymptomatic HIV There is a period of no sign and symptom but positive blood results. HIV-infected people look as healthy as normal people. This period is up to five years (Inthong, Y. 2002: 12).

Within 2-3 weeks after the infection of HIV to the human body, about 10 percent of patients have signs and symptoms such as: high body temperature, sore throat, headache, weakness, rash on the skin along the arms and legs and enlarged lymphnodes. These signs and symptoms stay for 10-14 days, and then will be disappear. Most of the patients think that they have had cold (Maneesriwongkul, W. 2002: 14).

The Second Period: Symptomatic HIV After the infected with HIV for five years, there are several symptoms that are often found in patients such as: chronic fever, chronic diarrhea, unknown cause of loses of body weight, oral thrush or herpes simplex, fatigue, and herpes zoster. These symptoms are not typical for AIDS only, but they are common for many other general diseases. Therefore, the diagnosis is difficult with compound symptoms or other groups of signs and symptoms of the disease, that also related with immune deficiency syndrome (Maneesriwongkul, W. 2002:14).

The Third Period: AIDS This period is the loss of immunity inside the body. Patients are always ill from opportunistic infection disease, and Kaposi sarcroma (not often found in Thailand) (Maneesriwongkul, W. 2002:16).

Signs and symptoms of the disease that related with the decline of CD4

During early period of HIV-infected, the human body shows no signs and symptoms of the disease, for there are a lot of CD4+ T-Lymphocyte, that the immune system is strong enough to fight against HIV. Usually, the normal human body has CD4+ T-Lymphocyte about 700-1000 cell/c.c. in the blood. After HIV-infection for five years; patients do not have any signs and symptoms of the disease and look normally healthy. This phase is called ***phase A*** by the Centers for Disease Control and Prevention (CDC), and has CD4 more than 500 cells. After 5-7 years of HIV infection, there are less than 500 cells of CD4, but more than 200 cells. Patients now

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have signs and symptoms of the illness of dermatitis from fungus, Candida in mouth, loss of body weight, herpes zoster, pruritic papular erution (PPE), chronic common cold, and chronic diarrhea; and some patients are infected from Mycobacterium tuberculosis. This phase is called *phase B*. After 7-8 years of HIV-infection, there are less than 200 CD4 cells and there is a loss of immune response to prevent other diseases or immunologic abnormalities of HIV-infected patients. HIV has ruined the body immune system; this is called ***phase C***, and patient is called AIDS-patient (patient in both ***phase A*** and ***phase B*** are called HIV-infected person).

Most of the AIDS-patient are always easily ill from opportunistic infection diseases such as Pneumocystis Carinii Pneumonia (PCP), Taxoplasmosis, Tuberculosis Lymphnode, Cryptococcosis, Mycobacterium Avium Complex (MAC), and Cytomegalovirus Retinitis (CMV). Phase C, the AIDS-patients are always readmitted and died from opportunistic infection diseases at the ninth or tenth year of infection (Borwonwatthanuwong, J. 2002).

Definition of AIDS patient was, initiated by the Ministry of Public Health of Thailand in the middle of 1993, and divided into three classes, all classes must have positive results of anti-HIV tests at all periods.

Class I means that all AIDS patients have an indication of Immunodeficiency.

Class II means that all AIDS patients have CD4 cell count lower than 200 cell/micro lit.

Class III means that transmission is from mother to newborn child (MTC).

AIDS patients are divided on the staging of their disease which is important for managing the treatment and following up the planning. In 1993, the CDC divides patients into three categories throughout the world. (Revision of the CDC's AIDS Surveillance Case Definition for Adolescents Adults, 1993).

Patients are divided by clinical signs and symptoms together with quantity of CD4 cell count, as follows (Sungkhanuphap, S. 2002: 621):

Category 1: Patients have CD4 cell count begin at 500 cell/micro lit or 29%

Category 2: Patients have CD4 cell count at amount of 200-499 cell/micro lit or 14-28%

Category 3: Patients have CD4 cell count at less than 200 cell/micro lit or less than 14%

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Category A: Patients have no signs and symptoms of the disease or body have persistent generalized lymphadenopathy (PGL).

Category B: Patients have signs and symptoms of the disease, but it is not mentioned in category C. These clinical signs often found are: oral thrush, vulvovaginal candidiasis, cervical dysplasia, fever (38.5 °C) or chronic diarrhea for 1 month, oral hairy leukoplakia, herpes zoster, ITP (Idiopathic Thrombocytopenic Purpura), PID (Pelvic Inflammatory disease) and peripheral neuropathy.

Category C: Patients that have clinical AIDS signs, almost all of the patients have illness from opportunistic infection.

Treatment of AIDS

Treatment of AIDS has 4 steps (Department of Communicable Disease Control: Ministry of Public Health 2001; 2) as follows:

1. Treatment and Prevention

Treatment and prevention is mostly focused on opportunistic infections, cancers, and other signs such as fever, diarrhea, fatigue, or weight loss. Some of the signs and symptoms of the diseases were cured by medications, but some were not. Nowadays prophylaxis prevention can stop many opportunistic infections by taking medication before the body immune systems of HIV/AIDS-infected patients are down. There are many medications for prophylaxis prevention of Pneumocystis Pneumonia, Cryptococcosis, and Tuberculosis which resulting in prolong survival and better quality of living.

2. Treatment Aimed to Kill HIV

Nowadays, there is no medication that can kill HIV but can only inhibit the increase of numerous HIV cells. In addition, the treatment can prolong patients' lifes with a decrease of many complicated diseases. Patients can eat better which resulting in an increase of body weight and good quality of life. They maybe able to return to work like normal people after the treatment. The Disease Control and Prevention of AIDS in Thailand stated that using of three antiretroviral drugs was sufficient for an effective treatment. It has a high efficacy to decrease numerous HIV cells. Antiretroviral drugs are produced by the Government Pharmaceutical Organization in Thailand which is a low and affordable cost of 1,200-5,040 bahts per month.

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Moreover, the Thai Government has a health insurance policy to help AIDS patients to get an access for antiretroviral drugs with free of charge in the 30 bahts project.

3. Stimulating the Lost Immune System

To date, there are many chemical drugs that are experimented to stimulate the lost body immune system such as interlouikin two (IL-2) and AIDS vaccine. Expectation of these chemical drugs and AIDS vaccines taken together with antiretroviral drugs is believed that this is the best efficacy for treatment presently. However, it is in the experimental process.

4. The Psychotherapy and Psycho-Support

The psychotherapy and psycho-support of patients is important. The counseling, advice and mental support methods can help AIDS-patients relieved from many depressions and pressures. Not only that, they can help for obtaining some occupations but can also help for withdrawal out of drug addiction.

Pinthong, P. and colleagues (2003: 123) conducted a study on HIV/AIDS-infected patients in Maejun Hospital, Chengrai province and reported that patients that lived in the district has no knowledge about opportunistic infection diseases, and could not perform their self-care in prevention of opportunistic infection diseases. Therefore, they provide training on knowledge about the disease, opportunistic infections disease, and care for the HIV/AIDS-infected patients and folks. There were 14 groups of 450 cases in 11 districts, and 130 villages who had received prophylaxis medicine for helping prevent opportunistic infections diseases such as cotrimoxazole and fluconazole.

Nammoung, S. (2003: 160) stated that providing education and information on HIV/AIDS help greatly on disclosure the disease. Patients could not be helped if they did not disclose their HIV status. Those patients who did disclose their infected status would receive prompt treatment and psycho-support. When they are ill, most of them needed antiretroviral therapy to return to their normal life. Out of 86 cases, 46 patients received antiretroviral therapy and their quality of life improved and could return to the family duties.

Conclusively, HIV/AIDS-infected patients have to have knowledge of AIDS and their illness for their own good practice and self-care. Moreover, there has to be participated in their treatment. The planning together with a health care team would

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bring good results, healthier and better quality of life for their patients. So the researcher plan to give knowledge of AIDS in this program for training on skills of adherence practice on antiretroviral drugs.

2. Knowledge of Antiretroviral Drugs and Practice for Healthy

The goals of giving antiretroviral therapy are as following (Mutsikapunt, P. 2002: 2):

1. The clinical goal is to improve quality of life and promote a longer life span for the patients.

2. The maximum and durable suppression of a viral load that can be available is in addition as much as possible and as long as possible. The progression of the disease was stopped and a prevented viral resistance.

3. The immunologic goal is for restoration or preservation of immunologic function. This is increasing, all or both quantity and quality of CD4+cells.

4. The reduction of HIV-related rates such as morbidity and mortality.

5. The goal of control epidemic of disease is to decreasing disseminate of HIV infection.

6. The goal of treatment is the preservation of regimens that will be selected in the future which have fewer side effects; then patients can continue adherence on antiretroviral drugs.

HIV has a life span that can be as short as about 1.5 days from assembly by an infected person, effectively hijacked cells through infection of another cell back to assembly by the newly infected cell. HIV lacks proofreading enzymes to correct errors made when it converts its RNA into DNA via reverse transcription. Since the life time of HIV is short and the DNA copies are wildly diverse, due to a high error rate, HIV mutates very rapidly. Most of the mutations are either inferior to the parent virus (often lacking the ability to reproduce at all) or convey non advantage, but some of them are superior to their parent and can enable HIV to slip past defenses such as the human immune system and antiretroviral drugs. The best defense against resistance is to suppress HIV as much as possible because the more active copies, the more chance that a superior one will be made. This is natural selection in action (Wikipedia, 2004:1).

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Combinations of antiretrovirals work by increasing the number of obstacles HIV has to mutate around and by reducing the chances of a superior mutation by keeping the number of offspring low. If a mutation arises that conveys resistance to one of the drugs being taken, the other drugs will help suppress reproduction of that mutation. With rare exceptions, no individual antiretroviral drug has been demonstrated to suppress an HIV infection for long; these agents must be taken in combinations in order to have a lasting effect. As a result the standard of care is to use combinations of antiretroviral drugs (Wikipedia, 2004:2).

Combinations of antiretrovirals are subjected to positive and negative synergies. This limits the total number of combinations that are available to use. For example, taking DDI and AZT together does affect less than taking either one separately since they inhibit each other (Wikipedia, 2004:2).

There are other issues that further reduce the number of viable treatment combinations that can be derived from the availablity of antiretroviral drugs. Often severe side effects from antiretrovirals further limit treatment options. They need to adhere to a complicated dosing schedule which makes it impossible for some people to use the drugs properly (Wikipedia, 2004:3).

In the event that a person's HIV infection becomes resistant to standard HAART, there are only a few options. One option is to take larger combinations of antiretroviral drugs known as mega-HAART or salvage therapy, unfortunately at the cost of increasing the drugs' side effects. Another is to take only one or two antiretroviral drugs, specifically ones that have been demonstrated to induce HIV mutations which diminish the virulence of the infection somewhat.

Treatment interruptions ("drug holidays"), where the antiretroviral drugs are discontinued, are being studied as a method by which the sensitivity of HIV to the antiretroviral drugs can be increased by changing the selection pressure back from the drugs to being in the human immune system again. This is an effort to breed viruses, which are more drugs susceptible. Unfortunately, during the life-cycle of HIV the virus spends some time in a state, where it is entirely composed of DNA which has been integrated into human DNA. Under certain conditions HIV can remain dormant in this state, since CD4 T-cells are also dormant when they are not aroused due to the presence

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of detectable invading organisms. Once the antiretroviral drugs are re-introduced HIV is emerging from a dormant state which can include drug resistant strains.

Once HIV has mutated in a sufficiently antiretroviral-drug-resistant state the treatments become more fitful and desperate. People are still dying of AIDS despite the improvements in therapy that allow so many to live (Wikipedia, 2004:3).

Groups of Antiretroviral Drug

There are 4 groups of antiretroviral drug as follows (Wikipedia, 2004:1):

1. Nucleoside Reverse Transcriptase Inhibitor and Nucleotide Reverse Transcriptase Inhibitor
2. Nonnucleoside Reverse Transcriptase Inhibitor
3. Protease Inhibitor (PI)
4. Fusion Inhibitor

1. Nucleoside Reverse Transcriptase Inhibitor (NRTI) and Nucleotide Reverse Transcriptase Inhibitor.

This group is nucleoside analogue reverse transcriptase inhibitor; which has a producing of the chain of DNA of HIV finished. Antiretroviral drugs in this group, for example are zidovodine, stavudine, didanosine, lamivudine and zalcitabine (Mutsikapunt, P. 2002: 3).

2. Nonnucleoside Reverse Transcriptase Inhibitor (NNRTI)

This group is group integrated with reverse transcriptase enzymes of HIV-1 made it reverse transcriptase enzymes and transform, and loss of function, then HIV no enter to nucleolus of CD4 this group, are nevirapine and delavirdine (Mutsikapunt, P. 2002: 3).

3. Protease Inhibitor (PI)

Antiretroviral drugs in this group are protease inhibitors. Action effect for holding back the increasing of HIV cells in CD4 cells with infected-HIV or replication of HIV cells, or expression phase. There are abnormal HIV cells in blood circulation. Examples of this group: saquinavir, indinavir, indinavir and nelfinavir (Mutsikapunt, P. 2002: 3)

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4. Fusion Inhibitor (Drug group: Entry and Fusion Inhibitor).

This group is also known as Fuzeon or T-20 which is a type of medicine called a fusion inhibitor. Fusion inhibitors work by blocking the HIV virus from entering human cells. It's injected twice a day for all of the patient's life (Wikipedia, 2004:2).

Side effects of antiretroviral drug

Each antiretroviral drug have individual adverse side effect. The more uses of antiretroviral drugs, the more new adverse side effects will occur. Therefore, frequent adverse side effects were found in all types of antiretroviral drugs.

Frequent adverse of side effect for specific antiretroviral drugs group

The adverse side effects in NRTI drug group

Lactic acidosis/hepatitis steatosis

That found Lactic acidosis state and hepatoma from steatosis state when using the NRTI group, but a high rate of mortality. Patients who had symptoms will show signs and symptoms of fatigue, weight loss, abdominal pain, nausea, vomiting, and dyspnea. Also the blood results of HCO3 concentration levels were low, but the blood lactate CPK and SGOT levels were high. CT scan of abdominal cavities and liver biopsy revealed steatosis. The treatment often failed and resulted in a high mortality rate; some times patients get better from stopping NRTI drug. We found this in all cases which take all NRTI drugs. Although, some reports found a more high rate in d4T or ddI/hydroxy urea drugs than other drugs. From the results of toxicity to mitochrondria, such may be the cause of other clinical symptom, such as myopathy, neuropathy, cardiomyopathy, pancreatitis, asthma, lipoatrophy in supportive treatments report show that using riboflavin might be helping (Mutsikapunt, P. 2002: 6).

The adverse side effects in NNRTI drug group

Rash

The Use of NNRTI drugs especially in Nevirapine found a rash in about 16 %. Almost all are not violent and are often found in first 2-3 weeks. It may resolve it self

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with the use of anti-allergy drug 5 % of patient maybe severe and turn to Steven-Johnson syndrome then death (Mutsikapunt, P. 2002: 6).

Hepatitis

That found hepatitis from Nivirapine drug, about 12.5 % was found in the first 12 weeks. If they are not violent it may be not stopping the drug, but if SGPT levels are over 5 times the normal level may be you should stop using Nevirapine (Mutsikapunt, P. 2002: 6).

The adverse side effects in PI drug group

Hyperglycemia

Some reports have found hyperglycemia state, diabetes mellitus, diabetic keto-acidosis, after intake of the drug the average timing symptom are with in 63 days. When stopping taking the drugs the blood levels will decrease in to a normal level so you should be monitoring the blood level every 3-4 months (Mutsikapunt, P. 2002: 8).

Fat redistribution

We found the changing in fat distribution in the parts of the body. The clinical symptoms we found are central obesity, peripheral fat wasting, visceral fat accumulation, dorsocer accumulation (buffalo hump), extremity wasting with venous prominence, facial thinning, breast enlargement and lipomatosis (Mutsikapunt, P. 2002: 8).

Hyperlipidemia

High blood lipid level include cholesterol, triglyceride produce coronary artery disease in young patients, strokes and cholecystitis so doctor should check the level of cholesterol and triglyceride every 3-4 months (Mutsikapunt, P. 2002: 8).

Increased bleeding episodes in patient with hemophilia

Some reports about bleeding tendency in hemophilia A and B patient, usually hemorthrosis and soft tissue onset after intake of drug after about 22 days (Mutsikapunt, P. 2002: 8).

Avascular necrosis

Some reports about vascular necrosis, about 0.3-1.3 of patients whose intake of PI (protease inhibitor) antiretroviral drug is usually found at head of femur. Each

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antiretroviral drug have individual adverse side effect. May be found that (Mutsikapunt, P. 2002: 8).

The factors have influenced antiretroviral drugs treatment failure

The failure of treatment will happen fast or slowly depending on which procedure the patient takes. The failure of treatment is more severe and is more violent. Factors that produce the failure of treatment are as follow (Sungkhanuphap, S. 2002: 740-741):

1. Insufficient antiretroviral potency.

If the antiretroviral drug intake is insufficient to decrease the level of viral HIV into a lower level until it cannot be detected it will produce a selection of resistance antiretroviral drugs and increase the viral load in a short time, then CD4 levels will decrease. The benefit in clinical treatment will happen in a short time. The problem of efficacy and insufficient antiretroviral drug potency are an important factor in Thailand. Presently, we still use antiretroviral drugs as mono therapy, dual therapy, and triple drug regimens which are not suitable, some doctors give a false dose or false method of drug intake, the more we understand about drug's resistance and disadvantages, the more important decrease in this factor.

2. Poor adherence

The quantities of viral infestation is increase faster in the body, an increase of 10^9 copy cells per day, if there is no treatment. Therefore, persistence on treatment is very important which is mainly relied on consistency on taking medication. At present, most antiretroviral drugs tend to have a short life that taking one dose a day is too low and cannot decrease viral load that may also produce drug resistance. Generally, antiretroviral drugs were taking twice a day for full potential of drug efficiency that will cause more problems for the patients to keep on track on adherence.

3. Pharmacological factors

Many antiretroviral drugs have unpleasant side effects or reactions such as reactions between the drug combinations, irritation when taking with some food, in absorption when taking with inappropriate meal time (before, with, or after meal). These reactions may withhold the patients in their adherence on medication taking.

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4. Advanced disease

The advancement in the stages of the disease is also the cause of failure in adherence on medication taking. If the patients are severe in their condition, mostly, their CD4 levels are low that the endurance on adverse side effects of the drugs is also bad. These patients, then, cannot bare the undesirable side effects of the drug and are difficult to follow the strict regimen.

5. Pre-existing mutation

The patients infected with pre-existing mutation viruses with their early acquired infection may be tolerance to antiretroviral drugs than the patients who acquired the viruses in general. These patients may easily develop the resistance to antiretroviral drugs even though they are strict to the regimen.

The research of antiretroviral drugs

Atiratana, K. (2003) studied the HIV infected/AIDS patients who took triple therapy for at least 6 months. The results were that the patients significantly improved their qualities of life. There were many factors that increased these patients' qualities of life such as occupation and income. The most common side effect of antiretroviral drugs was rash.

Sirisosesluk, W. (1997) studied the pharmacist's home visit on AIDS patients who have received treatment from Nakornpink hospital. Almost all patients had many problems from drug using such as 86.11 % cannot use drug in the correct way, and 40.0 % had adverse drug reactions. For the adverse drug reaction, it was found about 16.7% could be protect and can be resolved by a pharmacist on dose adjustment or time management for suitable drug intake (44.7%). For pharmacological management at home, 94.44% of the patients and relatives were satisfied in advice service, 91.7% needed home health care service frequently, and 88.9% need a manual for drug users.

Suthawan, S. (2003: 60) conducted descriptive study of the use of triple antiviral drugs therapy (HAART) in Srisaket hospital. The results found that most of the samples had good quality of life and well being, medium physical and mind, and fair social.

Suetrong, C. (2003: 52) studied home health care of HIV infected/AIDS patients of Ladyoa hospital and found that the drug unit's dose system was frequently

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supported in drugs taking. The drug unit's dose system helped the patients to take drugs more easily and more convenient to carry that reduced the chance of forgetting drug. On the appointment day, the patients must bring the left over drugs to the providers and were checked the date that the patient forgets to take the drugs. This study resulted more increase in patients' weight, CD4 count level, and quality of life.

Wanichsun, T. (2003: 130) studied the vision of antiviral drug user and their health care behavior of the AIDS patients who joined the service system development project and follow up the HIV infected/AIDS patients in Thailand (**Access to Care** project: ATC) by in-depth interview and observation. The data analysis was from 18 patients who gave the important information from 3 hospitals. The results found that the patients could occasionally follow AIDS and treatment information, so they can understand AIDS; could live in AIDS state; and could have an efficacy of antiviral drug treatment by receiving more information. They could help to support the other patients who received antiretroviral therapy to accept and decide to join the project by themseleves. Most of the patients who gave the information had good level of taking care of themselves, tried intensively to care for their bodies, were more relaxed about their health, were more self confident in their competency, and tried to adjust in HIV infected/AIDS life style. Disclosing themselves to their family could bring in more support and encouraged a powerful mind that helped on rehabilitation. However, most of the patients did not disclose themselves to other peoples such as their friends, neighbors, or community. For the medical side effects of treatment and social effect by antiviral drug therapy, this study found that all patients who gave the information were satisfied with the results of antiviral drugs therapy and became healthier in mind. The more the patients increased their confidence in joining the social or community activities, the more they realized the value of living.

In conclusion, the results of antiviral drug treatment were good for physical fitness and quality of life in HIV infected/AIDS patients. Those who were adhered to antiretroviral therapy could have more hope for better physical fitness and quality of life. The researcher taught about the knowledge of treatment of drug to the HIV infected/AIDS patients by the power point presentation in group discussion.

Collaboration in medicine therapy

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Collaboration in taking medicine therapy means that behavior or action of patient that allows and to be willing to select a practice and to follow advice of the health care team for taking medicine and follow up on appointments. Chronic diseases such as hypertension, DM and other diseases are emphasized on taking medicine and health practice. Good adherence is a decisive factor in treatment for success.

For almost all chronic conditions, except HIV/AIDS, 80% adherence is a realistic goal that yields acceptable clinical outcome. HIV/AIDS is unlike other chronic diseases, the rapid replication and mutation rate of HIV requires very high levels of adherence; as 95%, in order to achieve durable suppression of viral load. HIV infected/AIDS patients have low adherence rates, similar to those seen in other chronic diseases. Less than optimal adherence may quickly cause resistance, which can then be transmitted to others. The potential and effective new combinations of antiretroviral drug, called highly active antiretroviral therapy (HAART), have proven efficacious in reducing viral load and improving clinical outcomes however, the large number of medications required, complicated dosing requirements, and less-than-optimal tolerability make adherence difficult. Because of critical importance of adherence to antiretroviral treatment of HIV, HIV patient provides a compelling case for maximizing adherence (WHO, 2003).

Improving of HIV/AIDS patient is to have a good adherence and very good continuous taking of medicine. Therefore, in treating HIV/AIDS patients simply having compliance is not enough but it is requiring on an adherence that is the most powerful practice on increasing the CD 4 level of the patients.

3. Adherence

Definition of adherence

The AIDS Institute New York State, Department of Health (2003:1) defines the term adherence as “Adherence means the act or quality of sticking to something; steady devoting; and the act of adhering. Adherence is best achieved through a collaborative process that facilitates acceptance and integration of a medication regimen into an individual's daily life.” Where as a compliance means “the act of

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conforming, yielding or acquiescing. Compliance implies that the prescribed regimen is not a shared decision made between the individual and the provider."

WHO (2001:3) defines adherence as that "the extent to which the patient follows medical instructions"

Haynes (2001) and Rand (1993) stated that "The extent to which a person's behavior- taking medication, following a diet, and/or executing life style changes, corresponds with agreed recommendations from a health care provider".

Adherence Versus Compliance

The Institute New York State Department of Health (2003) refers that the term adherence is broader than the term compliance, which is used to describe the degree to which an individual follows the regimen prescribed by the provider. Adherence reflects collaboration between the patient and the provider in devising the medical regimen, not simply the following of instructions. A relationship that fosters trust and respect is essential for the care of individuals, especially for those with a chronic illness such as HIV.

It is necessary to understand the degree of medication adherence needed to effectively and durably control HIV replication; or, conversely, how many doses of medication can be missed before treatment response is adversely impacted. One study using an electronic medication event monitoring system (MEMS) looked at viralogical failures on HAART as a function of adherence to treatment (Paterson, et al., 1999). Forty-five patients were studied. Treatment failure was defined as an HIV-1 RNA of >400 copies/ml. Adherence to treatment at a level of 95 % or better was associated with a failure rate of 19 %. With adherence of 90-95%, the failure rate increased to 36%. As adherence dropped to 86-90%, the failure rate rose to 50%, and with<70% adherence, the failure rate increased to 94%. This study directly relates better adherence to greater reduction in HIV viral load. Electronic medication event monitoring caps record the time and date that the pill bottle is opened. However, the data did not disclose how many pills were removed when the bottle was opened or if the pills were taken as instructed. Thus, true adherence may be lower than indicated by surveillance (Tennenberg, 1999: 1).

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Non adherence to HIV medications allows for a higher viral load translating into a higher likelihood of progression to AIDS. Reduction in viral load results in a decrease of opportunistic infections, hospitalization, and progression to AIDS, and HIV-related morbidity. Poor adherence results in increased plasma viremia with its associated increase in morbidity and mortality. Suboptimal treatment of HIV infection, due to a poor treatment regimen or non-adherence to a potent regimen, breeds HIV that is resistant to the antiretroviral agents. Cross-resistance also exists between antiretroviral agents in the same class. Therefore, therapeutic options for drug resistant HIV can be limited. The best chance for effective HIV therapy lies with the first treatment course. Once resistance has developed, success rates are more limited, particularly if adherence issues are not resolved (Tennenberg, 1999: 2).

In promotion adherence of HIV-infected/ AIDS patient, for occurring with outcome positive and the most usefulness for patient, the reasons for non-adherence to HAART include patient, disease, treatment, and provider factors. No consistent connection between medication adherence and demographics such as age, gender, race, and occupation; between alcohol and drug use and poor adherence can also not be consistently demonstrated.

The important patient characteristics are the levels of insight into the disease process and the impact treatment will have on the course of the illness. If the patient does not believe that treatment will be of benefit, there is less motivation to adhere. The patient's fear of side effects or belief in the ability to control side effects may also network of friends, family, or partner. Supporting individuals can give encouragement and allay psychological conditions such as depression and anxiety, which also affect compliance, and may affect the level of trust and confidence the patient has in the doctor and the entire healthcare team (Tennenberg, 1999: 4).

Treatment or disease factors relate to characteristics of the treatment or the illness that generate barriers to adherence. One example is the complexity of the treatment regimen. This includes the number of medications, the number of doses taken each day, and the number of pills taken at each dose. Some medications, such as didanosine, need to be taken on an empty stomach, and others, such as saquinavir should be taken with food. It can be challenging to keep the specifics of the treatment regimen straight. The medications can also be associated with serious side effects,

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such as nausea, vomiting, diarrhea, and neuropathy that can be serious deterrents to adherence. Individuals with unstable living circumstances may not be able to properly and safely store their medicines. Individuals who work may not be able to carry their medications with them and may not have a private place to take them out of view of their co-works (Tennenberg, 1999: 4).

Provider factors also play an important role. The health care providers must see their patients as partners in the treatment plan. Time must be taken to educate the patient about the treatment, side effects, and the disease process. Attempts should be made to tailor the treatment regimen to a particular patient's lifestyle and attitudes about treatment. The providers must recognize the aforementioned patient factors, and prescribe appropriately. Importantly, the provider should not impose treatment on a patient who expresses reluctance or unwillingness, even if the patient meets the treatment criteria. Similarly, it may be reasonable to delay switching to a new regimen if the patient expresses unwillingness or hesitation. It is rarely an emergency to initiate HAART, and time spent exploring the reasons for the patient's hesitation may improve the chances of treatment success through better adherence (Tennenberg, 1999: 4).

The list below, adapted from the NIH antiretroviral Guidelines (2001), lists additional patient and medication-related strategies to improve adherence (WHO, 2003).

- Inform patient, anticipate, and treat side-effects.
- Simplify food requirements.
- Avoid adverse drug interactions.
- If possible, reduce dose frequency and number of pills.
- Negotiate a treatment plan, which the patient understands and to which he or she is committed.
- Take time, and use multiple encounters to educate and explain the goals of therapy and the need for adherence.
- Establish readiness to take medication before the first prescription is written.
- Recruit family and friends to support the treatment plan.
- Develop a concrete plan for a specific regimen, relation to meals, daily schedule, and side-effects.

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- Provide a written schedule and pictures of medications, daily or weekly pillboxes, alarm clocks, pagers and other mechanical aids to adherence.
- Develop adherence support groups, or add adherence issues to the regular agenda of support groups.
- Develop links with local community-based organizations to explain the need for adherence with educational sessions and practical strategies.
- Consider "pill trials" with jellybeans.

The Collaboration of HIV-infected/AIDS patients is on antiretroviral therapy

Songwattana, P. (2003: 85-86), mentioned the collaboration on antiretroviral therapy of HIV-infected/AIDS patients that care around all dimension as: adherence drug, follow up on appointment once a month, management of problems was solved by themselves (such as problems from side-effect of antiretroviral therapy), self care for general health, for example: avoiding all drinking alcohol and smoking tobacco, taking a useful food by five dominants (carbohydrate, protein, fat, vegetable and fruit), drink water 2,000-2,500 c.c. per day, avoiding of food from fermentation because it made diarrhea, exercise on three times once a week, each time do not take over than 30 minutes, then they should have suitable relaxation and sleeping on 6 hours per day at night, moreover they must do preventing disease transmission to other people.

Other researches are about antiretroviral therapy

World Health Organization (WHO, 2003: 27-35) reported that there were 5 main factors that affected people's adherence: socioeconomic related factors, health care team/ system-related factors, condition related factors, therapy-related factors, and patient-related factors.

Socioeconomic related factors on negative effects to adherence includes stress about children, has low income for the women; and lack of social support for African American men and support of family and friend for Caucasian men.

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Health care team/ health system-related factors on negative effects include lack of clear instructions from health professionals; and poor delivery of care, education in managing diseases, and treatment.

Health care team/ health system-related factors positive effects include good relationship between patient and physician; and support of nurses and pharmacists.

Condition related factors on negative effects were asymptomatic patients.

Condition related factors on positive were symptomatic patients; understanding the relationship between adherence and viral load.

Therapy-related factors on negative effects include complex treatment regimens, closed monitoring, severe lifestyle alterations, adverse events, adverse effects of treatment, lack of clear instructions about how to take the medications.

Therapy-related factors on positive effects include less frequent dose, fewer pills per day, fewer dietary restrictions, fitting medication to individual's lifestyle, belief that medication is effective.

Patient-related factor on negative effects include forgetfulness, life stress, alcohol use, drug use, depression, hopelessness and negative feelings beliefs that alcohol and drug use interfere with medication: life stress.

Patient-related factor on positive effects were positive beliefs regarding the efficacy of antiretroviral medications.

Pythia, T. and associated (2001) studied on the limited patient adherence to highly active antiretroviral therapy for HIV–1 infection and found that 47% reported taking all antiretroviral medications on time and following dietary instructions. Patient who reported deviation from their regimen shows lower drug adherence. Reasons for deviation from the regimen were forgetting (35%), considering it's impossible to combine about taking medication with activities at that particular moment (24%), feeling sick or ill (22%), having a change in daily routine (19%), and not having the medications available at the requested time (15%).

The report from a recent conference about HIV adherence, adherence to New HIV therapies: research conference, November 20-21, 1997, originally defined these categories (the National Institutes of Health Office of AIDS Research: NIH OAR, 1997):

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The factors affecting adherence and non-adherence have been complied into four broad categories of factors, each containing multiple issues that were elaborated as patient factors. Provider or clinician factors, illness and/or treatment regiment factors and contextual factors.

Williams and Friedland (1997:51-55); Cramer and Rosenheck (1998:196-201) found that patient's demographics such as sex, age, race, education, occupation, and socioeconomic status were not related to adherence.

Flexner (1997) reported that all individuals-regardless of demographics or disease-adherence falls into general patterns: almost no one was 100 % adherent; most patients were moderately adherent, taking 70 % to 99 % of doses; and 30% of patients were poorly adherent, taking less than 60% of prescribed doses.

4. Providing counseling support to patients who have antiretroviral drugs therapy

The counseling for patient taking antiretroviral drug therapy

The antiretroviral therapy is a part of the HIV infected patient care process, but it would be successful, or not, much depended upon the counseling provider and process. Counseling could help the patients to understand about: how to use antiretroviral drugs, access the health care system, cooperate on adherence to antiretroviral drugs regimen with a provider health team, and makes patient to continue on adherence antiretroviral drugs for as long as they live.

Guideline of providing counseling of antiretroviral drug therapy

Sanguanwong N. (2002, cited in Thai CDC, MOPH, 2002: 9) suggested the useful contents for a counselor that can be applied with a counseling service as following:

1. Counselor ought to counsel with both positive and negative information of antiretroviral drugs. Counselors gave clear and easy to understand about facts and information to the patients. For example:

Positive information of antiretroviral drugs: it can inhibit viral loaded, increase CD4, thus the immune of system of the body is strengthened to prevent other

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opportunistic diseases. However, taking medicine must be on time, don't forget to take at any time, and must take medicine for the rest of their lives.

Negative information of antiretroviral drugs: patient may be ill from side effects of antiretroviral drugs that can be ranged from mild symptoms or perhaps too severe till death. Furthermore, the patients who have non-adherence to antiretroviral drugs, then it can cause drug resistant, have impacted on failure of antiretroviral drug therapy that lead to switch of new regimen for treatment. This will make the treatment even more ineffective.

2. Counselors have to search many factors that influence the continuity of adherence of the patients by collecting many data that were useful for most of the counseling service to help the patients.

3. Principle of drug counseling for antiretroviral drug therapy is a must to be concerned in using counseling method similar to an art, especially knowledge of antiretroviral drug that important to give for the HIV patients. To activation the patients on understanding in drug related problems, and collaborate in their medication taking on the right dose and on time. In this stage, the emphasis is on the patient development of their self esteem and understanding of the strictly adherence on medication.

The information needed for patients are as follows:

- Drugs: dose, time, route of taking
- Special cautions in drug-use
- Side effects and drug interaction
- Practice of self care
- How to store drugs
- How to refill prescription
- What to do when forgetting taking medicine

4. Counselor have to record data in counseling in all cases for next counseling, for planning to help others, and for following up on patients' prescriptions.

Practice for counseling to activate collaborating in continue adherence.

Generally, when people illness has happened it needs drug treatments and they must continue on taking medicine. Problems are always found in chronic patients

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such as not taking all doses of the medicine as doctor orders, stop taking medicine by themselves, feel alright and think they don't need to take medicine, are afraid of side effects and outcome of drugs after using for a long time.

The antiretroviral therapy emphasizes that continuity of adherence drug is very important. All types and numbers of medicine taking must be very strictly practice on assumption as: when to take medicine, what route of taking, what interaction must be avoided. The counselors have to guide on solving the problems and activate good adherence on antiretroviral drugs of HIV-infected/AIDS patient that is an important role of the counselor.

Problems that are commonly found in the patients adhered to antiretroviral drug for a long time are as follow:

1. Problems from patient-related factors:
    - Lack of understanding about antiretroviral therapy and how to take medicines correctly
    - Lack of real intention
    - Forgetting take medicine
    - Having complex problems such as sore throat, trouble on swallowing or disliking of taking medicine
    - Patients feel powerless when taking medicine for along time, but still in poor health and do not improve
    - When having problems from taking medicine, patients did not tell its fact to the counselor, because they were anxiety of afraid of being blamed from the counselor
    - Patients do not tell the real result of the blood test to their family and closed friends because they do not want any people to know about it, then the burden of keeping it secret is too much to bare that the patients much hide their medications out of other people's sight
    - Patients have wrong belief on cure and self care
    - Some patients drink alcohol or have a substance addiction
2. Problem from therapy-related factor
    - Drugs are not tasty

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- Drugs have many regimens and too many tablets to take in one time, moreover some drugs tablets are too big to eat
- Drugs are too complex to take such as, some drugs need to be diluted in water
- Some drugs may cause allergies

3. Problems from providing system related factors
    - Providing a inconvenient service delivering system: appointment for checking up, appointment for refilled prescription, and appointment for counseling service
    - Problems from counseling service system: the place for counseling service is not always suitable for talking about complex problems that need privacy, counselor lack of skill and experience in counseling
    - Health team providers lack of continuous system to follow up patients
4. Problems from social/ economic factors
    - Patients move or work in a new place, in other provinces, then they cannot keep up with the follow up or appointments
    - Patients cannot take a sick leave
    - Patients have no money to pay for the treatment fee
    - The family is hopeless and neglect to help the patients
    - Some patients have no one to take them to hospital for refilled prescription
    - Some patients received wrong information about the treatment from other people and are all confused

Counseling

Counseling is a process of good relationships between counselor and the counselee with two ways communication, a counselor is a helper, and must have skills and knowledge for a counselee, for understanding, and seeking out real problems, causes of the problems, and ways of adaptation (Mental Health of Bureau, 2003: 43).

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Objective and characteristics of counseling

Objectives

1. To assist the counselee to learn more about himself and to understand his or her problems.

2. To assist the counselee to have problem solving skills and make decisions by themselves.

3. The counselee is able to modify counselee's behaviors for appropriate action.

Characteristics

1. Counseling is a process, to help counselee investigate their psychological, emotional and social problems and find ways for modification their behaviors on their own.

2. To emphasize a good relationship between counselor and counselee by building trust, an open minded atmosphere, relaxation, and understanding.

3. To emphasize two way communication, to create an understanding between counselor and counselee.

4. The dialogue between the counselor and counselee must follow the set goals that will rely very much on the counselor's ability.

5. The counseling is emphasized on here and now in order for the counselee to be able to draw their efficacy and ability.

6. There is no fixed answer depended on counselee's condition, efficacy, and ability.

7. Counseling is advice and teaching only that help to say whether it is right or wrong. Counseling assists counselee to have guidelines for problem solving and decision making considering. A counselor helps a counselee to reach his/her maximum fulfillment or potential and to become fully functional as a person.

Counseling process

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There are 5 steps of counseling process (Mental health of bureau, 2003: 48) as following:

1. Rapport is trust making, familiar, warm welcoming, and good feeling towards counselor. The counselor must be opened and show true feelings by using skills such as greeting, small talk, attending and opening. Agreement of service is to talk for direct understanding on issues and time frame of the talking and will be kept secret.

2. Problem survey is a process of counseling which open up the counselee's thinking, emotion, feeling, and self behavior.

3. Problem-solving plan is to find causes and needs of the counselee and link information from the problem survey by the counselor to help the counselee understands their own problems, causes, and needs, and to combine these understanding into problem solving plan.

4. Problem-solving is the ability of the counselee to make their decision to solve their own problems their ways. The counselor work to help facilitate the capacity building of the counselee by bringing in the counselee's recognition of their own strengths and potentials and find ways to help easy the process.

5. Terminating session is to end of the counseling by checking the cooperation between the counselor and counselee in dialoguing, determine the guidelines to follow.

The Strategies in Counseling

The strategies in counseling include:

1. Gentle Strategies include psychological supports, empathy, warm, flexible, and intentional listening

2. Systemic problem solving

3. Keep secret

4. Stable emotion personality

5. Skilled communication

6. Reasonable

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Individualized counseling

Counseling is a strategy of helping and caring for those who have mental anxieties or problems, may extend to families. To be a good counselor, this person need to have an understanding in human behavior, to have a good attitude, belief and behavior, and bring them to use with understanding of the psychological issues that the patient concerned (Mental Health Bureau, 2003: 1).

Therefore, a good counselor must have perception in these matters:

1. The mind consists of sub consciousness and consciousness. The conscious are realized and acknowledged, but the subconscious mind cannot understand the cognitive with reason. It works with mental mechanisms which is an unconscious.

2. The conscious mind consists of two parts such as cognition and emotion.

3. The positive cognition and emotion are purchased to such as, if you are able to think or see a good others, it's causes to have a positive cognition and emotion, controvert negative thinking can be purchased to negative cognition and emotion too.

4. The emotional will disturb a working of cognition. If the mental health is full with emotion, such as anxiety, grief, angry, exciting, and happy or, it reduces the effective on cognition working, so to calm down the mind will give better information and suggestions on who to choose as practice of counseling. The emotions will disturb the cognition of working or disrupt perception of information.

5. The emotion of grief, anxiety, regret and angry.

Anxiety is an emotional state, which he or she thinks of a situation previously. It's effects his life. Regret is an emotion state, which happens after a situation or to review a past event, it's mean that they are lost and blind, if he obtains the adherence. Anxiety is an emotion state, when it happens, he or she meets a things which they don't want and it effects hope, and response it behaviors both verbal and non-verbal.

6. Communication includes verbal expression and non-verbal expression. With the verbal expression, people communicate through the expression of the word and its meaning, discussion, explanation, dialogue, complaint, or argue. With the non-verbal expression, people communicate through the expression of the tone of voice, a gleam in the eyes, a look, gestures, and including a body touch.

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Conclusion

Counseling is a mental service to help the counselee to decrease their tensions of mental and to be able to resolve the problem by oneself.

5. Perception of self-efficacy

Albert Bandura, a Canadian psychologist who has developed the social learning theory and changed his theory into social cognitive theory. In social cognitive theory human agency operates within an interdependent causal structure involving triadic reciprocal causation. In this transactional view of self and society, internal personal factors in the form of cognitive, affective, and biological events; behavior; and environmental events all operate as interacting determinants that influence one another bidirectionally (Figure 2)

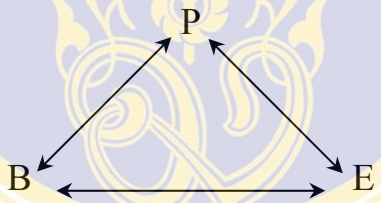

Figure 2 The relationships between the three major classes of determinants in triadic reciprocal causation. B represents behavior; P the internal personal factors in the form of cognitive, affective, and biological events; and E the external environment (Bandura, 1997: 6)

Reciprocity does not mean that the three sets of interacting determinants are of equal strength. Their relative influence will vary for different activities and under different circumstances. Nor do the mutual influences and their reciprocal effects all spring forth simultaneously as a holistic entity. It takes time for a causal factor to exert its influence.

Bandura (1997: 6) introduced the concept of perceived self-efficacy in the context of cognitive behavior modification. It has been found that a strong sense of personal efficacy is related to better health, higher achievement and more social integration. This concept has been applied to change behavior. Behavioral change is

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facilitated by a personal sense of control. If people believe that they can take action to solve a problem instrumentally, they become more inclined to do so and feel more committed to this decision. While outcome expectancies refer to a judgment of the likely consequence such performances will produce, perceived self-efficacy pertains to a judgment of one's ability to organize and execute given types of performances. A person who believes in being able to cause an event can conduct a more active and self-determined live course. This 'can do' cognition mirrors a sense of control over one's environment. It reflects the belief in being able to master challenging demands by means of adaptive action. The causal relationship between beliefs of personal efficacy and outcome expectations is depicted in Figure 3.

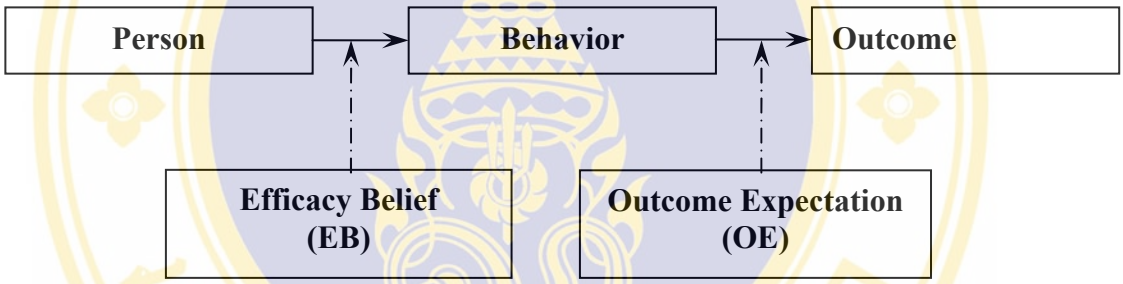

Figure 3 The condition relationships between efficacy belief and outcome expectation (Bandura, 1997:22)

Bandura has proved self-efficacy theory, and offered a theory structure, which present the main components:

1. Efficacy Belief (EB) means the determination about one's efficacy concerning how well one can work. It can be the belief of a person concerning ability in performing something, which is powerful for a living. The belief in one's efficacy can be considered from feeling, thought, motive and behavior.

2. Outcome Expectation (OE) means the belief a person evaluates certain performance that will to the expected outcome due to that performance.

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From the model above, it can be concluded that whether a person will decide to perform a behavior or not depends on efficacy belief, the ability to perform the behavior, and outcome expectation of that performance. Both components has the relation as demonstrated as show in Figure 4.

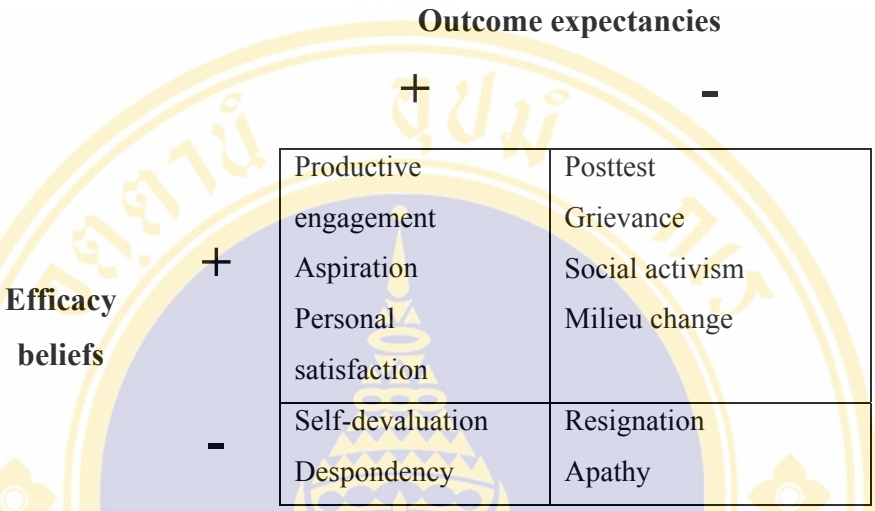

Figure 4 The relationship between efficacy beliefs and outcome expectancies (Bandura, 1997: 20)

Self-efficacy beliefs are constructed from four principal sources of information: 1) enactive mastery experiences that serve as indicators of capability; 2) vicarious experiences that alter efficacy beliefs through transmission of competencies and comparison with the attainments of other; 3) verbal persuasion and allied types of social influences that one possesses certain capabilities; 4) physiological and affective states from which people partly judge their capability, strength, and vulnerability to dysfunction (Bandura, 1997: 79-115). Bundura say that self efficacy beliefs are effect on human's behavior as follows:

1. Congnitive process

There are several forms of cognitive process related to the self-efficacy. Human's behaviors are guided by the value judgment. People who have high self-efficaey will perceive the success as the guidance to support in any activities but in the opposite, people who have low self-efficacy will think of failure and are not brave to do things to make a success.

The most important thing for cognition is to help people develop their behavior. This process passes through the efficiency communication, which

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eliminates all unclear information. To learn, anticipate and control their behavior we need their judgement to weigh and adopt all expected factors in order to revise all outcomes, which happen and will be happening as a results of their actions. They will notice which factor is suitable and effective to them.

People who are faced with a tough situation and have low self-efficacy will avoid the situation by decreasing their wants and so the quality of their action will be worse. In the opposite people who have high self-efficacy and feel the target is challenging will try to analyze the best way to reach that target and finally be successful.

2. Motivational process

Motivating people is to help them think in advance and to have expectation in the activities they have done. Self-efficacy and outcome expectation should be promoted to make plans to reach the expexted targets. Motivation is directed by the expected target and individual person standard, which are controlled by (1) satisfaction, (2) dissatisfaction in the other people‘s behavior and (3) self-efficacy. To believe in oneself ability affects one self in various ways. People may try harder to adapt themselves when facing the problem. People with low self-efficacy will put less effort in and finally give up the activity while people with high self-efficacy will try harder when they fail. Self-efficacy creates challenges and strength to fight to target.

3. Affective process

To be believed that people who believe in self-efficacy will have tension and able to control themselves when they are in tough situation. But if people do not believe they are able to control the situation, they will perceive that all dangers are around them and beyond their ability. As a result, tension creates process effects. Concerning the health of people, tension is a main factor that causes abnormal function in people’s health. If people are faced with uncontrollable tension, it will cause abnormal immunization; which is a link to be infected and finally get sick.

4. Selection process

Bandura believed that self-efficacy can be adjusted by the selected activities or environment. People will avoid any situations and activities they believe. They are beyond their ability. On the other hand, they are ready to challenge any activities they have selected after their consideration. The selection environment is affected by the

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society and will lead to the supportive competition, value judgment and interest as long as they make an effective decision.

Sources of self-efficacy

From conceptual of Bandura (1997), self-efficacy beliefs are constructed From four principle sources of information as follows.

1. Enactive mastery experience

Enactive mastery experience is the most effective method in developed perceived self-efficacy and the cause of people receiving achieve experience that what they can achieve, many have success of experience which make them have confidence and perceive self efficacy so that they can fight the same situations and expected that they can have success, however sometimes they fail, but theirs no impact on them because they have ability to think for themselves may be not enough effort used the right method but can use skill and experience in transition for different situations. On the other hand some people always they fail experience and as a result is an effect so that they have low self-efficacy. Therefore they need to develop their skills more enough to make them have achievement in their experience due to effect in increased self efficacy.

2. Vicarious experience

The estimated of self-efficacy is a part of experience and seeming the experience as a model of success. If people estimate that they have enough ability to make a decision to do that activity, but people can not estimate that they have ability to do all activity, therefore they compare with achievement of experience of other people who similar as them. This is a result of motivating, people believes and that they have enough ability to do that activity and if achieved if they try to do so. Models have two types as follows: (1) the live-modeling for example, person, and (2) the symbolic modeling for example, moves, VCD.

3. Verbal persuasion

Verbal persuasion is using and talking to the person to make them have confident to do an activity and to achieve, especially in a case as difficult behavior which if they were introduced, to a powerful mind, and admiring; and then tried hard to do an activity.

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The Verbal persuasion is easy method but should be used together with other resources.

4. Physiological and affective state

People will have a decision of self–efficacy by pass physiological and affective state. The physiological state is a response of the body to show when the body is attacked by something and faced with stress or an abnormal body such as: illness, pain, or not at ease, this has an effect on people who have low self-efficacy. In the same as, an affective state a reaction response to stimulation of mood, they show positive affective such as: satisfied, feeling happy, self valuation in ones own self that make people have high self-efficacy but the negative affective state are: stress, anxiety, fear, and suffering that will effect people who have less self-efficacy and always avoid that behavior so self-efficacy is high when people have normal physiological and affective state or they can control themselves when have affective stimulus too.

In given domains of functioning, efficacy beliefs vary in level, strength, and generality. The outcomes that flow from a given course of action can take the form of positive or negative physical, social, and self-evaluation effects.

Efficacy beliefs vary on several dimensions that have important performance implications. They differ in level or magnitude, strength, and generality (Bandura, 1997: 22; Bandura, 1986: 396; Bandura, 1977: 84-85).

1. Level or Magnitude: When tasks are ordered according to level of difficulty, the efficacy beliefs of different individuals may be limited to simpler tasks, extend to moderately difficult ones, or include even the most taxing performances within a particular domain of functioning.

2. Strength: Weak efficacy beliefs are easily negated by disconfirming experiences, whereas people who have a strong belief in their own competence will persevere in their coping efforts despite high amount of difficulties. The stronger the efficacy beliefs, the higher the likelihood that threatening tasks will be dealt with successfully.

3. Generality: People may judge themselves efficacious only in certain domains of functioning or across a wide range of activities and situations. Domain-

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linked assessments reveal the patterning and degree of generality of people's perceptions of their efficacy.

The related research

Treethunyasup, Y. (1995) studied the effects of dentist education for transition behavior for health dentical prevention among primary school students by quasi-experiment research. The simple group are the first primary school, 120 cases divided in to a experimental group and a comparison group each group has 60 cases. The results found that the experimental group is transitive in knowledge and self-efficacy believes outcome expectancies from prevention disease are related with the prevention of tooth decay and gum inflammation disease in statistical significant at level of 05.

Juldacha, S. (1997) studied effect of education program for transition practice behavior in Tuberculosis patients by following on introduction about correct health practice for treatment of Tuberculosis patient. The Quasi-experiment was used in this study with application self-efficacy theory and social support for transition behavior. The samples are Tuberculosis patient 97 cases, divided experimental group 49 cases and experimental group 48 cases. The results found that after intervention experimental group has: knowledge about Tuberculosis disease, self-efficacy of practice follow on introduction in treatment, practice behavior that follow on introduction in treatment and outcome experiences of good results from practice that follow on introduction in treatment has higher mean score than before intervention and comparison group in statistical significant.

Keuwsaoad, O. (2001) studied effect of promotion self-efficacy to health practices of patients who were ill from Coronary artery disease and had received treatment at a heart disease clinic in OPD at Cheingkhom hospital Phayau province, during June to September 2001. The sample selected is a purposive sample about 30 cases are divided random lying a experimental group with a comparison group has 15 cases in each group. The Experimental group had received promotion self-efficacy program and comparison was received health care routine from nurses. The result found that: (1) the mean score of self-efficacy of Experimental group after intervention was higher than before intervention (p value = .001), (2) the mean score of health practice behavior of Experimental group after intervention was higher than before

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intervention (p value = .001), (3) Experimental group had a mean score of self-efficacy and was higher than comparison group (p value = .05) after intervention. This concluded the results of a study and showed that the effect of promotion self efficacy made Coronary artery disease patients have high self-efficacy beliefs and has health care practice better.

6. Self-efficacy to improve adherence on antiretroviral drugs among infectious HIV patients program

Concept and program in this research

This research the researcher applied self-efficacy theory of Bundura (1997) is a concept on this study by explained self-efficacy of HIV infected/AIDS patients who received antiretroviral drug therapy and efficacy beliefs of individual people to take antiretroviral drugs right on treatment / regimen (taking medicine on time, don't forget any time and any dose) continue regularly that call good adherence. They must have perceived self efficacy beliefs before, and then they will do behavior and try to do behavior to achieve.

The SEPADA program in this research that promotion self-efficacy in HIV-infected/AIDS patients that for increased self-efficacy of patients so that they improved adherence better which is useful for treatment themselves. In this study the researcher applied self-efficacy theory by using the 4 following processes on increasing self-efficacy of patients for they have good adherence and maintain better behavior.

4 following processes as follows:

(1) Enactive mastery experiences, in this study Enactive mastery experiences was used for success in adherence antiretroviral drugs of patients by passed live-models so that a person achievements of good adhering antiretroviral drugs

(2) Vicarious experiences, in this study used pillboxes for patients to simple pick up and remember to taking medicines.

(3) Verbal persuasion, in this study used individual counseling on all of physical, psychological and problems of taking medicines.

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(4) Physiological and affective states, in this study used the Relaxation technique for training patients so that they can do, and then they will control Physiological and affective states and are normal by themselves.

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CHAPTER III
MATERIALS AND METHODS

This chapter presents the research procedures as follows.

1. Research Design.
2. Population and Samples.
3. Research Instruments.
4. Research Procedures.
5. Data Analysis.

1. Research Design

This study was a quasi - experimental research with two groups pretest and posttest design (experimental and comparison groups). There were 40 subjects assigned to the experimental group, and the other 40 subjects assigned to the comparison group. The program implementation and the data collection were conducted as shown in the diagram below:

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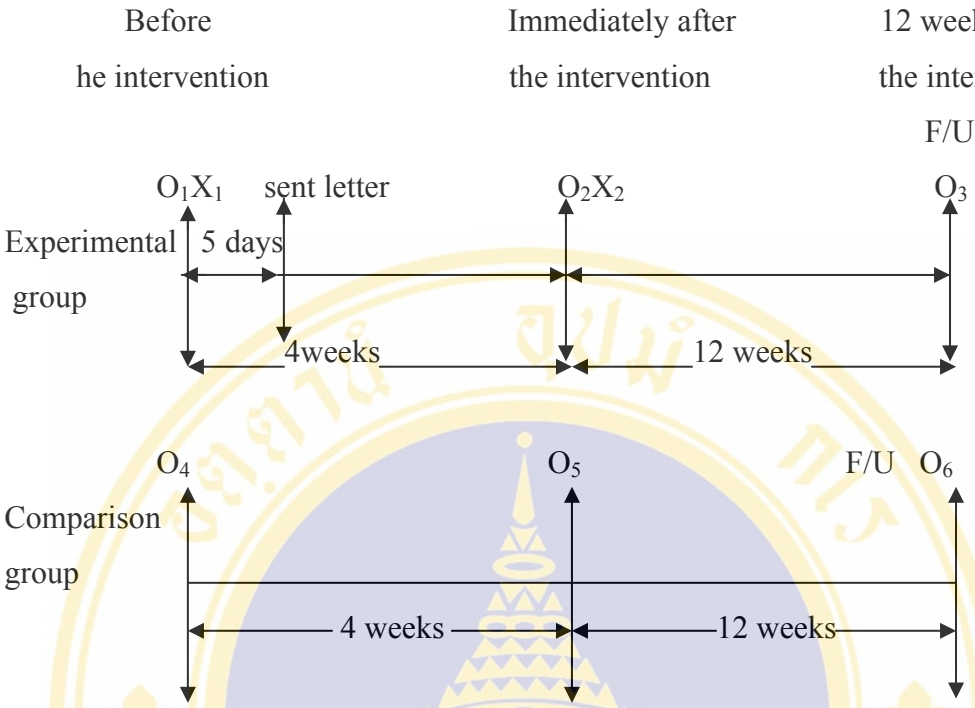

Figure 5: the diagram of intervention in this research

O_1 O_4 = Pre-test, the data were collected at the beginning of the study before the 1st session of the self-efficacy program. The samples of these two groups were requested to fill out the questionnaire which include perceived self–efficacy, outcome expectation, knowledge about antiretroviral drug, self care behavior on correctly and continuously adhere to antiretroviral drugs.

O_2 O_5 = The data were collected, at immediately after the intervention (post-test 1), at the 4th week after the pre-test (O_1, O_4) with the same questionnaires.

O_3 O_6 = The data were collected, at three months follow up (post-test 2), at 12 weeks after the O_2, O_5 with the same questionnaires as the pre-test and post-test 1.

X_1 = - Provided HIV/AIDS knowledge: HIV/AIDS, medication taking, self- care practice

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- Provided vicarious experience: A lived role model presentation
- Provided verbal persuasion: Giving reminding letter to record their medication taking at home and return on the 5th day of the intervention
- Provided interactive mastery experience: Giving given medicine box
- Provided physiological and affective states: Muscle relaxation technique

X_2 = - Provided individualized counseling fit with each person problem
- Provided individualized needed knowledge
- Re-stimulated by a lived role model vicarious experience
- Return demonstration of the muscle relaxation technique

2. Population and Samples

Population

The target population for this study was the patients registered in the NAPHA program in Photharam Hospital, Ratchaburi province. The members of the NAPHA were 86 people (males = 42, females = 44) since June 1, 2004 which was almost equal to the number of the calculated sample size; therefore, the samples for this study were all recruited without sampling selection.

Sample Size

From the table of sample size of Kregcie and Morgan (1990, p 608-609) with $\alpha = 0.05$, there were 70 samples needed for this study (See Appendix C).

Sample Selection Criteria

The samples were those males and females who registered into the NAPHA program to receive antiretroviral drugs at current stage with the following criteria:

Inclusion Criteria:

1. Aged between 20 – 60 years old
2. Had good orientation
3. Were willing to participate in the study
4. Members of the NAPHA Program
5. Signed the consent form

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Exclusion Criteria:

1. Had other complication diseases such as Pneumocystis Carinii Pnuemonia (PCP), Taxoplasmosis, Crptococcosis, and Mycobacterium Avium Complex (MAC).
2. Had drug complications and the doctor made a decision to put out of the project and stopped antiretroviral drug such as Lactic Acidosis/Hepatitis Steatosis, Steven-Johnson Syndrome
3. Were dead
4. Missed any session of the whole program

Sample Procedures

The total 86 patients would come to see the doctor at the ARV clinic on every Thursday afternoon with approximately 20 patients for each week. The comparison group would be the patients who came to the clinic on the first and third week and the experimental group would be the patients who came to the clinic on the second and fourth week. There were 1 death, 2 Unwilling to participate (busy with work), 1 role model and 2 health volunteer leader. Therefore, there were 80 patients in both groups: 40 in the experimental and 40 in the comparison group. However, finally there were 72 patients left, 36 patients in the experimental group and 36 patients in the comparison groups in which there were 1 death, 7 losses during the intervention (Figure 6).

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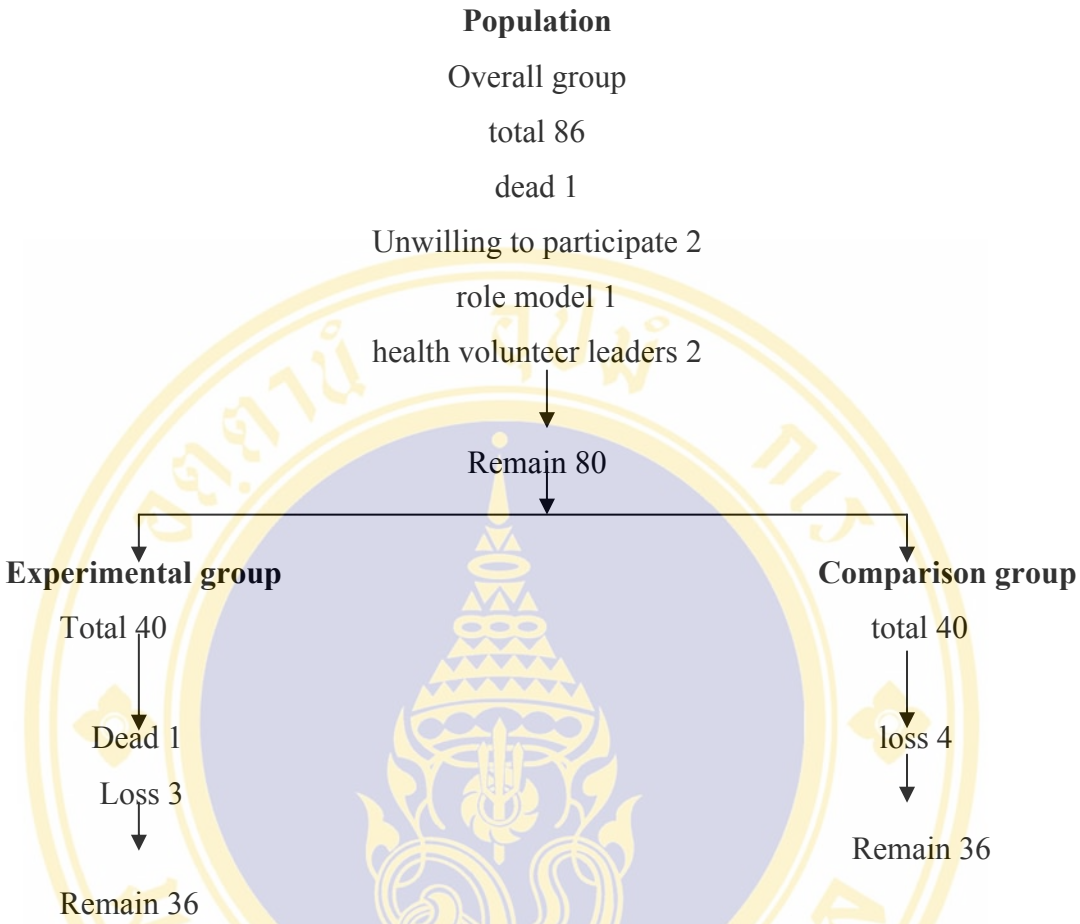

Figure 6: Sample procedure

In each group, the samples met at the Holistic Center of Photharam hospital on week-end (either Saturday or Sunday) from 9.00 –12.00 a.m. because it was their free time. This kind of schedule facilitated their well participation and cooperation. Each small group consisted of 5-6 patients who lived close to each other. The researcher gave some small incentives of 50 bahts for those who came to each meeting. Totally, they received 150 bahts for participation in this study.

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3. Research Instruments

There were two types of research instruments: the experimental, and the data collection.

3.1 Experimental materials

There were 5 experimental instruments as follows:

3.1.1 information about knowledge on HIV/AIDS which included knowledge and antiretroviral drug, practice on self care of adherence on taking medicine, proper eating habit, and practice on exercise and relaxation.

1) Power point presentation.

2) Manual which from AIDS ACCESS FOUNDATION and MSF-Belgium was supported as followed: 2.1) “hand out of AIDS…knowing can cure”, 2.2) “Together to know, together to cure. ”

3) Brochure which from Thai CDC Ratchaburi province name of “when who should be taking antiretroviral therapy.”

3.1.2 Pill boxes

3.1.3 Tape cassette of practice of self muscle relaxation technique

3.1.4 Self-Report Record

3.1.5 Lived Model

3.2 Experimental instruments

There were 5 parts that included general characteristics of the patients, knowledge, outcome expectation for taking antiretroviral drugs, self-efficacy belief, and adherence behavior.

Part 1: General Characteristics of the Patients

This questionnaire was designed by the researcher to collect the descriptive data on sex, age, marital status, education level, occupation, family economic status, family role, past history of HIV infection and other illnesses, and life events.

Each variable was categorized as follows:

Sex included males and females.

Age in years was categorized into 5 years classifications.

Marital status was classified into single, married, widowed, divorced, and separated.

Educational level was classified into 5 levels: primary school, secondary

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school, high school, diploma certificate, and bachelor degree.

Occupation was classified as employed, trading, agriculture, own business, unemployed, and house keeper.

Family income was the actual amount of income/month for the total household and the poverty line, based on the standardized of basic human needs requirement, was about 20,000 bahts/year/person. The family income was reported as sufficiency with some saving, sufficiency, insufficiency, or insufficiency with indebt.

Family role was the question about a formal role as the head of the family, spouse, son/daughter, relatives, or others. Family role also included the responsibility during the normal and crisis.

Past history of HIV infection and other illnesses was asking about the cause of infection, duration of knowing the blood result, history of signs and symptoms of infection.

Life events included marital status, employment, mobility, family conflict, problem at work, and disappointment with life.

Part 2: Knowledge questionnaire

There were 2 parts of the knowledge questionnaire: knowledge about anti HIV/AIDS drugs and knowledge about practice of self care behavior on medication taking adherence

2.1 Questionnaire of knowledge about antiretroviral drugs was developed by the researcher on the reviewing of related concepts, theories and previous studies. There were 10 items which were close-ended. For correct answers, 1 score was given and for false or uncertain answers, zero score was given. The total scores were ranged between 0-10 and knowledge was ranked into 3 levels. The Bloom's concept (1976:60) was used as reference to categorize the levels as follows:

Interpretation of score			**Interpretation**
Score	0-5	(0-59%)	low level.
Score	6-8	(60–79%)	moderate level.
Score	9-10	(80–100%)	good level.

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2.2 Questionnaire of knowledge about practice of self care behavior on medication taking adherence

This questionnaire was developed by the researcher by reviewing related concepts, theory, and previous studies. There were 7 items with 3 scales of yes, no, and not sure questionnaire. For correct answers, 1 score was given and for false or uncertain answers, zero was given. The total scores were ranged between 0-7 and knowledge were ranked into 3 levels. The Bloom's concept (1976:60) was used as reference to categorize the levels as follows:

Interpretation of score			**Interpretation**
Score	0-3	(0–59%)	low level.
Score	4-5	(60–79%)	moderate level.
Score	6-7	(80-100%)	good.

Part 3: Questionnaire of Outcome Expectation for Taking Antiretroviral Drugs

This questionnaire was developed by the researcher which included the components of physical, social, and self-evaluation outcome expectation. It was a 20 items questionnaire with a 5 rating Likert's scale of very much, much, moderate, little, and very little and scored as follows: Possible scores are ranged between 20-100 points The questionnaire includes positive statements are the item number 1-20. The scoring scheme is as follows:

Response	**score**
Very much expected	5
Much expected	4
Moderate expected	3
Little expected	2
Very little expected	1

Part 4: Questionnaire of Self-Efficacy Belief

Bandura (1997: 43) stated that self-efficacy belief mean to believe in ones own ability by own self and to manage and continue behavior through out something. Self-

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efficacy beliefs are the ability level and self-decision in doing something.

4.1 Self efficacy belief about self ability level. There were 14 items of the belief about self-efficacy on ability level of taking medication and seeking care. The questionnaire includes positive statements are the item number 1-14. The scale is Likert type with 5 response format namely:

Response	**score**
Very highly certainly	5
Highly certainly	4
Moderate certainly	3
Little certainly	2
Uncertainly	1

4.2 self efficacy belief about self-decision: There were 6 situations about perception on personal capacity about making own decision on taking medication in some difficult and unusual conditions in relation with punctuality on time, regimen, and treatment. There were 3 close ended-choices with one open ended-choice for others please specify. There was one correct answer with the close ended-choice that would be score as 1; however, with the open ended choice that might be score as 1 if the answer was reasonable enough. The Self efficacy belief about self-decision can be classified into 3 levels as follows.

Interpretation of score			**Interpretation**
Score	<3	(0–59%)	low level.
Score	3-4	(60–79%)	moderate level.
Score	5-6	(80-100%)	high level.

Part 5: Adherence Behavior

There were 2 parts of this questionnaire: Delayed or missing report and self-report of dose, time, and date.

5.1 Delayed or Missing Report which consist of 2 types of questionnaire: 5 items

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of several multiple choices, and 17 items of a 4 rating scale with usually, often, sometime, and never.

5.1.1 5 items of several multiple choices included amount of the medication, dose, and time

5.1.2 17 items of a 4 rating scale, with usually, often, sometime, and never, of the question of missing, forgetting, and non-adhering The questionnaire includes negative statements are the item number 1-17.

Response	**score**
Constantly	1
Often	2
Sometime	3
Never	4

5.2 Self-Report: It was a calendar of daily record of dose, time, and date for 4 months. The patients did not allow to take any late medication more than 5 minutes for 3 times/month or 3 times out of 60 times. Totally, the patients could not miss any medication more than 12 times for the whole study. Strictly, they cannot miss any day of taking medication.

Process of Research Instrument Development.

The researcher developed the research instruments as the following processes:

1. Studying the preliminary data, content, conceptual theory and related research.
2. Defining scope and structure of the questionnaire content to cover objectives and hypotheses.
3. Designing the experimental plan.
4. Formulating the questionnaires and scoring system.
5. Submitting the questionnaires to the experts on research instruments for correcting and editing as well as checking the content validity.

6. The questionnaires were pre–tested with 30 AIDS patients in other hospital who had similar characteristics as the sample group. The testing of the reliability of

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the questionnaire was through the Cronbach's Alpha coefficient of scale. The results of the testing were questionnaire of knowledge about antiretroviral drugs (α = 0.74), questionnaire of knowledge about practice of self care behavior on medication taking adherence (α = 0.67), questionnaire of outcome expectation for taking antiretroviral drugs (α = 0.93), questionnaire of Self efficacy belief about self ability level (α = 0.95), questionnaire of self efficacy belief about self-decision (α = 0.73), and adherence behavior, the question of missing, forgetting, and non-adhering (α = 0.89).

4. Research Procedures

The research procedures included the stages of preparation, and intervention as follows:

Preparation stage

The researcher prepared the study by:

4.1 Obtaining the permission of human rights subjects on human experimentation from the ethical committees of Mahidol University.

4.2 Submitting a letter from the Faculty of Graduate Studies, Mahidol University to the Photharam hospital's director to explain the objectives and ask for permission to conduct the study.

4.3 Cooperating with the hospital staff about the research objectives, steps, and procedures.

4.4 Training two research assistants who are the infected patients and acted as the health volunteer leaders.

4.5 Preparing the research setting (The Holistic Center) and the instruments such as knowledge manuals, tape, brochures, pill boxes, and questionnaires.

4.6 Cooperating with the 4th Region of the Prevention and Control Institute, AIDS Department of Ratchaburi Public Health Provincial office for supporting health materials.

Intervention Stage

The experimental group received the full program of two meetings of intervention with 4 weeks apart and 4 months followed up in congruent with three

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times data collection: before, immediately after, and 4 months followed up. The comparison group received no intervention but only the data collection part with three times period.

The Experimental Group:

The first appointment meeting during the 1st week (60 – 90 minutes), activities were as follows:

1. The research Introduced them selves to the samples for relationship building and research preparation

2. Explained the objectives of this study

3. The samples were asked to complete questionnaires in 40 minutes at the times of before the intervention.

4. The Researcher presented power point about success person who has good adhering on antiretroviral drug, knowledge on HIV/AIDS which included knowledge and antiretroviral drug, practice on self care of adherence on taking medicine, proper eating habit, and practice on exercise and relaxation. In order that the patients to initiated the role model on practice behavior for adherence for taking antiretroviral drugs. Bandura said (1997) that lived model would increase other people's efficacy on doing some behavior. The researcher summarized the important content and give health materials.

5. The researcher introduced the lived role model who was as the same people in the power point presentation to the patients. Then the lived role model talked with the patients about good adhering on antiretroviral drug, knowledge on HIV/AIDS which included knowledge and antiretroviral drug, practice on self care of adherence on taking medicine, proper eating habit, and practice on exercise and relaxation; and opened opportunity for the patients to ask about any questions. Moreover, the researcher gave chances for the patients to exchange ideas with each other and the lived role model. Then, they would learn from their-self experience and others that would lead to correctly practice behavior.

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6. The researcher gave pill boxes, introduced the using pill boxes, and repeated how use the pillboxes. For the sample's convenience in practice for their adherence on medication taking and they learned their-self success in this experience. Thus, they improved and continued on good adherence this of taking medicine.

7. The researcher introduced and used muscle relaxation to the patients and invited them to practice for 20 minutes once a day. This was purposed on the samples to be peaceful in mind and have non anxiety, the people who have normal physiological and affective state can control themselves and perceive self-efficacy to practice behavior much better.

8. The researcher gave self-report to record the samples to take have for recording to adherence behavioral on taking antiretroviral drug in each month for 4 month, and then returned it back to the researcher at the end of month.

9. After 5 day of the intervention the samples would returned the letters and reported on how their adherence behavior on taking medication to the researcher (the researcher gave the envelope and inform paper when the first intervention and told they sent to the researcher). This was stimulating to the samples to remind them to have good adherence behavior

10. The researcher concluded the program and set a time for the next appointment.

The second appointment at the 4 th week (120 minutes).

1. The researcher asked the samples for sign and symptoms about taking medication, pillboxes use, adherence practice for taking medicine and practice on heath their own, and invidualized counseling, the complementation for their good practice. Thus, this was reinforcement to the samples to improve adherence behavior sustainly

2. The researcher repeated the power point presentation about success for the lived role model (the same presentation as the 1st appointment) and the researcher summarized the contents.

3. The lived role model dialogued with the samples about adherence practice for taking antiretroviral drugs, practice on health their own and any health problems of

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the samples. Then the lived role model and the samples had some discussion together on adherence. This allowed the samples to observe and learn from those whom success on adherence.

4. The researcher repeated the muscle relaxation technique and let the samples to do self practice that they recalled. They became skilled in practice for the muscle relaxation technique.

5. The samples answered the questionnaire for the immediately post test.

6. The researcher collected the self-report record from the samples.

7. The researcher concluded the program and set a time for the next follow-up appointment.

The third appointment at the 16 th week (60 minutes).

1. The researcher followed up for the sample's progression on sustainable adherence

2. The samples answered the same questionnaire for 40 minutes.

3. The researcher asked for any problems that may encourage and collected the self-report records from the samples.

4. The researcher concluded the program and talked with the sample, encourage for keeping up with adherence on taking antiretroviral drug and practice of self care for their life because these things could make them live healthier and prevented early drug resistant.

The comparison group

The first meeting was at the 1st week. The nurse recorded the patients' weight and began the process by:

1. Starting the relationship by introducing the researcher and team
2. Explaining the objective of the study.
3. Distributing the questionnaire
4. Setting time for the next data collecting

The second data collection at the 4th week included

1. Answering the questionnaire for 40 minutes (the second time)

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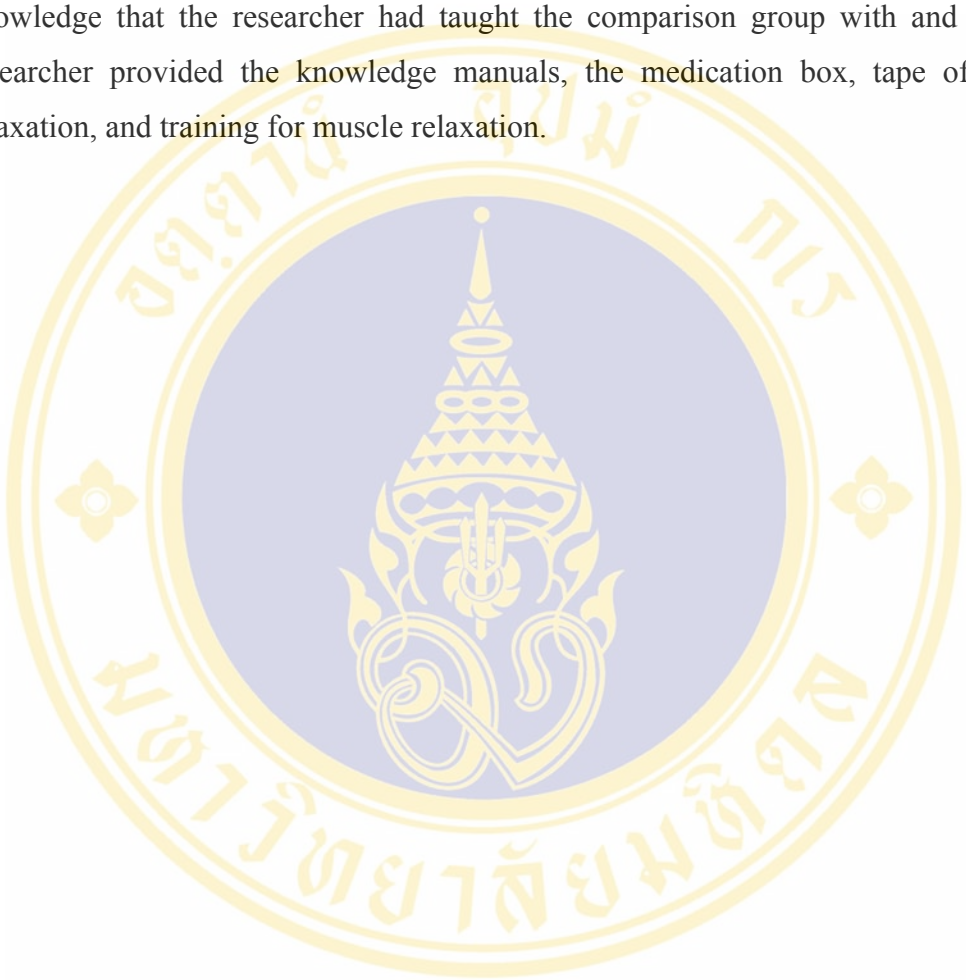
2. Setting time for the next data collecting

The third data collection at the 16 th week

1. Answering the questionnaire for 40 minutes (the third time)

2. The researcher concluded the study by wrapping the patients with the knowledge that the researcher had taught the comparison group with and also the researcher provided the knowledge manuals, the medication box, tape of muscle relaxation, and training for muscle relaxation.



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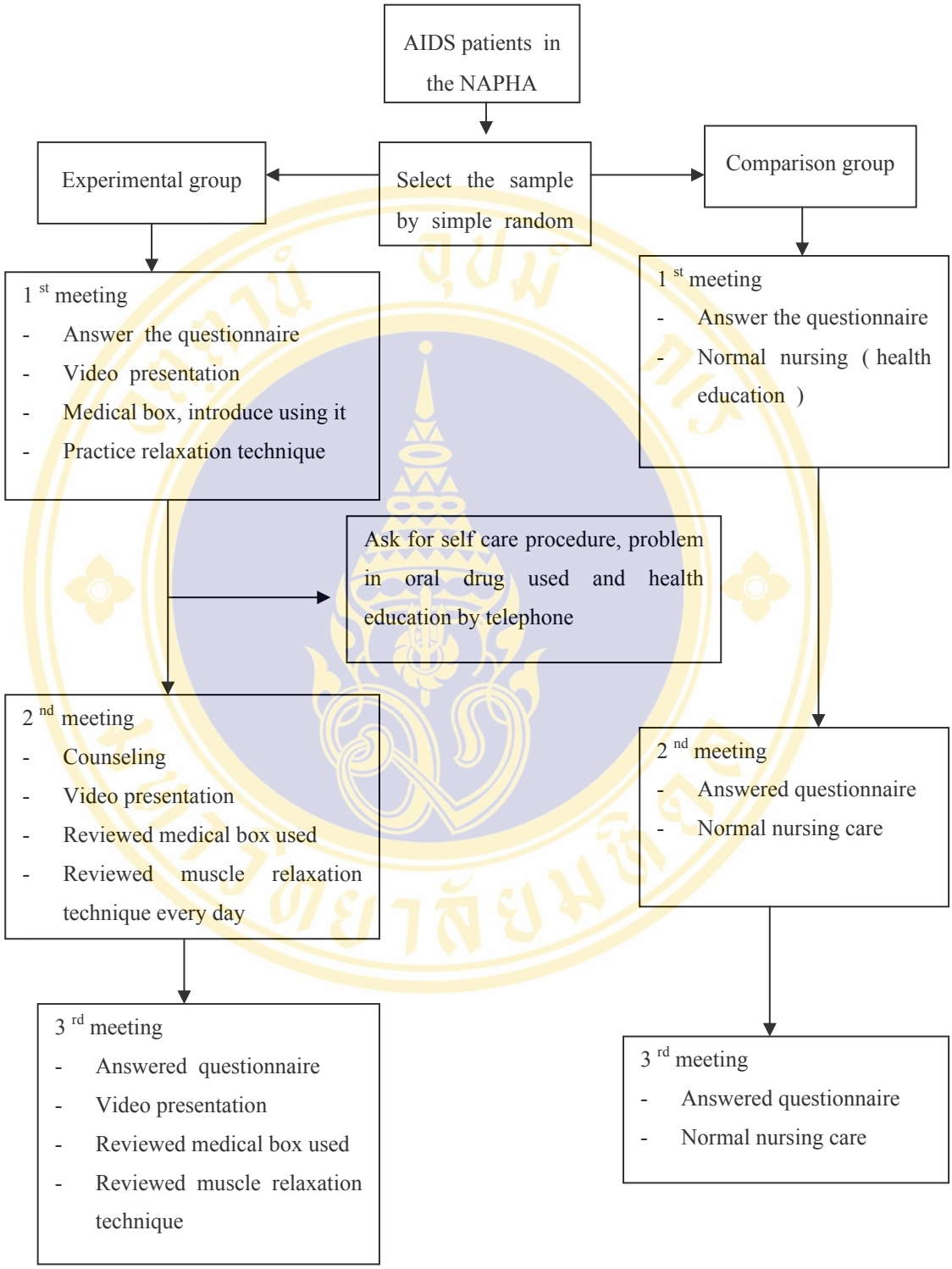

Figure 7: Research Procedure in this study

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5. Data Analysis

The data were analyzed by using the statistical computer package for window.

1. Descriptive statistics including mean, standard deviation, and percentage were used to describe general characteristics.

2. Compared the difference among the mean scores from the experimental group before and after the experiment including, knowledge about antiretroviral drug, outcome expectancies and self efficacy belief was using Paired t – test.

3. Compared the difference among the mean scores between the experiment and comparison groups before and after the experiment including, knowledge about antiretroviral drug, outcome expectancies and self efficacy belief was using t – test.

4. Repeated measures analysis of variance(mixed design R-MANOVA) was used for analysis of total the mean score between the experimental and comparison group including, knowledge about antiretroviral drug, outcome expectancies and self efficacy belief at the before the intervention, immediately after the program one month , and three month follow-up.

5. Compared the difference among adherence rate between the experiment and comparison groups before and after the experiment was using chi-square.

6. Compared the difference among adherence rate within the experimental group before and after the experiment was using Wilcoxon test.

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CHAPTER IV
RESULTS

This study aimed to assess the effect of SEPADA program of the HIV-infected/AIDS patients, Photharam Hospital. After the program, there were totally 72 HIV-infected/AIDS subjects: 36 in the experiment group, and another 36 in the comparison group. The data were collected at before, immediately, and three months follow up after the experiment. The results of data analysis were presented as follows:

Section 1: The Socio-demographic characteristics of the subjects.

Section 2: Numbers and percentages of knowledge, outcome expectancies, self-efficacy belief on practice for adherence taking antiretroviral drugs in the experiment and comparison groups.

Section 3: The tested hypothesis

1) The mean scores of knowledge, outcome expectancies, self-efficacy belief in the experimental group would be greater than the comparison group at immediately after the intervention.

2) The mean scores of knowledge, outcome expectancies, self-efficacy belief the experimental group would be greater than the comparison group at three months follow up after the intervention.

3) The mean scores of knowledge, outcome expectancies, self-efficacy belief within the experimental group at immediately after the intervention would be greater than before the intervention.

4) The mean scores of knowledge, outcome expectancies, self-efficacy belief within the experimental group at three months follow up after the intervention would be greater than before the intervention.

5) The experimental group would have better adherence practice (≥ 95 %) on antiretroviral drug than the comparison group at immediately after the intervention.

6) The experimental group would have better adherence practice (≥ 95 %) on antiretroviral drug than the comparison group at three months follow up after the

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intervention.

7) At immediately after the intervention, the experimental group would have better adherence practice (≥ 95%) on antiretroviral drug than at before the intervention.

8) At three months follow up after the intervention, the experimental group would have better adherence practice (≥ 95%) on antiretroviral drug than at before the intervention.

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Section 1: The Socio-demographic Characteristics of the Subjects

Table 1 Numbers and percentages of the HIV infected/ AIDS patients in the experimental and comparison groups classified by socio-demographic characteristics

Socio-Demographic Characteristics	Experimental (n = 36)		Comparison (n = 36)		P-Value
	Number	%	Number	%	
Sex					
Male	18	50	16	44.4	.132
Female	18	50	20	55.6	
Age (year)					
20-24	1	2.8	3	8.3	.064
25-29	11	30.6	5	13.9	
30-34	11	30.6	18	50.0	
35-39	7	19.4	3	8.3	
40-44	2	5.6	5	13.9	
45-49	2	5.6	2	5.6	
50-54	1	2.8	-	-	
55-59	1	2.8	-	-	
Mean Age (years) ±S.D.	33.89±7.54		33.00±6.27		
Min-Max	24-58		21-49		
Religion					
Buddhist	36	100	34	94.4	.261
Christian	0	0	2	5.6	
Marital Status					
Single	6	16.7	6	16.7	.549
Married	20	55.6	19	52.8	
Widowed	3	8.3	6	16.7	
Divorced	1	2.8	1	2.8	
Separated	6	16.7	4	11.0	

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Table 1 Numbers and percentages of the HIV infected / AIDS patients in the experimental and comparison groups classified by socio-demographic characteristics (Cont)

Socio-Demographic Characteristics	Experimental (n = 36)		Comparison (n = 36)		P-Value
	Number	%	Number	%	
Level of Education					
Primary school	27	75.0	26	72.1	.156
Secondary school	4	11.1	4	11.1	
High school	1	2.8	2	5.6	
Diploma Certificate	1	2.8	2	5.6	
Bachelor Degree	3	8.3	2	5.6	
Occupation					
Employed	25	69.4	17	47.2	.189
Trading	4	11.1	2	5.6	
Agriculture	1	2.8	2	5.6	
Own business	0	0	3	8.3	
Unemployed	4	11.1	8	22.2	
House keeper	2	5.6	4	11.1	
Family income (Baht)					
1,500-5,000	13	36.0	14	38.9	.587
5,001-10,000	18	50.0	17	47.1	
10,001-15,000	2	5.6	-	-	
15,001-20,000	2	5.6	2	5.6	
25,001-30,000	1	2.8	1	2.8	
30,001-35,000	-	-	1	2.8	
45,001-50,000	-	-	1	2.8	

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Table 1 Numbers and percentages of the HIV infected / AIDS patients in the experimental and comparison groups classified by socio-demographic characteristics (Cont)

Socio-Demographic Characteristics	Experimental (n = 36)		Comparison (n = 36)		P-Value
	Number	%	Number	%	
Individual income by criterion on human basic need :one person per					
5,001-10,000	0	0	1	2.8	.619
10,001-15,000	5	13.9	4	11.0	
15,001-20,000	15	41.7	9	25.0	
25,001-30,000	9	25.0	11	30.6	
30,001-35,000	5	13.8	5	13.9	
45,001-50,000	1	2.8	1	2.8	
Mean (Baht ± S.D)	28,149± 26075.46		31,540 ± 25,732.21		
Min-Max	6,000-120,000		4,800-120,000		
Individual income					
Lower than 20,000 Baht / year	17	47.2	13	36.1	.261
Equal and more than 20,000 Baht/ year	19	52.8	23	63.9	
Sufficiency of income					
Sufficiency with saving	2	5.6	3	8.3	.549
Sufficiency	15	41.7	15	41.7	
Insufficiency	7	19.4	7	19.4	
Insufficiency and in debt	12	33.3	11	30.6	
Number of Family Member					
Lived alone(1)	1	2.8	2	5.6	.549
Lived with spouse(2)	8	22.2	5	13.9	
Lived with spouse&children (3-5)	22	61.1	21	58.3	
Lived with extended family(>5)	5	13.9	8	22.2	

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Table 1 Numbers and percentages of the HIV infected/ AIDS patients in the experimental and comparison groups classified by socio-demographic characteristics (Cont)

Socio-demographic Characteristics	Experimental (n = 36)		Comparison (n = 36)		P-Value
	Number	%	Number	%	
Family Position					
Head of family	8	22.2	7	19.4	.504
Spouses	5	13.9	8	22.2	
Son/daughter in law	16	44.4	14	38.9	
Relatives	7	19.5	7	19.5	
Family Duty/Responsibility					
No Duty/Responsibility	5	13.9	6	16.7	.549
Doing Together with Other Family Members	26	72.2	23	63.8	
Sole Duty	3	8.3	5	13.9	
Stay Alone	2	5.6	2	5.6	
Health Insurance					
Universal Coverage (30 bahts)	30	83.3	22	61.1	.423
Social Security	5	13.9	9	25.0	
Veteran	1	2.8	1	2.8	
Self Payment	-	-	4	11.1	

Table 1 shows similar descriptive statistics for each socio-demographic characteristic between the experimental and comparison groups. There were no differences between the numbers of males and females in both experimental and comparison groups. There were also no differences between the experimental and comparison groups in their age group which most of them (about 60%) were of 25-29 and 30-34 years with mean of 33 years. The experimental group was slightly older than the comparison group in their age range: 24-58 years and 21-49 years, respectively. All of them in the experimental group were Buddhist, but there were 2 Christians in the comparison group (5.6 %) while the majorities were Buddhist.

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Approximately half of them were married, 55.6 % in the experimental group, and 52.8 % in the comparison group, and another half were single, widowed, divorced, and separated in both groups. For the level of education, there were three-quarter of the subjects in both groups finished primary school (75 % in the experimental group, 72.1 % in the comparison group), followed by secondary school (equally 11.1 % in both groups).

The occupations of both groups were similar in categories of employed (69.4 % in the experimental group, 47.2 % in the comparison group), but there were 11.1 % unemployed in the experiment group, 22.2 % in the comparison group. The family incomes were mostly in the level of 1500-5,000 bahts and 5,001-10,000 bahts on both groups (36.0 % and 38.9 % in the experimental group, 50.0% and 47.1 % in the comparison group). The individual income by criterion human basic needed: one person per year was mostly 10,001-20,000 bahts and 10,000-20,000 bahts and 36.1 % and 25 % in experimental group, 25.0 and 30.6 percent in the comparison group. The individual income by criterion human basic needed: one person per year equal and more than 20,000 bahts per year and 52.8 % in the experimental group, 63.9 % in the comparison group.

The number of family in the experimental group and the comparison group mostly lived with spouse and children and having 3-5 numbers in families (61.1%, 58.3%, respectively). The individual incomes of most patients in both groups were sufficient but not enough for saving (equally 41.7 % in both groups) and there were one-third of both groups who had not enough income and were in dept.

Regarding family position of the patients, about 40% of both the experimental and comparison groups were son/daughter in law living in the extended family structure and one-third of them lived in the nuclear family as the head of the family or spouse of them. There were equally 19.5% in both groups lived as relatives in the main family. Majority of both groups (about 70%) shared some duties and responsibilities within the family members and about 10% had full responsibilities for all households or 5% stay alone on their own. About 15% had no responsibility with full family supports. Majority of the subjects had universal coverage card (83.3 % in the experimental group, 61.1 % in the comparison group). Some subjects in the comparison group (11.1 %) had to pay for health expenditure on their own budget.

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Table 2 Numbers and percentages of the HIV infected/ AIDS patients in the experimental and comparison groups classified by disease status and therapy

Disease Status & Therapy	Experimental (n = 36)		Comparison (n = 36)		P-Value
	Number	%	Number	%	
Infection Transmission					
Sexual Intercourse	32	88.9	33	91.6	.306
Drug Injection	4	11.1	2	5.6	
Tattoo	0	0	1	2.8	
Duration of Knowing Blood Result					
0-3	22	61.0	25	69.4	.156
4-6	6	16.7	5	13.9	
7-9	6	16.7	5	13.9	
9	2	5.6	1	2.8	
Mean (years) ± S.D.	3.72± 3.43		3.28±2.69		
Min-Max	1-13		1-11		
Signs and Symptoms Prior to Receiving Antiretroviral Therapy					
Thrush ulcer					
No	13	36.1	18	50.0	.135
Yes	23	63.9	18	50.0	
Chronic fever > 1month					
No	19	52.8	15	41.7	.261
Yes	17	47.2	21	58.3	
Herpes zoster					
No	25	69.4	24	66.7	.261
Yes	11	30.6	12	33.3	

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Table 2 Numbers and percentages of the HIV infected/ AIDS patients in the experimental and comparison groups classified by disease status and therapy (Cont)

Disease Status & Therapy	Experimental (n=36)		Comparison (n=36)		
	Number	%	Number	%	P-Value
Chronic diarrhea > 1month					
No	25	69.4	28	77.8	.261
Yes	11	30.6	8	22.2	
Loss of body weight >5 kgs within the last 6 months					
No	14	38.9	15	41.7	.261
Yes	22	61.1	21	58.3	
Weak/Malaise >1month					
No	15	41.7	11	30.6	.261
Yes	21	58.3	25	69.4	
Chronic cough > 2 months or Pneumonia					
No	19	52.8	23	63.9	.261
Yes	17	47.2	13	36.1	
Enlarge lymphnode > 1 month					
No	27	75.0	31	86.1	.261
Yes	9	25.0	5	13.9	
Stage of disease					
AIDS	20	55.6	19	52.8	.306
Symptomatic HIV	12	33.3	8	22.2	
Asymptomatic HIV	4	11.1	9	25.0	
Opportunistic disease prior to receiving antiretroviral drugs					
None	16	44.4	14	38.9	.649
Yes	20	55.6	22	61.1	

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Table 2 Numbers and percentages of the HIV infected/ AIDS patients in the experimental and comparison groups classified by disease status and therapy (Cont)

Disease Status & Therapy	Experimental (n = 36)		Comparison (n = 36)		P-Value
	Number	%	Number	%	
TB	14	38.9	10	27.8	
PCP	4	11.1	7	19.4	
Creptomeningitis	1	2.8	4	11.1	
Taxoplasmosis Meningitis	1	2.8	1	2.8	
Ever Received Antiretroviral Drugs (ARV)					
Never	30	83.3	27	75.0	.306
Ever	6	16.7	9	25.0	
AZT	2	5.6	8	22.2	
ARV	4	11.1	1	2.8	
CD4 Count (cell/micro lit.) Level at the First when Started ARV					
< 50	18	50.0	23	63.9	.392
≥ 50 - 99	9	25.0	7	19.5	
≥100 - 149	3	8.4	3	8.3	
≥150 - 199	3	8.3	3	8.3	
> 200	3	8.3	-	-	

Table 2 also shows similarity of each characteristic of disease status and therapy between the experimental and comparison groups. Approximately 90% of the AIDS cases in both groups got infection from sexual intercourse. Around 5-10% got infection from drug injection. There was one case in the comparison group got infection from tattooing. These patients in both experimental and comparison groups came for medical treatment when they were very sick with the duration of known result of positive blood test within 0-3 years (61.0 % , 69.4 %), followed by 4-6 years and 7-9 years (16.7 % and 13.9 %; 16.7 % and 13.9 %, respectively). The mean duration of known result of positive blood test was about 3 years in both groups which meant that the patients waited until they had definite signs and symptoms of AIDS.

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Thus, their CD4 counts were less than 200 and treated by antiretroviral medication within the short period of the diagnosis.

These patients in both experimental and comparison groups had several signs and symptoms of AIDS before receiving antiretroviral therapy such as thrush ulcer (63.9.1 %, 50 %), chronic fever for longer than one month (47.2 %, 58.3 %), loss of body weight more than 5 kgs within 6 months (61.1 %, 58.3 %), weak/malaise for longer than one month (58.3 %, 69.4 %), herpes zoster (30.6 %, 33.3 %), chronic diarrhea for longer than one month (30.6 %, 22.2 %), chronic cough for longer than one month (47.2 %, 36.1 %), enlarged lymph node found at least 2 locations for longer than two months (25 %, 13.9 %, respectively).

Most of the patients in both experimental and comparison groups entered into the NAPHA Program with AIDS stage (55.56 %, 52.78 %); symptomatic HIV (33.3%, 22.2%), and asymptomatic HIV (11.1%, 25%), respectively. A little more than half of both groups were ill from opportunistic diseases before receiving antiretroviral therapy.

The opportunistic diseases often found in both experimental and comparison groups were Tuberculosis (38.9 %, 27.8 %), Pneumocystis Carinii Pneumonia (PCP) (11.1 %, 19.4 %, respectively). Majority of the subjects in both experimental and comparison groups had never received any antiretroviral therapy (83.3%, 75.0%, respectively). The CD4 counts in experimental and comparison groups at first start of antiretroviral drug therapy were mostly of lower than 50 cells/micro lit. (50.0%, 63.9%); and more than and equal 50-99 cells/micro lit (25.0%, 19.5%).

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Table 3 Numbers and percentages of the HIV infected/ AIDS patients in the experimental and comparison groups classified by life event and emotional status characteristics

Life Event and Emotional Status	Experimental (n=36)		Comparison (n=36)		P-Value
	Number	%	Number	%	
Loss of loved one within 1 Year					
No	25	69.4	29	80.5	.261
Yes	11	30.6	7	19.5	
-Parents	2	5.6	0	0	
-Spouse	5	13.9	6	16.7	
-Relative	4	11.1	1	2.8	
Life Events					
No	28	77.7	29	80.5	.261
Yes	8	22.3	7	19.5	
-Widowed	1	2.8	4	11.1	
-Divorces	0	0	1	2.8	
-Separated	4	11.1	1	2.8	
-Remarried	1	2.8	1	2.8	
-Moved	1	2.8	0	0	
-Lay Off	1	2.8	0	0	
Conflict within family					
No	29	80.6	31	86.1	.261
Yes	7	19.4	5	13.9	
Problems at work					
No	30	83.3	30	83.3	1.000
Yes	6	16.7	6	16.7	
Felt Depressed/hopeless					
No	30	83.3	15	41.7	.261
Yes	6	16.7	21	58.3	

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Table 3 shows similarity in their life events and emotional status characteristics in both experimental and comparison groups. The patients in both groups reported of experienced loss of loved one within 1 year of 30.6%, 19.4%, respectively. These significant others were mostly spouse (13.9 %, 16.7 %), parents (5.6%, 0%) and relatives (11.1 %, 2.8 %, respectively). They had some conflicts with their family (19.4%, 13.9%), conflict with coworkers (equally16.7% in both groups). The patients in the comparison group felt slightly more depressed/hopeless than the patients in the experimental groups (16.7% in the experimental group, 58.3% in the comparison group).

Section 2: Numbers and percentages of knowledge, outcome expectancies, self-efficacy belief to practice for adherence to antiretroviral drugs in the experimental and comparison groups

Table 4 Numbers and percentages of the level knowledge in the experimental and comparison groups over three time periods

Knowledge Level	Expermental		Comparison	
	N	%	N	%
	36	100	36	100
Before the intervention				
Good	2	5.6	3	8.3
Moderate	11	30.5	10	27.8
Low	23	63.9	23	63.9
Immediately after the intervention				
Good	13	36.1	4	11.1
Moderate	15	41.7	12	33.3
Low	8	22.2	20	55.6
Three months follow up				
Good	17	41.2	2	5.6
Moderate	16	44.4	15	41.7
Low	3	8.3	19	52.7

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Table 4 Before the intervention the experiment and comparison groups had the most level of knowledge low (63.9% equally) followed moderate level (30.5%, 27.8%). Immediately after intervention, the experimental group had good and moderate level of knowledge (36.1%, 41.7%), the comparison group had moderate and low level of knowledge (33.3%, 55.6%). Three months follow up, the experimental group had good and moderate level of knowledge (47.3%, 44.4%), the comparison group had moderate and low level of knowledge (41.7%, 52.7%).

Table 5 Numbers and percentages of the level knowledge in the experimental and comparison groups over three time periods

Knowledge Practice of self care	**Expermental**		**Comparison**	
	N	**%**	**N**	**%**
	36	**100**	**36**	**100**
Before the intervention				
Good	2	5.6	3	8.3
Moderate	19	52.8	15	41.7
Low	15	41.7	18	50.0
Immediately after the intervention				
Good	19	52.8	4	11.1
Moderate	11	30.5	12	33.3
Low	6	16.7	20	55.6
Three months follow up				
Good	16	44.7	4	11.1
Moderate	17	47.2	17	47.2
Low	3	8.3	15	41.7

Table 5 Before the intervention the experimental and comparison groups had the most level of knowledge low (41.7%, 50.0%) followed moderate level (52.8%, 41.7%). Immediately after intervention, the experimental group had good and comparison group had moderate and low level of knowledge (52.8%, 30.5%), the comparison group had moderate and low level of knowledge (33.3%, 55.6%). Three month follow up, the experimental group had good and moderate level of knowledge

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(44.4%, 47.2%), the comparison group had moderate and low level of knowledge (47.2%, 41.7%).

Table 6 Numbers and percentages of the level outcome expectancies in the experimental and comparison groups over three time periods

Outcome Expectancies	Expermental		Comparison	
	N	%	N	%
	36	**100**	**36**	**100**
Before the intervention				
Very much expected	7	19.4	7	19.4
Much expected	23	63.9	20	55.6
Moderate expected	6	16.7	9	25.0
Little expected	-	-	-	-
Very little expected	-	-	-	-
Immediatel after intervention				
Very much expected	24	66.6	10	27.8
Much expected	10	27.8	16	44.4
Moderate expected	2	5.6	10	27.8
Little expected	-	-	-	-
Very little expected	-	-	-	-
Three months Follow up				
Very much expected	26	72.3	5	13.9
Much expected	7	19.4	25	69.3
Moderate expected	3	8.3	2	5.6
Little expected	-	-	2	5.6
Very little expected	-	-	2	5.6

Table 6 before the intervention the experiment and comparison groups had the most level of outcome expectancies as much (63.9%, 55.6%). Immediately after the intervention, the experimental group had high level of outcome expectancies were in creased than before the intervention as very much and much (66.7%, 27.8%). The comparison group had level of outcome expectancies as very much, much and

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moderate level (27.8%, 44.4% and 27.8%). Three months follow up the experimental group had level of outcome expectancies as much and moderate (69.3%, 13.9%).

Table 7 Numbers and percentages of the level self–efficacy beliefs in the experimental and comparison groups over three time periods

Self – Efficacy Level	Expermental		Comparison	
	N	%	N	%
	36	**100**	**36**	**100**
Before the intervention				
Very highly certainly	22	61.1	15	41.7
Highly certainly	12	33.3	21	58.3
Moderate certainly	2	5.6	-	-
Little certainly	-	-	-	-
Uncertainly	-	-	-	-
Immediately after intervention				
Very highly certainly	28	77.8	21	58.3
Highly certainly	8	22.8	14	38.9
Moderate certainly	-	-	1	2.8
Little certainly	-	-	-	-
Uncertainly	-	-	-	-
Three months Follow up				
Very highly certainly	29	80.6	18	50.0
Highly certainly	7	19.4	15	41.7
Moderate certainly	-	-	3	8.3
Little certainly	-	-	-	-
Uncertainly	-	-	-	-

Table 7 before the intervention the experiment and comparison groups had the most level very high certainly (61.1%, 41.7%) followed high level (33%, 58.3%). Immediately after intervention, the experimental group had level increased than before the intervention as very high certain (77.8%, 22.2%). The comparison group had level very high certainly and high (58.3%, 38.9%). Three months follow up the

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experimental had very high certainly level and high certainly level (80.6%, 19.4%). The comparison group had very high certainly and high certainly level (50.0% and 41.7%)

Table 8 Numbers and percentages of the level self–efficacy beliefs on self-decision in the experimental and comparison groups over three time periods

Self–Efficacy Beliefs Self-Decision	Expermental		Comparison	
	N	%	N	%
	36	**100**	**36**	**100**
Before the intervention				
High	15	41.7	9	25.0
Moderate	17	47.2	20	55.6
Low	4	11.1	7	19.4
Immediately after the intervention				
High	26	72.2	17	47.2
Moderate	8	22.2	17	47.2
Low	2	5.6	2	5.6
Three months follow up				
High	27	75.0	25	69.4
Moderate	8	22.2	10	27.8
Low	1	2.8	1	2.8

Table 8 before the intervention the experiment and comparison groups had high level (41.7%, 25.0%) followed moderate level (47.2%, 55.6). Immediately after intervention, the experimental group had high and moderate level (72.2% and 22.2%), the comparison group had high and moderate (47.2% equally). Three months follow up, the experimental group had high and moderate level (75.0%, 22.2%), the comparison group had high and moderate (69.5%, 27.8%).

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Section 3: The tested hypotheses

Table 9 The mean scores of knowledge, outcome expectancies, and self-efficacy beliefs on practice for adherence to antiretroviral drugs in the experimental and the comparison groups at before the intervention

Group	Before the Intervention				
	n	$\bar{x}$	S.D.	t	p-value
Knowledge					
Experimental	36	8.81	2.86	-.041	.967
Comparison	36	8.83	2.84		
Expected outcome					
Experimental	36	70.06	10.37	.052	.959
Comparison	36	69.92	12.23		
Self-efficacy					
Experimental	36	61.58	7.81	.231	.818
Comparison	36	61.17	7.50		

Table 9 shows that there were not significantly different between the experimental and comparison groups on their knowledge, expected outcome, and self-efficacy belief on practice for adherence on taking antiretroviral drugs at before the intervention.

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Table 10 The mean scores of knowledge, outcome expectancies, and self-efficacy belief on practice for adherence to antiretroviral drugs in the experimental and the comparison group at immediately after the intervention

Group	Immediately after the Intervention				
	n	$\bar{x}$	S.D.	t	p-value
Knowledge					
Experimental	36	12.83	3.05	5.74	<.001
Comparison	36	8.97	2.65		
Expected outcome					
Experimental	36	79.64	10.25	2.39	.013
Comparison	36	72.75	13.91		
Self-efficacy					
Experimental	36	68.86	8.76	3.42	<.001
Comparison	36	62.36	7.27		

Table 10 shows that the experimental group had significantly greater mean scores on their knowledge, expected outcome, and self-efficacy belief on practice for adherence on taking antiretroviral drugs than the comparison group at immediately after the intervention (p <0.05, <0.001).

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Table 11 The mean scores of knowledge, outcome expectancies, and self-efficacy belief on practice for adherence to antiretroviral drugs in the experimental and the comparison groups at three months follow-up

	Three Months Follow-up				
Group	**n**	**$\bar{x}$**	**S.D.**	**t**	**p-value**
Knowledge					
Experimental	36	13.39	2.57	6.84	<.001
Comparison	36	9.06	2.81		
Expected outcome					
Experimental	36	82.69	10.09	4.03	<.001
Comparison	36	72.19	10.73		
Self-efficacy					
Experimental	36	70.17	9.61	3.70	<.001
Comparison	36	62.97	6.63		

Table 11 shows that the experimental group had significantly greater mean scores on their knowledge, expected outcome, and self-efficacy belief on practice for adherence on taking antiretroviral drugs than the comparison group at three months follow up after the intervention (p <0.001).
(Figure 8.1-8.3)

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Table 12 The mean scores of knowledge, outcome expectancies, and self-efficacy belief on practice for adherence to antiretroviral drugs within the experimental group at before the intervention, immediately after the intervention, and three months follow up

Variables		$\bar{x}$	S.D.	Paired t-test	p-value
Knowledge					
Pair 1	Pre-test	8.81	2.86	-8.24	<.001
	Post-test 1	12.83	3.05		
Pair 2	Pre-test	8.81	2.86	-10.81	<.001
	Post-test 2	13.39	2.57		
Pair 3	Post-test1	12.83	3.05	-1.44	.158
	Post-test 2	13.39	2.57		
Expected outcome					
Pair 1	Pre-test	70.06	10.37	-9.00	<.001
	Post-test 1	79.63	10.25		
Pair 2	Pre-test	70.06	10.37	-10.31	<.001
	Post-test 2	82.69	10.09		
Pair 3	Post-test1	79.63	10.25	-4.84	<.001
	Post-test 2	82.69	10.09		
Self-efficacy					
Pair 1	Pre-test	61.58	7.81	-6.51	<.001
	Post-test 1	68.86	8.76		
Pair 2	Pre-test	61.58	7.81	-6.07	<.001
	Post-test 2	70.17	9.61		
Pair 3	Post-test1	68.86	8.76	-1.65	.107
	Post-test 2	70.17	7.81		

Table 12 shows the pair comparison of each test within the experimental group. The mean scores of knowledge, and self-efficacy belief on practice for adherence on taking antiretroviral drugs were significant increased at immediately after the intervention and three months follow up than at before the intervention. The

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mean scores of expected outcome on taking antiretroviral drugs regularly were significantly increased at immediately and three months follow up after the intervention than at before the intervention and also further significantly increased at the three months follow up than at the immediately after the intervention.

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Table 13 The mean scores of knowledge, outcome expectancies, and self-efficacy belief on practice for adherence to antiretroviral drugs within the comparison group at before the intervention, immediately after the intervention, and three months follow up

Variables		$\bar{x}$	S.D.	Paired t-test	p-value
Knowledge					
Pair 1	Pre-test	8.83	2.84	-3.40	.736
	Post-test 1	8.97	2.64		
Pair 2	Pre-test	8.83	2.84	-.62	.537
	Post-test 2	9.06	2.81		
Pair 3	Post-test1	8.97	2.64	-.22	.831
	Post-test 2	9.06	2.81		
Expected outcome					
Pair 1	Pre-test	69.92	12.23	-1.83	.076
	Post-test 1	72.75	13.90		
Pair 2	Pre-test	69.92	12.23	-1.69	.101
	Post-test 2	72.31	11.76		
Pair 3	Post-test1	72.75	13.90	-.391	.698
	Post-test 2	72.31	11.71		
Self-efficacy					
Pair 1	Pre-test	61.17	7.50	-1.30	.200
	Post-test 1	62.36	7.26		
Pair 2	Pre-test	61.17	7.50	-1.75	.088
	Post-test 2	62.97	6.63		
Pair 3	Post-test1	62.36	7.26	-.69	.498
	Post-test 2	62.97	6.63		

Table 13 shows the pair comparison of each test with in the comparison group. The mean scores of knowledge, expected outcome, self-efficacy belief, and practice for adherence on taking antiretroviral drugs were not significantly different at before the intervention, at immediately after the intervention, and at three months follow-up.

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Figure 8 presents 3 graphs of the group, and treatment, and time interaction. This showed that the experimental group had higher the mean scores of knowledge, expected outcome, and self-efficacy belief on practice adherence taking the antiretroviral drugs than the comparison group over time, respectively.

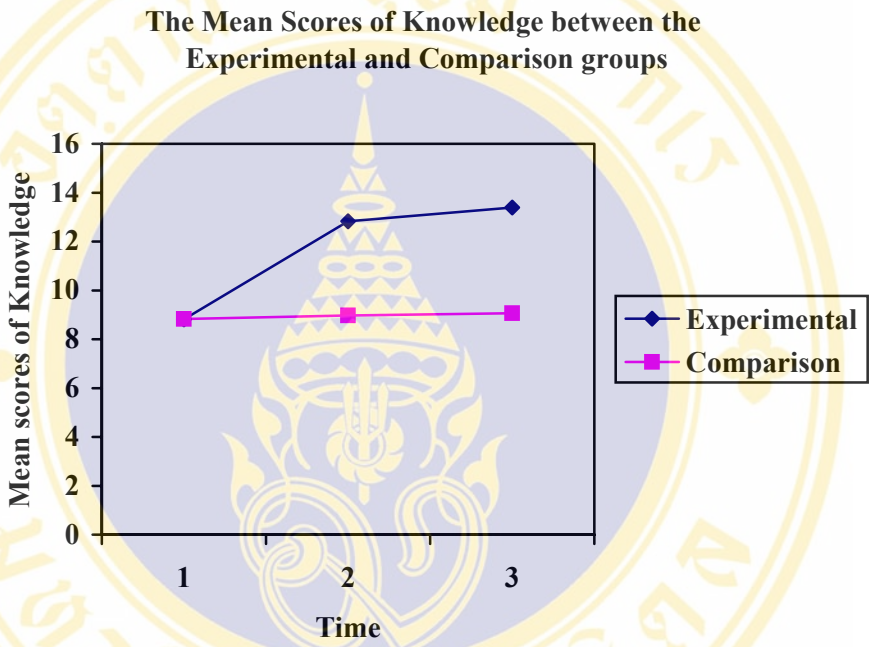

Figure 8.1: The mean scores of knowledge between the experimental and comparison groups over three times period

This figure shows the mean scores of knowledge between the experimental and comparison groups over three times period. The experimental group had a greater increased the mean scores of knowledge than the comparison group over time, respectively.

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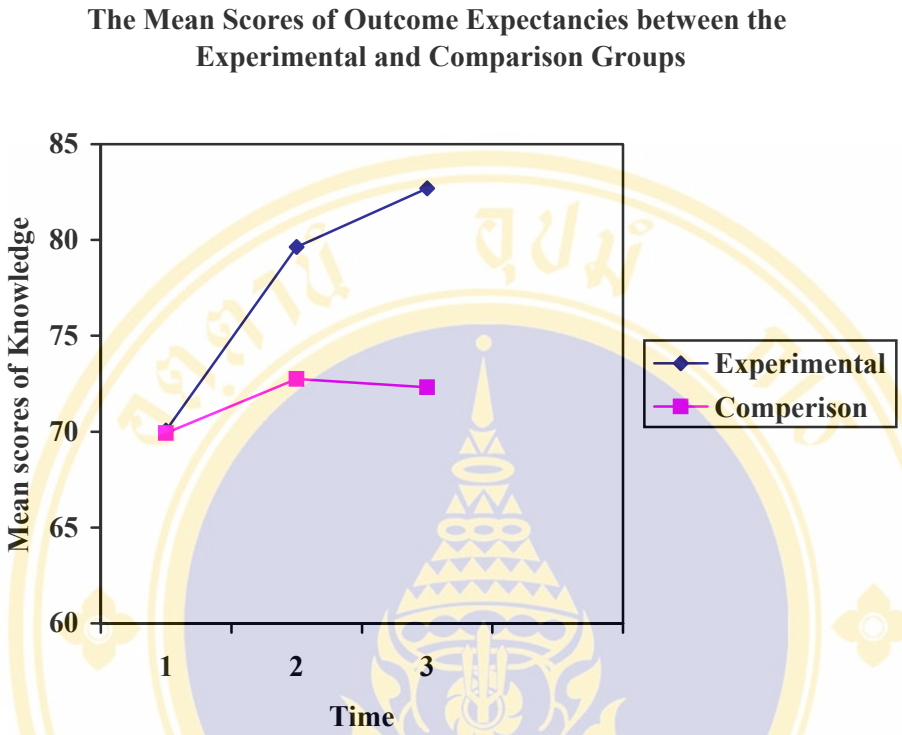

Figure 8.2: The mean scores of outcome expectancies between the experimental and comparison groups over three times period

This figure shows the mean scores of outcome expectancies between the experimental and comparison groups on three times period. The experimental group had a greater increased the mean scores of outcome expectancies than the comparison group over time, respectively.

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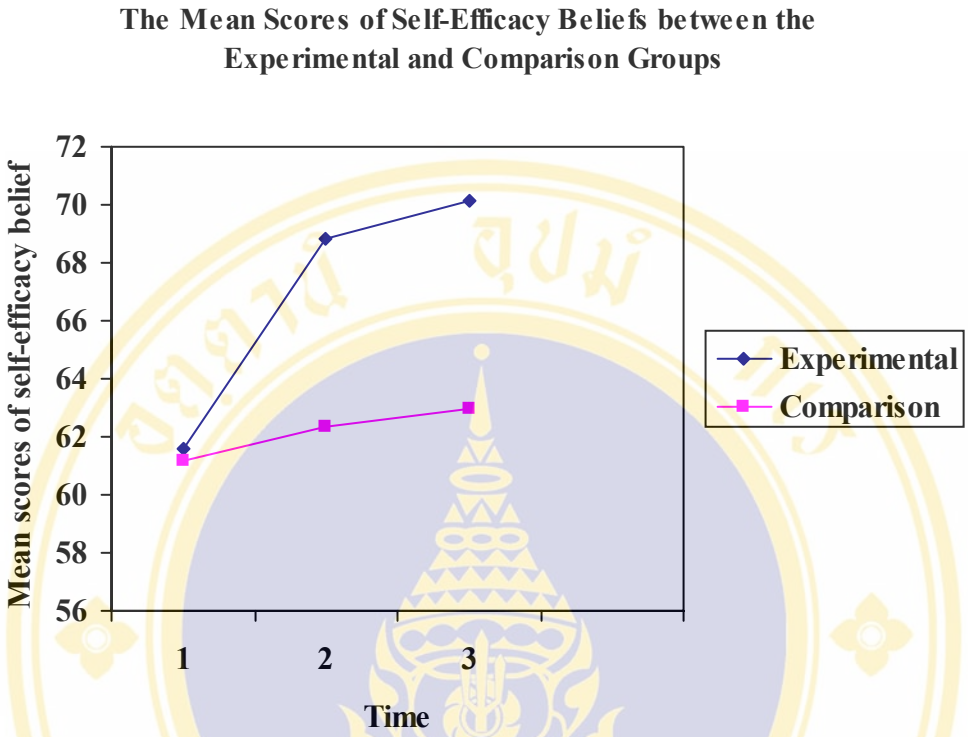

Figure 8.3: The mean scores of self-efficacy beliefs between the experimental and comparison groups over three times period

This figure shows the mean scores of self-efficacy beliefs between the experimental and comparison groups on three times period. The experimental group had a greater increased the mean scores of self-efficacy belief than the comparison group over time, respectively.

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Table 14 Repeated measures analysis of variance on time total, knowledge, expected outcome, self-efficacy and practice between the experimental and comparison groups over three times periods

Source of Variation	Value	hypothesis df	F-Ratio	p-value
Between-subjects Effect				
Group	.27	3	6.44	<.001
Within subjects Effect				
Time	.75	6	23.747	<.001
Time* Group	.645	6	14.331	<.001

Table 14 shows that there was a significant difference between the experimental and the comparison groups without time (p< .001); and with time*group was also significantly different (p< .001).

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Table 15 Repeated measures analysis of variance on time, knowledge, outcome expectancies, and self-efficacy on practice adherence between the experimental and comparison groups on three times periods

Source of Variation	SS	df	MS	F-Ratio	p-value
Between-subjects					
Group					
Knowledge	400.17	1	400.17	22.95	<.001
Expected outcome	1820.04	1	1820.04	5.28	<.001
Self-efficacy	1194.74	1	1194.74	7.85	<.001
Within subjects					
Time					
Knowledge	207.84	1	207.84	75.19	<.001
Expected outcome	2032.51	1	2032.51	64.34	<.001
Self-efficacy	971.36	1	971.36	32.25	<.001
Group * Time					
Knowledge	171.17	1	171.17	61.93	<.001
Expected outcome	945.56	1	945.56	29.93	<.001
Self-efficacy	413.44	1	413.44	15	<.001

Table 15 shows that there was a significant difference over three times period of the mean scores of knowledge, outcome expectancies, and self-efficacy belief on practice for adherence taking antiretroviral drugs between and within the experimental and the comparison groups (p< .001). Therefore, the experimental group had higher mean scores of knowledge, outcome expectancies, and self-efficacy belief on practice for adherence taking antiretroviral drugs than the comparison group and than before the intervention. The effect of groups, time, group*time were significantly increased the mean scores of knowledge, outcome expectancies, and self-efficacy belief on practice for adherence taking antiretroviral drugs (p< .001) (See Figure 8.1-8.3).

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Table 16 Adherence behavior of taking antiretroviral drugs between the experimental and comparison groups at 1st month, 2nd month, 3rd month and 4th month from self-reports

Group	n	Adherence behavior (≥ 95%)		Non adherence behavior (≥ 95%)		Chi-square (p-value)
		N	%	N	%	
The 1st month (pre test)						
Experimental	36	10	27.8	26	72.2	.604
Comparison	36	10	27.8	26	72.2	
The 2nd month(post test 1)						
Experimental	36	24	66.7	12	33.3	<.001
Comparison	36	8	22.2	28	77.7	
The 3rd month						
Experimental	36	30	83.3	6	16.7	<.001
Comparison	36	8	22.2	28	77.8	
The 4th month (post test 2)						
Experimental	36	30	83.3	6	16.7	<.001
Comparison	36	8	22.2	28	77.8	

Table 16 shows before the intervention, both the experiment and comparison groups were not significantly different the adherence behavior of taking antiretroviral drug. Therefore, the experiment and the comparison groups had similar practice before the intervention. Immediately after the intervention, the experimental group had significantly increased the adherence behavior of taking antiretroviral drugs than before the intervention (p=.05). Also at three months follow up, the experimental group had significantly increased the adherence behavior of taking antiretroviral drugs than immediately after the intervention (p=.05) (Figure 9).

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Table 17 Wilcoxon signed-rank test comparison of the adherence (≥95 %) to taking antiretroviral drugs within the experimental groups at 1st month, 2nd month, 3rd month and 4th month from self-reports

Experimental group	z	p-value
1st month-2nd month (pre test) (post test 1)	-.742	<.001
1st month-3rd month (pre test)	-4.264	<.001
1st month-4th month (pre test) (post test 2)	-4.690	<.001
2nd month-3rd month (post test 1)	-1.897	.058
2nd month-4th month (post test 1) (post test 2)	-2.309	.021
3rd month-4th month (post test 2)	-1.000	.317

Table 17 shows immediately after the intervention, the experimental group have significantly better adherence practice (≥ 95 %) on antiretroviral drug than at before the intervention(p=.05). Three months follow up after the intervention, the experimental group have significantly better adherence practice (≥ 95 %) on antiretroviral drug than at before the intervention (p=.05) (Figure 9).

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Table 18 Wilcoxon signed-rank test comparison of the adherence (≥95 %) to taking antiretroviral drugs within the comparison groups at 1st month, 2nd month, 3rd month and 4th month from self-reports

comparison group	z	p-value
1st month-2nd month (pre test) (post test 1)	-1.414	.157
1st month-3rd month (pre test)	-1.414	.157
1st month-4th month (pre test) (post test 2)	-2.449	.014
2nd month-3rd month (post test 1)	<.001	1.000
2nd month-4th month (post test 1) (post test 2)	2.000	.046
3rd month-4th month (post test 2)	2.000	.046

Table 18 shows immediately after the intervention, the comparison group decreased not significant adherence practice (≥ 95 %) on antiretroviral drug less than at before the intervention. Three months follow up after the intervention, the comparison group significant decreased adherence practice (≥ 95 %) on antiretroviral drug less than at before the intervention (Figure 9).

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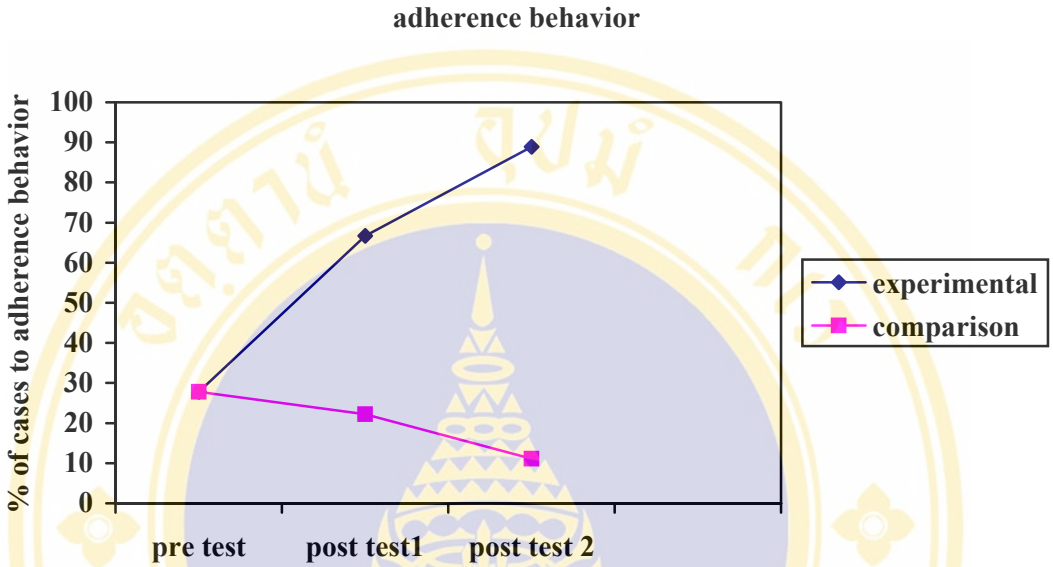

Figure 9: Adherence behavior of both groups

This shows the experimental group had greater practice on adherent than the comparison group over time at before intervention, immediately after intervention and three months follow up.

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CHAPTER V
DISCUSSION

From the study on the effect of SEPADA program of the HIV-infected/AIDS patients, Photharam Hospital, results of data analysis were discussed as follows:

Section 1: The socio-demographic characteristics of the subjects.

The HIV-infected/AIDS patients' descriptive statistics of the experimental and comparison groups were similar. There were no differences between the numbers of males and females in both experimental and comparison groups. There were also no differences between the experimental and comparison groups in their age group which most of them (about 60 %) were of 25-29 and 30-34 years with a mean of 33 years. The experimental group was slightly older than the comparison group in their age range: 24-58 and 21-49, respectively. All of them in the experimental group were Buddhist, but there were 2 Christians in the comparison group (5.6 %) while the majorities were Buddhist. Approximately half of them were married. For the level of education, there were three-quarter of the subjects in both groups finished primary school. The occupations of both groups were similar in categories of employed in the comparison group), but there were 11.1 % unemployed in the experiment group, 22.2 % in the comparison group, the family take care and help them about some money and other dimensions. The family incomes were mostly in the level of 1500-5,000 bahts and 5,001-10,000 bahts in both groups. The individual income by criterion human basic needed person per year were most 10,001-20,000 and 10,000-20,000 baht (36.1 % and 25 % in experimental group, 25.0 % and 30.6 % in the comparison group). The individual income by criterion human basic needed person per year equal and more than 20,000 bahts per year 52.8 % in experimental group, 63.9 % in the comparison group. That individual income by criterion human basic needed is less than 20,000 bahts were called poor (Standardized of the Basic Human Needs, Department of Community Development, Ministry of Interior, 2002-2006). The numbers of family in

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the experimental group and the comparison group were mostly lived with spouse and children and had 3-5 numbers in families which indicated that family didn't leave the patients to live alone. The individual incomes of most patients in both groups were sufficiency but not enough for saving and there were one-third of both groups who had not enough income and were in dept. Regarding family position of the patients, about 40% of both the experimental and comparison groups were son/daughter in law living in the extended family structure and one-third of them lived in the nuclear family as the head of the family or spouse of them. This indicated that the family didn't dislike them. Most of their family known that they were infected with HIV and spouse of them still did not leave. Moreover, some of spouses who were not infected with HIV still care for them very well. In addition, son in law or daughter in law whese spouse were dead that is spouse the family didn't leave them (44.4% in experimental group, 38.9% in comparison group). Majority of both groups (about 70%) shared some duties and responsibilities within the family members.

The characteristics of disease status and therapy of the experimental and comparison groups were similar. Approximately 90% of the AIDS cases in both groups got infection from sexual intercourse. These patients in both experimental and comparison groups came for medical treatment when they were very sick with the duration of known result of positive blood test within 0-3 years. The mean duration of known result of positive blood test was about 3 years in both groups which meant that the patients waited until they had definite signs and symptoms of AIDS. If the patients recognized the severity of the disease, the patients may pay more attention on their own health and seeking help at the early stage of infection. Therefore, the patients may prolong their life expectancy to live longer with well-being. Borwonwatthanuwong, J.(2004) stated that if the patients had tested for their CD4 cell count consistently and treated with antiretroviral drugs shortly after the diagnosis, the patients would have a better respond to drugs than late treatment and low resistant rate.

These patients in the experimental and comparison groups had several signs and symptoms of AIDS before receiving antiretroviral therapy such as thrush ulcer, chronic fever for longer than one month, loss of body weight more than 5 kgs within 6 months, weak/malaise for longer than one month, herpes zoster, chronic diarrhea for longer than one month, chronic cough for longer than one month, enlarged lymph

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node found at least 2 locations for longer than two months. Most of the patients in both the experimental and comparison groups entered into the NAPHA Program with AIDS stage. A little more than half of both groups were ill from opportunistic diseases before receiving antiretroviral therapy. The opportunistic diseases often found in both the experimental and comparison groups were Tuberculosis (38.9 %, 27.8 %), Pneumocystis Carinii Pneumonia (PCP) (11.1 %, 19.4 %), respectively. Majority of the subjects in both experimental and comparison groups had never received any antiretroviral therapy. The CD4 cell counts in the experimental and comparison groups at the first start of antiretroviral drug therapy were mostly of lower than 50 cells/micro lit; and more than and equal 50-99 cells/micro lit.

There were similar life events and emotional status characteristics in both the experimental and comparison groups. The patients in the experimental group felt slightly more depressed / hopeless than in the comparison group (16.7% in the experimental group, 58.3% in the comparison group).

Section 2: tested hypotheses

Knowledge

Before the intervention: both the experiment and comparison groups were not significantly different on their mean scores on their knowledge. Therefore, the experimental and the comparison group had similar knowledge at before the intervention.

Immediately after the intervention and three months follow up: Immediately after the intervention, the experimental group had significantly increased their knowledge than at before the intervention. Therefore, hypothesis 3 was supported. Also at three months follow up, the experimental group had slightly increased their knowledge than before the intervention (p = 0.158). Therefore, hypothesis 4 was supported (Table 12). The patients' knowledge of antiretroviral drug and self-care practice on health was sustained and slightly improved over three months period of time (Figure 8.1). Immediately after the intervention, the experimental group had increased their knowledge than the comparison group. Also at three months follow up, the experimental group had statistically increased their knowledge than the comparison group (Table 10 and 11), which supported hypotheses 1 and 2.

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About 50% of the experimental group misunderstood about the punctuality of taking antiretroviral drugs (Item 1, Appendix D) because the leader of the infected-HIV patients in the rainbow program, who was not the sample in this study, told the patients to be flexible on the timing that could be taking drugs missing no later than 1 hour. The researcher clarified the misunderstanding of the term of what adherence mean and how strictly the regimen should be carried out, otherwise the resistance to antiretroviral drugs would be aggravated.

About one-third of the patients in the experimental group were not realized about the long term side effects of antiretroviral drugs: hyperglycemias, buffalo hump, and lipid dystrophy (Item 4, Appendix D) and also the patients did not have knowledge about what to do about the side effect of rash (Item 7, Appendix D). The researcher explained the predictable side effects of the medication for the patients to be able to observe and detect these signs and symptoms in advance. The group had discussed on this topic very widely and understood what they should do.

Considering improving of knowledge of antiretroviral drug and self-care practice on health, it could be explained that the SEPADA program gave basic knowledge that was closed to patients' experiences, conditions, and complications; the real effects of non-adherence to antiretroviral drug. The researcher used the lecture method with power-point presentation and personal manuals and handouts for the patients to carry back home. Additionally, the researcher reinforced the patients by the presentation of the lived model, an infected health volunteer, to explain in a simply way for other patients to easily understand and able to apply in daily living. This knowledge was concerning about AIDS disease, antiretroviral drug, self care for taking medicine, eating habit, practice on exercise and relaxation. Right after the session, the researcher provided an opportunity for the group to openly share and discuss their ideas and opinions. There were various supports on many helping subjects such as medication's side effects, complimentary therapy, medication adherence, food intake, and exercise.

In this study, the researcher gave the story on the activities of "I can fight it" that reflected one infected patient consulted with the other patient on the experience of getting through the treatments and survived with well-being and live liked others. The story captured the patient's attention that it could help the patients to learn and

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remember better. Peerawut, J. (1999) said that visual materials could help the people to understand and remember better. In addition, the researcher used the lived model to support the important and direct points on how he had practiced on adherence behavior, what he had encountered within his treatments and obstacles, and what he had encouraged himself to strictly attach to the regimen. In summary, the researcher reinforced the patients by encouraging on giving compliments even though on a small succession, reminding the patients consistently by sending some letters, monitoring and clarifying on how to make a self-report record, and repeating the previous session's contents at every meeting.

The comparison group was not significantly different on their mean scores of knowledge at before the intervention, immediately after the intervention, and three months follow up (Table 13). However, one patient in the comparison group responded that he paid a lot of attention on seeking health information and knowledge to care for him. He said that "I read this book more than one hundred times until I remember exactly all the contents that I can locate where they are in what page."

This study's result was in consistency with the Yourself, M.E. (2004) who studied on HIV/AIDS knowledge, perception, and risky behavior among patients suspected to have STDs in Egypt. The study found that sex, level of education, and age were the determinants of knowledge level while gender and level of knowledge were the predictors of perception of threat.

Outcome expectancies

Before the intervention: Both the experimental and comparison groups were not significantly different on their mean scores of outcome expectancies on adherence to antiretroviral drug therapy (Table 9). Therefore, the experiment and comparison groups had similar outcome expectancies on adherence to antiretroviral drug therapy before the intervention.

Immediately after the intervention and three months follow up: Immediately after the intervention, the experimental group had increased their mean scores of outcome expectancies on adherence to antiretroviral drug therapy than before the intervention. Therefore, hypothesis 3 was supported. Also at three months follow up, the experimental group had increased their mean scores of outcome expectancies

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on adherence to antiretroviral drug therapy than before the intervention (Table 11); therefore, hypothesis 4 was supported. Thus, the patients' expected outcome on adherence antiretroviral drug and self-care practice on health was significantly sustained and improved over three months period of time (Figure 8.2). Immediately after the intervention, the experimental group had increased their expected outcome on adherence antiretroviral drug and self-care practice on health than the comparison group. Also at three months follow up, the experimental group had statistically increased their expected outcome than the comparison group (Table 10 and 11), which supported hypotheses 1 and 2.

The outcome expectancies was taking time to adopt that the patients may need evident-based to support their beliefs from observing own self, comparing with others or imitating others, and doing things that accepted by their surrounding society. Bandura (1997) stated that outcome expectancies were the self-decision about the outcome resulting from the results of behavior such as being accepted by society, getting prize, and being satisfied with himself. The researcher arranged the small patient's group (10 patients), to have opportunities to exchange ideas, giving out information, presentating of a good sample, and giving encouragement and compliments to those who did the correct adherences. Moreover, demonstration and practice of the muscle relaxation technique for the patients to help out with the calmness inside and promote powerful mind to want to live with full hope, and also help to relax and sleep better. In addition, the researcher provided individualized counseling for helping the patients to solve the personal problem or psychological support so that they had good outcome expectation, this followed with the concepts of the theory of Bandura (Bandura, et al. 1997:125). Having the opportunities to observe live-model on correct behaviors, which resulted in satisfactory outcome, the patients would gain more confident of the individual to become successful.

The patient's outcome expectancies were mostly on living with well-being, being survived on ownself with some occupation, not admitting to the hospital, having life security, and being relax and decreasing stress (Items 1, 3, 5, 7, 18, 19, Appendix D). Most of the patients reported that they had moderate satisfied with their sexual relationship. However, some patients said that "when we knew we were infected with HIV we felt ….we did not want to discuss about it, we did not have sex after all."

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The comparison group was not significantly different on their mean score of the outcome expectancies at before the intervention, the immediately after the intervention and three months follow up (Table 13).

Comparing the average scores of both groups, it was found that the experimental group had a greater mean score than the comparison group, with statistical significant Immediately after the intervention and three months follow up (Table 10 and 11). This followed hypotheses 1 and 2.

Niloiyaka, P. (1994: 228, cited in Kaewsawang, K. 1999:33), reported that if the patients adhered on taking antiretroviral drugs right on regimen, the patients became stronger and had more hope. For this study, the experimental group who had good adherence had gained more weight over than 5 kgs and had better appearance. This was an objective evidence for the patient's outcome expectancy to encourage them to be a better adherence.

Self-Efficacy Beliefs

Before the intervention: both the experiment and comparison groups were not significantly different on their mean scores of self-efficacy beliefs. Therefore, the experimental and comparison groups had similar self-efficacy beliefs before the intervention (Table 9).

Immediately after the intervention and three months follow up: Immediately after the intervention, the experimental group had significantly increased their mean scores of self-efficacy beliefs. Also at three months follow up, the experimental group had increased their mean score of self-efficacy beliefs (Table 12). Therefore, hypotheses 3 and 4 were supported.

When considering changes on self-efficacy beliefs, it could be explained that the experimental group have increased their self-efficacy belief. Bandura (1997) said that one's efficacy determined how one can work or perform something which is powerful for living. The belief in one's efficacy can be considered from feeling, thought, motive, and behavior. The SEPADA program gave an opportunity for the patients to learn through 4 process as: (1) **Attentional process** that allowed the experimental group to observe behavior of practice adherence for taking antiretroviral drugs and observe experience of lived role model; (2) **Retention process** that allowed

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the patients to practice on collecting data and information from the lived role model for further plan to act; (3) **Production process** that allowed the patients to recall the actual action or behavior of the lived role model and constructed on their own image of what they must do to follow that recall; and (4**) Motivation process** that allowed the patients to motivate themselves to do that behavior as the lived role model. This process is the enactive mastery experiences that serve as indicators of capability and also vicarious experiences that alter efficacy beliefs through transmission of competencies and comparison with the attainments of other, as of Bandura (1977).

The lived role model in this study was an infected HIV male, 47 years old, Buddhist, lived in the same location district with the experimental group. He had ever admitted to the hospital with Creptomeningitis, and his level CD4 cell count at an initial antiretroviral therapy was 36. At the time of the presentation, his CD4 cells was 197 which took about 1 year and 5 months. Since, the samples all knew him in person very well and evidently saw the consequences of successful adherences, they all believed and respected the lived role model and followed through of what he had said and recommended. The lived role model conveyed and transmitted his practice experiences, problems and barriers on during practice adherence, and succession in practice adherence taking antiretroviral drug. He also discussed on the point of view of the patient on how to take care of own self health and how to make the body stronger to fight for AIDS such as how to eat, rest, and exercise. Information and recommendations from the lived role model experience, and his spoken word help the patients to accomplish on practice adherence. The patients responded that they understand more and doing right on taking antiretroviral drugs and having more will to take drugs and to live.

Panthong, S. (2002) also used the lived role model to promote self-efficacy to health practices of the patients who were ill from hypertension by doing relaxation technique of exercise that reduced the patient's blood pressure.

The researcher prepared the experimental group for 4 processes of enactive mastery experiences, vicarious experiences, verbal persuasion, and physiological affective states. The researcher initiated the activity from a simple one for the patients to be able to be easily successful. Due to the experimental group practice adherence taking antiretroviral drugs; therefore, the researcher trained the patients on using pill

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boxes and brought back home as convenience equipment to take antiretroviral drugs right on time. This simple activity is agreed with the concept of Bandura (1997) that person will increase perceived self-efficacy when that activity was not difficult. Moreover, the researcher gave the patients self-report record on the time, date, and dose of taking antiretroviral drugs and also their feeling, and brought back for discussion and dialogue on any problems that might occur in the group during the next meeting. For example "this self-report can help me to be successful surely in keeping up on my punctuality of taking antiretroviral drugs."; "when I feel unpleasantly with some situations it made me cry.", "I must bear it and life must go on, give yourself some will power to keeping on going"; "Oh I miss taking medication for 10 minutes which I should not"; "I've not miss any day of taking my medicine"; "why me"; "now it is the time to take medicine which is better than have nothing to do "; "nowadays I feel healthier and stronger. I do not think as much as before."

Concerning about verbal persuasion, the researcher used persuasion talking and complement to the patients to make them feel more confident on adherence take antiretroviral drugs when they practiced good adherence. But there were some patients who had poor adherence; the researcher asked for the group to help them to solve their problems. The researcher used verbal persuasion and complement to the patients who is a positive reinforcement to make the patients increased their self-efficacy beliefs. The researcher also provided individual counseling to help the patients saw themselves, then, they selected suitable strategies to overcome their mental and social problems. Together, the researcher positively reinforced the patients will-power by giving sympathy and complementary words. Bandura (1997: 101) said that "Verbal persuasion alone may be limited in its power to create enduring increases in perceived self-efficacy, but it can bolster self-change if the positive appraisal is within realistic bounds"

For physiological and affective state, the researcher demonstrated the relaxation techniques for the patients to practice daily. The rationales for relaxation were to help the patients to have normal physiological and affective state as much as their usual to further facilitate their good adherence. Bandura (1997: 106) said that "Mood states also affect people's judgments of their personal efficacy. Physiological indicators of efficacy play an especially influential role in health functioning and in

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activities requiring physical strength and stamina. Affective states can have widely generalized effects on beliefs of personal efficacy in diverse spheres of functioning."

The program helped the patients for a better understanding on knowledge by power point presentation of the success person who practice for adherence antiretroviral drugs which covering knowledge about: AIDS disease, antiretroviral drugs, and self-care practice on health. This lived-model also presented many successes in his life, talked with how to use successful strategies in practice for adherence antiretroviral drugs. Besides, the patients received the pill boxes for convenient keeping of their medicine; both individualized counseling and self muscle relaxation technique by the patients received the instruction method and received tapes cassettes and CD for practice by themselves at home. These methods were used in this process for the patient successfully learned by themselves. So this encouraged and created confidence in patients, which Bandura believed that direct experience was the most effective way in the development of perceived self-efficacy (Bandura, et al. 1997:123). Moreover, there were opportunities for members to ask questions and exchange experiences, opinions, problems and causes analysis, including appropriate practice for adherence taking antiretroviral drugs. These followed Bandura's theory of 4 following processes as follows: (1) Enactive mastery experiences (2) Vicarious experiences (3) Verbal persuasion (4) Physiological and affective states. Keuwsaoad, O. (2001) studied effect of promotion self-efficacy to health practices of patients who were ill from Coronary artery disease and had received treatment at a heart disease clinic in OPD at Cheingkhom hospital, Phayau province, and found that the mean score of self-efficacy of the experimental group after the intervention was significantly higher than before the intervention and higher than the comparison group after the intervention. This was also in agreement with the study by Waelweerakup, W. (2003:53-55) of the application of the self-efficacy theory on stress reduction behaviors of teachers under the office of the private education commission in Nakhonpathom province. This study found that after the experiment, the experimental group had statistically higher efficacy beliefs in self-massage, self-massage practice, and self-massage satisfaction than those of the comparison group. Juldacha, S. (1997) studied the effect of educational program for transitional practice behavior in Tuberculosis patients by following on introduction about correct health practice for

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treatment of Tuberculosis patient and found that after the intervention the experimental group self-efficacy of practice follow on introduction in treatment had significantly higher mean score of than before the intervention and comparison group.

This reflected on the self-efficacy beliefs item of (1) you had confident that you can adhere on taking antiretroviral drugs all your life (69.4%). (2) You can prepare medicine every time ready for take before you go away from home many days (77.8%). (8) You can take medicine's regimen seriously right on time at every dose (52.8%). (9) You have many different methods on ability of good adherence for taking medicine (44.4%). These were the items that most of the patients told that they can do due to result of the patients had increased self-efficacy from SEPADA program.

The comparison group increased slightly within the group that was not significantly different on their mean score of self-efficacy beliefs at before the intervention, immediately after the intervention and three months follow up (Table 13).

Comparing the mean scores after the experiment of both groups, it was found that the experimental group significantly had a greater mean score than the comparison group (Table 10 and 11). These supported hypotheses 1 and 2.

Practice for adherence on antiretroviral drugs therapy

Before the intervention: both the experiment and comparison groups were not significantly different on their adherence practice (≥ 95 %) on antiretroviral drug. Therefore, the experimental and the comparison group had similar practice before the intervention (Table 16).

Immediately after the intervention and three months follow up: Immediately after the intervention, the experimental group had significantly increased their adherence practice (≥ 95 %) on antiretroviral drug than before the intervention. Also at three months follow up, the experimental group had increased adherence practice (≥ 95 %) on antiretroviral drug than immediately after the intervention (Table 17, Figure 9). Therefore, hypotheses 7 and 8 were supported.

Considering changes about practice for adherence on antiretroviral drugs therapy, it could be explained that this was the result of SEPADA program to make the patients to have knowledge and awareness about the results of good adherence and

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poor adherence. Moreover, immediately after the intervention the researcher gave the letter to each patient and told them to send it back to the researcher after 5 days has passed. The letter included the items of how to practice on adherence antiretroviral drugs. Then, the patients selected the choices followed on what they had practiced and if they had no choices to select then, they could write something about problems in the letter. They could also telephone to the researcher for consulting out their problems. The researcher collected data from the letters and used them to solve the problems by individualized counseling and personal consulted telephone with each individual. With the individualized counseling method, each patient's problem was accordingly and appropriately solved. These provided more reinforced to the patient to adhere on antiretroviral drugs. This was agreed with Noble LM. (1998, cited in Schaffer & Yoon, 2001:74) who said that patients were more likely to adhere on a regimen when the relationship with their clinician allows them to express concerns about a condition or treatment, when treatment goals were shared, and when plans were made to overcome the identified barriers. In addition, the researcher gave pill boxes to the patients for convenience to take medicine anywhere. Some patients told the researcher that "I can take medicine right on regimen very well because of the given pillboxes." Another patient who had good practice expressed that "one day while as I was driving and it was the time to take medicine, I asked the person who accompany me on the passenger seat to give me medicine and water."

The items the answered that they had never done (100%) reflected on the practice items of (4) there are too many pills or tablets to take, it's so confused; (11) you don't take medicines because you can not found medicines.

The comparison group decreased their adherence practice (≥ 95 %) on antiretroviral drug less than before the intervention. Also at three months follow up, the comparison group was not significantly different on practice for adherence on antiretroviral drugs therapy at before intervention, at immediately after the intervention and decreased significant at three months follow up (Table 18).

Comparing the mean scores after the experiment of both groups, it was found that the experimental group significantly had greater mean scores than the comparison group (Table 16). These supported hypotheses 5 and 6.

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The SEPADA program used the concept of self-efficacy and together with counseling patient to increase adherence. This was agreed with Chesney and colleagues (2000: 265) that "the patients skip their medication because they become busy or forget to carry medications with them when they are away from home." This correlated with non-adherence behaviors that included low self-efficacy regarding ability to take medications and low perceived efficacy of medications. This study suggested that training and counseling patients prior to initiating combination therapy would be worthwhile and training could include general plans for adherence outside the home, practicing adherence behaviors to increase self-efficacy, and counseling about the effectiveness of the drugs. The patients had many problems on practice. Therefore; the patients should be continuously helped to have continuous good adherence.

Research Strengths

The results of the SEPADA program were successful in this research. There was some strengths this study such as: the researcher operated the program in a form of integration between strict regiment and warm hearted. The researcher use the strengths of working with and thinking on how to support the patients to practice for adherence antiretroviral drugs more efficiently and having quality of life. There was a preplanned management before the activities in the program had started and continued through the program, together with the training role-model and the volunteers. The researcher was proud of good cooperation of the volunteers and patients who were the samples in both groups, especially collaboration of patients about answering the questionnaires and following up on the program in each session. Moreover, the relaxation program was set on holiday for the patient's convenience to continue activity. Besides, the researcher provided some incentive money for the patients, each time they went to follow up in the program. One patient told the researcher that "I was ill and admitted in the ward for two days, and felt very anxiety with the researcher". A few days later, he came back in the program looked OK.

This SEPADA program was successful on practice of adherence and sustained for over three months follow up that might be the reason of the activities in each session could stimulate the patient's efficacy. In addition, the self-report record that

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aimed to remind to the patients to be strictly to adherence behavior also reinforced the patients sustainability to the behavior. Therefore, the self-report is important for the patients.

Research Limitations

This study may violate the internal validity of the quasi-experimental study on the threat of the contamination between the experimental and comparison group. The researcher aforeprevented this threat by choosing the small groups in the two groups who came to the clinic on a separate week, place of living, or friend group. Therefore, the patient identity and condition still kept secret.

During this research, a few patients were losing from following up, for example, the experimental group lost 3 cases due to business schedule and didn't complete participate in research. The comparison group lost 4 cases: 3 cases due to Business Schedule and 1 case moved to other location.

This research was studying in patients taking antiretroviral drugs of no more than two years, most patients may no have adverse effects of antiretroviral drugs as get and the effects of newly medicines influence the patients to be healthier then practice on good adherence. Silva and colleagues (1996, cited in Schaffer & Yoon, 2001: 73) said that the patients who experience adverse effects were more likely to discontinue the treatment.

In summary, this SEPADA program could increase the mean scores of the experimental group on knowledge, outcome expectancies, self-efficacy belief and increase adherence rate of practice taking antiretroviral drug from self-report than the comparison group. Therefore, the health care team should use the self-efficacy theory to apply with health services for helping the patients to have good adherence for taking antiretroviral drugs.

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CHAPTER VI
CONCLUSION

This quasi-experimental research was designed to examine the SEPADA program of the HIV-infected/AIDS patients, Photharam Hospital. This chapter presents a summary of the research methodology and findings. In addition, the recommendations on research findings are discussed.

Summary of the study

1. Subjects in the study

The subjects in this study were HIV-infected/AIDS patients in Photharam Hospital who received antiretroviral drugs therapy in the NAPHA program during June 3, 2004 through October 31, 2004. The sample group was divided into the experimental and comparison groups, with 36 patients in each group. The experimental group received knowledge about AIDS, antiretroviral drug, self care for taking medicine, eating habit, exercise and relaxation, and self-report. The comparison did not receive any activity except the self-report.

2. Socio-demographic characteristics

The experimental and comparison groups were similar in the socio-emographic characteristics of person, disease status and therapy characteristics, life event and emotional status characteristics.

3. Knowledge

The experimental group had significantly increased their knowledge at immediately after the intervention and at three months follow up than at before the intervention (p = <.001). The knowledge of the experimental group and the comparison group are similar at before the experiment (p = <.967). The experimental group's mean score of knowledge was significant greater than the comparison group at

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immediately after the intervention and at three months follow up (p = <.001) (Figure 8.1).

4. outcome expectancies

The experimental group had significantly increased their outcome expectancies at immediately after the intervention and at three months follow up than at before the intervention (p = <.001). The outcome expectancies of the experimental group and the comparison group were similar (p = .959) at before the experiment. The experimental group's mean score of outcome expectancies was significant greater than the comparison group at immediately after intervention (p = .013), and at three months follow up (p = <.001) (Figure 8.2).

5. Self-efficacy beliefs

The experimental group had significantly increased their self-efficacy beliefs at immediately after the intervention and at three months follow up than at before the intervention (p = <.001). The self-efficacy beliefs of the experimental and the comparison groups were similar (p = .818) at before the intervention. The experimental group's mean score of self-efficacy beliefs was significant greater than the comparison group at immediately after the intervention and at three months follow up (p = <.001) (Figure 8.3).

6. Practice

The experimental group had significantly increased their practice adherence behavior (≥ 95%) of taking antiretroviral drugs at immediately after the intervention and at three months follow up (p = <.001). The practice adherence behavior (≥ 95%) of taking antiretroviral drugs of the experimental and the comparison groups were similar (p = .604) at before the intervention. The experimental group had significant increased the adherence behavior (≥ 95%) of taking antiretroviral drugs than the comparison group at immediately after the intervention and at three months follow up (p = < .001) (Figure 9).

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Recommendations

The results of this research will provide for the nursing implementation including nursing practice, and nursing research.

Nursing implementation

Nursing practice

The SEPADA program in this research can be applied and used in workplaces for the highest benefit by trained personals that will provide health care, and made patients to have adherence on antiretroviral drugs. These results lead to develop and to be used in nursing practice to promote the HIV-infected/AIDS patients to have self-efficacy for good adherence. Moreover, these results can be used in other chronic disease patients who are taking medicine for a long time such as hypertension, diabetes mellitus.

The self-report record is useful for patients that should be applied for patients to use it for daily record. Because, it can booster the patients to have good practice adherence on taking antiretroviral drugs very well. The nurses should make a mini-pocket of self-report for the patients to conveniently carrying.

Nursing education

The self-efficacy theory should be used in curriculum development of a practitioner program at college and university. Organization of curriculum content and selections of student learning experiences should be deriving from the self-efficacy theory. Course objectives included identifying self-efficacy beliefs problems and distinguishing between effective and non effective coping mechanisms.

Nursing research

The program of research would be continued to develop around the concept of self efficacy for appropriate applies should be used with the HIV /AIDS patients and patients with chronic illnesses. This research has been used extensively to guide research to enhance the nursing care of patients with specific adherence taking medication for a long term therapy.

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Recommendations for further research

1. The future research should be repeated in different hospitals.

2. There should be a research study by applying self-efficacy theory or other theories on HIV-infected/AIDS patients or with chronic disease in order that adherence taking medicine for a long time such as hypertension, diabetes mellitus.

3. There should be longer length of time for the research study to 6 months in order to follow up on sustainability of the patient's behaviors, including follow up on complications in the long run.

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วิทยานิพนธ์ปริญญาวิทยาศาสตร์มหาบัณฑิต(สาธารณสุขศาสตร์) เอกพยาบาลสาธารณสุข, บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล.

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ป่วยโรคหลอดเลือดหัวใจ. วิทยานิพนธ์ ปริญญาพยาบาลศาสตร์มหาบัณฑิตสาขาวิชาการพยาบาลอายุรศาสตร์และศัลยศาสตร์, บัณฑิตวิทยาลัย มหาวิทยาลัยเชียงใหม่.

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APPENDIX

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NO. 65/2004

Documentary Proof of Ethical Clearance
The Committee on Human Rights Related to
Human Experimentation
Mahidol University, Bangkok

.....

Title of Project: **Application of Self-Efficacy Theory on Antiretroviral Drug Adherence among HIV Infected / AIDS Patients**

Principle Investigator: **Miss Raweewan Phongphuthachat**

Name of Institution: **Faculty of Public Health**

Approved by the Committee on Human Rights Related to Human Experimentation

Signature of Chairman: _____
(Professor Dr. Srisin Khusmith)

Signature of Head of Institute: _____
(Professor Dr. Pornchai Matangkasombut)

Date of Approval: 23 JUN 2004

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โครงการวิจัย

หัวข้อวิจัย กิจกรรมและผลที่ผู้ติดเชื้อ เอช ไอ วี / ผู้ป่วยเอดส์

วัตถุประสงค์ และวิธีการวิจัย

ในการวิจัยครั้งนี้ต้องการทราบแนวทางที่มีประสิทธิผลในการให้ข้อมูลให้ผู้ติดเชื้อเอชไอวี / ผู้ป่วยเอดส์มีการปฏิบัติการรับประทานยาต้านไวรัสเอดส์ อย่างสม่ำเสมอ

ขั้นตอนในการเข้าร่วมการวิจัยประกอบด้วย

1. กลุ่มที่ได้รับคำแนะนำตามปกติ ผู้เข้าร่วมวิจัยตอบแบบสอบถาม ซึ่งใช้เวลาประมาณ 25 นาที หลังจากนั้นอีก 4 สัปดาห์ และ 16 สัปดาห์ เมื่อมาตรวจให้ตอบแบบสอบถามซ้ำอีก

2. กลุ่มที่ได้รับคำแนะนำปกติและได้รับคำแนะนำในโปรแกรมการรรับรู้สมรรถนะแห่งตน ในการปฏิบัติรับประทานยาต้านไวรัสเอดส์ ผู้เข้าร่วมวิจัยตอบแบบสอบถาม ซึ่งใช้เวลา 25 นาที หลังจากนั้นชมวีดีทัศน์ เสนอตัวแบบบุคคลที่ประสบความสำเร็จในการปฏิบัติการรับประทานยาต้าน ไวรัสเอดส์ ผู้เข้าร่วมวิจัยได้รับกล่องยาและคำแนะนำในการนำไปใช้ประโยชน์ สุดท้ายได้รับการฝึกเทคนิคการผ่อนคลายกล้ามเนื้อ และได้รับเทปการฝึกการผ่อนคลายกล้ามเนื้อด้วยตนเอง นำไปฝึกปฏิบัติเองที่บ้านวันละครั้ง หลังจากนั้น 4 สัปดาห์ ต่อมา ผู้เข้าร่วมวิจัยทุกท่านได้รับบริการให้คำปรึกษาเป็นรายบุคคล หลังนั้นชมวีดีทัศน์ เสนอตัวแบบบุคคลที่ประสบความสำเร็จในการปฏิบัติการรับประทานยาต้านไวรัสเอดส์ ผู้เข้าร่วมวิจัยได้รับกล่องยาและทบทวนพร้อมทั้งปฏิบัติเทคนิคการผ่อนคลายกล้ามเนื้อด้วยตนเอง สุดท้ายตอบแบบสอบถาม หลังจากนั้น 12 สัปดาห์ต่อมา (หรือสัปดาห์ที่ 16) ตอบแบบสอบถามซ้ำ

เหตุผลที่เชิญชวนให้ท่านเข้าร่วมโครงการวิจัย

การปฏิบัติการรับประทานยาต้านไวรัสเอดส์ เป็นสิ่งสำคัญ เนื่องจากต้องรับประทานให้ตรงเวลา และไม่ลืมการรับประทานยา ตลอดชีวิต ดังนั้น การที่มีการรับประทานยาที่ดี ต่อเนื่องสม่ำเสมอ ตลอด จะทำให้ผู้รับประทานยาต้านไวรัสเอดส์ ไม่มีการดื้อยา มีคุณภาพชีวิตที่ดี แต่การปฏิบัติการรับประทานยาต้านไวรัสเอดส์ พบว่ามีผู้ที่รักษาด้วยต้านไวรัสเอดส์ มีการรับประทานยาไม่ตรงเวลา หลงลืมการรับประทานยาด้วย สาเหตุต่างๆ มากมาย เช่น มีกิจธุระมาก จิตใจไม่ปกติ เป็นต้น ดังนั้นผู้วิจัยเห็นความสำคัญ จำเป็นที่จะมีแนวทางการช่วยเหลือ ให้ผู้รักษาด้วยยาต้านไวรัสเอดส์มีการปฏิบัติรับประทานยาที่ดีตลอดไป ผู้วิจัยเห็นว่าการนำโปรแกรมการส่งเสริมการรับรู้

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สมรรถนะแห่งตนในการรับประทานยาต้านไวรัสเอดส์ มาช่วยผู้รักษาด้วยยาต้านไวรัสเอดส์ให้สามารถดำเนินการปฏิบัติตนในการรับประทานยาต้านไวรัสให้สามารถรับประทานยาได้ตรงตามเวลา ครบถ้วน ต่อเนื่อง ได้โดยง่ายซึ่งนำมาซึ่งคุณภาพชีวิตที่ดีของผู้รักษาด้วยยาต้านไวรัสเอดส์และครอบครัว อันจะเป็นผลดีต่อประเทศชาติต่อไป ด้วย

ประโยชน์ที่คาดว่าจะเกิดขึ้น

การส่งเสริมการรับรู้สมรรถนะแห่งตน ในการรับประทานยาต้านไวรัสเอดส์จะช่วยให้ผู้ที่รับประทานยาต้านไวรัสเอดส์ มีความมั่นใจและสามารถปฏิบัติการรับประทานยาต้านไวรัสเอดส์ได้ดีตลอดไป นำมาซึ่งคุณภาพที่ดี ของตนเองและครอบครัว ป้องกันการดื้อยาและล้มเหลวในการรักษาด้วยยาต้านไวรัสเอดส์

ระยะเวลาที่เข้าร่วมกิจกรรม 5 เดือน

ความเสี่ยง หรือความไม่สบายใจที่อาจเกิดขึ้นกับผู้ที่เข้าร่วมในการวิจัย

ไม่มีความเสี่ยงหรืออันตรายใด ๆ ในการเข้าร่วมการวิจัย เนื่องจากการวิจัยครั้งนี้ไม่ได้กระทำการทดลอง หรือปฏิบัติหัตถการใด ๆ ที่มีการลุกล้ำร่างกาย แต่อาจต้องเสียเวลาในการเข้าร่วมกิจกรรม และตอบแบบสอบถามบ้าง ซึ่งท่านจะได้รับค่าตอบแทนเป็นค่าใช้จ่ายในการเดินทางและค่าเสียเวลาในการเข้ากิจกรรมแต่ละครั้งเป็นจำนวน 50 บาท ทุกครั้งที่ท่านเข้าร่วมกิจกรรมใน โครงการวิจัย

ขอบเขตการดูแลรักษาความล้มเหลวของข้อมูลต่าง ๆ

ผู้วิจัยเก็บข้อมูลไว้เป็นความลับ และข้อมูลที่เก็บรวบรวมมาได้ทั้งหมด จะเปิดเผยเฉพาะในรูปที่เป็นการสรุปผลการวิจัยด้วยเหตุผลวิชาการเท่านั้น และผู้ที่จะสามารถรับรู้ข้อมูลเหล่านี้นอกจากผู้วิจัยและอาจารย์ที่ปรึกษาแล้ว ต้องได้รับความยินยอมจากผู้เข้าร่วมการวิจัยก่อน

สิทธิในการถอนตัวออกจากโครงการวิจัย

ในการเข้าร่วมงานวิจัยในครั้งนี้เป็นไปด้วยความสมัครใจของท่าน โดยท่านสามารถยกเลิกการเข้าร่วมโครงการวิจัยนี้ได้ตลอดเวลา โดยจะไม่มี ผลต่อการรักษาและการพยาบาลใด ๆ จะได้รับแต่อย่างไร กรณีมีเหตุผลจำเป็นหรือมีปัญหา ข้อสงสัยกรุณาติดต่อ ผู้วิจัย นางสาวรวีวรรณ พงศ์พุทธชาติ โทรศัพท์ 032–354-593 , 01-941-8244

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แบบฟอร์มใบยินยอมให้ทำการวิจัยโดยได้รับการบอกกล่าวและเต็มใจ

(Informed Consent Form)

การวิจัยเรื่อง การประยุกต์ทฤษฎีสมรรถนะแห่งตนในการรับประทานยาต้านไวรัสเอดส์อย่างสม่ำเสมอของผู้ติดเชื้อ เอช ไอ วี / ผู้ป่วยเอดส์

วันที่ให้ยินยอม วันที่.....เดือน.....พ.ศ. .....

ก่อนที่จะลงนามในใบยินยอมให้ทำวิจัยในครั้งนี้ ข้าพเจ้าได้รับการอธิบายจากผู้วิจัยถึงวัตถุประสงค์ของการวิจัย วิธีการวิจัย และประโยชน์ที่จะเกิดขึ้นจากการวิจัยอย่างละเอียด และมีความเข้าใจดีแล้ว

ผู้วิจัยรับรองว่าจะตอบคำถามต่าง ๆ ที่ข้าพเจ้าสงสัยด้วยความเต็มใจ ไม่ปิดบัง ซ้อนเร้น จนข้าพเจ้าเข้าใจ

ข้าพเจ้ามีสิทธิที่จะบอกเลิกการเข้าร่วมในโครงการวิจัยนี้ เมื่อใดก็ได้ และเข้าร่วมโครงการนี้ด้วยความสมัครใจและการบอกเลิกการเข้าร่วมการวิจัยนี้ จะไม่มีผลต่อการดูแลที่ข้าพเจ้าพึงได้รับต่อไป

ผู้วิจัยรับรองว่าจะเก็บข้อมูลเฉพาะที่เกี่ยวกับตัวข้าพเจ้าเป็นความลับ และจะเปิดเผยในรูปที่เป็นผลสรุปการวิจัย การเปิดเผยข้อมูลเกี่ยวกับตัวข้าพเจ้าต่อหน่วยงานต่าง ๆ ที่เกี่ยวข้องกระทำได้เฉพาะกรณีจำเป็นด้วยเหตุผลทางวิชาการเท่านั้น

ผู้วิจัยรับรองว่าหากมีข้อมูลเพิ่มเติมที่ส่งผลกระทบต่อการวิจัย ข้าพเจ้าจะได้รับการแจ้งให้ทราบโดยทั่วกันโดยไม่ปิดบัง ซ้อนเร้น

ข้าพเจ้าได้อ่านข้อความข้างต้นแล้ว และมีความเข้าใจดี ทุกประการ และได้ลงนามในใบยินยอมนี้ด้วยความเต็มใจ

ลงนาม.....ผู้ยินยอม

ลงนาม.....พยาน

ลงนาม.....พยาน

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APPENDIX B

RESEARCH INSTRUMENT

แบบสอบถามการรับรู้สมรรถนะแห่งตนในการรับประทานยาต้านไวรัสของผู้ป่วย

ส่วนที่ 1 แบบบันทึกข้อมูลส่วนบุคคล

คำชี้แจง โปรดทำเครื่องหมาย √ ลงใน ☐ หรือเติมข้อความลงในช่องว่าง

ID number……

วันที่ ……

1. เพศ ☐ 1 ชาย ☐ 2 หญิง

2. อายุ……ปี

3. ศาสนา ☐ 1 พุทธ ☐ 2 อิสลาม ☐ 3 คริสต์ ☐ 4 อื่นๆระบุ……

……

……

ส่วนที่ 2. **แบบสอบถามเกี่ยวกับความรู้ ความรู้เรื่องยาต้านไวรัสเอดส์ และความรู้ในการปฏิบัติตนทาง ด้านสุขภาพของผู้ติดเชื้อเอชไอวี/ผู้ป่วยเอดส์**

2.1. ความรู้เกี่ยวกับยาต้านไวรัสเอดส์

คำชี้แจง โปรดตอบคำถามทุกข้อตามความรู้ที่ท่านได้รับทราบมาเกี่ยวกับยาต้านไวรัสเอดส์ โดยทำเครื่อง หมาย √ ในช่องตัวเลือก ที่ท่านต้องการ

ความรู้	ใช่	ไม่ใช่	ไม่แน่ใจ
1. ท่านควรรับประทานยาต้านไวรัสตรงเวลาอย่างเคร่งครัด แต่ถ้ารับประทานช้า 1 ชั่วโมงก็อนุโลมให้ได้ ในบางครั้ง			
2. ……..			
10. ……			

2.2 การปฏิบัติตนทางด้านสุขภาพของผู้รับประทานยาต้านไวรัสเอดส์

คำชี้แจง โปรดตอบคำถามทุกข้อตามความรู้ที่ท่านได้รับทราบมาเกี่ยวกับการปฏิบัติตนของผู้ที่รับประทาน ยาต้านไวรัสเอดส์ โดยทำเครื่องหมาย √ ในช่องตัวเลือกที่ท่านต้องการ

ความรู้	ใช่	ไม่ใช่	ไม่แน่ใจ
1. ผู้ที่รับประทานยาต้านไวรัส ห้ามดื่มสุรา			
2. ……			
7……..			

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ส่วนที่3.แบบสอบถามความคาดหวังในผลลัพธ์ในการรับประทานยาต้านไวรัส

ท่านคาดหวังในเรื่องต่อไปนี้เพียงใด โปรดทำเครื่องหมาย√ ลงในช่องที่ตรงกับความคิดเห็นของท่านมากที่สุดเพียงข้อเดียว

ความคาดหวัง	ระดับความคาดหวัง				
	มากที่สุด	มาก	ปานกลาง	น้อย	น้อยที่สุด
1. เป็นผู้ที่มีสุขภาพแข็งแรงสมบูรณ์					
2. ……					
20 ……..					

ส่วนที่ 4. แบบสอบถาม การรับรู้สมรรถนะแห่งตน

4.1 ความคาดหวังในความสามารถตนเองท่านคาดหวังในความสามารถตนเองในเรื่องเหล่านี้เพียงใด

โปรดทำ เครื่องหมาย √ ลงในช่องที่ตรงกับความรู้สึกของท่านมากที่สุด

ท่านมั่นใจในความสามารถตนเองในเรื่องเหล่านี้เพียงใด	ระดับความมั่นใจ				
	มากที่สุด	มาก	ปานกลาง	น้อย	ไม่มั่นใจเลย
1. สามารถรับประทานยาต้านไวรัสได้ตลอดชีวิต					
2. ……					
14. ……					

ส่วนที่ 4 .2 แบบสอบถามการรับรู้สมรรถนะแห่งตน

ขอท่านได้โปรดทำเครื่องหมาย √ ลงในช่องที่ตรงกับความรู้สึกของท่านมากที่สุด

ข้อความต่อไปนี้เป็นเหตุการณ์สมมุติ ถ้าต้องอยู่ในสถานการณ์เหล่านี้ท่านจะปฏิบัติอย่างไร

1. ท่านไปธุระต่างจังหวัด ท่านพบว่าท่านลืมนำยามารับประทาน ท่านจะ

   ☐ 1 คิดว่าไม่เป็นไรแค่ครั้งเดียว จะรับประทานชดเชยในครั้งต่อไป

   ☐ 2 รีบกลับบ้านเพื่อนำยามารับประทานทันที

   ☐ 3 หาซื้อยาในโรงพยาบาลในพื้นที่ที่ตนเองมาทำธุระ

   ☐ 4 อื่น ๆ ระบุ.....

2 ……..

6. ……

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ส่วนที่ 5.1 การรับประทานยาต้านไวรัส

5.1.1 การปฏิบัติการรับประทานยาต้านไวรัส

โปรดเติมคำลงในช่องว่าง หรือแสดงเครื่องหมาย √ ที่ตรงกับความจริง

1. วิธีรับประทานยา (เติมตัวเลขลงในช่องว่าง)

จำนวนเม็ดยาที่รับประทานต่อครั้ง	จำนวนครั้งที่รับประทานต่อวัน	จำนวนเม็ดยาที่รับประทานต่อวัน
☐	☐	☐

2. ……

5. ……

5.1.2 การปฏิบัติในการรับประทานยาให้สม่ำเสมอ

ขอท่านได้โปรดทำเครื่องหมาย √ ลงในช่องที่ตรงกับสภาพความเป็นจริง

ในการปฏิบัติการรับประทานยาต้านไวรัสของท่านมากที่สุด ในแต่ละข้อเพียงคำตอบเดียว

การปฏิบัติ	ประจำ	บ่อยครั้ง	นานๆ ครั้ง	ไม่เคยทำ
1. เมื่อออกนอกบ้านท่านลืมนำยาต้านไวรัสติดตัวไป				
2. ……				
17. ……				

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5.2 แบบบันทึกรายงานการรับประทานยาต้านไวรัส

เดือน ……..

วันที่ ที่กินยาต้าน	เวลาที่กินยาต้าน	จำนวนเม็ดที่กิน	สาเหตุไม่ได้กินยา
1	เช้า.....	เช้า.....	
	เย็น.....	เย็น.....	
2	เช้า.....	เช้า.....	
	เย็น.....	เย็น.....	
3	เช้า.....	เช้า.....	
	เย็น.....	เย็น.....	
4	เช้า.....	เช้า.....	
	เย็น.....	เย็น.....	
5	เช้า.....	เช้า.....	
	เย็น.....	เย็น.....	

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List of Experts for Instrument validity

1. รองศาสตราจารย์ สมใจ ทุนกุล

ภาควิชาการพยาบาลสาธารณสุข คณะสาธารณสุขศาสตร์ มหาวิทยาลัยมหิดล

2. รองศาสตราจารย์ จารุวรรณ เหมะธร

ภาควิชาการพยาบาลสาธารณสุข คณะสาธารณสุขศาสตร์ มหาวิทยาลัยมหิดล

3. รองศาสตราจารย์ ทัศนีย์ นนทสร

ภาควิชาการพยาบาลสาธารณสุข คณะสาธารณสุขศาสตร์ มหาวิทยาลัยมหิดล

4. นายแพทย์ ธวัช เตียวิไล

นายแพทย์ 7 ผู้เชี่ยวชาญด้านอายุรกรรม

โรงพยาบาลโพธาราม อ.โพธาราม จ. ราชบุรี

5. นาง ขนิษฐา อติรัตนา

นักวิชาการสาธารณสุข 7

สำนักงานควบคุมโรคที่ 4 จังหวัดราชบุรี

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ที่ ศธ 0515(05).7/๑๖ ภาควิชาจิตเวชศาสตร์ คณะแพทยศาสตร์
มหาวิทยาลัยเชียงใหม่ 50200

เมษายน พ.ศ. 2547

เรื่อง อนุญาตให้ใช้เครื่องมือวิจัย
เรียน หัวหน้าภาควิชาการพยาบาลสาธารณสุข (รศ.สุนีย์ ละกำปั่น)
อ้างถึง หนังสือที่ ศธ 0517.142/356 ลงวันที่ 31 มีนาคม 2547

ตามหนังสือที่อ้างถึง ภาควิชาการพยาบาลสาธารณสุข คณะสาธารณสุขศาสตร์ มหาวิทยาลัยมหิดล ขออนุญาตให้ นางสาวรวิวรรณ พงศ์พุทธชาติ นักศึกษาหลักสูตร วท.ม. (สาธารณสุขศาสตร์) สาขาวิชาเอกพยาบาลสาธารณสุข ภาคพิเศษ ใช้เครื่องมือเทคนิคการผ่อนคลายกล้ามเนื้อด้วยตนเอง พร้อมด้วยเอกสารประกอบ เพื่อใช้ประกอบการทำวิทยานิพนธ์ ความแจ้งแล้วนั้น

ในการนี้ ข้าพเจ้าฯ พิจารณาแล้ว ไม่ขัดข้อง ยินดีอนุญาตให้ใช้เครื่องมือดังกล่าวได้

จึงเรียนมาเพื่อโปรดทราบ

ขอแสดงความนับถือ

(ผู้ช่วยศาตราจารย์ ดร.สมบัติ ตาปัญญา)
ผู้ช่วยศาสตราจารย์ประจำภาควิชาจิตเวชศาสตร์

ธุรการภาควิชาจิตเวชศาสตร์
โทร. 053-945422
โทรสาร 053-945426

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APPENDIX C

SAMPLE SELECTION TABLE

Sample Size

AGED 5983 Dr. Kathleen Kelsey
EDUCATIONAL AND PSYCHOLOGICAL MEASUREMENT
1970, 30, 607-610.

DETERMINING SAMPLE SIZE FOR RESEARCH ACTIVITIES

ROBERT V. KREJCIE
University of Minnesota, Duluth

DARYLE W. MORGAN
Texas A. & M. University

The ever increasing demand for research has created a need for an efficient method of determining the sample size needed to be representative of a given population. In the article "Small Sample Techniques," the research division of the National Education Association has published a formula for determining sample size. Regrettably a table has not bee available for ready, easy reference which could have been constructed using the following formula.

$$s = X^2 NP(1-P) \div d^2(N-1) + X^2 P(1-P).$$

s = required sample size.

X^2 = the table value of chi-square for 1 degree of freedom at the desired confidence level (3.841).

N = the population size.

P = the population proportion (assumed to be .50 since this would provide the maximum sample size).

d = the degree of accuracy expressed as a proportion (.05).Small-Sample Techniques. *The NEA Research Bulletin*, Vol. 38 (December, 1960), p. 99.

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Table for Determining Sample Size from a Given Population

N	*S*	*N*	*S*	*N*	*S*
10	10	170	118	600	234
15	14	180	123	650	242
20	19	190	127	700	248
25	24	200	132	750	254
30	28	210	136	800	260
35	32	220	140	850	265
40	36	230	144	900	269
45	40	240	148	950	274
50	44	250	152	1000	278
55	48	260	155	1100	285
60	52	270	159	1200	291
65	56	280	162	1300	297
70	59	290	165	1400	302
75	63	300	169	1500	306
80	66	320	175	1600	310
85	70	340	181	1700	313
90	73	360	186	1800	317
95	76	380	191	1900	320
100	80	400	196	2000	322
110	86	420	201	2200	327
120	92	440	205	2400	331
130	97	460	210	2600	335
140	103	480	214	2800	338
150	108	500	217	3000	341
160	113	550	226	3500	346

Note.—*N* is population size.*S* is sample size.

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APPENDIX D

ITEMS ANALYSIS

Number and percent of knowledge

ตารางที่ 19 จำนวนและร้อยละของผู้ป่วยติดเชื้อ HIV/ผู้ป่วยเอดส์จำแนกตามระยะเวลาของการเข้าโปรแกรม

ข้อความ	group	pre test		post test 1		post test 2	
		correct	Non correct	correct	Non correct	correct	Non correct
		n %	N %	n %	n %	n %	n %
1.ท่านควรรับประทานยาต้าน.....	experiment	16 44.4	20 55.6	17 47.2	19 52.8	19 52.8	17 47.2
	comparison	12 33.3	24 66.7	13 36.1	23 63.9	12 33.3	24 66.7

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Items Analysis

Number and percent of knowledge

ตารางที่ 19 จำนวนและร้อยละของผู้ป่วยติดเชื้อ HIV/ผู้ป่วยเอดส์จำแนกตามระยะเวลาของการเข้าโปรแกรม(ต่อ)

ข้อความ	group	pre test		post test 1		post test 2	
		correct	Non correct	correct	Non correct	correct	Non correct
		n %	N %	n %	n %	n %	n %
2.โรคเอดส์.....	experiment	28 77.8	8 22.2	32 88.9	4 11.1	32 88.9	4 11.1
	comparison	29 80.6	7 19.4	29 80.6	7 19.4	32 88.9	4 11.1
3. ควรรับประทานยา.....	experiment	28 77.8	8 22.2	36 100.0	- -	34 94.4	2 5.6
	comparison	33 91.7	3 8.3	33 91.7	3 8.3	31 86.1	5 13.9

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Items Analysis

Number and percent of knowledge

ตารางที่ 19 จำนวนและร้อยละของผู้ป่วยติดเชื้อ HIV/ผู้ป่วยเอดส์จำแนกตามระยะเวลาของการเข้าโปรแกรม(ต่อ)

ข้อความ	group	pre test		post test 1		post test 2	
		correct	Non correct	correct	Non correct	correct	Non correct
		n %	N %	n %	n %	n %	n %
4. ผลข้างเคียง.....	experiment	21 58.3	15 41.7	27 75.0	9 25.0	24 66.7	12 33.3
	comparison	21 58.3	15 41.7	24 66.7	12 33.3	24 66.7	12 33.3
5. ผู้ป่วยโรคเอดส์.....	experiment	29 80.6	7 19.4	34 94.4	2 5.6	32 88.9	4 11.1
	comparison	27 75.0	9 25.0	32 88.9	4 11.1	29 80.6	7 19.4

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Items Analysis

Number and percent of knowledge

ตารางที่ 19 จำนวนและร้อยละของผู้ป่วยติดเชื้อ HIV/ผู้ป่วยเอดส์จำแนกตามระยะเวลาของการเข้าโปรแกรม(ต่อ)

ข้อความ	group	pre test		post test 1		post test 2	
		correct	Non correct	correct	Non correct	correct	Non correct
		n %	N %	n %	n %	n %	n %
6. ผู้ป่วยเอดส์.....	experiment	31 86.1	5 13.9	32 88.9	4 11.1	30 83.3	6 16.7
	comparison	30 83.3	6 16.7	33 91.7	3 8.3	31 86.1	5 13.9

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Items Analysis

Number and percent of knowledge

ตารางที่ 19 จำนวนและร้อยละของผู้ป่วยติดเชื้อ HIV/ผู้ป่วยเอดส์จำแนกตามระยะเวลาของการเข้าโปรแกรม(ต่อ)

ข้อความ	group	pre test		post test 1		post test 2	
		correct	Non correct	correct	Non correct	correct	Non correct
		n %	N %	n %	n %	n %	n %
7. หลังรับประทาน...	experiment	14 38.9	22 61.1	16 44.4	20 55.6	18 50.0	18 50.0
	comparison	19 52.8	17 47.2	16 44.4	20 55.6	16 44.4	20 55.6
8 เมื่อรับบประทาน.....	experiment	23 63.9	13 36.1	27 75.0	9 25.0	28 77.8	8 22.2
	comparison	30 83.3	6 16.7	27 75.0	9 25.0	25 69.4	11 30.6

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Items Analysis

Number and percent of knowledge

ตารางที่ 19 จำนวนและร้อยละของผู้ป่วยติดเชื้อ HIV/ผู้ป่วยเอดส์จำแนกตามระยะเวลาของการเข้าโปรแกรม(ต่อ)

ข้อความ	group	pre test		post test 1		post test 2	
		correct	Non correct	correct	Non correct	correct	Non correct
		n %	N %	n %	n %	n %	n %
9. ถึงแม้ว่า.....	experiment	20 55.6	16 44.4	22 61.1	14 38.9	23 63.9	13 36.1
	comparison	20 55.6	16 44.4	22 61.1	14 88.9	21 58.3	15 41.7
10. เมื่อท่าน.....	experiment	30 83.3	6 16.7	32 88.9	4 11.1	34 94.4	2 5.6
	comparison	29 80.6	7 19.4	30 83.3	6 16.7	30 83.3	6 16.7

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Items Analysis

Number and percent of knowledge

ตารางที่19 จำนวนและร้อยละของผู้ป่วยติดเชื้อ HIV/ผู้ป่วยเอดส์จำแนกตามระยะเวลาของการเข้าโปรแกรม(ต่อ)

ข้อความ	group	pre test		post test 1		post test 2	
		correct	Non correct	correct	Non correct	correct	Non Correct
		n %	N %	n %	n %	n %	n %
2.2.1. ผู้ที่.....	experiment	34 94.4	2 5.6	34 94.4	2 5.6	34 94.4	2 5.6
	comparison	30 83.3	6 16.7	30 83.3	6 16.7	33 91.7	3 8.3
2.2.2. ผู้ที่รับการ.....	experiment	28 77.8	8 22.2	30 83.3	6 16.7	29 80.6	7 19.4
	comparison	25 69.4	11 30.6	26 72.2	10 27.8	26 72.2	10 27.8

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Items Analysis
Number and percent of knowledge

ตารางที่ 19 จำนวนและร้อยละของผู้ป่วยติดเชื้อ HIV/ผู้ป่วยเอดส์จำแนกตามระยะเวลาของการเข้าโปรแกรม(ต่อ)

ข้อความ	group	pre test		post test 1		post test 2	
		correct	Non correct	correct	Non correct	correct	Non correct
		n %	N %	n %	n %	n %	n %
2.2.3 หมูติด.....	experiment	29 80.6	7 19.4	31 86.1	5 13.9	21 58.3	15 41.7
	comparison	26 72.2	10 27.8	30 83.3	6 16.7	27 75.0	9 25.0
2.2.4. เมื่อรักษา.....	experiment	35 97.2	1 2.8	35 97.2	1 2.8	35 97.2	1 2.8
	comparison	32 88.9	4 11.1	32 88.9	4 11.1	33 91.7	3 8.3

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Items Analysis

Number and percent of knowledge

ตารางที่ 19 จำนวนและร้อยละของผู้ป่วยติดเชื้อ HIV/ผู้ป่วยเอดส์จำแนกตามระยะเวลาของการเข้าโปรแกรม(ต่อ)

ข้อความ	group	pre test		post test 1		post test 2	
		correct	Non correct	correct	Non correct	correct	Non correct
		n %	N %	n %	n %	n %	n %
2.2.5 เมื่อรับประทาน...	experiment	16 44.4	20 55.6	20 55.6	16 44.4	17 47.2	19 52.8
	comparison	22 61.1	14 38.9	19 52.8	17 47.2	17 47.2	19 52.8
2.2.6. ผู้รับประทาน.....	experiment	24 66.7	12 33.3	29 80.6	7 19.4	27 75.0	9 25.0
	comparison	26 72.2	10 27.8	20 55.6	16 44.4	21 58.3	15 41.7

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Items Analysis

Number and percent of knowledge

ตารางที่19 จำนวนและร้อยละของผู้ป่วยติดเชื้อ HIV/ผู้ป่วยเอดส์จำแนกตามระยะเวลาของการเข้าโปรแกรม(ต่อ)

ข้อความ	group	pre test		post test 1		post test 2	
		correct	Non correct	correct	Non correct	correct	Non correct
		n %	n %	n %	n %	n %	n %
2.2.7. ผู้รับประทาน.....	experiment	26 72.2	10 27.8	25 69.4	11 30.6	28 77.8	8 22.2
	comparison	22 61.1	14 38.9	21 58.3	15 41.7	21 58.3	15 41.7

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Items Analysis

Number and percent of outcome expectancies

ตารางที่ 20 จำนวนและร้อยละของผู้ป่วยติดเชื้อ HIV/ผู้ป่วยเอดส์จำแนกตามระยะเวลาของการเข้าโปรแกรม(ต่อ)

ข้อความ	group	pre test					post test 1					post test 2				
		5 n %	4 n %	3 n %	2 n %	1 n %	5 n %	4 n %	3 n %	2 n %	1 n %	5 n %	4 n %	3 n %	2 n %	1 n %
1. เป็น.....	experiment	7 19.4	10 27.8	19 52.8	- -	- -	10 27.8	12 33.3	13 36.1	1 2.8	- -	11 30.6	11 30.6	14 38.9	- -	- -
	comparison	6 16.7	12 33.3	17 47.2	1 2.8	- -	5 13.9	20 55.6	11 30.6	- -	- -	5 13.9	16 44.4	13 36.1	1 2.8	1 2.8
2. ไม่อ้วน.....	experiment	3 8.3	7 19.4	26 72.2	- -	- -	8 22.2	9 25.0	19 52.8	- -	- -	8 22.2	12 33.3	16 44.4	- -	- -
	comparison	3 8.3	4 11.1	29 80.6	- -	- -	3 8.3	9 25.0	23 63.9	1 2.8	- -	4 11.1	11 30.6	17 47.2	3 8.3	1 2.8
3. สามารถ...	experiment	6 16.7	22 61.1	6 16.7	- -	2 5.6	9 25.0	16 44.4	11 30.6	- -	- -	6 16.7	22 61.1	8 22.2	- -	- -
	comparison	10 27.8	17 47.2	6 16.7	2 5.6	1 2.8	10 27.8	14 38.9	8 22.2	4 11.1	- -	10 27.8	17 47.2	7 19.4	1 2.8	1 2.8

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Items Analysis

Number and percent of outcome expectancies

ตารางที่ 20 จำนวนและร้อยละของผู้ป่วยติดเชื้อ HIV/ผู้ป่วยเอดส์จำแนกตามระยะเวลาของการเข้าโปรแกรม(ต่อ)

ข้อความ	group	pre test					post test 1					post test 2				
		5 n %	4 n %	3 n %	2 n %	1 n %	5 n %	4 n %	3 n %	2 n %	1 n %	5 n %	4 n %	3 n %	2 n %	1 n %
4. รูป.....	experiment	4 11.1	13 36.1	16 44.4	3 8.3	- -	4 11.1	18 50.0	13 86.1	1 2.8	- -	4 11.1	15 41.7	17 47.2	- -	- -
	comparison	4 11.1	12 33.3	17 47.2	3 8.3	- -	7 19.4	11 30.6	17 47.2	1 2.8	- -	4 11.1	13 13	17 47.2	2 5.6	- -
5. ไม่เจ็บ..	experiment	10 27.8	15 41.7	8 22.2	3 8.3	- -	10 27.8	16 44.4	6 16.7	3 8.3	1 2.8	8 22.2	15 41.7	8 22.2	2 5.6	3 8.3
	comparison	11 30.6	10 27.8	5 13.9	7 19.4	3 8.3	13 36.1	9 25.0	7 19.4	4 11.1	3 8.3	14 38.9	10 27.8	4 11.1	7 19.4	1 2.8
6. ชีวิต.....	experiment	- -	12 33.3	17 47.2	5 13.9	2 5.6	- -	10 27.8	17 47.2	6 16.7	3 8.3	2 5.6	12 33.3	16 44.4	3 8.3	3 8.3
	comparison	3 8.3	2 5.6	22 61.1	5 13.9	4 11.1	1 2.8	8 22.2	17 47.2	4 11.1	6 16.7	5 13.9	5 13.9	16 44.4	5 13.9	5 13.9

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Items Analysis

Number and percent of outcome expectancies

ตารางที่ 20 จำนวนและร้อยละของผู้ป่วยติดเชื้อ HIV/ผู้ป่วยเอดส์จำแนกตามระยะเวลาของการเข้าโปรแกรม(ต่อ)

ข้อความ	group	pre test					post test 1					post test 2				
		5 n %	4 n %	3 n %	2 n %	1 n %	5 n %	4 n %	3 n %	2 n %	1 n %	5 n %	4 n %	3 n %	2 n %	1 n %
7. สามารถ.....	experiment	13 36.1	13 36.1	6 16.7	3 8.3		15 41.1	8 22.2	10 27.8	1 2.8	2 5.6	7 19.4	12 33.3	15 41.7	1 2.8	1 2.8
	comparison	10 27.8	12 33.3	11 30.6	3 8.3	- -	10 27.8	12 33.3	11 30.6	1 2.8	2 5.6	9 25.0	16 44.4	8 22.2	2 5.6	1 2.8
8. ทุกคน.....	experiment	8 22.2	16 44.4	12 33.3	- -	- -	11 30.6	18 50.0	6 16.7	- -	1 2.8	9 25.0	19 52.8	8 22.2	- -	- -
	comparison	8 22.2	17 47.2	10 27.8	1 2.8	- -	7 19.4	19 52.8	10 27.8	- -	- -	10 27.8	14 38.9	10 27.8	2 5.6	- -
9. สามารถ....	experiment	10 27.8	14 38.9	9 25	3 8.3	- -	10 27.8	14 38.9	8 22.2	3 8.3	1 2.8	9 25.0	20 55.6	6 16.7	1 2.8	- -
	comparison	7 19.4	15 41.7	12 33.3	2 5.6	- -	6 16.7	13 36.1	12 33.3	3 8.3	2 5.6	7 19.4	16 44.4	10 27.8	1 2.8	2 5.6

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Items Analysis

Number and percent of outcome expectancies

ตารางที่ 20 จำนวนและร้อยละของผู้ป่วยติดเชื้อ HIV/ผู้ป่วยเอดส์จำแนกตามระยะเวลาของการเข้าโปรแกรม(ต่อ)

ข้อความ	group	pre test					post test 1					post test 2				
		5 n %	4 n %	3 n %	2 n %	1 n %	5 n %	4 n %	3 n %	2 n %	1 n %	5 n %	4 n %	3 n %	2 n %	1 n %
10. สามารถ...	experiment	7 19.4	11 30.6	17 47.2	1 2.8	- -	10 27.8	12 33.3	12 33.3	2 5.6	- -	9 25	11 30.6	15 41.7	1 2.8	- -
	comparison	13 36.1	10 27.8	11 30.6	2 5.6	- -	12 33.3	11 30.6	9 25.0	2 5.6	2 5.6	7 19.4	16 44.4	10 27.8	3 8.3	- -
11. เป็น.....	experiment	7 19.4	15 41.7	13 36.1	1 2.8	- -	9 25.0	13 36.1	13 36.1	1 2.8	- -	8 22.2	12 33.3	13 36.1	3 8.3	- -
	comparison	10 27.8	12 33.3	12 33.3	2 5.6	- -	9 25.0	7 19.4	17 47.2	2 5.6	1 2.8	5 13.9	18 50.0	11 30.6	2 5.6	- -
12. เป็น.....	experiment	3 8.3	6 16.7	24 66.7	3 8.3	- -	4 11.1	6 16.7	24 66.7	2 5.6	- -	5 13.9	6 16.7	21 58.3	3 8.3	1 2.8
	comparison	6 16.7	4 11.1	21 58.3	4 11.1	1 2.8	4 11.1	5 13.9	22 61.1	4 11.1	1 2.8	3 8.3	10 27.8	21 58.3	2 5.6	- -

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Items Analysis

Number and percent of outcome expectancies

ตารางที่ 20 จำนวนและร้อยละของผู้ป่วยติดเชื้อ HIV/ผู้ป่วยเอดส์จำแนกตามระยะเวลาของการเข้าโปรแกรม(ต่อ)

ข้อความ	group	pre test					post test 1					post test 2				
		5 n %	4 n %	3 n %	2 n %	1 n %	5 n %	4 n %	3 n %	2 n %	1 n %	5 n %	4 n %	3 n %	2 n %	1 n %
13. สามารถ.....	experiment	10 27.8	14 38.9	11 30.6	1 2.8	- -	13 36.1	13 36.1	8 22.2	2 5.6	- -	9 25.0	18 50.0	7 19.4	2 5.6	- -
	comparison	9 25.0	18 50.0	7 19.4	2 5.6	- -	9 25.0	20 55.6	7 19.4	- -	- -	9 25.0	15 41.7	10 27.8	1 2.8	1 2.8
14. ได้รับ.....	experiment	6 16.7	12 33.3	18 50.0	- -	- -	7 19.4	14 38.9	14 38.9	- -	1 2.8	4 11.1	15 41.7	17 47.2	- -	- -
	comparison	4 11.1	14 38.9	16 44.4	2 5.6	- -	5 13.9	12 33.3	17 47.2	2 5.6	- -	5 13.9	10 27.8	19 52.8	2 5.6	- -
15. มี.....	experiment	4 11.1	12 33.3	15 41.7	3 8.3	2 5.6	6 16.7	10 27.8	15 41.7	4 11.1	1 2.8	6 16.7	10 27.8	18 50.0	2 5.6	- -
	comparison	6 16.7	13 36.1	11 30.6	6 16.7	- -	7 19.4	8 22.2	18 50.0	3 8.3	- -	4 11.1	12 33.3	18 50.0	1 2.8	1 2.8

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Items Analysis

Number and percent of outcome expectancies

ตารางที่20 จำนวนและร้อยละของผู้ป่วยติดเชื้อ HIV/ผู้ป่วยเอดส์จำแนกตามระยะเวลาของการเข้าโปรแกรม(ต่อ)

ข้อความ	group	pre test					post test 1					post test 2				
		5 n %	4 n %	3 n %	2 n %	1 n %	5 n %	4 n %	3 n %	2 n %	1 n %	5 n %	4 n %	3 n %	2 n %	1 n %
16. มีสิ่ง.....	experiment	2 5.6	6 16.7	22 61.1	5 13.9	1 2.8	3 8.3	8 22.2	17 47.2	6 16.7	2 5.6	3 8.3	7 19.4	17 47.2	5 13.9	4 11.1
	comparison	3 8.3	4 11.1	19 52.8	7 19.4	3 8.3	2 5.6	6 16.7	18 50.0	9 25.0	1 2.8	2 5.6	16 44.4	17 47.2	1 2.8	- -
17. ทำใน.....	experiment	6 16.7	4 11.1	15 41.7	9 25.0	2 5.6	8 22.2	9 25.0	12 33.3	6 16.7	1 2.8	5 13.9	12 33.3	15 41.7	3 8.3	1 2.8
	comparison	5 13.9	12 33.3	15 41.7	2 5.6	2 5.6	7 19.4	8 22.2	12 33.3	9 25.0	- -	7 19.4	10 27.8	16 44.4	3 8.3	- -
18. มีชีวิต.....	experiment	8 22.2	7 19.4	17 47.2	3 8.3	1 2.8	10 27.8	9 25.0	13 36.1	4 11.1	- -	8 22.2	15 41.7	12 33.3	1 2.8	- -
	comparison	8 22.2	15 41.7	10 27.8	2 5.6	1 2.8	9 25.0	14 38.9	9 25.0	4 11.1	- -	8 22.2	15 41.7	11 30.6	1 2.8	1 2.8

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Items Analysis

Number and percent of outcome expectancies

ตารางที่ 20 จำนวนและร้อยละของผู้ป่วยติดเชื้อ HIV/ผู้ป่วยเอดส์จำแนกตามระยะเวลาของการเข้าโปรแกรม(ต่อ)

ข้อความ	group	pre test					post test 1					post test 2				
		5	4	3	2	1	5	4	3	2	1	5	4	3	2	1
		n	n	n	n	n	n	n	n	n	n	n	n	n	n	n
		%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
19.	experiment	7	19	10	-	-	10	13	10	2	1	7	12	15	2	-
		19.4	52.8	27.8	-	-	27.8	36.1	27.8	5.6	2.8	19.4	33.3	41.7	5.6	-
มีโอกาส.....	comparison	5	10	16	5	-	7	12	15	2	-	8	14	13	1	-
		13.9	27.8	44.4	13.9	-	19.4	33.3	41.7	5.6	-	22.2	38.9	36.1	2.8	-
20.	experiment	4	5	19	8	-	10	5	17	2	1	6	8	16	4	2
		11.1	13.9	52.8	22.2	-	27.8	13.9	47.2	8.3	2.8	16.7	22.2	44.4	11.1	5.6
มี.....	comparison	4	7	15	5	5	10	5	14	5	2	6	9	14	6	1
		11.1	19.4	41.7	13.9	13.9	27.8	13.9	38.9	13.9	5.6	16.7	25.0	38.9	16.7	2.8

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Items Analysis

Number and percent of self-efficacy belief

ตารางที่ 21 จำนวนและร้อยละของผู้ป่วยติดเชื้อ HIV/ผู้ป่วยเอดส์จำแนกตามระยะเวลาของการเข้าโปรแกรม(ต่อ)

ข้อความ	group	pre test					post test 1					post test 2				
		5	4	3	2	1	5	4	3	2	1	5	4	3	2	1
		n	n	n	n	n	n	n	n	n	n	n	n	n	n	n
		%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
1.สามารถ.....	experiment	18	13	4	-	1	25	7	4	-	-	20	12	4	-	-
		50.0	36.1	11.1	-	2.8	69.4	19.4	11.1	-	-	55.6	33.3	11.1	-	-
	comparison	18	13	5	-	-	25	8	2	1	-	22	12	1	-	1
		50.0	36.1	13.9	-	-	69.4	22.2	5.6	2.8	-	61.1	33.3	2.8	-	2.8
2. หาก.....	experiment	21	15	-	-	-	28	8	-	-	-	26	10	-	-	-
		58.3	41.7	-	-	-	77.8	22.2	-	-	-	72.2	27.8	-	-	-
	comparison	21	11	3	-	1	27	8	1	-	-	21	14	1	-	-
		58.3	30.6	8.3	-	2.8	75.0	22.2	2.8	-	-	58.3	38.9	2.8	-	-
3. มีการ.....	experiment	15	18	2	1	-	27	7	2	-	-	20	13	2	1	-
		41.7	50.0	5.6	2.8	-	75.0	19.4	5.6	-	-	55.6	36.1	5.6	2.8	-
	comparison	17	16	2	-	1	25	11	-	-	-	24	12	-	-	-
		47.2	44.4	5.6	-	2.8	69.4	30.6	-	-	-	66.7	33.3	-	-	-

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Items Analysis
Number and percent of self-efficacy belief

ตารางที่ 21 จำนวนและร้อยละของผู้ป่วยติดเชื้อ HIV/ผู้ป่วยเอดส์จำแนกตามระยะเวลาของการเข้าโปรแกรม(ต่อ)

ข้อความ	group	pre test					post test 1					post test 2				
		5	4	3	2	1	5	4	3	2	1	5	4	3	2	1
		n	n	n	n	n	n	n	n	n	n	n	n	n	n	n
		%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
4. นับ.....	experiment	16	10	8	2	-	21	8	5	2	-	17	8	9	2	-
		44.4	27.8	22.2	5.6	-	58.3	22.2	13.9	5.6	-	47.2	22.2	25.0	5.6	-
	comparison	15	12	6	2	1	17	12	4	3	-	15	15	5	1	-
		41.7	33.3	16.7	5.6	2.8	47.2	33.3	11.1	8.3	-	41.7	41.7	13.9	2.8	-
5. สามารถ.....	experiment	17	11	7	-	1	19	14	3	-	-	18	14	4	-	-
		47.2	30.6	19.4	-	2.8	52.8	38.9	8.3	-	-	50.0	38.9	11.1	-	-
	comparison	15	13	7	-	1	17	11	6	1	1	19	13	3	1	-
		41.7	36.1	19.4	-	2.8	47.2	30.6	16.7	2.8	2.8	52.8	36.1	8.3	2.8	-
6. สามารถ.....	experiment	13	18	5	-	-	17	15	4	-	-	15	17	4	-	-
		36.1	50.0	13.9	-	-	47.2	41.7	11.1	-	-	41.7	47.2	11.1	-	-
	comparison	13	13	8	1	1	21	10	4	1	-	20	14	1	1	-
		36.1	36.1	22.2	2.8	2.8	58.3	27.8	11.1	2.8	-	55.6	38.9	2.8	2.8	-

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Items Analysis

Number and percent of self-efficacy belief

ตารางที่ 21 จำนวนและร้อยละของผู้ป่วยติดเชื้อ HIV/ผู้ป่วยเอดส์จำแนกตามระยะเวลาของการเข้าโปรแกรม(ต่อ)

ข้อความ	group	pre test					post test 1					post test 2				
		5 n %	4 n %	3 n %	2 n %	1 n %	5 n %	4 n %	3 n %	2 n %	1 n %	5 n %	4 n %	3 n %	2 n %	1 n %
7. สามารถ.....	experiment	7 19.4	16 44.4	13 36.1	- -	- -	11 30.6	13 36.1	12 33.3	- -	- -	15 41.7	14 38.9	7 19.4	- -	- -
	comparison	11 30.6	17 47.2	8 22.2	- -	- -	7 19.4	19 52.8	9 25.0	1 2.8	- -	12 33.3	15 41.7	9 25.0	- -	- -
8. สามารถ.....	experiment	18 50.0	9 25.0	7 19.4	- -	2 5.6	19 52.8	11 30.6	6 16.7	- -	- -	18 50.0	12 33.3	5 13.9	1 2.8	- -
	comparison	15 41.7	14 38.9	6 16.7	1 2.8	- -	20 55.6	11 30.6	5 13.9	- -	- -	18 50.0	15 41.7	3 8.3	- -	- -
9. มี.....	experiment	14 38.9	15 41.7	5 13.9	1 2.8	1 2.8	16 44.4	15 41.7	4 11.1	12.8 	- -	15 41.7	16 44.4	5 13.9	- -	- -
	comparison	14 38.9	14 38.9	7 19.4	1 2.8	- -	13 36.1	13 36.1	9 25.0	- -	1 2.8	16 44.4	14 38.9	5 13.9	- -	1 2.8

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Items Analysis

Number and percent of self-efficacy belief

ตารางที่ 21 จำนวนและร้อยละของผู้ป่วยติดเชื้อ HIV/ผู้ป่วยเอดส์จำแนกตามระยะเวลาของการเข้าโปรแกรม(ต่อ)

ข้อความ	group	pre test					post test 1					post test 2				
		5 n %	4 n %	3 n %	2 n %	1 n %	5 n %	4 n %	3 n %	2 n %	1 n %	5 n %	4 n %	3 n %	2 n %	1 n %
10. สนใจ	experiment	9	12	13	1	1	12	10	12	2	-	10	12	14	-	-
ศึกษา.....		25.0	33.3	36.1	2.8	2.8	33.3	27.8	33.3	5.6	-	27.8	33.3	38.9	-	-
	comparison	7	11	17	-	1	9	9	17	1	-	8	16	11	1	-
		19.4	30.6	47.2	-	2.8	25.0	25.0	47.2	2.8	-	22.2	44.4	30.6	2.8	-
11. สามารถ.....	experiment	7	5	20	4	-	4	12	16	3	1	6	13	15	1	1
		19.4	13.9	55.6	11.1	-	11.1	33.3	44.4	8.3	2.8	16.7	36.1	41.7	2.8	2.8
	comparison	2	10	20	3	1	5	4	22	2	3	5	11	19	-	1
		5.6	27.8	55.6	8.3	2.8	13.9	11.1	66.1	5.6	8.3	13.9	30.6	52.8	-	2.8
12. รับ.....	experiment	15	10	10	1	-	18	12	6	-	-	16	13	7	-	-
		41.7	27.8	27.8	2.8	-	50.0	33.3	16.7	-	-	44.4	36.1	19.4	-	-
	comparison	15	13	6	1	1	17	14	4	1	-	17	17	1	1	-
		41.7	36.1	16.7	2.8	2.8	47.2	38.9	11.1	2.8	-	47.2	47.2	2.8	2.8	-

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Items Analysis

Number and percent of self-efficacy belief

ตารางที่ 21 จำนวนและร้อยละของผู้ป่วยติดเชื้อ HIV/ผู้ป่วยเอดส์จำแนกตามระยะเวลาของการเข้าโปรแกรม(ต่อ)

ข้อความ	group	pre test					post test 1					post test 2				
		5 n %	4 n %	3 n %	2 n %	1 n %	5 n %	4 n %	3 n %	2 n %	1 n %	5 n %	4 n %	3 n %	2 n %	1 n %
13. เก็บ.....	experiment	16 44.4	16 44.4	4 11.1	- -	- -	23 63.9	12 33.3	1 2.8	- -	- -	20 55.6	15 41.7	1 2.8	- -	- -
	comparison	15 41.7	16 44.4	4 11.1	- -	1 2.8	21 58.3	11 30.6	4 11.1	- -	- -	19 52.8	13 36.1	4 11.1	- -	- -
14. สามารถ.....	experiment	18 50.0	14 38.9	3 8.3	- -	1 2.8	22 61.1	10 27.8	4 11.1	- -	- -	20 55.6	10 27.8	5 13.9	1 2.8	- -
	comparison	18 50.0	16 44.4	1 2.8	1 2.8	- -	22 61.1	12 33.3	2 5.6	- -	- -	20 55.6	15 41.7	1 2.8	- -	- -

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Number and percent of self-efficacy belief

ตารางที่ 21 จำนวนและร้อยละของผู้ป่วยติดเชื้อ HIV/ผู้ป่วยเอดส์จำแนกตามระยะเวลาของการเข้าโปรแกรม(ต่อ)

ข้อความ	group	pre test		post test 1		post test 2	
		correct	Non correct	correct	Non correct	correct	Non correct
		n %	n %	n %	n %	n %	n %
1. ท่าน.....	experiment	17 47.2	19 52.8	14 38.9	22 61.1	16 44.4	20 55.6
	comparison	11 30.6	25 69.4	15 41.7	21 58.3	17 47.2	19 52.8
2. เมื่อท่าน.....	experiment	19 52.8	17 47.2	23 63.9	13 36.1	23 63.9	13 36.1
	comparison	16 44.4	20 55.6	18 50.0	18 50.0	22 61.1	14 38.9

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Number and percent of self-efficacy belief

ตารางที่ 21 จำนวนและร้อยละของผู้ป่วยติดเชื้อ HIV/ผู้ป่วยเอดส์จำแนกตามระยะเวลาของการเข้าโปรแกรม(ต่อ)

ข้อความ	group	pre test		post test 1		post test 2	
		correct	Non correct	correct	Non correct	correct	Non correct
		n %	N %	n %	n %	n %	n %
3. ท่าน..... …	experiment	28 77.8	8 22.2	31 86.1	5 13.9	35 97.2	1 2.8
	comparison	21 58.3	15 41.7	24 66.7	12 33.3	27 75.0	9 25.0
4. มี.....	experiment	33 91.7	3 8.3	32 88.9	4 11.1	31 86.1	5 13.9
	comparison	26 72.2	10 27.8	27 75.0	9 25.0	28 77.8	8 22.2

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Number and percent of self-efficacy belief

ตารางที่ 21 จำนวนและร้อยละของผู้ป่วยติดเชื้อ HIV/ผู้ป่วยเอดส์จำแนกตามระยะเวลาของการเข้าโปรแกรม(ต่อ)

ข้อความ	group	pre test		post test 1		post test 2	
		correct	Non correct	correct	Non correct	correct	Non correct
		n	N	n	n	n	n
		%	%	%	%	%	%
5. วัน.....	experiment	26	10	29	7	33	3
		72.2	27.8	80.6	19.4	91.7	8.3
	comparison	28	8	24	12	27	9
		77.8	22.2	66.7	33.3	75.0	25.0
6. ท่าน.....	experiment	28	8	33	3	36	-
		77.8	22.2	91.7	8.3	100	-
	comparison	31	5	35	1	35	1
		86.1	13.9	97.2	2.8	97.2	2.8

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Number and percent of practice

ตารางที่ 22 จำนวนและร้อยละของผู้ป่วยติดเชื้อ HIV/ผู้ป่วยเอดส์จำแนกตามระยะเวลาของการเข้าโปรแกรม(ต่อ)

ข้อความ	group	pre test				post test 1				post test 2			
		4 n %	3 n %	2 n %	1 n %	4 n %	3 n %	2 n %	1 n %	4 n %	3 n %	2 n %	1 n %
1. เมื่อ.....	experiment	29 80.6	7 19.4	- -	- -	33 91.7	3 8.3	- -	- -	32 88.9	4 11.1	- -	- -
	comparison	25 69.4	8 22.2	- -	3 8.3	29 80.6	6 16.7	- -	1 2.8	29 80.6	5 13.9	- -	- -
2. มีธุระ.....	experiment	29 80.6	7 19.4	- -	- -	30 83.3	6 16.7	- -	- -	33 91.7	3 8.3	- -	- -
	comparison	29 80.6	7 19.4	- -	- -	29 80.6	7 19.4	- -	- -	32 88.9	4 11.1	- -	- -
3. ท่าน.....	experiment	30 83.3	6 16.7	- -	- -	31 86.1	5 13.9	- -	- -	32 88.9	4 11.1	- -	- -
	comparison	29 80.6	7 19.4	- -	- -	30 83.3	6 16.7	- -	- -	32 88.9	4 11.1	- -	- -

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Number and percent of practice

ตารางที่ 22 จำนวนและร้อยละของผู้ป่วยติดเชื้อ HIV/ผู้ป่วยเอดส์จำแนกตามระยะเวลาของการเข้าโปรแกรม(ต่อ)

ข้อความ	group	pre test				post test 1				post test 2			
		4	3	2	1	4	3	2	1	4	3	2	1
		n	n	n	n	n	n	n	n	n	n	n	n
		%	%	%	%	%	%	%	%	%	%	%	%
4. เม็ดยา.....	experiment	36	-	-	-	36	-	-	-	36	-	-	-
		100.0	-	-	-	100.0	-	-	-	100	-	-	-
	comparison	35	1	-	-	35	1	-	-	36	-	-	-
		97.2	2.8	-	-	97.2	2.8	-	-	100	-	-	-
5. กลัว.....	experiment	36	-	-	-	36	-	-	-	35	1	-	-
		100.0	-	-	-	100.0	-	-	-	97.2	2.8	-	-
	comparison	33	2	-	1	-	35	-	1	36	-	-	-
		91.7	5.6	-	2.8	-	97.2	-	2.8	100	-	-	-
6. ท่าน.....	experiment	36	-	-	-	36	-	-	-	36	-	-	-
		100.0	-	-	-	100.0	-	-	-	100	-	-	-
	comparison	35	1	-	-	35	1	-	-	35	1	-	-
		97.2	2.8	-	-	97.2	2.8	-	-	97.2	2.8	-	-

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Number and percent of practice

ตารางที่ 22 จำนวนและร้อยละของผู้ป่วยติดเชื้อ HIV/ผู้ป่วยเอดส์จำแนกตามระยะเวลาของการเข้าโปรแกรม(ต่อ)

ข้อความ	group	pre test				post test 1				post test 2			
		4 n %	3 n %	2 n %	1 n %	4 n %	3 n %	2 n %	1 n %	4 n %	3 n %	2 n %	1 n %
7. มี.....	experiment	29 80.6	7 19.4	- -	- -	33 91.7	3 8.3	- -	- -	34 94.4	2 5.6	- -	- -
	comparison	30 83.3	5 13.9	1 2.8	- -	31 86.1	5 13.9	- -	- -	34 94.4	2 5.6	- -	- -
8.รู้สึก.....	experiment	27 75.0	8 22.2	1 2.8	- -	27 75.0	9 25.0	- -	- -	32 88.9	4 11.1	- -	- -
	comparison	27 75.0	9 25.0	- -	- -	26 72.2	10 27.8	- -	- -	30 83.3	5 13.9	- -	1 2.8
9. รู้สึก.....	experiment	36 100.0	- -	- -	- -	36 100.0	- -	- -	- -	35 97.2	1 2.8	- -	- -
	comparison	34 94.4	2 5.6	- -	- -	36 100.0	- -	- -	- -	35 97.2	1 2.8	- -	- -

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Number and percent of practice

ตารางที่ 22 จำนวนและร้อยละของผู้ป่วยติดเชื้อ HIV/ผู้ป่วยเอดส์จำแนกตามระยะเวลาของการเข้าโปรแกรม(ต่อ)

ข้อความ	group	pre test				post test 1				post test 2			
		4	3	2	1	4	3	2	1	4	3	2	1
		n	n	n	n	n	n	n	n	n	n	n	n
		%	%	%	%	%	%	%	%	%	%	%	%
10. บางวัน.....	experiment	36	-	-	-	35	1	-	-	35	1	-	-
		100.0	-	-	-	97.2	2.8	-	-	97.2	2.8	-	-
	comparison	35	1	-	-	35	1	-	-	36	-	-	-
		97.2	2.8	-	-	97.2	2.8	-	-	100	-	-	-
11. หา.....	experiment	36	-	-	-	36	-	-	-	36	-	-	-
		100.0	-	-	-	100.0	-	-	-	100	-	-	-
	comparison	36	-	-	-	36	-	-	-	36	-	-	-
		100.0	-	-	-	100.0	-	-	-	100	-	-	-
12. ยา.....	experiment	35	1	-	-	35	1	-	-	32	4	-	-
		97.2	2.8	-	-	97.2	2.8	-	-	88.9	11.1	-	-
	comparison	36	-	-	-	35	-	-	1	36	-	-	-
		100.0	-	-	-	97.2	-	-	2.8	100	-	-	-

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Number and percent of practice

ตารางที่ 22 จำนวนและร้อยละของผู้ป่วยติดเชื้อ HIV/ผู้ป่วยเอดส์จำแนกตามระยะเวลาของการเข้าโปรแกรม(ต่อ)

ข้อความ	group	pre test				post test 1				post test 2			
		4 n %	3 n %	2 n %	1 n %	4 n %	3 n %	2 n %	1 n %	4 n %	3 n %	2 n %	1 n %
13. ลืม.....	experiment	36 100.0	- -	- -	- -	35 97.2	- -	- -	1 2.8	36 100	- -	- -	- -
	comparison	35 97.2	1 2.8	- -	- -	35 97.2	1 2.8	- -	- -	35 97.2	1 2.8	- -	- -
14. รู้สึก.....	experiment	32 88.9	2 5.6	2 5.6	- -	34 94.4	2 5.6	- -	- -	34 94.4	2 5.6	- -	- -
	comparison	32 88.9	3 8.3	- -	1 2.8	31 86.1	4 11.1	1 2.8	- -	30 83.3	5 13.9	1 2.8	- -
15. สับ.....	experiment	31 86.1	5 13.9	- -	- -	34 94.4	2 5.6	- -	- -	35 97.2	1 2.8	- -	- -
	comparison	33 91.7	1 2.8	- -	2 5.6	32 88.9	4 11.1	- -	- -	35 97.2	1 2.8	- -	- -

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Number and percent of practice

ตารางที่ 22 จำนวนและร้อยละของผู้ป่วยติดเชื้อ HIV/ผู้ป่วยเอดส์จำแนกตามระยะเวลาของการเข้าโปรแกรม(ต่อ)

ข้อความ	group	pre test				post test 1				post test 2			
		4 n %	3 n %	2 n %	1 n %	4 n %	3 n %	2 n %	1 n %	4 n %	3 n %	2 n %	1 n %
16.ลืม.....	experiment	36 100.0	- -	- -	- -	35 97.2	1 2.8	- -	- -	35 97.2	1 2.8	- -	- -
	comparison	33 91.7	2 5.6	1 2.8	- -	34 94.4	2 5.6	- -	- -	35 97.2	1 2.8	- -	- -
17. ไม่สามารถ.....	experiment	31 86.1	4 11.1	- -	1 2.8	31 86.1	3 8.3	2 5.6	- -	32 88.9	3 8.3	1 2.8	- -
	comparison	32 88.9	3 8.3	- -	1 2.8	33 91.7	3 8.3	- -	- -	31 86.1	5 13.9	- -	- -

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BIOGRAPHY

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